* **IN THE HIGH COURT OF DELHI AT NEW DELHI`**

Pronounced on: 20th February, 2025

\+ **CS(COMM) 423/2016 & I.As. 18701/2014, 20810/2014, 3550/2021**

KONINKLIJKE PHILIPS N.V. .....Plaintiff

Through: Mr. Pravin Anand, Ms. Vaishali Mittal, Mr. Siddhant Chamola, Ms. Shraddha Singh Chauhan and Ms. Pallavi Bhatnagar, Advocates.

versus

MAJ(RETD) SUKESH BEHL & ANR .....Defendants

Through: Mr. J. Sai Deepak, Mr. N. K. Bhardwaj, Ms. Kashima Chadha, Mr. Avinash K. Sharma and Mr. Bikash Ghorai, Advocates.

\+ **CS(COMM) 499/2018 & I.As. 3258/2017, 3509/2021**

KONINKLIJKE PHILIPS N.V. .....Plaintiff

Through: Mr. Pravin Anand, Ms. Vaishali Mittal, Mr. Siddhant Chamola, Ms. Shraddha Singh Chauhan and Ms. Pallavi Bhatnagar, Advocates.

versus

G.S KOHLI & ORS .....Defendants

Through: Mr. J. Sai Deepak, Mr. N. K. Bhardwaj, Ms. Kashima Chadha, Mr. Avinash K. Sharma and Mr. Bikash Ghorai, Advocates.

\+ **CS(COMM) 519/2018 & I.As. 10541/2012, 16494/2018, 3549/2021**

KONINKLIJKE PHILIPS N.V. .....Plaintiff

Through: Mr. Pravin Anand, Ms. Vaishali Mittal, Mr. Siddhant Chamola, Ms.

Shraddha Singh Chauhan and Ms. Pallavi Bhatnagar, Advocates.

versus

SURINDER WADHWA & ORS .....Defendants

Through: Mr. J. Sai Deepak, Mr. N. K. Bhardwaj, Ms. Kashima Chadha, Mr. Avinash K. Sharma and Mr. Bikash Ghorai, Advocates.

CORAM:
HON'BLE MR. JUSTICE SANJEEV NARULA

JUDGMENT

SANJEEV NARULA, J.:

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1. This judgment resolves three inter-connected suits filed by the Plaintiff relating to the infringement of Indian Patent No. 218255, which pertains to a 'Method of Converting Information Words to a Modulated Signal.'[1] The Plaintiff contends that the Defendants have unlawfully exploited their patented technology, specifically, the Eight-to-Fourteen Modulation Plus coding,[2] which forms an essential and integral industry standard in the manufacturing, storage, and replication of data in digital formats, such as in Digital Versatile Discs.[3] The Defendants, though distinct legal entities, mount a common defence, challenging both the infringement claim and the very validity of the Suit Patent. Through their respective counter-claims, they seek revocation on multiple grounds, including insufficiency of disclosure, lack of novelty, and alleged misrepresentation. Beyond being a dispute over patent infringement, these cases raise broader questions about the enforcement of Standard Essential Patents,[4] the obligations of licensees and implementers in the digital storage industry, and the legal implications of a patentee's disclosures before the Patent Office.

2. Although separate trials were conducted in the three suits, the core

[1] "Suit Patent."
[2] "EFM+."
[3] "DVDs."
[4] "SEPs."

issues in each case remain substantially the same, revolving around the same patented invention and raising similar claims of infringement. The evidence relied upon by the parties also overlaps to a significant extent. Accordingly, with the consent of all counsel, these matters are being decided through a common judgment.

THE PARTIES

3. For ease of reference, the parties to the three suits and their *inter-se* relationships are depicted in the following tabular chart:

PLAINTIFF	DEFENDANTS	RELATIONSHIP BETWEEN THE DEFENDANTS
CS (COMM) 423/2016 (originally, CS (OS) 2206/2012)		
Koninklijke Philips N.V.	Maj. (Retd.) Sukesh Behl [Defendant No. 1] M/s Pearl Engineering Company [Defendant No. 2]	Defendant No. 1 is the proprietor of Defendant No. 2.[5]
CS (COMM) 499/2018 (originally, CS (OS) 2700/2012)		
Koninklijke Philips N.V.	Mr. G.S. Kohli [Defendant No. 1] Balaji Optical Disc Private Limited [Defendant No. 2, *ex-parte*] Powercube Infotech Private	Defendant No. 1 is the director of Defendant No. 3.[6] Defendant No. 1 is an erstwhile director of Defendant No. 2. He

[5] The Defendants in CS(COMM) 423/2016 shall be collectively referred as "Pearl Engineering" in this judgment.
[6] Defendants No. 1 and 3 in CS(COMM) 499/2018 shall be collectively referred as "Powercube Infotech" in this judgment.

	Limited [Defendant No. 3] Mr. Jaspal Singh Chandok [Defendant No. 4, *ex-parte*]	resigned from this position prior to the institution of the suit. Defendant No. 4 is stated to be the director of Defendants 2 and 3. Defendants No. 2 and 4 were proceeded *ex-parte* on 06th November, 2013.
CS (COMM) 519/2018 (originally, CS (OS) 1615/2012)		
Koninklijke Philips N.V.	Mr. Surinder Wadhwa [Defendant No. 1] M/s Siddharth Optical Disc Private Limited [Defendant No. 2]	Defendant No. 1 is the director of Defendant No. 2.[7]

THE SUIT PATENT

4. The subject matter of all the three suits is the Plaintiff's Indian Patent No. 218255, titled "*Method of Converting Information Words to a Modulated Signal*." The Suit Patent, filed as a divisional conventional application under Section 16 of the Patents Act, 1970,[8] arises from the parent application No. 136/CAL/1995 dated 13th February, 1995.[9] The Parent Application was later deemed to be abandoned under Section 21(1) of

[7] The Defendants in CS(COMM) 519/2018 shall be collectively referred as "Siddharth Optical" in this judgment.
[8] "Patents Act"
[9] "Parent Application."

the Patents Act. The bibliographic details of the Suit Patent are set out below:

APPLICANT	Koninklijke Philips Electronics N.V. (later amended to Koninklijke Philips N.V.)
APPLICATION DETAILS	312/MAS/1999
DATE OF FILING	17th March, 1999
DETAILS OF THE PARENT APPLICATION	Application No. 136/CAL/95 dated 13th February, 1995.
TITLE OF THE INVENTION	Method of converting information words to a modulated signal.
CORRESPONDING EP PATENT	EP745254B1 titled "*Method of converting a series of m-bit information words to a modulated signal, method of producing a record carrier, coding device, decoding device, recording device, reading device, signal, as well as a record carrier*" filed on 1st February, 1995.
CORRESPONDING US PATENT	US 5920272 and US 5696505C1 titled "*Method of converting a series of m-bit information words to a modulated signal, method of producing a record carrier, coding device, decoding device, recording device, reading device, signal, as well as a record carrier*" filed on 25th July, 1997 and 08th February, 1995, respectively.
DATE OF EXPIRY	12th February 2015

5. The Suit Patent comprises thirteen claims. Claims 1 to 11 and 13 involve a method of converting a series of m-bit information words into a modulated signal, where 'm' is an integer. Each information word is converted into an n-bit code word, where 'n' is greater than 'm.' These code words are used to generate a modulated signal, per the rules of conversion to satisfy a pre-determined criterion. This technology is integral to EFM+ coding, an essential feature in modern DVD systems. The EFM+ modulation enables encoding of 8-bit information words into 16-bit code words, thus

providing an efficient system of transmitting information. The Suit Patent entails additional elements, including the process for recording, storage, transmission, and decoding of information.

6. Claim 12 of the Suit Patent, which is central to the controversy at hand, covers the record carrier on which the modulated signal obtained by the method claimed in claims 1 to 11 is provided in a track.

THE PATENT DISPUTE: CLAIMS AND COUNTER-CLAIMS

I. THE CONTROVERSY IN BRIEF

7. The Plaintiff filed these suits in 2012, seeking a permanent injunction prohibiting the Defendants from infringing the Suit Patent along with ancillary reliefs of damages, rendition of accounts, delivery up etc. They allege that the Defendants, engaged in large-scale DVD replication, have been using the patented technology without a license. The Plaintiff asserts that the Suit Patent concerns a transformative development in DVD production: the encoding of data into binary format using EFM+ technology, which facilitates higher data storage capacity on DVDs compared to earlier methods, like Video Compact Discs.[10] The Plaintiff claims that this innovation has been crucial to the global standardization of DVD production, ensuring universal compatibility with DVD players regardless of the manufacturer. This channel modulation technology forms an indispensable component of DVD replication and qualifies as an SEP within the DVD standard. The Plaintiff emphasises that the replication process adopted by the Defendants directly involves the Plaintiff's patented EFM+ encoding, and constitutes a wilful and deliberate infringement of the Suit

[10] "VCDs."

Patent.

8. The Defendants, on the other hand, acknowledge replicating DVDs in significant volumes, but deny any infringement of the Plaintiff's patent. They argue that claims of the Suit Patent essentially entail a process for compression of data applied in the manufacturing of an original DVD, that is distinct from replication process deployed by them, which is purely a mechanical process. The Defendants maintain that their replication process does not involve the steps claimed in the Suit Patent, and assert that they have obtained necessary documentation, including copyright permissions from content owners to reproduce the copies. Their defence also hinges on the argument that the EFM+ encoding process, which is one of the steps in their replication process is outsourced to third parties, thus denying that their own activities amount to infringement. In addition to the above, the Defendants have also filed counter-claims challenging the validity of the Suit Patent. They argue that the Suit Patent was wrongly granted, raising allegations of fraud, concealment, and non-compliance with the stipulations of the Patents Act.

9. In response, the Plaintiff asserts that the Defendants cannot absolve themselves of liability by allegedly outsourcing critical components of the replication process, which are covered by the Suit Patent. Without prejudice, they also rely on the principles of vicarious liability and joint tort-feasorship as the Defendants have admitted directing third parties to undertake steps covered by the Suit Patent. Furthermore, the Plaintiff contends that as an SEP, the infringement of the Suit Patent can be demonstrated indirectly by showing that the Defendants' products comply with the standardized DVD specifications, which inherently include EFM+ encoding. On the issue of

validity of the Suit Patent, the Plaintiff argues that the Defendants' challenges lack substance. They highlight that although the Defendants raised objections to the enforceability of the patent, they have failed to provide substantial evidence or any convincing arguments during final submissions.

II. OVERVIEW OF THE CASE SET UP BY THE PARTIES

10. Given the similarity in the factual matrix and contentions raised, for clarity and convenience, during final arguments, the counsel predominantly referred to the pleadings and oral and documentary evidence in CS(COMM) 423/2016. Accordingly, the submissions advanced in CS(COMM) 423/2016 are recounted in this segment. The facts and contentions, where they deviate, are also delineated in this segment.

II.I. ***On behalf of the Plaintiff***

11. The facts and contentions presented by the Plaintiff are as follows:

11.1. ***The Plaintiff's commercial activities:***

11.1.1. Koninklijke Philips N.V. (formerly, Koninklijke Philips Electronics N.V.), a company incorporated in Netherlands, is a globally recognized leader in electronics. Known by its trademark "PHILIPS," the corporation has revolutionized consumer electronics for decades. With operations spanning over sixty countries, its product portfolio includes consumer electronics, domestic appliances, and healthcare devices. The Plaintiff's innovations have positioned it at the forefront of digital technology in fields such as television displays, video compression, and optical storage solutions.

11.1.2. Through substantial investment in research and development,

the Plaintiff has pioneered several groundbreaking technologies. These include the compact cassette system, laser-based optical disc systems such as CD-Audio, CD-ROM, Video-CD, CD-R/RW, SACD, and various other formats of DVDs and Blu-ray discs. The Plaintiff's continuous efforts spanning decades culminated in the creation of the Compact Disc[11] and DVD. At the time of filing of the suits, the Plaintiff held an extensive portfolio of intellectual property, including approximately 55,000 patent rights, 33,000 trademark registrations, 49,000 design registrations, and 2,600 domain names.

11.1.3. Among the Plaintiff's patents is Indian Patent No. 175971, titled "Digital Transmission System," which played a crucial role in VCD replication technology.[12] This patent was valid until 27th May, 2010.

11.1.4. The DVD, though physically similar to a CD, offers significantly enhanced storage capacity. As an optical storage medium, data on a DVD is replicated using a series of 'lands' and 'pits' – elevated and recessed areas on the disc's surface, readable by laser – that allow for far greater data storage in its pre-recorded format. DVDs require specialized playback devices capable of interpreting this stored information.

11.2. ***The essentiality of the Suit Patent****:*

11.2.1. The Suit Patent pertaining to channel modulation is one of the nine essential patents utilised in the production and replication of DVDs in India. An essential patent is one that discloses and claims an invention indispensable for practicing a given industry standard. The essentiality of a patent implies that it is technically impossible, based on normal technical

[11] "CD."
[12] "VCD Patent."

practices and the available state of the art, to produce, sell, lease, or operate equipment or methods compliant with a standard without infringing upon the specific patent. In the present cases, the essential nature of the Suit Patent has been affirmed by an independent patent evaluator.

11.2.2. The Suit Patent is indispensable to the technology underlying the replication of DVDs, as defined in the 'DVD Specifications for the Read-Only Disc-Part 1 – Physical Specifications ROM Standard.'[13] This standard was established by the DVD Forum, an international consortium of hardware manufacturers, software developers, content creators, and other key players in DVD technology. The Forum comprises prominent industry leaders, including IBM, Microsoft, Paramount Pictures, Walt Disney, Lenovo, Yamaha, Sony, Pioneer, and others. The purpose of the Forum is to facilitate the exchange and dissemination of ideas and information concerning the DVD format, its technical capabilities, and potential improvements and innovations. By promoting the broad acceptance of DVD products worldwide across the entertainment, consumer electronics, and IT industries, the DVD Forum ensures that standards of technology used in DVDs are consistent and interoperable across different manufacturers and countries.

11.2.3. The scope of claims of the Suit Patent corresponds to the claims in its related US and European patents, which have undergone essentiality analysis in relation to the DVD ROM Standard. Thus, the Suit Patent has been acknowledged as a core component of DVD Standard technology framework, establishing its essentiality within the industry's technological ecosystem.

11.2.4. The Plaintiff enjoys statutory rights under the Patents Act in respect of the Suit Patent in India. This includes the exclusive right to make, use, sell, and license the Suit Patent, as well as the negative right to restrain others from engaging in such activities without authorization.

11.3. ***Licensing regime vis-à-vis the Suit Patent:***

11.3.1. In addition to their core business of manufacturing and marketing electronic products, the Plaintiff also engages in the licensing of their patents to third parties. In this context, manufacturers and replicators of DVDs and VCDs across the world, including India, have obtained licenses from the Plaintiff to lawfully conduct mass replication of these products.

11.3.2. The replication, manufacture, sale, lease, and import of DVDs require licenses for the use of all essential patents involved in the process, including the Suit Patent, from within the relevant patent pools. The Suit Patent is essential for adhering to the DVD Standard. Thus, the replication of DVDs invariably requires the use of the Suit Patent.

11.3.3. Plaintiff provides comprehensive licensing information through its website, www.ip.philips.com, which includes details about the Optical Storage Licensing Programme, covering DVD Video and DVD ROM discs, among other products.

11.3.4. The Plaintiff initiated a worldwide, non-discriminatory licensing program under which licenses for patents essential to the DVD Standard were offered. Under this program, the Plaintiff provided two types of patent licenses for DVD Video Disc and DVD ROM Disc replication: (a) a "Philips Only" version, covering only the patents held by the Plaintiff, and (b) a "Joint License," which included patents from Plaintiff, Sony, Pioneer,

[13] "DVD Standard."

and LG (who together form the 4C patent pool). This regime continued until 30th June, 2012, whereafter the Plaintiff authorised "One-Red, LLC," a company based in the United States to execute license arrangements with interested entities.

11.3.5. The applicants have the exclusive discretion to choose between the "Philips Only" and "Joint" patent licenses. The Plaintiff's licensing policies and schemes are transparent, fully described, and publicly available on their website. The Plaintiff follows a global policy of basing their licensing activities on fair, reasonable, and non-discriminatory principles, ensuring that licensing fee is commercially viable for all manufacturers. The Plaintiff's licenses are accessible to any applicant on standard terms, and each license grants the licensee the right to globally market the licensed product.

11.3.6. The Plaintiff's patents are widely recognized, with replicators across the world and in India, including Moser Baer India Limited,[14] Jet Speed Audio Private Limited, KRCD (India) Private Limited, and Aftab Electronics Private Limited, obtaining licenses for its essential patent to replicate DVDs. As on the date of filing of the suits, the Plaintiff had issued approximately 220 DVD Video and DVD ROM Disc Patent Licenses worldwide.

11.4. ***The impugned activities of the Defendants***:

In CS (COMM) 423/2016

11.4.1. Defendant No. 2 is a proprietorship of Defendant No. 1, Maj (Retd.) Sukesh Behl. It is an entity engaged in the engineering,

[14] "Moser Baer."

manufacturing, and replication of optical storage devices, including VCDs and DVDs. Through an agreement dated 28th January, 2005, Pearl Engineering obtained a license from the Plaintiff to use its patents relevant to VCD technology, including the VCD Patent, which was integral to the replication and manufacturing of VCDs.[15]

11.4.2. Under the terms of the VCD License Agreement, Pearl Engineering was obligated to submit quarterly statements detailing the manufacture, replication, and sales of VCDs, pay royalties to the Plaintiff based on the reports, and submit audited statements to the Plaintiff. However, Pearl Engineering only sporadically submitted royalty reports, with the last report being for the April-June 2007 quarter. They also made intermittent royalty payments, with no payments made since April 2009. Thus, they were clearly in breach of the VCD License Agreement dated 28th January, 2005.

11.4.3. During the subsistence of the VCD License Agreement, the Plaintiff learnt that Pearl Engineering had purchased/ acquired a DVD disc replication line. The Plaintiff addressed a letter dated 31st August, 2006 to Pearl Engineering, informing them of its patents pertaining to DVD Video and DVD-ROM Disc technology. The Plaintiff requested a confirmation regarding the acquisition of the DVD replication line and advised Pearl Engineering to obtain the necessary patent license for DVD replication. A follow-up letter was sent on 27th September, 2006, reiterating the Plaintiff's earlier request.

11.4.4. In response, Pearl Engineering, *via* an e-mail dated 31st May, 2007 confirmed that they had procured a DVD replication line and requested

[15] "VCD License Agreement."

the relevant documents to apply for a DVD Disc Patent License Agreement from the Plaintiff. The Plaintiff replied to this request on 01st June, 2007, where it shared an application for obtaining a DVD Disc Patent License Agreement.

11.4.5. Subsequently, the Plaintiff received a partially filled Application Form from Pearl Engineering, albeit without a covering letter. In an e-mail dated 19th July, 2007, the Plaintiff acknowledged receipt of the form, but pointed out that it was incomplete and incorrectly filled out. Plaintiff requested Pearl Engineering to correct the errors and provide the missing information. As no response was received, the Plaintiff sent a second e-mail on 30th July, 2007, reiterating the request to rectify the application form. Despite these communications, Pearl Engineering failed to provide the necessary information or obtain the requisite DVD Disc Patent License Agreement.

11.4.6. In the meantime, given the continued breach of the VCD License Agreement, the Plaintiff issued notices of default to Pearl Engineering on 29th April 2010, and again on 06th May, 2010. Since Pearl Engineering failed to respond to the default notice, the Plaintiff terminated the VCD License Agreement on 14th July, 2010.

11.4.7. Pearl Engineering continued to manufacture DVDs without obtaining the requisite license. Consequently, on 28th October, 2010, a representative of the Plaintiff purchased several DVDs manufactured by Pearl Engineering from a retail store in New Delhi. Upon further investigation, the Plaintiff uncovered that Pearl Engineering is manufacturing and replicating DVD Video/ ROM discs using the coding mechanism protected under the Suit Patent. Upon examination of three

DVDs produced by Pearl Engineering, namely, '*Fairy Tales – Vol. 3*,' '*Grade*,' and '*Best of the Best Rhymes*,' it became evident that they are utilizing the EFM+ Modulation technology disclosed in the Suit Patent. These findings are also supported by an affidavit of the Plaintiff's technical expert, Mr. Johannes P.J.G. Van Liempd.

11.4.8. Pearl Engineering is thus, persistently infringing the Plaintiff's patent rights.

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11.4.9. Defendants No. 1 and 4 are the Directors of Defendants No. 2 and 3. The Defendants are together engaged in the business of manufacturing and replicating storage devices, such as VCDs and DVDs.

11.4.10. In 2007, the Plaintiff learnt that Defendants No. 1 and 2 were manufacturing and replicating DVDs. Consequently, they addressed a letter dated 25th April, 2007 to the Defendants, informing them of the Plaintiff's patents pertaining to DVD Video and DVD-ROM Disc technology. The Plaintiff offered to execute a DVD Disc License Agreement with Defendants No. 1 and 2 and shared a copy of the application along with the necessary details. However, they never responded to the Plaintiff's communication.

11.4.11. Since Defendants No. 1 and 2 continued to replicate and manufacture VCDs and DVDs without a license, the Plaintiff issued another communication dated 08th February, 2010, requiring them to obtain an appropriate license from the Plaintiff. Similar communications were issued on 10th March, 2010 and 03rd November, 2010 to Defendants No. 1, 2 and 4, reiterating the Plaintiff's position.

11.4.12. Upon learning of Defendant No. 3's involvement in the impugned activities, the Plaintiff addressed four letters dated 28th April, 2010, 19th May, 2010, 08th September, 2010, and 29th October, 2010 to Defendant No. 3. In these communications, the Plaintiff informed Defendant No. 3 that they had procured samples of DVDs titled '*Bhavnao ko samjho*' and '*3-in-1 movie*' replicated by Defendant No. 3 for Eagle Home Entertainment Private Limited and Shemaroo Entertainment Private Limited, respectively. However, no response was received from the Defendants.

11.4.13. On 08th November, 2010, the Plaintiff's representatives procured samples of infringing DVDs produced by Defendants No. 2 and 3 from a retail store in New Delhi. Upon examination of the DVDs '*Bheja Fry*,' '*Tintin and Shooting Star*,' and '*Tintin and the Picaros*,' the Plaintiff ascertained that the Defendants were utilising the EFM+ Modulation disclosed in the Suit Patent. The findings of infringement of the Suit Patent are supported by the affidavit of the technical expert Mr. Johannes P.J.G. Van Liempd.

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11.4.14. The Defendants, Siddharth Optical, are manufacturers, replicators, and sellers of VCDs and DVDs. They were earlier voluntary licensee of the Plaintiff's VCD Patent under a VCD License Agreement dated 27th August, 2003. Under the terms of the VCD License Agreement, Siddharth Optical was obligated to submit quarterly royalty reports, make payments to the Plaintiff within sixty days from the end of the respective quarter, and submit audited statements to the Plaintiff. However, Siddharth

Optical repeatedly defaulted in fulfilling their obligations under the VCD License Agreement. The Plaintiff addressed multiple correspondence between 09th October, 2003 to 18th May, 2005, requesting Siddharth Optical to submit royalty reports, but to no avail.

11.4.15. Given the continued breach of the VCD License Agreement, the Plaintiff issued notices of default to Siddharth Optical on 26th August, 2005, 20th September, 2005, and on 31st October, 2005. While Siddharth Optical responded to the Plaintiff's communications, it failed to comply with its obligations. Consequently, the Plaintiff terminated the VCD License Agreement on 02nd August, 2006.

11.4.16. Despite termination, Siddharth Optical continued to manufacture and replicate VCDs. The Plaintiff issued cease-and-desist notices dated 14th August, 2006 and 25th August, 2006 to Siddharth Optical, demanding them to obtain fresh license from the Plaintiff. In response, Siddharth Optical acknowledged using the Plaintiff's VCD Patent, but refused to procure a license. A meeting was also held between the representatives of the parties in September, 2006 that did not fructify into a license arrangement.

11.4.17. The Plaintiff addressed letters dated 05th February, 2010 and 10th March, 2010 to Siddharth Optical, informing them of the Suit Patent and advising them to obtain the necessary patent license for DVD replication.

11.4.18. In their response dated 16th March, 2010, Siddharth Optical denied that they are replicating the DVDs due to inviable market conditions and low demand. The Plaintiff refuted these assertions in their letter dated 25th March, 2010.

11.4.19. From the Annual Reports of Siddharth Optical, it is evident that they have manufactured and sold 49,48,503 DVD Discs between 2006 and 2009. Simultaneously, the Plaintiff also issued communications to customers of Siddharth Optical.

11.4.20. On 16th June, 2010, Siddharth Optical confirmed that they had purchased second-hand machinery to manufacture DVDs and were unaware of the license requirements. They further cited commercial difficulties and undertook to cease manufacturing of DVDs till the market recovered.

11.4.21. Despite these assurances, Siddharth Optical continued to manufacture DVDs without obtaining the requisite license. Consequently, on 08th November, 2010, a representative of the Plaintiff purchased several DVDs manufactured by Siddharth Optical from a retail store in New Delhi. Upon further investigation, the Plaintiff uncovered that Siddharth Optical is manufacturing and replicating DVD Video/ ROM discs using the EFM+ modulation protected under the Suit Patent. From an examination of three DVDs produced by Siddharth Optical, namely, '*Jungle*,' '*Ankhen*,' and '*Maachis*,' it is evident that they are utilizing the EFM+ Modulation technology disclosed in the Suit Patent. These findings are also supported by an affidavit of the technical expert, Mr. Johannes P.J.G. Van Liempd.

II.II. ***The defence raised by the Defendants***

12. The facts and contentions raised by the Defendants in their written statements and counter-claims are summarised below:

12.1. ***On the aspect of infringement of the Suit Patent:***

12.1.1. The Defendants are well-regarded in the industry and replicate the DVDs only after securing the necessary copyright documentations from

the rightful owners. They have invested substantial resources and labour to build their standing. The Plaintiff, fully aware of Defendants' market position, has initiated these lawsuits solely to damage their reputation and disrupt their business.

12.1.2. Defendant's DVD replication business does not infringe on any of the Plaintiff's rights. They are conducting lawful and legitimate businesses, while the Plaintiff is attempting to enforce rights that are either inapplicable or likely to be revoked. The suits have been filed with the intent to harass and extract unwarranted financial gains from the Defendants, and therefore, the suits are not maintainable.

12.1.3. The suits are barred by delay, laches, and acquiescence. Admittedly, the Plaintiff has been aware of the activities of Siddharth Optical, Pearl Engineering, and Powercube Infotech since 09th May, 2005, 31st August, 2006, and 25th April, 2007, respectively. Yet, the Plaintiff chose to file these suits between May-September, 2012, after a delay of nearly six years. The Plaintiff has offered no explanation for this extended delay. This inaction amounts to acquiescence, rendering the suits unsustainable, and liable to be dismissed.

12.1.4. The Suit Patent, which relates to channel modulation, neither discloses a process nor a product necessary for the replication of DVDs or the DVDs resulting from the replication process in India. The Defendants have detailed their replication processes, outlining each step involved, which shall be discussed later in this judgment. The Defendants contended that at no stage, either directly or indirectly, do they utilize the methods disclosed in the claims of Suit Patent.

12.1.5. Taking into account the technical practices used in the industry

and the state of the art, the Suit Patent does not contain any claims that are essential to the practice of DVD replication. In this regard, the Defendants disputed the opinion of the patent evaluator relied upon by the Plaintiff, which suggests that Suit Patent is necessary for the execution of even a single step of the DVD replication process.

12.1.6. The Defendants denied that the claims of the Suit Patent have been analysed for essentiality in relation to DVD specifications, particularly for Read-Only discs.

12.1.7. The Defendants are not bound by the Plaintiff's licensing program as they do not use the method claims covered by the Suit Patent, which makes the licensing program inapplicable to them. They further disputed the legitimacy of the alleged licensing program of the Plaintiff, arguing that the alleged licensing company, One-Red, and the website www.one-red.com was found to be non-functional. Further, manufacturers and replicators of DVDs and VCDs worldwide, including in India, have not obtained relevant licenses from the Plaintiff for mass replication, as alleged. The Plaintiff has concealed the fact that a significant number of replicators have resisted the Plaintiff's so-called licensing requirements and considerable litigation on this issue is pending globally.

12.1.8. Pearl Engineering and Siddharth Optical executed the VCD Patent License Agreements under misconception, threat, and inducement by the Plaintiff. They were threatened by the Plaintiff of civil and criminal action seeking significant damages and imprisonment. The Plaintiff assured that by obtaining a license and paying royalties, these Defendants could freely manufacture VCDs without further risk. Therefore, Pearl Engineering and Siddharth Optical were compelled to sign the agreement and obtain the

license.

12.1.9. Nonetheless, the VCD Patent previously held by the Plaintiff, has expired and is now in the public domain and can therefore, be utilised by any entity without a license.

12.2. ***On the aspect of invalidity of the Suit Patent***

12.2.1. *Non-compliance with the requirements of Section 8 of the Patents Act*: the Plaintiff failed to furnish the required information to the Controller of Patents,[16] as mandated under Section 8 of the Patents Act. The application for the Suit Patent, numbered 312/MAS/1999,[17] was filed on 17th March, 1999, at Patent Office, Chennai with the title "Method of Producing a Record Carrier Recorded with a Modulated Signal and Record Carrier Produced in the Method." In terms of Section 8, the Plaintiff filed Form 4 along with the application claiming that the relevant details were set out in the annexure, but no annexure was enclosed with the application until the objections were raised in the Preliminary Examination Report.

12.2.2. Subsequently, the Plaintiff filed an annexure to Form 4 on 13th March, 2002 containing a list of all corresponding applications filed outside India, which was later revised on 31st August, 2004 after nearly five years. There were several inconsistencies between the annexures submitted on these two occasions. The list submitted on 31st August, 2004 did not mention the patent applications filed in Malaysia, Turkey, and Taiwan, which were earlier shown in the annexure filed along with the application. Additionally, the Plaintiff furnished false information to the Patent Office and concealed material facts. They did not disclose the filing of the several

[16] "Patent Office."
[17] "Divisional Application."

patent applications before the Patent Office, which were same or substantially same to the Suit Patent application. Therefore, the Suit Patent is liable to be revoked under Section 64(1)(m) of the Patents Act.

12.2.3. *The patent was obtained on a false suggestion or representation*: the Suit Patent was obtained through suppression of material facts, by misleading and misguiding the Patent Office. The Divisional Application was filed four years after the Parent Application before the Chennai branch of the Patent Office. Both the Parent and Divisional Applications ought to have been filed before the same branch of the Patent Office. Further, these applications are identical, with no new claims being introduced in the Divisional Application. Therefore, the Suit Patent is liable to be revoked under Section 64(1)(j) of the Patents Act.

12.2.4. *The Suit Patent is revocable under Section 64(1)(k), 64(1)(d), and 64(1)(e) of the Patents Act:* The claims of the Suit Patent describe a method of performing a mental act by a person of average intelligence. The Suit Patent is thus barred by Section 3(m) of the Patents Act.

12.2.5. The Suit Patent is barred under Section 3(k) of the Patents Act and could not have been granted as it is merely a computer program. Section 3(k) excludes mathematical methods, business methods, computer programs *per se*, and algorithms from patentability, as they fall under the purview of the Copyright Act, 1957.

12.2.6. The method allegedly patented under the Suit Patent relates to the translation of 8-bit information into 16-bit coded words, which are sequentially placed on DVDs to produce a modulated signal. This concept of block encoding was conceived by the same inventor in as early as 1981 and is covered by US Patent No. 4501000, where m-bit information words are

encoded into n-bit coded words using the d,k constraint, with the signal then modulated as an NRZ-M signal. This process is identical to the alleged invention in the Suit Patent. Hence, the Suit Patent is not new under Section 64(1)(e) of the Patents Act.

12.2.7. *Invalidity under Section 64(1)(h) and Section 64(1)(i) of the Patents Act*: The complete specification of the Suit Patent does not sufficiently and fairly describe the invention. As it fails to adequately describe the invention in a manner that would enable a person skilled in the art to replicate it, the Suit Patent is invalid under Section 64(1)(h) and Section 64(1)(i) of the Patents Act.

PROCEDURAL ORDERS AND FACTS OF SIGNIFICANCE

I. CASE MANAGEMENT PROCEEDINGS

13. After summons were issued in the suits, the Defendants, along with their written statements, filed counter-claims questioning the validity of the Suit Patent. The Plaintiff disputed the allegations raised in the counter-claims in their written statement, to which, the Defendants also filed a replication, except in CS (COMM) 499/2018, leading to closure of their right through order dated 03rd October, 2013.

14. In CS (COMM) 499/2018, Defendants No. 2 and 4 *viz.* Balaji Optical Disc Private Limited and Mr. Jaspal Singh Chandhok, did not enter appearance despite service through substituted modes. Accordingly, they were proceeded *ex-parte* on 06th November, 2013.

15. Admission/denial of documents was conducted in the suits as follows:

a. In CS (COMM) 423/2016, Pearl Engineering denied all documents of the Plaintiff. The Plaintiff, however, admitted certain documents filed by

Pearl Engineering pertaining to the record of the Patent Office in respect of the Suit Patent.

b. In CS (COMM) 519/2018, Siddharth Optical admitted thirty-five documents of the Plaintiff, which are marked as Exhibit P-1 to Exhibit P-35. Plaintiff admitted documents marked as Exhibit D-1 to Exhibit D-25 produced by Siddharth Optical.

c. In CS (COMM) 499/2018, the Plaintiff admitted Exhibits D-1 to D-34 of Powercube Infotech, while Powercube Infotech denied all the documents of the Plaintiff.

16. Based on the pleadings filed in the instant suits, both parties filed applications under Order XII Rule 6 of the Code of Civil Procedure, 1908,[18] seeking a judgment on admissions in their favour, and against the other party.[19] The Defendants contended that the Plaintiff had admitted to its failure to disclose the relevant information to the Patent Office, as required by Section 8 of the Patents Act. Consequently, they asserted that the Suit Patent was subject to revocation under Section 64(1)(m) of the Patents Act and sought a judgment on this ground. The Plaintiff, on the other hand, argued that the Defendants, in their written statement, had failed to effectively rebut the allegations of infringement. Relying on this omission, the Plaintiff sought a judgment in their favour through their applications.

17. Pearl Engineering's application under Order XII Rule 6 was

[18] "Code."

[19] The details of applications filed by the parties under Order XII Rule 6 of the Code are as follows:

a. In CS(COMM) 423/2016, the Plaintiff filed I.A. 14921/2013 and Pearl Engineering filed I.A. 21411/2012.

b. In CS(COMM) 519/2018, the Plaintiff filed I.A. 15308/2013, and Siddharth Optical filed I.A. 21368/2012.

c. In CS(COMM) 499/2018, the Plaintiff filed I.A. 14883/2013, and Powercube Infotech filed I.A. 21407/2012.

dismissed by the order dated 06th November, 2013, in CS(COMM) 423/2016. In their application, Pearl Engineering relied on the Plaintiff's communications to the Patent Office and the affidavit of Mr. D.J. Solomon, the Plaintiff's patent agent, filed in these proceedings, to argue that non-compliance with Section 8 of the Patents Act had been admitted. The Plaintiff refuted this claim, asserting that the omission of information regarding corresponding foreign applications was an inadvertent oversight by its patent agent during filing. The Court observed that while the Plaintiff did not deny that the information had not been supplied, the issue of whether this omission constituted wilful suppression of information was a triable matter. Consequently, the Court held that the question of whether the Suit Patent is liable to be revoked on this ground could only be determined after evaluating the evidence presented during the trial. On the same date, the Plaintiff withdrew their application under Order XII Rule 6.

18. The decision dated 06th November, 2013 was assailed before the Division Bench of this Court in FAO (OS) 16/2014 by Pearl Engineering. The Division Bench dismissed the appeal on 07th November, 2014, holding that non-compliance with Section 8 may trigger Section 64(1)(m) for patent revocation, but such revocation is not automatic. It observed that while compliance with Section 8(1) of the Patents Act is mandatory, the use of the word "may" in Section 64(1) indicates that revocation is discretionary. In the case at hand, the Court will have to determine whether the omission was intentional or merely a clerical and *bona fide* error, after assessment of the evidence. Thus, revocation under Section 64(1)(m) would require proof of deliberate omission. Consequently, the Division Bench held that in absence of an unequivocal admission by the Plaintiff, a judgment under Order XII

Rule 6 of the Code could not be issued without evaluating evidence from both parties. Pearl Engineering's appeal [bearing SLP (C) 6615/2015] against the order of the Division Bench was dismissed by the Supreme Court on 24th April, 2015.

19. Following the judgment of the Division Bench, the Plaintiff approached this Court seeking dismissal of applications under Order XII Rule 6 of the Code filed by Siddharth Optical and Powercube Infotech in CS (COMM) 519/2018 and CS (COMM) 499/2018, respectively. On 07th January, 2015 and 26th November, 2014, the parties' respective applications were dismissed as withdrawn.

20. In the meantime, the Plaintiff-company underwent a change of name from Koninklijke Philips Electronics N.V. to Koninklijke Philips N.V. on 15th May, 2013. Accordingly, the Plaintiff preferred applications to bring on record this development. The applications were accompanied with the relevant certificate and document evidencing the filing of an application to reflect this change in the records of the Patent Office. Considering the above, the Plaintiff's applications bearing I.A. 11788/2014, I.A. 11783/2014, and I.A. 11897/2014 in CS (COMM) 423/2016, CS (COMM) 499/2018 and CS (COMM) 519/2018, respectively, were allowed on 18th July, 2014 and 07th January, 2015.

II. ISSUES

21. During the course of the proceedings, and before the framing of issues, the Plaintiff expressly abandoned the relief of rendition of accounts and instead, opted to pursue a claim for damages against the Defendants.[20]

[20] This statement of the Plaintiff is recorded in order dated 30th November, 2012, in CS (COMM) 423/2016

The relevant extracts of the orders are reproduced below:

Order dated 30th November, 2012 in CS (COMM) 423/2016:

"***IA 21410/2012 (u/O.7 R.11 CPC)***

The learned counsel for the plaintiff states that the plaintiff presses only for damages and does not press for rendition of accounts.

In view of the election made by the plaintiff, learned counsel for the defendant does not press this application, which is, accordingly, dismissed as not pressed.

It is made clear that in the event of succeeding, the plaintiff would be entitled only to damages.

IA stands disposed of.

Order dated 30th November, 2012 in CS (COMM) 499/2018:

"***IA 21408/2012 (u/O.7 R.11 CPC)***

The learned counsel for the plaintiff states that the plaintiff presses only for damages and does not press for rendition of accounts.

In view of the election made by the plaintiff, learned counsel for the defendant does not press this application, which is, accordingly, dismissed as not pressed.

It is made clear that in the event of succeeding, the plaintiff would be entitled only to damages.

IA stands disposed of."

Order dated 27th November, 2012 in CS (COMM) 519/2018:

"At the outset, counsel for the plaintiff states that the relief in the present suit may be confined to prayers (i) to (iv) and (vi) to (viii) of para 48, which is the prayer clause in the plaint.

Leave, as prayed for, is granted. The relief in the suit is confined to the prayers (i) to (iv) and (vi) to (viii) of the prayer clause."

22. On the basis of the pleadings, issues were framed on 26th November,

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and CS (COMM) 499/2018, and order dated 27th November, 2012 in CS (COMM) 519/2018.

2012, 27th November, 2012, and 30th April, 2014 in CS (COMM) 423/2016, CS (COMM) 519/2018, and CS (COMM) 499/2018, respectively. The issues, as framed, highlighting the overlap in the three cases are tabulated below:

CS(COMM) 423/2016	CS(COMM) 519/2018	CS(COMM) 499/2018
COMMON ISSUES		
1. Whether the plaintiff is the proprietor of Patent No. 218255, as alleged in the plaint? OPP	2. Whether the plaintiff is the proprietor of the patent No.218255, as alleged in the plaint? OPP	(i) Whether the plaintiff is the proprietor of the patent IN 218255 as alleged in the plaint? OPP
2. Whether the Patent No. 218255 is invalid, as stated in the counter- claim? OPD	3. Whether the suit patent is valid, as alleged in the counter-claim? OPD	(iii) Whether the patent No. IN 218255 is invalid as alleged in the Counter-Claim? OPD
3. Whether the defendant has infringed the patent of the plaintiff, as alleged in the plaint? OPP	4. Whether the defendants/ counter-claimants have infringed the plaintiff's registered patent No. 218255? (OPP)	(v) Whether the defendants/ counter-claimants have infringed the plaintiff's/ respondent's registered patent No. IN 218255? OPP
4. Whether the plaintiff is entitled to the injunction sought by it? OPP	5. Whether the plaintiff is entitled to a permanent injunction as prayed for in para 48(i) of the prayer clause? (OPP)	(viii) Whether the plaintiff/ respondent is entitled to a permanent injunction in terms of paragraph 45 (i) and (ii)? OPP
5. Whether the plaintiff has obtained registration of Patent No. 218255 by committing fraud, as alleged in the written statement? OPD 6. Whether the defendant is entitled to revocation of registration of Patent No. 218255 in favour of the plaintiff? OPD	6. Whether the plaintiff has obtained the registration patent No. 218255 by fraud, as alleged? (OPP)	(ii) Whether the plaintiff has obtained grant of Patent No. IN 218255 by committing fraud, as alleged in the written statement? OPD
8. Relief	7. Relief	(ix) Whether the plaintiff is entitled to damages? OPP (x) Relief.

REMAINING ISSUES		
7. Whether the suit, as framed, is not maintainable? OPD	1. Whether the plaint has been signed and verified by a duly authorised person? OPP	
		(iv) Whether the impugned suit patent is an essential patent in respect of DVD technology? OPP
		(vi) Whether the defendants/counter-claimants were aware of the plaintiffs/respondent's DVD patents and their licensing programs and despite that continued wilful infringement? OPP
		(vii) Whether the defendants/ counter-claimants are liable to pay any license fee to the plaintiff/respondent and if so at what rate? OPP

23. Given that the suits progressed to the trial stage, as recorded in the orders dated 26th November, 2012 and 26th September, 2014 in CS (COMM) 423/2018 and CS (COMM) 499/2018, respectively, the Plaintiff decided not to press their applications under Order XXXIX Rules 1 and 2 of the Code. These applications were accordingly dismissed as withdrawn.

III. THE CONDUCT OF TRIAL

24. Post framing of issues, the parties filed their lists of witnesses and the trial commenced before the Local Commissioners appointed by the Court. The witnesses deposed by the parties are as follows:

PARTY	WITNESS
Plaintiff [in all the three suits]	Mr. Farokh Nariman Bhiwandiwalla [PW-1], the constituted attorney and erstwhile licensing counsel of the Plaintiff
	Mr. Johannes P.J.G. Van Liempd [PW-2], the intellectual property counsel as the expert witness.
Pearl Engineering [In CS(COMM) 423/2016]	Mr. Sukesh Behl [DW-1], proprietor of Defendant No. 2
	Mr. Chirag Tanna [DW-2], qualified patent agent as the expert witness.
Siddharth Optical [In CS (COMM) 519/2018]	Mr. Surinder Wadhwa [DW-1], Director of Defendant No. 2
	Mr. Chirag Tanna [DW-2], qualified patent agent as the expert witness.
Powercube Infotech [In CS (COMM) 499/2018]	Mr. G.S. Kohli [DW-1], Director of Defendant No. 3.
	Mr. Chirag Tanna [DW-2], qualified patent agent as the expert witness.

25. During trial, Pearl Engineering and Powercube Infotech applied to the Court for permission to summon the concerned officials of the Patent Offices located at Chennai and Kolkata along with the record of the Suit Patent.[21] These applications were allowed on 17th November, 2014 and 15th October, 2015, summoning the officials and the original records pertaining to the Suit Patent.

26. In CS (COMM) 423/2016, through I.A. 6548/2015, the Plaintiff sought production of: (a) the original sales/ purchase agreements concerning the DVD Video/ ROM Disc Replication Lines from 2006, (b) monthly

excise and other statutory returns in relation to the manufacture and sale of DVD Video/ ROM discs commencing from January 2007, and (c) complete annual accounts from 2007, by Pearl Engineering. This application was allowed on 20th July, 2015. Pearl Engineering challenged this order in FAO (OS) 458/2015, with no success.

27. Later, on 04th March, 2016, Defendant No. 1 in CS (COMM) 423/2016, Maj. (Retd.) Sukesh Behl, submitted an affidavit, stating that the documents directed to be produced by the Court, are not in his power, possession, or control as the factory premises were closed.

28. The trial in all three suits stood concluded by 03rd September, 2016. Thereafter, the Plaintiff filed an application bearing I.A. 12146/2016 in CS (COMM) 499/2018, requesting for a combined hearing of all the suits. While the parties concurred that the instant suits cannot be consolidated, given the congruence of the issues, law, facts, and counsel, they consented to matters being clubbed for joint hearing. Later, in its order dated 20th February, 2024, this Court expressed its *prima facie* opinion that the suits can be disposed of by a common judgment.

29. After the trial was concluded, the Plaintiff filed I.A. 9425/2019 in CS (COMM) 519/2018, I.A. 9427/2019 in CS (COMM) 423/2016, and I.A. 9386/2019 in CS (COMM) 499/2018, seeking appointment of independent scientific advisors to assist the Court in the determination of infringement. Through the order dated 16th July, 2019, a decision on these applications was deferred to the final hearing stage. The Plaintiff however did not press these applications at the final arguments stage.

30. In the meantime, in order to secure their claim for damages, the

[21] I.A. 19993/2014 in CS (COMM) 423/2016 and I.A. 21917/2015 in CS (COMM) 499/2018.

Plaintiff filed applications in the suits, seeking a direction to the Defendants to file their audited statements of all movable and immovable assets. The Plaintiff additionally sought a direction to the Defendants to ensure maintenance of sufficient funds or assets to cover the Plaintiff's claim for damages.[22] These applications are pending consideration.

31. Extensive arguments were subsequently advanced by the counsel for the parties, which finally stood concluded on 28th May, 2024.

ISSUE-WISE ANALYSIS AND FINDINGS

I. WHETHER PLAINTIFF IS LIABLE TO BE NON-SUITED FOR LACK OF AUTHORIZATION?[23]

32. Considering the foundational significance of these issues concerning the legality and propriety of the institution of CS (COMM) 423/2016 and CS (COMM) 519/2018, it is deemed fit to address them at the outset. The issue of maintainability, as framed in CS (COMM) 423/2016, is premised on the lack of authority of Mr. Farokh N. Bhiwandiwalla to institute, sign, and verify the plaint.

33. The Plaintiff is a company incorporated in Netherlands. The suits, CS (COMM) 423/2016 and CS (COMM) 519/2018, have been instituted by Mr. Farokh N. Bhiwandiwalla [PW-1] on their behalf. Mr. Bhiwandiwalla, a director of the company named One-Red India Licensing Private Limited,[24] was earlier engaged with Philips Electronics India Limited, the Plaintiff's

[22] Bearing I.A. 20069/2022 in CS (COMM) 519/2018, I.A. 20043/2022 in CS (COMM) 423/2016, and I.A. 20061/2022 in CS (COMM) 499/2018.

[23] This segment shall decide the following issues framed in CS (COMM) 423/2016 and CS (COMM) 519/2018:

a. *Issue no. 7: Whether the suit, as framed, is not maintainable? OPD [CS(COMM) 423/2016], and*
b. *Issue no. 1: Whether the plaint has been signed and verified by a duly authorised person? OPP [CS(COMM) 519/2018].*

Indian subsidiary, as their licensing counsel. The Plaintiff submitted that since 01st July, 2012, all their licensing operations were executed through One-Red LLC.

34. Mr. Bhiwandiwalla has signed and verified the pleadings as a constituted attorney of the Plaintiff authorized through Powers of Attorney dated 12th December, 2011 and 28th May, 2012 [Ex. PW-1/1 in CS (COMM) 423/2016 and CS (COMM) 519/2018, respectively] executed by Mr. E.P. Coutinho.[25] To establish Mr. Coutinho's authority and competence, the Plaintiff relied upon extracts from the Trade Register of Netherlands, exhibited as Ex. PW-1/2.

35. Siddharth Optical and Pearl Engineering argued that CS (COMM) 519/2018 and CS (COMM) 423/2016 have been filed by an unauthorized person. They pointed out that PW-1 is admittedly not an employee, director, or an officer of the Plaintiff. Rather, he is a director of a different and distinct entity, One-Red LLC. During his cross-examination, PW-1 accepted that he had not seen the Board Resolution entitling Mr. Coutinho to further authorize PW-1 to institute the suits. PW-1 merely referred to the general powers of the secretary under the Dutch law and the ordinary business practices. Further, PW-1 vaguely alluded to the Articles of Association of the Plaintiff to explain Mr. Coutinho's authority. These explanations, according to Siddharth Optical and Pearl Engineering, are speculative and lack substantiation through tangible evidence, such as the Articles of Association or relevant Board Resolutions. Accordingly, they contended that CS (COMM) 519/2018 and CS (COMM) 423/2016 are liable to be

[24] "One-Red LLC."
[25] "PoA."

dismissed under Order XXIX Rule 1 of the Code.

36. The relevant extracts from the cross-examination of PW-1, relied upon by Siddharth Optical and Pearl Engineering, are reproduced below:

Cross-examination conducted on 25th July, 2013 in CS (COMM) 423/2016

"Q1 *Please see the power of attorney dated 12th December, 2011 in your favour. Who executed the same?*

Ans: *It was executed by Mr. E.P. Coutinho who is the General Secretary of the Plaintiff.*

Q2 *I put it to you that Plaintiff is a limited company.*

Ans: *Yes.*

Q3 *I put it to you that Mr. E.P. Coutinho has no power or authority to execute the power of attorney in your favour.*

Ans: *No, his authority can be seen from Ext. PW-1/2 where it is clearly specified that he has authority with power of substitution.*

Q4 *I put it to you that the Board of Directors of the Plaintiff company has never authorized Mr. Coutinho to execute the said power of attorney.*

Ans: *I understand that under the Dutch Law any senior executive having an authority in a limited company has to be recorded in the chamber company has to be recorded in the chamber of commerce trade register in the Netherlands. This has been done and is evidence by Ext. PW-1/2.*

Q5. *Please specify the specific provision of Dutch Law giving such an authority.*

Ans: *To make a responsible statement for the Hon'ble Court, I can cross-check and verify and come back with an answer on the next turn.*

Q6 *Have you brought minute book of the Plaintiff company to show the authority in favour of Mr. E.P. Coutinho or any Board Resolution to the effect?*

Ans: *No.*

Q7 *Does any minute book containing Board Resolutions exist or not?*

Ans: *Yes.*

Q8 *Have you seen those minute books with your own eyes?*

Ans: *No, but it is an accepted principle that limited companies would have minute books.*

Q9. *What are your technical qualifications?*

Ans: *I have no technical qualification. By educational qualification, I am a B.Com, LL.B.*

Q10. *What is the relationship between One-Red LLC, USA and the Plaintiff?*

Ans: *The plaintiff is one of the four shareholders of One-Red LLC, USA.*

Q11. Who are the other shareholders apart from the Plaintiff in One-Red LLC, USA?
(Objected to being relevant)
Ans: Other shareholders are Sony Corporation of Japan, Pioneer Corporation of Japan and LG of South Korea.
Q12. What is the arrangement between One-Red LLC and One-Red India Licensing Pvt. Ltd.?
Ans: One-Red India Licensing Pvt. Ltd. is a subsidiary of One-Red LLC.
Q.13 With effect from 1st July, 2012 who is authorized to conduct Plaintiff's Optical Licensing activities of the Plaintiff in India?
Ans: One-Red LLC is authorized by Plaintiff and Sony to carry out optical licensing activities for CD technology. Further One-Red LLC is authorized by Plaintiff, Sony, Pioneer and LG as referred above to carry out optical licensing activities for DVD technology. For India region One-Red India Licensing Pvt. Ltd. carries out the above activities.
Q.14 Prior to 1st July 2012 who was authorized to carry out the licensing activities for CD and DVD technologies of the patents of the Plaintiff in India?
Ans: The Plaintiff itself was carrying out that activity and was also carrying out activities for the other three companies i.e. Sony, Pioneer and LG as mentioned above."

Cross-examination conducted on 22nd August, 2013 in CS (COMM) 519/2018

"*Q. 1 Do you know Mr. E.P. Coutinho?*
Ans. Yes. He is the General Secretary of the Plaintiff.
Q.2 What are the powers of the General Secretary?
Ans. To my understanding, the powers of the General Secretary relate to the management of a company including ensuring that the company is able to institute and defend litigations in its interest.
Q.3 Where are these powers defined in favour of the General Secretary?
Ans. To my understanding, it is a normal business practice as the designation of "General Secretary" so suggests.
Q.4 Is it only a practice or is it codified under any law?
(The counsel for the Plaintiff objects to the said question as the question is a legal one and requires legal interpretation.)
Ans. My general knowledge suggest that probably the company's Article of Association may state such authority.
Q.5 Your understanding and general knowledge is derived from where or it is your conjecture?
Ans. In my initial years in Philips Electronics India Limited, way back in 1986 onwards, I was assisting the company secretary of the said company and as such I have some general knowledge on the same.

Q.6 *Have you ever gone through the Articles of Association of the Plaintiff Company?*
Ans. *No.*
Q.7 *Is it correct that the said Mr. E.P. Coutinho has executed a Power of Attorney in your favour for and on behalf of Plaintiff Company and you have signed and verified the plaint on account of that only?*
Ans. *Yes.*
Q.8 *The Plaintiff company is run by a Board of Directors. Is it correct?*
Ans. *Yes.*
Q.9 *Does the Board of Directors of the Plaintiff company hold regular Board meetings?*
Ans. *Probably yes.*
Q.10 *In the said board meetings, do they pass Board Resolutions?*
Ans. *Probably yes.*
Q.11 *You are not sure?*
Ans. *Board resolutions are passed at the board meetings.*
Q.12 *Was there any Board Meeting in which Mr. E.P. Coutinho was authorized to execute the power of attorney in your favour?*
Ans. *I am sure it would be there.*
Q.13 *Now tell me whether Mr. Coutinho has derived powers as General Secretary or by virtue of Board Resolution?*
Ans. *Mr. Coutinho would have inherent authorities based on his title of "General Secretary" and the Plaintiff Company would have also given him authority through a Board Resolution.*
Q.14 *Have you seen or gone through any such resolution of the Board of Directors authorizing Mr. Coutinho to execute power of attorney in your favour?*
Ans. *After my cross-examination by you in the other matter, I had checked this out with the legal colleague of the Plaintiff and he informs me that there is a board resolution. As such, 1 have physically not seen the Board Resolution yet.*"

37. Further, on this issue, Siddharth Optical and Pearl Engineering placed reliance upon the judgments of this Court in ***Nibro Limited v. National Insurance Company Limited***,[26] ***Ferruccio Sias and Anr. v. Jai Manga Ram Mukhi***,[27] and ***State Bank of Travancore v. Kingston Computers (I) P.***

[26] AIR 1999 Del 25.
[27] (1994) ILR 2 Delhi 87.

Ltd.[28]

38. The Court has considered the objections raised by Siddharth Optical and Pearl Engineering relating to the maintainability of CS (COMM) 423/2016 and CS (COMM) 519/2018. The Plaintiff, a company, has the capacity to sue and be sued in its own name. Being a juristic entity, any company would necessarily act through individuals authorized to represent their interests in legal proceedings. Under Order XXIX Rule 1 of the Code, in cases involving corporations, the secretary, director, or other principal officers familiar with the facts of the case, are empowered to sign and verify pleadings on the company's behalf. In terms of Order VI Rule 14, pleadings must be signed by the party and their pleader, if any. Additionally, *de hors* Order XXIX Rule 1, a company, as a juristic entity, may validly authorize any person to sign a plaint or written statement on its behalf, satisfying the requirements of Order VI Rule 14.

39. The procedural defect cited by Siddharth Optical and Pearl engineering does not, in the opinion of the Court, impact the maintainability of CS (COMM) 423/2016 and CS (COMM) 519/2018. The lack of an express authorization to institute, verify, and sign the pleadings or other legal documents can be remedied by a subsequent ratification by the corporation. The Supreme Court in ***United Bank of India v. Naresh Kumar and Ors.,***[29] held that such a ratification can be explicit, such as resolutions of board of directors, or can be inferred from the conduct of the parties and circumstances of the legal proceedings.

40. The Plaintiff's prolonged involvement in these suits for over a decade,

[28] (2011) 11 SCC 524.
[29] (1996) 6 SCC 660.

exhibits their implied ratification of the actions of Mr. Bhiwandiwalla. Their endorsement is further manifest by the engagement of witnesses, specifically Mr. Bhiwandiwalla, submission of oral and documentary evidence, payment of court fee and consistent participation in the trial throughout the pendency of these suits. These factors lend credence to the authority of Mr. Bhiwandiwalla, which has been impliedly ratified by the Plaintiff.

41. The judicial precedents cited by Siddharth Optical and Pearl Engineering also recognize the principle of subsequent ratification. Therefore, the Court must recognize that procedural defects, such as questions surrounding the formal authorization of signatories, should not derail substantive claims unless a clear prejudice is demonstrated. The guiding principle is that justice should not be obstructed by technicalities, when the essence of authorization has been established through supporting documents and circumstances. Given these considerations, the challenge made to the competence of Mr. Bhiwandiwalla in instituting the suits and their maintainability, does not find favor with the Court.

Finding

42. The Court is satisfied that CS (COMM) 519/2018 and CS (COMM) 423/2016 have been instituted on behalf of the Plaintiff by a competent person, and the technical objections raised do not warrant dismissal. The Plaintiff has sufficiently proved that Mr. Farokh N. Bhiwandiwalla, who signed and verified the plaint, was duly authorized to institute these suits. Accordingly, issue No. 7 in CS (COMM) 423/2016 and issue No. 1 in CS (COMM) 519/2018 are answered in favor of the Plaintiff, and against Siddharth Optical and Pearl Engineering.

II. WHETHER PLAINTIFF IS THE OWNER OF THE SUIT PATENT?[30]

43. The Plaintiff claims ownership of Indian Patent No. 218255 titled "*Method of Converting Information Words to a Modulated Signal*." Section 2(1)(m) of the Patents Act describes "patent" as a patent for any invention granted under the Act. Section 2(1)(p) defines a "patentee" as the person entered on the Register as the grantee or proprietor of the patent. Therefore, to establish proprietorship, the Plaintiff must demonstrate that the Suit Patent is registered under the Patents Act, and they are recorded as the patentee in the Patents Register.

44. The Suit Patent was granted to the Plaintiff on 31st March, 2008. PW-1 has substantiated the claim of ownership by duly proving the certified copies of the patent certificate and extracts of the Patent Register marked as Ex. PW-1/5 in CS (COMM) 423/2016 and CS (COMM) 519/2019. This evidence establishes the Plaintiff's proprietorship of the Suit Patent.

45. On 15th May, 2013, the Plaintiff-company underwent change of name from "Koninklijke Philips Electronics N.V." to "Koninklijke Philips N.V," as evidenced by Ex. PW-1/3 in CS (COMM) 499/2018. The Plaintiff filed an application to reflect this change in the records of the Patent Office on 28th May, 2014, which has been approved. The e-Register of the Indian Patent Office [Ex. PW 1/4 in CS (COMM) 499/2018] reflected this change on 13th June, 2014. Moreover, through orders dated 18th July, 2014 and 07th January, 2015, this Court also allowed Plaintiff's applications recording the

[30] This segment shall address the following issues:
a. *Issue no. 1: Whether the plaintiff is the proprietor of Patent No. 218255, as alleged in the plaint? OPP [in CS (COMM) 423/2016];*
b. *Issue No. 2: Whether the plaintiff is the proprietor of the patent No.218255, as alleged in the plaint? OPP [in CS (COMM) 519/2018]; and*
c. *Issue No. (i): Whether the plaintiff is the proprietor of the patent IN 218255 as alleged in the plaint?*

change in the name of the Plaintiff.[31] The public records pertaining to the Suit Patent, which have also been produced as evidence, further affirm the lawful proprietorship of the Plaintiff, Koninklijke Philips N.V., over the Suit Patent.

46. Although the Defendants have raised challenges to the validity of the Suit Patent, these do not pertain to the question of ownership of the Plaintiff. Except for a bare denial, the Defendants have not presented any cogent challenge or evidence to disprove the Plaintiff's claim of proprietorship. Thus, the Court concludes that Plaintiff is the owner of the Suit Patent.

Finding

47. The Plaintiff has proved the patent certificate granted in their favor, the accompanying specifications, and the revised entry in the Patent Register. The evidence submitted establishes the Plaintiff's ownership over the Suit Patent. Accordingly, issue No. 1 in CS (COMM) 423/2016 and CS (COMM) 519/2018 and issue no (i) in CS (COMM) 499/2018 are decided in favor of the Plaintiff, confirming that Koninklijke Philips N.V. is the proprietor of the Suit Patent.

OPP [in CS (COMM) 423/2016].

[31] I.A. 11788/2014, I.A. 11783/2014, and I.A. 11897/2014 in CS (COMM) 423/2016, CS (COMM) 499/2018 and CS (COMM) 519/2018, respectively.

III. WHETHER THE SUIT PATENT IS INVALID?[32]

48. In their written statements and counter-claims in all three suits, the Defendants have contested the validity of the Suit Patent, seeking its revocation on various grounds, including obtaining the registration by fraud. The Court accordingly proceeds with assessing the merits of the Defendants' challenge to the validity of the Suit Patent, examining each ground in detail.

III.I. *Whether the Suit Patent is subject to revocation under Section 64(1)(m) of the Patents Act?*

49. Under Section 64(1)(m) of the Patents Act, a patent is liable for revocation if the applicant fails to disclose the information required by Section 8, or furnishes information which, in material particulars, was false to their knowledge. Section 8 of the Patents Act reads as under:

> "***8. Information and undertaking regarding foreign applications*** *- (1) Where an applicant for a patent under this Act is prosecuting either alone or jointly with any other person an application for a patent in any country outside India in respect of the same or substantially the same invention, or where to his knowledge such an application is being prosecuted by some person through whom he claims or by some person*

[32] In this section, the Court shall decide the following issues framed in the suits:

In CS (COMM) 423/2016:

a. *Issue No. 2- Whether the Patent No. 218255 is invalid, as stated in the counter- claim? OPD*
b. *Issue No. 5- Whether the plaintiff has obtained registration of Patent No. 218255 by committing fraud, as alleged in the written statement? OPD*
c. *Issue No. 6- . Whether the defendant is entitled to revocation of registration of Patent No. 218255 in favour of the plaintiff? OPD*

In CS (COMM) 519/2018:

a. *Issue No. 3- Whether the suit patent is valid, as alleged in the counter-claim? OPD*
b. *Issue No. 6- 6. Whether the plaintiff has obtained the registration patent No. 218255 by fraud, as alleged? (OPP)*

In CS (COMM) 499/2018:

a. *Issue No. (iii) - Whether the patent No. IN 218255 is invalid as alleged stated in the Counter-Claim? OPD*
b. *Issue No. (ii)- Whether the plaintiff has obtained grant of Patent No. IN 218255 by committing fraud, as alleged in the written statement? OPD*

deriving title from him, he shall file along with his application or subsequently within the prescribed period as the Controller may allow-

(a) a statement setting out detailed particulars of such application; and

(b) an undertaking that, up to the date of grant of patent in India, he would keep the Controller informed in writing, from time to time, of detailed particulars as required under clause (a) in respect of every other application relating to the same or substantially the same invention, if any, filed in any country outside India subsequently to the filing of the statement referred to in the aforesaid clause within the prescribed time.

(2) At any time after an application for patent is filed in India and till the grant of a patent or refusal to grant of a patent made thereon, the Controller may also require the applicant to furnish details, as may be prescribed, relating to the processing of the application in a country outside India, and in that event the applicant shall furnish to the Controller information available to him within such period as may be prescribed."

50. The Defendants strenuously argued that the Plaintiff failed to disclose to the Patent Office the information required by Section 8 of the Patents Act. The instances of non-compliance pointed out by the Defendants are summarized below:

50.1. The application for the Suit Patent was filed on 17th March, 1999 before the Patent Office, Chennai. Along with the application, the Plaintiff filed Form 4 in terms of Section 8 of the Patents Act. This form, as implicitly acknowledged by PW-2, already contained an application number before any number could be assigned by the Patent Office. Further, in Form 4, the Plaintiff claimed that the relevant details were set out in the annexure, but no such annexure was filed along with the application until an objection was raised in the Preliminary Examination Report.

50.2. Subsequently, the Plaintiff filed an annexure to Form 4 on 13th March, 2002 containing a list of all corresponding applications filed outside India,

which was later revised on 31st August, 2004 after nearly five years. This annexure, filed much beyond the prescribed time period, disclosed several applications that had not been included in the original annexure provided in reply to the Preliminary Examination Report. Moreover, the applications filed before the patent offices in Malaysia, Turkey, and Taiwan, which were included in the list dated 13th March, 2002, were deliberately omitted from the list dated 31st August, 2004. These inconsistencies indicate that one of the statements made by the Plaintiff's representatives must be inaccurate, raising serious questions about the Plaintiff's compliance with the statutory obligations.

50.3. The list, as submitted on 31st August, 2004, mentioned the following patent applications:

COUNTRY	APPLICATION NO	FILING DATE	STATUS	PATENT NO	DATE OF GRANT
U.S.A.	09/899091	08.02.1995	Pending		
Argentina	331023	15.02.1995	Granted	254412	27.07.2000
Austria	95905746.4	01.02.1995	Granted	E173110	04.11.1998
Australia	95-14240	01.02.1995	Granted	692822	05.11.1998
Belgium	95905746.4	01.02.1995	Granted	0745254	04.11.1998
Bulgaria	100774	01.02.1995	Granted	62106	21.07.1999
Brazil	P19506787.6	01.02.1995	Granted	P19506787.6	07.08.2001
Brazil	P19510740.1	01.02.1995	Pending		
Brazil	P19510741.0	01.02.1995	Granted	P19510741.0	27.04.2004
Botswann	98-00054	22.04.1998	Granted	BW/P/99/00014	01.12.1999
Canada	2183355	01.02.1995	Pending		
Canada	2456968	01.02.1995	Pending		
Switzerland	95905746.4	01.02.1995	Granted	0745254	04.11.1998
China	95192574.1	01.02.1995	Pending		
China	200310102653.2	01.02.1995	Pending		
Czech Republic	96-PV2389	01.02.1995	Granted	290751	01.08.2002
Germany	95905746.4	01.02.1995	Granted	69505794.4	04.11.1998
Denmark	95905746.4	01.02.1995	Granted	0745254	04.11.1998

Spain	95905746.4	01.02.1995	Granted	2126877	04.11.1998
Finland	963151	01.02.1995	Pending		
France	95905746.4	01.02.1995	Granted	0745254	04.11.1998
Great Britain	95905746.4	01.02.1995	Granted	0745254	04.11.1998
Greece	95905746.4	01.02.1995	Granted	0745254	04.11.1998
Hong Kong	98114079.8	01.02.1995	Granted	HK1012767	31.03.2000
Hungary	P9602247	01.02.1995	Granted	221085	16.05.2002
Indonesia	P-950245	15.02.1995	Granted	1D0005313	20.07.2000
Vietnam	S19960999	13.08.1996	Granted	1407	25.10.2000
South Africa	95-1115	10.02.1995	Granted	95-1115	30.10.1996

50.4. Contrary to their undertaking in Form 4, the Plaintiff intentionally and deliberately failed to disclose the filing details of the patent applications before the Patent Office. They did not disclose the filing of the following patent applications, which were the same or substantially similar to the Suit Patent application:

COUNTRY	PATENT NO.	DATE OF FILING	DATE OF PUBLICATION
U.S.A.	US5920272	25.07.1997	06.07.1999
U.S.A.	US5696505	08.02.1995	09.12.1997
Russia	RU2153707	01.02.1995	27.07.2000
Romania	RO119260	01.02.1995	30.06.2004
Romania	RO119099	01.02.1995	30.03.2004
Japan	JP2004005901	15.12.2002	08.01.2004
Norway	NO963388 (Patent No. 322948)	14.08.1996	07.10.1996
Mexico	MX9603394	14.08.1995	29.03.1997
Poland	PL319407 (Patent No. PL192729)	01.02.1995	04.08.1997
Slovakia	SK105195 (Patent No. SK283798)	01.02.1995	06.05.1998
Slovenia	SI745254	01.02.1995	31.08.1999
Poland	PL192729	01.02.1995	29.12.2006
New Zealand	NZ278137	01.02.1995	24.02.1997
Japan	JPH09512392	01.02.1995	09.12.1997

50.5. There are discrepancies in the numbers of the corresponding patent application in the United States of America[33] – the annexure submitted on 13th March, 2002 mentioned the application number as 08/385533 with the filing date of 08th February, 1995, whereas the annexure dated 31st August, 2004 mentioned application number 09/899091 filed on 08th February, 1995. Even this date is incorrect as the patent application in the US was filed on 05th July, 2001.

50.6. The Plaintiff had filed a petition on 12th November, 2004 in respect of the belated submission of details stipulated under Section 8 of the Patents Act. In this petition, the Plaintiff alleged that the requisite information was not available to them on 17th March, 1999, and therefore could not be entered in Form-4. This submission is false and controverted by the record. The annexure submitted on 31st August, 2004 clearly shows that most of the disclosed applications had been filed as early as 1995, with only one exception – Vietnam, which was filed in 1996 – well before the filing date of the application for the Suit Patent. These discrepancies, according to the Defendants, point to a deliberate suppression of material information, forming a valid ground for revocation under Section 64(1)(m) of the Patents Act.

51. In contrast, the Plaintiff argued that on 16th July, 2004, they had furnished complete information in respect of filing and prosecution of patent applications across jurisdictions, spanning three pages, to their patent agent – Mr. D.J. Solomon working at M/s DePenning and DePenning [Ex. PW-2/D4 in CS (COMM) 423/2016 and Ex. PW-2/D9 in CS (COMM) 519/2018]. However, due to an inadvertent error by the paralegal of the

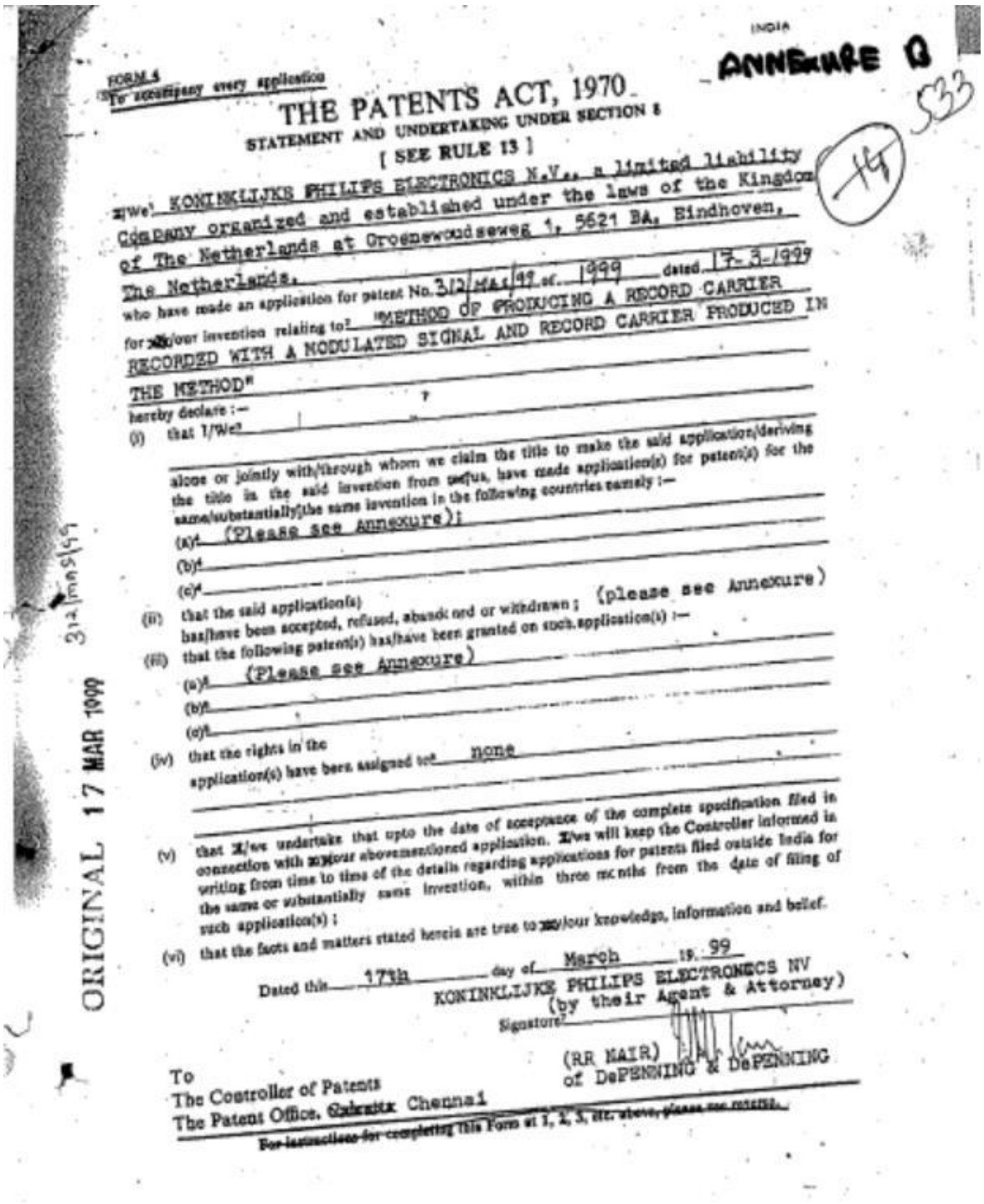
[33] the "US."

patent agent, the complete list of the applications could not be filed before the Patent Office. This, the Plaintiff argued, is corroborated by the affidavit dated 14th September, 2012 of Mr. Solomon submitted as Ex. PW-2/11 in CS (COMM) 519/2018. Therefore, the Plaintiff contended that the omission was not deliberate, and ought not to result in the revocation of the Suit Patent.

52. The Court has considered the submissions and evidence advanced by the parties. The preliminary assessment of Plaintiff's compliance with Section 8 of the Patents Act was considered by this Court in the order dated 06th November, 2016 in CS (COMM) 423/2016. In this order, while deciding Pearl Engineering's application under Order XII Rule 6 of the Code, the Court observed that the alleged non-disclosure was a triable issue rather than an admitted violation. The matter was further examined in the appeal [FAO(OS) 16/2014] filed by Peal Engineering. The Division Bench, in its judgment dated 07th November, 2014, while acknowledging the mandatory nature of compliance with Section 8(1) of the Patents Act, held that Section 64(1) confers a discretion upon the Court while assessing the question of revocation under Section 64(1)(m). The Bench emphasized that while discrepancies in disclosures could be material, the fact that the Plaintiff did submit corresponding foreign application details indicated that there was not a complete failure to meet the obligations under Section 8(1). The Court further noted that determining the nature of the alleged omission – whether intentional or inadvertent – would require a full trial to unearth the context and significance. The challenge to the afore-noted order before the Supreme Court was dismissed by order dated 24th April, 2015 in SLP(C) 6615/2015.

53. In light of the judgment of the Division Bench and the applicable legal principles, the Court must now determine whether the Suit Patent is liable for revocation under Section 64(1)(m) of the Patents Act. This requires an examination of whether the Plaintiff's omission to furnish complete information was deliberate or wilful, or indicative of an intent to mislead the Patent Office.

54. The Plaintiff provided the information to its legal representative, Mr. Solomon, who was responsible for prosecuting the Suit Patent before the Patent Office. The affidavit of Mr. Solomon [Mark PW-2/11 in CS (COMM) 519/2018] stated that he had submitted the required details to the Patent Office on three separate occasions: 17th March, 1999, 13th March, 2002, and 31st August, 2004. These documents, enclosed as Annexure-B to Mr. Solomon's affidavit, are reproduced below for context:



INDIA

ANNEXURE A

FORM 5
To accompany every application

THE PATENTS ACT, 1970

STATEMENT AND UNDERTAKING UNDER SECTION 8

[SEE RULE 13]

I/We* KONINKLIJKE PHILIPS ELECTRONICS N.V., a limited liability Company organized and established under the laws of the Kingdom of The Netherlands at Groenewoudseweg 1, 5621 BA, Eindhoven, The Netherlands,

who have made an application for patent No. 312/mas/99 of 1999 dated 17.3.1999

for *my/our invention relating to* "METHOD OF PRODUCING A RECORD CARRIER RECORDED WITH A MODULATED SIGNAL AND RECORD CARRIER PRODUCED IN THE METHOD"

hereby declare :—

(i) that I/We* alone or jointly with/through whom we claim the title to make the said application/deriving the title in the said invention from *me/us, have made application(s) for patent(s) for the same/substantially the same invention in the following countries namely :—

(a)* (Please see Annexure);

(b)*

(c)*

(ii) that the said application(s) has/have been accepted, refused, abandoned or withdrawn ; (please see Annexure)

(iii) that the following patent(s) has/have been granted on such application(s) :—

(a)* (Please see Annexure)

(b)*

(c)*

(iv) that the rights in the application(s) have been assigned to* none

(v) that *I/we undertake that upto the date of acceptance of the complete specification filed in connection with *my/our abovementioned application. *I/we will keep the Controller informed in writing from time to time of the details regarding applications for patents filed outside India for the same or substantially same invention, within three months from the date of filing of such application(s) ;

(vi) that the facts and matters stated herein are true to *my/our knowledge, information and belief.

Dated this 17th day of March 19 99

KONINKLIJKE PHILIPS ELECTRONECS NV
(by their Agent & Attorney)

Signature

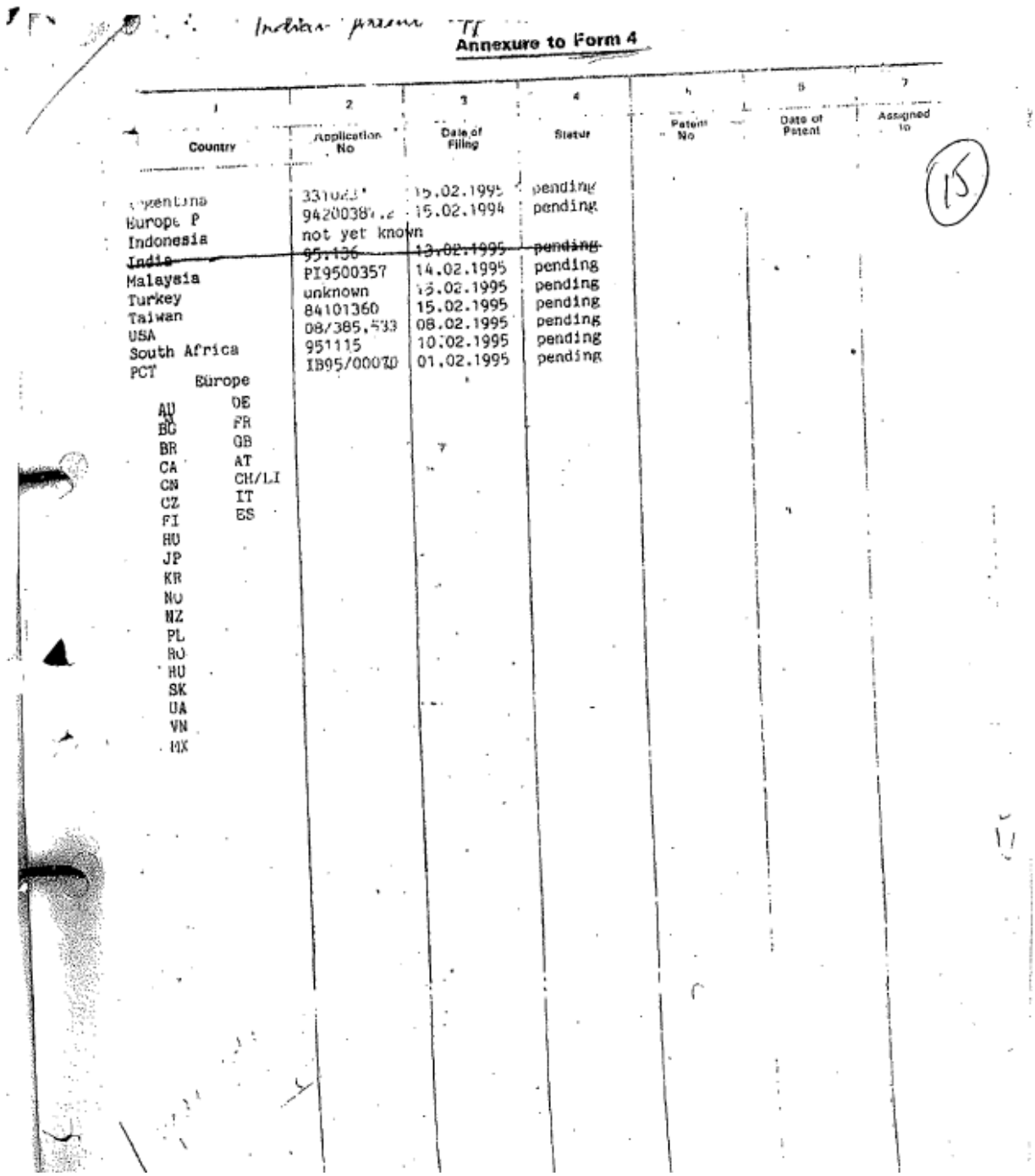
(RR NAIR)
of DePENNING & DePENNING

To
The Controller of Patents
The Patent Office, ~~Calcutta~~ Chennai

~~For instructions for completing this Form at 1, 2, 3, etc. above, please see reverse.~~

ORIGINAL 17 MAR 1999

312/mas/99



Indian patent TT

Annexure to Form 4

1 Country	2 Application No	3 Date of Filing	4 Status	5 Patent No	6 Date of Patent	7 Assigned to
Argentina	331023	15.02.1995	pending			
Europe P	94200387.2	15.02.1994	pending			
Indonesia	not yet known					
~~India~~	~~95.136~~	~~13.02.1995~~	~~pending~~			
Malaysia	PI9500357	14.02.1995	pending			
Turkey	unknown	15.02.1995	pending			
Taiwan	84101360	15.02.1995	pending			
USA	08/385,533	08.02.1995	pending			
South Africa	951115	10.02.1995	pending			
PCT	IB95/00070	01.02.1995	pending			
Europe						
AU DE						
BG FR						
BR GB						
CA AT						
CN CH/LI						
CZ IT						
FI ES						
HU						
JP						
KR						
NO						
NZ						
PL						
RO						
HU						
SK						
UA						
VN						
MX						

(15)

312/MAS/99 16

ANNEXURE TO FORM 4

The following application has been filed in the name of the inventors :

COUNTRY	APPLN NO	FILING DATE	STATUS	PATENT NO	DATE OF GRANT
U S A	09/899091	08.02.1995	Pending		

The following applications have been filed in the name of the applicants :

COUNTRY	APPLN NO	FILING DATE	STATUS	PATENT NO	DATE OF GRANT
Argentina	331023	15.02.1995	Granted	254412	27.07.2000
Austria	95905746.4	01.02.1995	Granted	E173110	04.11.1998
Australia	95-14240	01.02.1995	Granted	692822	05.11.1998
Belgium	95905746.4	01.02.1995	Granted	0745254	04.11.1998
Bulgaria	100774	01.02.1995	Granted	62106	21.07.1999
Brazil	PI9506787.6	01.02.1995	Granted	PI9506787.6	07.08.2001
Brazil	PI9510740.1	01.02.1995	Pending		
Brazil	PI9510741.0	01.02.1995	Granted	PI9510741.0	27.04.2004
Botswana	98-00054	22.04.1998	Granted	BW/P/99/00014	01.12.1999
Canada	2183355	01.02.1995	Pending		
Canada	2456968	01.02.1995	Pending		
Switzerland	95905746.4	01.02.1995	Granted	0745254	04.11.1998
China	95192574.1	01.02.1995	Pending		
China	200310102653.2	01.02.1995	Pending		
Czech Republic	96-PV2389	01.02.1995	Granted	290751	01/08.2002
Germany	95905746.4	01.02.1995	Granted	69505794.4	04.11.1998
Denmark	95905746.4	01.02.1995	Granted	0745254	04.11.1998
Spain	95905746.4	01.02.1995	Granted	2126877	04.11.1998
Finland	963151	01.02.1995	Pending		
France	95905746.4	01.02.1995	Granted	0745254	04.11.1998
Great Britain	95905746.4	01.02.1995	Granted	0745254	04.11.1998
Greece	95905746.4	01.02.1995	Granted	0745254	04.11.1998
Hong Kong	98114079.8	01.02.1995	Granted	HK1012767	31.03.2000
Hungary	P9602247	01.02.1995	Granted	221085	16.05.2002
Indonesia	P-950245	15.02.1995	Granted	ID0005313	20.07.2000
Vietnam	S19960099	13.08.1996	Granted	1407	25.10.2000
South Africa	95-1115	10.02.1995	Granted	95-1115	30.10.1996

31 AUG 2004

55. The affidavit of Mr. Solomon [Mark PW-2/11 in CS (COMM) 519/2018] reads as under:

> *"1. I say that I have been associated with M/s DePenning & DePenning since 1991 and that I was the attorney in-charge handling the prosecution of Indian Patent Application No. 312/MAS/1999 before the Indian Patent Office, Chennai now granted as Indian Patent No. 218255. The said application is in relation to an invention for "Method for converting information words to modulated signal" and was filed by Koninklijke Philips Electronics N.V (hereinafter referred to as the "applicant/ patentee")*
>
> *2. I say that I was assisted in this matter by my paralegal Mary D'Cruz who is also associated with the company since 2003 and is responsible for dealing with the formal requirements in relation to the aforementioned patent application.*
>
> *3. I say that M/s Cantwell & Co, an Intellectual Property Law Firm is a sister concern of M/s DePenning & DePenning*
>
> *4. I say that the address for service in respect, of the aforementioned application in the records of the Indian Patent Office is DePenning & DePenning 31, South Bank Road, Chennai 600028.*
>
> *5. I say that the following communications are on record at the Indian Patent Office in relation to the examination of the above application. These communications are enclosed as **Annexure A** (Colly):*
>
> *•. Preliminary Scrutiny Report dated March 7, 2002*
> *• Our response dated March 13, 2002*
> *• First Examination Report dated May 14, 2003*
> *• Our response to the First Examination Report dated August 31, 2004*
> *• Further Examination Report dated October 26, 2004*
> *• Our response to the Further Examination Report dated November 12, 2004*
>
> *6. I say that in relation to the aforementioned patent application, the details of the corresponding foreign applications as required under Section 8 of the Indian Patents Act were filed with the Indian Patent Office on the following dates and are enclosed as **Annexure B** (Colly):*
>
> *• March 17,1999*
> *• March 13, 2002 and*
> *• August 31, 2004*
>
> *7. I say that we received instructions from the patentee/ applicant to respond to the First Examination Report by their letter of July 16, 2004 and was received by us on July 27, 2004. A copy of the said letter with its annexures is enclosed as **Annexure C**.*

8. I say that along with the instructions from the patentee/ applicant, we received an updated status list of corresponding applications for three pages with the second page printed on the back of the first page.

9. I say that inadvertently my paralegal assisting me missed out the information in relation to corresponding foreign applications that was printed in the reverse of the first page as forwarded to us by the patentee/ applicant.

10. I say that the said omission was purely accidental with no intention to withhold any information from the Indian Patent Office.

11. I say that the information that was inadvertently omitted was relating to corresponding granted patents and corresponding pending patent applications in other jurisdiction.

12. I say that in view of the above, we are now enclosing herewith the status list of all corresponding foreign applications along with their status as was received by us from the patentee/applicant."

56. Mr. Solomon, in his affidavit, stated that the Plaintiff provided their agent with the letter dated 16th July, 2004, enlisting all the international applications corresponding to the Suit Patent. This letter, running into three pages, was printed on both sides. He clarified that due to an inadvertent lapse on the part of his office, the information contained on the reverse-side of the first page was not submitted to the Patent Office. On becoming aware of this lapse, the Plaintiff promptly submitted the affidavit dated 14th September, 2012 of Mr. Solomon before the Patent Office, Chennai, enclosing therewith the complete particulars of all corresponding applications to the Suit Patent.

57. This assertion is corroborated by the responses given during the cross-examination of PW-2, where it was confirmed that the submissions to the Patent Office represented the status in the Plaintiff's database at the time and were considered accurate and complete.

Cross-examination conducted on 05th August, 2014 in CS (COMM) 423/2016

"Q.242 In para No.18 of your affidavit Exh.PW2/A, you have stated on oath that the plaintiff has complied with his obligations under

Section 8 of the Indian Patents Act, 1970, and submitted the details of corresponding foreign applications on the following three occasions - 17.03.1999, 13.03.2002, and 31.08.2004. If you look at your previous answer to Q.241, what were the details furnished and by whom to your local agent in connection with these corresponding applications on. 17.03.1999 and 13.03.2002?

(Objected to as the information and documents are already on record)

Ans. These details were provided by our IP support department, which details require regular update and those updated details were provided in 2004. Until 2009, we as a company were not cautioned by our attorneys nor by the press nor by our local office that the standard of disclosure is a strict one. It was only after a case which was decided in the Delhi High Court in 2009, which I believe is called Chemtura case that strict standards appear to be followed. Before the grant of the patent in suit, we supplied full, true and complete information regarding corresponding patent applications of the patent in suit to our local agent and we believed that this information was filed with the Patent Office. ***We did not know that there had been a photocopying error at our local agent resulting that some information was left out when our agent transmitted this information to the Patent office. We only became aware of this recently in 2012***

Q.243 Will it be correct to say that apart from 17.03.1999, 13.03.2002 and 31.08.2004, no other Form-4 was ever filed in the suit patent during prosecution?

Ans. I only can confirm the three occasions and 1 do not know about other occasions.

Q.244 Will it be correct to say that whatever information was submitted by the Plaintiff on these three occasions as referred above, to the Patent office is true and correct?

Ans. At the moment of submission, this information represented the status in our database was true and correct. Regular updates are required because this information changes."

[Emphasis Supplied]

58. The above evidence suggests that the Plaintiff's intellectual property department supplied all details relevant to compliance of Section 8 of the Patents Act to their patent agent in 2004. They were apparently under the belief that this information had been filed with the Patent Office, and were

not aware of the lapse at their prosecuting agent's office. The testimony of PW-2 coupled with Mr. Solomon's affidavit suggests that immediately upon learning of this failure in 2012, the Plaintiff undertook corrective measures to ensure that the complete record is placed before the Patent Office. Thus, before the grant of the Suit Patent, the Plaintiff had supplied full, true, and complete information regarding corresponding patent applications in 2004. The inadvertent lapse, in the Court's view, does not equate to a deliberate omission or suppression of material facts.

59. During the trial, the Defendants shouldered the burden of proving that the Plaintiff, or its patent agent, intentionally withheld information from the Patent Office, and that such suppression was material to the grant of the Suit Patent. Rather than discharging this burden with substantive evidence, they merely attempted to cast doubts on the evidentiary value of Mr. Solomon's affidavit [Mark PW 2/11 in CS (COMM) 519/2018], arguing that it constituted hearsay due to his absence from the witness stand.

60. Similarly, reliance on an 'implicit acknowledgement' by PW-2 that Form 4 filed with the Divisional Application mentioned an application number before registration by the Patent Office lacks force. The Defendants carried the onus to prove, with credible evidence, that the Plaintiff committed fraud on the Patent Office, which they have failed to do.

61. Additionally, the Defendants argued that the letter dated 16th July, 2004 was also issued to the patent agent through e-mail. They contended that the information transmitted *via* e-mail would not involve physical page-turning, and thus, the missing data was inexcusable. This assertion also lacks substantiation through evidence. In this regard, the Court notes that PW-2 in his cross-examination, had stated as under:

Cross-examination conducted on 05th August, 2014 in CS (COMM) 423/2016

"Q.248 In para 18 of your evidence affidavit, you had stated that complete information regarding the corresponding foreign application for the suit patent were submitted by the Plaintiff to the attorney handing the portfolio. Please tell what was the mode of supply of this information?

Ans. I assume it must have been by regular mail post possibly by a confirmation by fax or e-mail or vice-a-versa.

xx ... xx ... xx

Q.257 I say that a soft copy of this letter containing information of the corresponding foreign applications to the suit was also transmitted to the attorney through e-mail.

Ans. As stated before, I assume this is the case, possibly by a confirmation by fax or e-mail or vice-a-versa.

xx ... xx ... xx

Q.260 Is it correct to say that neither you are aware nor you can answer about the transmission of e-mail copy of letter Exh.PW2/D4 containing the information of the corresponding foreign applications by the Plaintiff to the attorney and the confirmation of its receipt by the attorney?

Ans. If I read Exh.PW2/D4, I can say that this information has been received by the attorney completely. I must assume in view of the statement in the letter that the e-mail also was sent in addition to the postal transmittal."

62. The above responses do not conclusively establish that the letter dated 16th July, 2004 [Ex. PW-2/D4 in CS (COMM) 423/2016 and Ex. PW-2/D9 in CS (COMM) 519/2018] was also sent *via* e-mail by the Plaintiff, which is the foundation of the Defendants' objections. Rather, they indicate that the Plaintiff's communication with the prosecuting attorney included various modes of transmission, including mail and fax – both of which involved physical documents.

Conclusion

63. Section 64(1)(m) provides for the revocation of a patent on the ground that the patentee has failed to disclose to the Patent Office the required

information, or has furnished materially false information. While the errors in handling the disclosures ideally should have been avoided, they cannot be construed as a deliberate act of suppression by the Plaintiff.

63.1 The Defendants, for their part, have failed to establish that any material information was knowingly withheld by the prosecuting attorney or that the omission was intended to mislead the Patent Office. More importantly, they have not demonstrated how the omitted details, if provided, would have altered the grant of the Suit Patent, particularly when the corresponding foreign applications remained valid and enforceable throughout the patent term.

63.2 In contrast, the Plaintiff has placed evidence on record showing that, at the time of filing, the disclosures made under Section 8 were based on the best available data within its internal records. Given the dynamic nature of patent portfolios across multiple jurisdictions, the process of updating such records is inherently complex and subject to administrative oversight.

63.3 A mere clerical or inadvertent error in updating foreign patent statuses, without any evidence of bad faith or intent to mislead, cannot be a ground for revocation.

63.4 For these reasons, the Court finds that the objections under Section 64(1)(m) are without merit and do not justify invalidating the Suit Patent.

III.I.I. *Evaluation of Defendants' allegations concerning corresponding patent applications in Malaysia, Turkey, Taiwan, the US, and Europe*

Insufficient disclosure of patent applications in Malaysia, Tukey, and Taiwan

64. The Defendants placed significant emphasis on the inconsistencies in the annexures to Form 4 submitted by the Plaintiff on two separate

occasions – 13th March, 2002 and 31st August, 2004. They argued that the corresponding patent applications filed in Malaysia, Turkey, Taiwan, which were disclosed in the list dated 13th March, 2002, were intentionally excluded from the subsequent list of 31st August, 2004. These discrepancies, according to the Defendants, point to a willful suppression of vital information and an intentional breach of undertaking regarding corresponding foreign applications.

65. In the Court's opinion, the incongruencies between the annexures dated 13th March, 2002 and 31st August, 2004 and omissions by the Plaintiff have been adequately addressed through the testimony of PW-2. For brevity, the relevant portions from cross-examination conducted in CS (COMM) 423/2016 are extracted below:

> *"Q.201 In Exh. PW2/D8 on page 58, there is an entry which speaks of the country Turkey (application No. Unknown) and the status shown of the patent application in Turkey is shown as pending as on 17.03.1999. According to your information after studying the records of the Plaintiff in respect of filing this internationally, is this information true and correct?*
>
> *(Objected to by ld. Counsel for the Plaintiff on the ground of Section 92 of the Indian Evidence Act).*
>
> *Ans. I would have to check the records of my company but I can add that when it says that the number is not yet known, that means the said number has not been recorded in our database. It could well be that a number was already known to our patent agent in Turkey.*
>
> *xx ... xx ... xx*
>
> *Q.309 In your answer to Q.199, you were to look through the records of the Plaintiff and answer to the effect that on 17.03.1999 was the Plaintiff aware of the Indonesian Patent Application number and its status which you have provided as unknown in the annexure to Form-4 dated 17.03.1999.*
> *(Objected to)*
>
> *Ans. As I stated before the annexure to Form-4 in 1999 was identical to the annexure to Form-4 filed in 1995 and was not updated. The*

Indonesian patent application was granted on 20.07.2000 hence the status pending was correct in 1999. We did not update the application number as said before until 2004 where we filed a new annexure to Form-4.

Q.310 I put it to you that in the annexure to Form-4 dated 17.03.1999 in relation to the Indonesian Patent Application neither is the number given nor is the status provided and this was done deliberately to suppress material information to the Controller.

Ans. That is denied.

Q.311 In your answer to Q.197, you were to look through the records of the Plaintiff and answer to the effect that on 17.03.1999 was the Plaintiff aware of the status of Malaysian Patent Application number PI 9500357 and its status which was shown as pending in the annexure to Form-4 dated 17.03.1999. Are you now able to answer this question after looking through the records of the Plaintiff?

Ans. Yes. Malaysian application PI 9500357 was pending on 17.03.1999 and was granted on 30.04.2001. We have provided to our agent the correct and complete information regarding corresponding Malaysian Patent Application with the letter dated 16.07.2004, exhibited as Exh. PW2/D-4.

Q.312 In your answer to Q.201, you were to look through the records of the Plaintiff and answer to the effect that on 17.03.1999 was the Plaintiff aware of the status of Turkey Patent Application number shown as "unknown" and its status which was shown as pending in the annexure to Form-4 dated 17.03.1999. Are you now able to answer the question about the correctness of this information after looking through the records of the Plaintiff?

Ans. In our records, the Turkish Patent Application No. 95-0136 was pending on 17.03.1999 and was granted on 22.10.2002. We have provided to our agent the correct and complete information regarding corresponding Turkish Parent Application with the letter dated 16.07.2004, exhibited an Exh. PW2/D-4. There has not been any adverse decision by the Turkish Patent Office regarding the patentability of this patent application. The same holds for all other corresponding foreign patent applications by the respective foreign Patent offices.

Q.313 I put it to you that the Plaintiff was aware of the Turkish Patent Application No. 95-0136 and failed to provide this in that annexure to Form-4 filed on 17.03.1999 and on 31.08.2004.

Ans. That is denied.

Q.314 In your answer to Q.195, you were to look through the records of the Plaintiff and answer to the effect that on 17.03.1999 the Plaintiff aware of the status of Taiwan Patent Application No.84141360 and its status which was shown as pending in the annexure to Form-4

dated 17.03.1999. Are you now able to answer the question about the correctness of this information after looking through the records of the Plaintiff?

Ans. The said Taiwan Patent Application was granted an 15.04.1997. We have provided our agent with the correct and complete information about this corresponding patent with the letter of 16.07.2004 Exh. PW2/D-4.

Q.315 I put it to you that deliberately the status "pending" was given on the annexure to Form-4 dated 17.03.1999 and this status should have been "granted".

Ans. That is denied."

66. The letter dated 16th July, 2004 [Ex. PW-2/D4 in CS (COMM) 423/2016 and Ex. PW-2/D9 in CS (COMM) 519/2018] addressed by the Plaintiff to their patent agent is crucial to ascertain the merits of the narrative put forth by the Plaintiff's witness. Through this letter, the Plaintiff communicated their instructions to the patent agent in response to the Examination Report. With this letter, the Plaintiff *inter alia*, annexed the following list of corresponding patents:

COUNTRY	REFERENCE	FILING NR	FILING DATE	PUBLICATION NR	GRANT DATE	GRANT NR	EXPIRY DATE	TITLE
IE	N 014746 -	95905746.4	01-Feb-95	0745254-A1	04-Nov-98	0745254	01-Feb-15	EFM+ channel coding
IT	N 014746 -	95905746.4	01-Feb-95	0745254-A1	04-Nov-98	0745254	01-Feb-15	EFM+ channel coding
JP	N 014746 -	95-521693	01-Feb-95	97-512392	14-Mar-03	3408256	01-Feb-15	EFM+ channel coding
JP	N 014746 A	02-363762	01-Feb-95				01-Feb-15	EFM+ channel coding
KR	N 014746 -	96-704550	01-Feb-95				01-Feb-15	EFM+ channel coding
KR	N 014746 A	10-2003-7004922	07-Apr-03				01-Feb-15	EFM+ channel coding
LU	N 014746 -	95905746.4	01-Feb-95	0745254-A1	04-Nov-98	0745254	01-Feb-15	EFM+ channel coding
MC	N 014746 -	95905746.4	01-Feb-95	0745254-A1	04-Nov-98	0745254	01-Feb-15	EFM+ channel coding
MX	N 014746 -	9603394	01-Feb-95		28-Jul-98	189493	01-Feb-15	EFM+ channel coding
MY	N 014746 -	PI9500357	14-Feb-95		30-Apr-01	112136	30-Apr-16	EFM+ channel coding
NL	N 014746 -	95905746.4	01-Feb-95	0745254-A1	04-Nov-98	0745254	01-Feb-15	EFM+ channel coding
NO	N 014746 -	19963388	01-Feb-95				01-Feb-15	EFM+ channel coding
NZ	N 014746 -	278137	01-Feb-95	278137	23-Jun-97	278137	01-Feb-15	EFM+ channel coding
PL	N 014746 -	P319407	01-Feb-95				01-Feb-15	EFM+ channel coding
PT	N 014746 -	95905746.4	01-Feb-95	0745254-A1	04-Nov-98	0745254	01-Feb-15	EFM+ channel coding
RO	N 014746 -	96-001653	01-Feb-95		30-Jan-04	119099	01-Feb-15	EFM+ channel coding
RO	N 014746 A	01-00059	01-Feb-95				01-Feb-15	EFM+ channel coding
RU	N 014746 -	96118250	01-Feb-95	33	27-Jul-00	2153707	01-Feb-15	EFM+ channel coding
SE	N 014746 -	95905746.4	01-Feb-95	0745254-A1	04-Nov-98	0745254	01-Feb-15	EFM+ channel coding
SI	N 014746 -	95905746.4	01-Feb-95	0745254-A1	04-Nov-98	9530188	01-Feb-15	EFM+ channel coding
SK	N 014746 -	95-PP1051	01-Feb-95	96-PP1051	19-Nov-03	283798	01-Feb-15	EFM+ channel coding
TR	N 014746 -	95-0136	15-Feb-95		22-Oct-02	29626	15-Feb-15	EFM+ channel coding
TW	N 014746 -	84101360	15-Feb-95	294862	15-Apr-97	82864	15-Feb-15	EFM+ channel coding
UA	N 014746 -	96083269	01-Feb-95		15-Nov-01	42757	01-Feb-15	EFM+ channel coding
US	N 014746 -	08/385533	08-Feb-95		09-Dec-97	5696505	08-Feb-15	EFM+ channel coding
US	N 014746 A	08/900275	08-Feb-95		06-Jul-99	5920272	08-Feb-15	EFM+ channel coding
US	N 014746 K	90/006637	09-May-03				09-May-23	EFM+ channel coding

67. The above extract reinforces the deposition of PW-2. It becomes evident that the Plaintiff had provided the status of all the corresponding applications, as recorded in their database, to the attorney responsible for filing it with the Patent Office. PW-2 further clarified that the Malaysian Patent Application No. PI 9500357, which was shown as pending in the annexure to Form 4 prepared on 17th March, 1999, was granted on 30th April, 2001. Thus, as on the date of filing Form 4 on 17th March, 1999, this application was pending. Similarly, Turkish Patent Application No. 95-0136, shown as 'pending' in the annexure dated 17th March, 1999, was granted on 22nd October, 2002. The patent application filed in Taiwan, which was mentioned as 'pending' in the list dated 17th March, 1999, was granted on 15th April, 1997. Thus, the error in enlisting the status of corresponding patent applications prevalent at the time of submission of the annexure to Form 4, *i.e.,* 13th March, 2002, does not suggest an intent to mislead the Patent Office or prejudice the evaluation process of the Suit Patent. It is only an inadvertent oversight. This is established by the contents of letter dated 16th July, 2004, which accurately depicts the status of applications pending before the Patent Offices in Taiwan, Malaysia, and Turkey. These circumstances demonstrate the Plaintiff's efforts to ensure that true and correct information is furnished to the Patent Office. Moreover, the Defendants have not convincingly demonstrated that this omission weighed in the decision to grant the Suit Patent.

Discrepancy regarding US patent

68. The Defendants argued that the US patent application (08/385533) was granted on 09th December, 1997 under US Patent No. 5696505, prior to

the filing of the Divisional Application. However, they emphasised that this crucial fact was not disclosed to the Indian Patent Office in Form 4. Additionally, they contended that the subsequent re-examination of this US patent by the US Patent Office was also not brought to the attention of the Indian Patent Office, thereby constituting a failure to disclose material information under Section 64(1)(m) of the Patents Act.

69. The Defendants' contention regarding the alleged non-disclosure of the status of US Patent No. 5696505 does not persuade the Court to invalidate the Suit Patent on this ground. The Indian Patent Office was first made aware of the existence of the corresponding US patent application in as early as 1995, when it was disclosed as a part of the Parent Application. This US application was subsequently granted in 1997 as US Patent No. 5696505. The alleged non-disclosure thus, pertains to the filing of the Divisional Application on 17th March, 1999, where the Plaintiff did not expressly mention the grant of the corresponding US patent before the Patent Office. This omission appears to be a clerical oversight rather than a deliberate act of suppression. The Court also finds merit in the Plaintiff's contention that there was no strategic or substantive advantage for the Plaintiff in withholding the fact of the US patent's grant. If anything, disclosing that the US patent had been granted two years earlier in 1997 would have bolstered the Plaintiff's case before the Patent Office, reinforcing the patentability of the claimed invention.

70. As for the Plaintiff's failure to update the status of the US patent and disclose its re-examination in 2003, the evidence on record suggests that this omission was also inadvertent and not deliberate. In terms of the Patent Officer's requisition, the patent agent requested the Plaintiff to provide the

filing particulars and status of corresponding foreign applications that were 'pending,' 'granted,' or 'refused.' At the time of issuance of the Plaintiff's response dated 16th July, 2004, the US Patent had not been refused or invalidated by the US Patent Office. Therefore, the Plaintiff's disclosure that the US patent application had been granted in December 1997 was accurate and does not suggest a material suppression by them. As discussed above, few pages of the list enclosed with Plaintiff's communication dated 16th July, 2004 that contained full particulars of granted foreign patents, including the US Patent, were mistakenly omitted by the office of the Plaintiff's patent agent.

71. The affidavit of the Plaintiff's patent agent coupled with the afore-noted responses of PW-2 during cross-examination confirm that the Plaintiff had indeed provided full details of their foreign applications, including the US patent application, to their agent.

72. The Defendants have not controverted the issuance of the communication dated 16th July, 2004 [Ex. PW-2/D4 in CS (COMM) 423/2016 and Ex. PW-2/D9 in CS (COMM) 519/2018] by the Plaintiff to their prosecuting agent. They have also not brought forth any evidence to establish that the inadvertent omission by the Plaintiff's agent materially impacted the grant of the Suit Patent. Contrastingly, the Plaintiff's witness [PW-2] has proved that the particulars pertaining to all the corresponding applications to the Suit Patent were shared with their agent. While in certain instances, the Plaintiff's records may not have reflected the recent status, there is no basis to conclude that such omission was deliberate, or with an intent to withhold material facts from the Patent Office.

Discrepancy regarding European Patent

73. Lastly, the Defendants pointed to the incomplete disclosures in respect of the European Patent Application No. 94200387.2 dated 15th February 1994,[34] from which the Suit Patent claimed priority. This priority claim was also reflected in Form 4 accompanying the Parent Application. Subsequently, the EP application lapsed on 16th June, 1994 due to non-payment of fees. The Defendants submitted that the Plaintiff intentionally depicted the status of the EP application as 'pending' at the time of filing of the Divisional Application in 1999. On the other hand, the Plaintiff explained that this error occurred due to manual record-keeping constraints, particularly as patent records were maintained by entering data from paper forms. They submitted that the details of the EP application from Form 4 of the Parent Application were replicated in the Divisional Application, which led to the inadvertent error. However, in the subsequent communication of 16th July, 2004 to their patent agent, the Plaintiff did not mention the EP application.

74. Further, the Plaintiff explained that the EP application had no bearing on the Suit Patent beyond serving as a priority document. They informed that after the lapse of EP application, they filed a corresponding PCT application bearing IB95/00070 in 1995, claiming priority from the EP application. This PCT application designated several European countries, including Germany, France, United Kingdom, and Italy, and was eventually granted as EP 745254. Furthermore, PW-2 also confirmed when this PCT application matured into national grants, the Plaintiff disclosed these developments in its subsequent Form 4 filings. He also confirmed that the

Suit Patent directly corresponded to the EP application resulting from the PCT filing.

75. The Court finds merit in the Plaintiff's explanations, which are substantiated by the testimony of PW-2. Indisputably, the Plaintiff did not include the EP application in the updated foreign filing status report dated 16th July, 2004, as this application was no longer surviving. This indicates that the Plaintiff acknowledged their earlier oversight and intended to provide a corrected record to the Patent Office. Given that the EP patent served only as a priority document, the non-disclosure of its lapse was, at best, an error lacking any *mala fide*.

Conclusion

76. In evaluating whether a patent holder has failed to comply with Section 8 of the Patents Act, the non-disclosure must be deliberate and substantial enough to have impacted the decision to grant the patent. The Defendants relied on the judgments in ***Chemtura Corporation v. Union of India,***[35] and ***F. Hoffman-La Roche Ltd., Switzerland and OSI Pharmaceuticals Inc, New York v. Cipla Ltd.***[36] to assert that compliance with Section 8 of the Patents Act is mandatory, and any deviation or inadequate disclosure leads to revocation of the patent. However, the jurisprudence on this issue has since evolved with the Division Bench's judgment in ***Maj. (Retd.) Sukesh Behl and Anr. v. Koninklijke Philips Electronics N.V.***[37], discussed above. The Court noted that the absence of complete compliance does not automatically imply that there was a

[34] "EP application."
[35] 2009 SCC OnLine Del 2634.
[36] 2012 SCC OnLine Del 4704.
[37] "FAO (OS) 16/2014"

deliberate violation of Section 8, particularly where some degree of disclosure was made. The Courts have consistently emphasized that a simple non-disclosure of information does not render the patent revocable under Section 64(1)(m). Instead, the violation must be "patent and manifest," demonstrating a significant impact on the grant of the patent.[38]

76.1. On this issue, it would be profitable to also refer to the US decision of ***Therasense, Inc. v. Becton, Dickinson & Co***.,[39] which established the "but-for" materiality test. Under this test, a reference or withheld information is considered material only if the Patent Office would not have granted the patent had it been aware of the undisclosed information.

76.2. The evidence supports that the omission of certain particulars of corresponding foreign applications was not material and intentional, as required under Section 64(1)(m) for revocation of the patent. This oversight was subsequently rectified and brought to the attention of the Patent Office through an affidavit of the prosecuting agent, as detailed in Annexure D of Mr. Solomon's affidavit dated 14th September, 2012 [Mark PW-2/11 in CS (COMM) 519/2018]. The Defendants have not disputed the filing of this affidavit before the Patent Office. The submission of this affidavit indicates that the Plaintiff took corrective measures upon identifying the omission, reinforcing that there was no intent to mislead or suppress information. This is particularly relevant as there is no record of any invalidation ruling by a national court or adverse report from a national patent office against the Suit Patent during its term.

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[38] *See:* ***Intex Technologies (India) Ltd. v. Telefonaktiebolaget LM Ericsson,*** 2023 SCC OnLine Del 1845; ***Lava International Limited v. Telefonaktiebolaget LM Ericsson,*** 2024 SCC OnLine Del 2497; and ***Merck Sharp and Dohme Corporation and Anr. v. Glenmark Pharmaceuticals,*** 2015 SCC OnLine Del 8227.

[39] 649 F.3d 1276 (Fed. Cir. 2011).

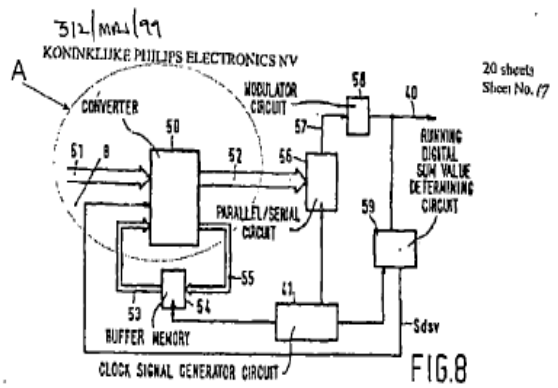
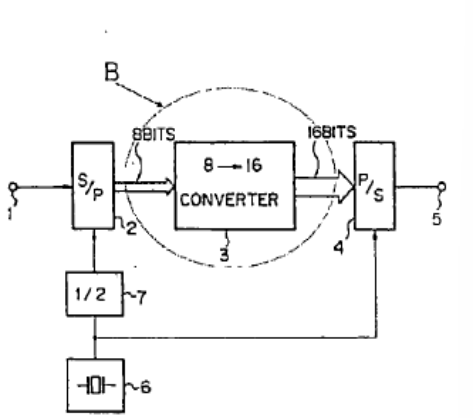
76.3. The inadvertent omission, attributable to a clerical error, does not meet the threshold of material suppression that would influence the grant of the Suit Patent. Jurisprudence on this issue has consistently held that honest mistakes or procedural lapses, absent proof of deceitful intent, do not justify patent revocation. There is no basis to conclude that the Indian Patent Office would have refused the Suit Patent had it been made aware of the re-examination of the US counterpart. The Plaintiff's submissions, supported by affidavits and corroborated by testimony of their witness, establish that the requisite details were provided in a manner that met the statutory obligations.

76.4. The burden of proof on the Defendants for showing deliberate non-disclosure that prejudiced the grant of the Suit Patent, has not been met. In view of the oral and documentary evidence, the Court holds that Plaintiff acted in good faith in disclosure of the information under Section 8 of the Patents Act, thereby negating any inference that the Suit Patent is liable to be revoked under section 64(1)(m) of the Patents Act.

III.II. ***Whether the invention claimed in the Suit Patent is publicly known, not new, or publicly used under Section 64(1)(e) of the Patents Act?***

77. The Defendants referred to the US Patent No. 5206646 titled "Digital Modulating Method" owned by Sony Group Corporation [Mark X-11 in CS (COMM) 423/2016],[40] to contend that the claims within the Suit Patent lack novelty and are, therefore, liable for invalidation under Section 64(1)(e) of the Patents Act. Their arguments and evidence in this regard are detailed below:

77.1. The Sony Patent predates and anticipates the Suit Patent. The subject matter of this earlier patent is nearly identical, with the only difference being the coding tables used. Specifically, they argued that the hardware and circuitry elements claimed in the Suit Patent were known in the public and were disclosed in the prior art – the Sony Patent. As is evident from the following comparison drawn in the evidence by way of affidavit of DW-2, Sony Patent also features an 8-to-16-bit converter, which overlaps significantly with the EFM+ coding technology claimed by the Plaintiff:

FIGURE 8 IN THE SUIT PATENT	**FIGURE 1 IN THE SONY PATENT**
	

77.2. The foundation of the inventions claimed in the Suit and Sony Patents is the converter, where the conversion of information from 8-bit to 16-bit code word occurs. A comparison of the information words and corresponding coded words under the Suit Patent and Sony Patent reveals several identical conversions. For instance, the code word corresponding to information word "227" in the Sony Patent is the same as the code word

[40] "Sony Patent."

selected from set V1 of the Suit Patent for information word "227" (from the first set of tables, ranging from 0 to 255). Similarly, the code word corresponding to information word "37" in the Sony Patent is identical to the code word selected from set V2 of the Suit Patent for information word "37" (from the first set of tables, ranging from 0 to 87). These similarities underscore the fact that Sony Patent anticipates and overlaps with the claims made in the Suit Patent.

77.3. Therefore, the primary difference between the converters entailed in the Suit Patent and the Sony Patent lies in the conversion rules – essentially, the algorithm or program governing the process. This aspect constitutes a mathematical method *per se*, which, under the law, does not qualify as a patentable invention.

77.4. The Defendants referenced to the cross-examination of PW-2, where he was confronted regarding the extent to which Sony Patent anticipated the EFM+ technology disclosed in the Suit Patent. They argued that PW-2 did not categorically refute the assertion that the Sony Patent encompassed significant aspects of the EFM+ technology. To support their contention, Defendants cited the following extracts from the cross-examination of PW-2:

> **Cross-examination conducted on 27th and 28th August, 2014 in CS (COMM) 423/2016:**
>
> *"Q.461 As far as EFM+ reference is made to US Patent No. 5,206646 as being the patent associated with EFM+. Are you familiar with this patent?*
>
> *Ans. I cannot say because I do not know patent numbers by heart.*
>
> *Q.462 This US Patent No. 5,206646 was attached to the Defendants' documents at page 618 Mark X-11 filed along with the Defendants' List of documents dated 27th August, 2012. Can you now identify this document?*

Ans. No, I am not familiar with this document.

Q.463 Have you studied the contents of the document at any point of time?

Ans. No.

Q.464 I put it to you that this document Mark X-11 discloses in Fig.1 at page 619, the 8 -> 16 modulation and therefore the EFM+. What do you have to say on this?
(Objected to by the learned counsel or the Plaintiff on the ground that the prior art cited in the above question has been sufficiently distinguished in para 16(c) of parawise reply to the preliminary objections in the Replication and forms a part of the Court record).

Ans. I deny that this document discloses EFM + modulation according to the suit patent.

xx … xx … xx

Q.513 I now draw your attention to figure 1 of US patent no.5206, 646 which is marked as Mark X-11 where there is also shown a converter which receives 8 bit binary input signals and converts these signals to 16 bit output signals as shown. Would you say this converter is analogous to the converter 60 in that it also contains a logical circuitry with a number of gates & ports to carry out the conversion?

Ans: I would say this converter also contains logical circuitry but it will implement a different method of conversion. Furthermore, I draw your attention to the fact that this US patent no.5206,646 was cited as prior art during the prosecution of our patent US 5696505 meaning that the US Examiner has recognized that this patent US 5206, 646 is not material to the patentability of our US 5696505.

xx … xx … xx

Q.517 Would you therefore say that in respect of patent no.5206,646, the inventive step of this patent would also lie in the method as claimed in that patent and the logical circuitry that implements that method cannot be considered as such inventive?

Ans: I cannot answer this question because I have insufficient knowledge of this patent."

Cross-examination conducted on 28th November, 2014 in CS (COMM) 519/2018:

"Q.454 I ask you to turn to Fig. 1 of this document (Ex. PW2/D10) where it shows an 8 bit information word being converted to a 16 bit code word using the converter marked with reference 3. Please look at

Exh. PW2/3 filed with your affidavit of evidence under Index dated 12.03.2013 on page 88 and Fig 3.3-1. Is it not correct that the schemes shown in both figures are similar?

Ans. That is incorrect because I see 5 blocks in Fig.1 of patent US 5206646 and I see two blocks with different names in Fig. 3.3-1 on page 88 of Ex PW2/3.

Q.455 I put it to you that both schemes involve conversion of 8 bit information words to 16 bit code words.

Ans. As mentioned before, patent No.US5206646 is mentioned as prior art by the US Examiner to our corresponding US patents of the suit patent in India. The schematic diagram in Fig.1 of said US patent shows an 8 bit to 16 bit converter which must use a different method than the method used in the patent in suit. Our patent in suit also is about 8 bit to 16 bit conversion but as said before, the method which we use is new and inventive compared to the method used in US 5206646.

Q.456 Is it correct that in the suit patent the 8 bit to 16 bit conversion happens in blocks of 8 bit information words but one block at a time?

Ans. I believe in our suit patent two blocks at a time are processed but I am not completely sure about this.

xx … xx … xx

Q.467 I put it to you that the inventor Mr. Immink has himself stated that EFM+ has properties similar to those of EFM (para 2 lines 2 & 3 and column 2 paragraph 2 lines 1 & 2) and that both these codes are members of the family of DC 3 Run Length Limited Codes. For instance, in his article, "EFM coding: squeezing the last bits". The article is dated 3rd August, 1997.

Ans. I can see that the inventor wrote it but I can also see that in para 2 he states "the strategy of EFMPIus (which is the same as EFM+) is much more refined and much more powerful than the original EFM. The complexity of EFM+ is also significantly greater."

77.5. Further, Defendants argued that, in the Suit Patent, the conversion rules are stored in integrated circuit chips as look-up tables, and there is no requirement for additional hardware elements to perform the conversion steps. The Suit Patent does not claim a combination of hardware elements essential to the process of converting information words into code words.

Even if the Plaintiff were to assert that the Suit Patent encompasses hardware elements, the replication process does not necessitate such hardware. Thus, the hardware elements cited by the Plaintiff are neither used, nor essential to the replication activities carried out by the Defendants, undermining any claim of infringement.

77.6. The underlying invention of the Suit Patent lacks any substantial improvement in hardware capability, and as such, cannot be considered a genuine technological innovation. Any hardware limitations referenced in the Suit Patent are incidental, and do not contribute to a technical advancement in the systems designed for encoding or decoding data on compact discs. This reinforces their claim that the core invention rests on the rules of conversion – a mathematical algorithm that, under the Patents Act, does not meet the criteria for patentability as a standalone invention.

78. The Plaintiff, on the other hand, controverted the allegations of the Defendants, arguing that the Suit Patent discloses a different invention from the Sony Patent. They submitted that a review of Figure 8 in the Suit Patent reveals that the core functions described in the preamble of claim 1 are executed within the converter block and a parallel-connected buffer memory. This converter block, which constitutes the essence of the claimed invention, operates by implementing rules of conversion. These rules, embedded as a computer program within the converter block, facilitate the conversion of a series of *m*-bit information words into a series of *n*-bit code words according to predefined conversion principles. The Plaintiff also emphasised that the Defendants, within their own submissions, have conceded that the Sony Patent involves a different mechanism compared to the claimed invention of the Suit Patent. This admission, according to the

Plaintiff, contrasts their argument and affirms that the cited document neither anticipates the Suit Patent, nor renders it obvious.

Does the Sony Patent anticipate the Suit Patent?

79. The Court has examined the submissions and evidence on record. For a patent to be invalidated on the grounds that the invention claimed was not new, or was publicly known or used before the priority date, the prior art must comprehensively disclose or anticipate the claimed invention. Therefore, in assessing the Defendants' challenge, it is essential to consider whether the Sony Patent discloses or anticipates the invention claimed in the Suit Patent, in its entirety. This means that the Sony Patent must disclose every feature of the Suit Patent, with the same arrangement and functionality.

80. The Sony Patent describes a digital modulation method that converts 8-bit data into 16-bit channel bits. This process uses successive 14-bit channel bits, similar to the Eight-to-Fourteen Modulation method,[41] and includes two consecutive '0.' Figures 2A-2G of the Sony Patent clearly illustrate this encoding process. In contrast, the Suit Patent introduces EFM+ encoding, a novel mechanism that addresses a key limitation of earlier EFM technologies, including the Sony Patent. Specifically, the Suit Patent resolves the ambiguity in decoding that arises when a 16-bit channel code corresponds to multiple 8-bit data words. This issue is inherent in the Sony Patent, but is not addressed or resolved therein. The Suit Patent, on the other hand, provides a unique solution through a method that ensures one-to-one

[41] "EFM."

correspondence between code words and data words, achieving unambiguous decoding. This feature is explicitly detailed in the specification and claims of the Suit Patent.

81. A fundamental difference between the two patents lies in the capacity of the Suit Patent to eliminate the decoding ambiguity present in the Sony Patent. In the Sony Patent, a 16-bit channel code may not uniquely identify a single 8-bit data word, leading to potential errors during decoding. The Suit Patent resolves this limitation by employing advanced classification and coding techniques, as described in its claims and look-up tables. This novel feature differentiates the Suit Patent from the Sony Patent, making it new. The Sony Patent is primarily focused on channel modulation, with its innovation residing in the specific arrangement of channel bits for the EFM process. While it may perform 8-bit to 16-bit conversion, it does not go beyond this to address challenges such as decoding precision and storage efficiency. In contrast, the Suit Patent provides a framework that not only encodes data but also ensures efficient storage and unambiguous decoding, making it distinct in both scope and functionality.

82. To better understand the distinction between the Suit Patent and the Sony Patent, we imagine a situation where one is translating a message into a secret code. In the Sony Patent, the translation process converts 8-letter words into 16-letter encoded words. However, some of these encoded words may correspond to more than one original 8-letter word, making it unclear which message was initially sent – a problem akin to receiving two identical keys for different locks. This ambiguity can lead to errors when decoding the message. In contrast, the Suit Patent introduces an innovative mechanism that ensures each encoded 16-letter word corresponds to only

one unique 8-letter word. It achieves this by classifying and selecting code words in such a way that decoding is precise and unambiguous, akin to having a unique key for each lock. Furthermore, the Suit Patent achieves this while maintaining higher data efficiency, allowing more information to be stored on a DVD. This critical advancement solves the ambiguity problem and ensures the compatibility and reliability of DVDs, setting it apart from the Sony Patent.

83. The EFM+ modulation, which constitutes the heart of the Suit Patent, is more than just an 8-to-16-bit conversion. It involves a specific set of rules and processes for encoding that allow unique identification of information words during decoding – elements absent from the cited prior art. PW-2 categorically denied that the Sony Patent discloses the EFM+ modulation as claimed in the Suit Patent. He clarified that while the Sony Patent does disclose a converter that receives 8-bit binary input signals and outputs 16-bit signals, it implements a different method of conversion compared to the method claimed in the Suit Patent. This assertion reinforces the Plaintiff's position that the specific conversion methodology in the Suit Patent is distinct and not disclosed by prior art. The testimony of PW-2 directly challenges the Defendants' contention that the Sony Patent anticipates the claimed invention.

84. Furthermore, the Plaintiff highlights that the Sony Patent was cited as prior art during the prosecution of the Plaintiff's corresponding US Patent No. 5696505. However, the US Patent Examiner, after due consideration, waived this objection, affirming that the Sony Patent did not compromise the patentability of US Patent No. 5696505. While this determination is not conclusive for assessing inventiveness under the Patents Act, it is

nonetheless a persuasive factor. The fact that a comparable examination found the Sony Patent insufficient to negate novelty or inventive step lends weight to the Plaintiff's argument that the Suit Patent is not anticipated. This reinforces the position that the Sony Patent does not disclose all essential elements of the invention claimed in the Suit Patent.

Conclusion

85. The jurisprudence on anticipation under Section 64(1)(e) of the Patents Act supports the Court's analysis. For a patent to be invalidated on this ground, the prior art must disclose every element of the claimed invention in the same arrangement and functionality. A mere resemblance in certain aspects is insufficient unless the prior disclosure is complete and enabling. In ***Lava International Limited*** *(Supra)*, a coordinate bench of this Court emphasized that anticipation requires complete and enabling disclosure. Furthermore, in ***Telefonaktiebolaget LM Ericsson v. Intex Technologies (India) Ltd***.,[42] it was clarified that technical advancements and practical application of standard-essential technologies must be considered while evaluating novelty and inventive step. Applying these principles, the role of the Suit Patent in the development of the DVD standard and its resolution of technical limitations present in prior art reaffirm its novelty. The Defendants have failed to demonstrate that any single prior art reference fully discloses the claimed invention with the same structure, operation, and effect. Consequently, the challenge under Section 64(1)(e) fails.

[42] DHC Neutral Citation: 2015:DHC:2448.

III.III. ***Whether the Suit Patent is liable to be invalidated on the ground of suppression and fraud under Section 64(1)(j)?***

86. The Defendants' arguments to seek invalidity of the Suit Patent under Section 64(1)(j) are summarized below:

86.1. The Suit Patent was initially presented as a Divisional Application stemming from the Parent Application bearing No. 136/CAL/1995, filed in 1995. The Divisional Application was filed four years later, this time before the Chennai branch of the Patent Office. The Parent Application was subsequently abandoned [Ex. PW2/D-1 in CS (COMM) 423/2016]. The Parent and Divisional Applications ought to have been filed before the same branch of the Patent Office.

86.2. Both the Divisional and Parent Applications are identical, with no discernible new claims being introduced in the Divisional Application, which is a prerequisite for filing a divisional patent under Section 16 of the Patents Act. The commonality of the claims is obvious from the drawings and the date of specification. The Plaintiff, or its agent, had cancelled certain dates on the documents, further suggesting procedural irregularities.

86.3. The Plaintiff filed five divisional applications – Indian Patent Nos. 184753,[43] 185349,[44] 221405,[45] 221406,[46] and 218255 (the Suit Patent) – originating from the Parent Application. In his cross-examination, PW-2 admitted that these divisional applications were aspects of the same invention, which was claimed in the Parent Application. Thus, there is no plurality of inventions, all the divisional applications are parts of the same

[43] Ex. PW-2/D18 in CS (COMM) 423/2016 and Ex. PW-2/D5 in CS (COMM) 519/2018.
[44] Ex. PW-2/D19 in CS (COMM) 423/2016 and Ex. PW-2/D6 in CS (COMM) 519/2018.
[45] Ex. PW-2/D20 in CS (COMM) 423/2016 and Ex. PW-2/D8 in CS (COMM) 519/2018.
[46] Ex. PW-2/D21 in CS (COMM) 423/2016 and Ex. PW-2/D7 in CS (COMM) 519/2018.

alleged inventive concept. The claims covered in the corresponding European patent of the Plaintiff, are identical to the Parent Application, Suit Patent, and Patents No. 184753 and 185349. However, no divisional applications were filed in Europe, and where all claims were covered in a single application.

86.4. The extracts from the cross-examination of PW-2 relied upon by the Defendants, are reproduced below:

Cross-examination conducted on 06th - 07th August, 2018 in CS (COMM) 423/2016

"Q.282 In response to Q.215, have you got the two Patent numbers?

Ans. Yes. They are Indian Patent No.185349 i.e. for No.14.746IN-A and Indian Patent No.184753 i.e. for No.14.746IN-B.

Q.283 I put it to you that these two Patent Nos. 185349 and 184753 are divisional Patent applications to 136/CAL/95 the parent Patent application to the suit patent.

Ans. That is correct.

xx ... xx ... xx

Q.327 You have studied the records of the internal file reference No. 14.746 of which the suit patent forms the family. I put it to you that in India, this family consists of one parent patent application 136/CAL/1995, which was abandoned, and five Divisional Patents to the same invention being Patent Nos. 185349, 184753, 221405, 221406 and 218255?

Ans. That is correct. However, the divisional patents relate to different aspects of the same invention.

Q.328 I put it to you that the divisional status for the suit patent is vital to you without which you would not have been able to enjoy the priority date of the parent 136/CAL/1995 and without such a priority date, the suit patent would have lacked novelty.

Ans. I do not understand the question. A divisional automatically gets granted priority date of parent.

Q.329 If the suit patent did not enjoy a priority date as a divisional application, it would have lacked in novelty. Is it correct?
(Objected to as being argumentative)

Ans. I cannot answer that question before seeing the prior art.

Q.330 Is it not correct that several of the corresponding patent applications were published prior to the filing of the Indian Patent Application and these would have constituted prior art had the suit patent not been considered as a divisional application to 136/CAL/1995?
(Objected to as being argumentative)
Ans. If the publication date is before the filing date of divisional application, that is correct. But, the divisional enjoys priority date of the parent application, so this is a non-relevant hypothetical question.

Q.331 Please refer to your answer to Q.327 where you stated that the divisionals related to the different aspects of the same invention. Were these different aspects of the same invention not present in the parent application 136/CAL/1995 which was abandoned?
Ans. They were all present in the parent application.

Q.332 Were these different aspects of the same invention not present in the European Patent No.745254?
Ans. They were present. In fact, the Indian Parent Application as filed is a copy of the European Patent Application.

Q.333 How many divisional applications did you file to the European Patent Application?
Ans. None. Because the European examiner granted all aspects of the invention in different claims in one patent.

Q.334 Have you studied the file and records of the parent patent application 136/CAL/1995 which was eventually abandoned for non-compliance of the objections by the Indian examiner of the Indian Patent Office?
Ans. As stated before I have read this file but not studied it. Furthermore, according to Indian practice, there is a non-extendable time limit before which the grant of the patent must have been accomplished and therefore, Plaintiff decided to file divisionals in order to safeguard its rights.

Q.335 Have you filed divisional patent applications to this invention in any other country beside India?
Ans. Yes.

Q.336 Could you name those countries?
Ans. I can name US and China and maybe more countries which I cannot remember.

Q.337 I put it to you that no divisional application was filed in the US?
Ans. Since I am not a US patent attorney, I may have answered by mistake that probably those applications were called continuations in part.

Q.338 I put it to you that you had not complied with the objections of the Indian examiner in 136/CAL/1995 and deliberately got this application abandoned?

Ans. That is denied.

Q.339 I put it to you that in the parent Application No.136/CAL/ 1995, your local agent was the Calcutta branch of the Cantwell & Co. and you deliberately and with ulterior motive appointed the Madras branch of De Penning and De Penning only because the alleged divisional application should not have been examined by the same examiner who had fatally objected to the claims of the parent Patent Application, thus taking undue advantage of the Indian patent system having multiple patent offices not interacting with each other at that time and played fraud on the Controller.

Ans. I pertinently deny all of this.

xx … xx … xx

Q.395 I am showing you Exh. PW2/D-18 the print out of Indian Patent No.184753, Exh. PW2/D-19 print out of Indian Patent No. 185349, Exh.PW2/D-20 print out of Indian Patent No.221405 with the file wrapper of this patent available on the Indian Patent Office website; Exh. PW2/D-21 print out of Indian Patent No.221406 with the file wrapper of this patent available on the Indian Patent Office website. I put it to you that each of these patents disclose different aspects of the same inventive concept as in 136/CAL/1995.
(Objected to on the ground that the supporting 65-B affidavit is filed on behalf of Maj. (Retd.) Sukesh Behl (Defendant No. 1) without disclosing the complete URL, computer and printer used by him for taking the said print-out; Further, the document that the witness is now shown is multiple pages and the Defendants had time to file this in Court when they had the opportunity to do so and the witness has not identified the document).

Ans. That is correct.

Q.396 And therefore, the matter disclosed in the body of the specification of these patents is also similar to the matter disclosed in the body of the specification of the suit patent No. 218255.

Ans. That is correct.

Q.397 I put it to you that all six documents i.e. the patent specification of 136/CAL/1995, Indian Patent No.184753, Indian Patent No. 185349, Indian Patent No.221405, Indian Patent No.221406 and Indian Patent No.218255 contain claims which are overlapping each other in the respective documents.

Ans. ***The patent specification of the parent 136/CAL/1995 contained all claims relating to different aspects of the inventive concept, but***

has not been granted. Hence, this patent specification cannot be taken into account. The granted patents all contain different claims relating to different aspects of the same inventive concept, and as such, those claims all have different scopes and are not considered to be overlapping."

[Emphasis Supplied]

Cross-examination conducted on 27th November, 2014 in CS (COMM) 519/2018

"*Q.368 Is the patent specification of 185349 and its drawings almost identical to the specification and drawings filed in 136/CAL/1995 and the suit patent?*

Ans. Apart from the claims, the title and the abstract, I believe they are almost identical.

Q.369 Is it correct that the claims of patent No. 185349 are part of the same inventive concept as disclosed in 136/CAL/1995?
(Counsel for the Plaintiff states that despite the objection on scope of claims, the counsel for the Defendants is continuing to question along the same lines and therefore seriously objected to.)

Ans. They are different inventions belonging to the same overall inventive concept.

Q.370 Is Indian Patent No. 221406 a divisional to 136/CAL/1995?
Ans. Yes.

Q.371 Is the patent specification of 221406 and its drawings almost identical to the specification and drawings filed in 136/CAL/1995 and the suit patent?

Ans. Apart from the claims, the title and the abstract, I believe they are almost identical.

Q.372 Is it correct that the claims of patent No.221406 are part of the same inventive concept as disclosed in 136/CAL/1995?
(Counsel for the Plaintiff states that despite the objection on scope of claims, the counsel for the Defendants is continuing to question along the same lines and therefore seriously objected to).

Ans. ***They are different inventions belonging to the same overall inventive concept.***

Q.373 Is Indian Patent No. 221405 a divisional to 136/CAL/1995?
Ans. Yes.

Q.374 Is the patent specification of 221405 and its drawings almost identical to the specification and drawings filed in 136/CAL/1995 and the suit patent?

Ans. Apart from the claims, the title and the abstract, I believe they are almost identical.

Q.375 Is it correct that the claims of patent No.221405 are part of the same inventive concept as disclosed in 136/CAL/1995?
(Counsel for the Plaintiff states that despite the objection on scope of claims, the counsel for the Defendants is continuing to question along the same lines and therefore seriously objected to).

Ans. ***They are different inventions belonging to the same overall inventive concept****."*

[Emphasis Supplied]

86.5. Basis the testimony noted above, Defendants argued that PW-2 has admitted that there is no material difference in the body of the specifications of the Suit Patent, the Parent Application, and the other four divisional applications. This indicates that there has been double patenting, where the same invention has been sought to be protected in the Parent Application and the divisional applications, including the Suit Patent. In accordance with Section 21 of the Evidence Act, 1872,[47] this statement must be considered as admission.

86.6. Further, the Defendants' expert witness, Mr. Chirag Tanna [DW-2] has also affirmed in his evidence, that the specifications disclosed in the Suit Patent overlap with the claims in Indian Patent No. 184753 and 185349 and consequently, the claims of the Parent Application. These facts were concealed by the Plaintiff from the Patent Examiner at the time of examination of the Suit Patent.

86.7. Such discrepancies raise questions about the integrity of the filing process and suggest misrepresentation or concealment of facts. These facts should be considered as evidence of Plaintiff's non-compliance with the statutory requirements for divisional applications and potential

[47] "Evidence Act"

misrepresentation during the patent prosecution process. Therefore, the Plaintiff has deliberately acted in violation of the statutory rules for patent prosecution. The Plaintiff's failure to make a full disclosure constitutes fraud under Section 64(1)(j) of the Patents Act, making the Suit Patent liable for revocation by this Court.

87. The Court has carefully considered the submissions and evidence presented by both parties. Since the Defendants seek revocation of the Suit Patent under Section 64(1)(j) on the ground that it was secured through false suggestions and misrepresentations concerning the Parent Application and the divisional applications derived from it, the burden of proof squarely rests on them. To succeed under this provision, the Defendants must establish that the patentee deliberately misled the Patent Office by knowingly making false statements or representations with the intent to deceive the examiner. An allegation under Section 64(1)(j) requires more than mere inadvertence, error, or oversight – it necessitates proof of a wilful act of misrepresentation or concealment, demonstrating that the patentee sought to secure an unfair advantage in the grant process. Thus, the onus lies on the Defendants to furnish clear and convincing evidence that the Plaintiff engaged in fraudulent conduct or material misrepresentation.

88. Bearing the above noted principles in mind, the Court now proceeds to evaluate the merits of the grounds put forth by the Defendants.

III.III.I. *Re: Parent and Divisional Applications*

89. The Suit Patent originated as a divisional application from the Parent Application filed before the Patent Office, Kolkata, in accordance with

Section 16 of the Patents Act read with the Patent Rules, 1972.[48] A divisional application, once submitted, is independently examined by the Patent Office, separate from the parent application. It goes through the same examination process as any other patent application, and objections can be raised independently of the parent application.

90. Under Rule 4 of the 1972 Rules, the "appropriate office" for an applicant without a place of business in India is determined basis the address for service provided by the applicant. In this case, the Parent Application was filed in Kolkata, where the Plaintiff was represented by Cantwell & Co., listing the address for service in Kolkata. Conversely, the Divisional Application for the Suit Patent was filed before the Patent Office, Chennai with DePenning & DePenning as the agents on record, whose address for service was in Chennai. Pertinently, on the date of filing of the application for the Suit Patent, there was no embargo under the Patents Act or the 1972 Rules on filing of a divisional application before a different Patent Office. Since the jurisdiction for patent filings is determined by the address for service submitted by the applicant, the Plaintiff has adequately explained the reason for filing the Divisional Application before the Patent Office, Chennai. Consequently, this ground urged by the Defendants is found untenable.

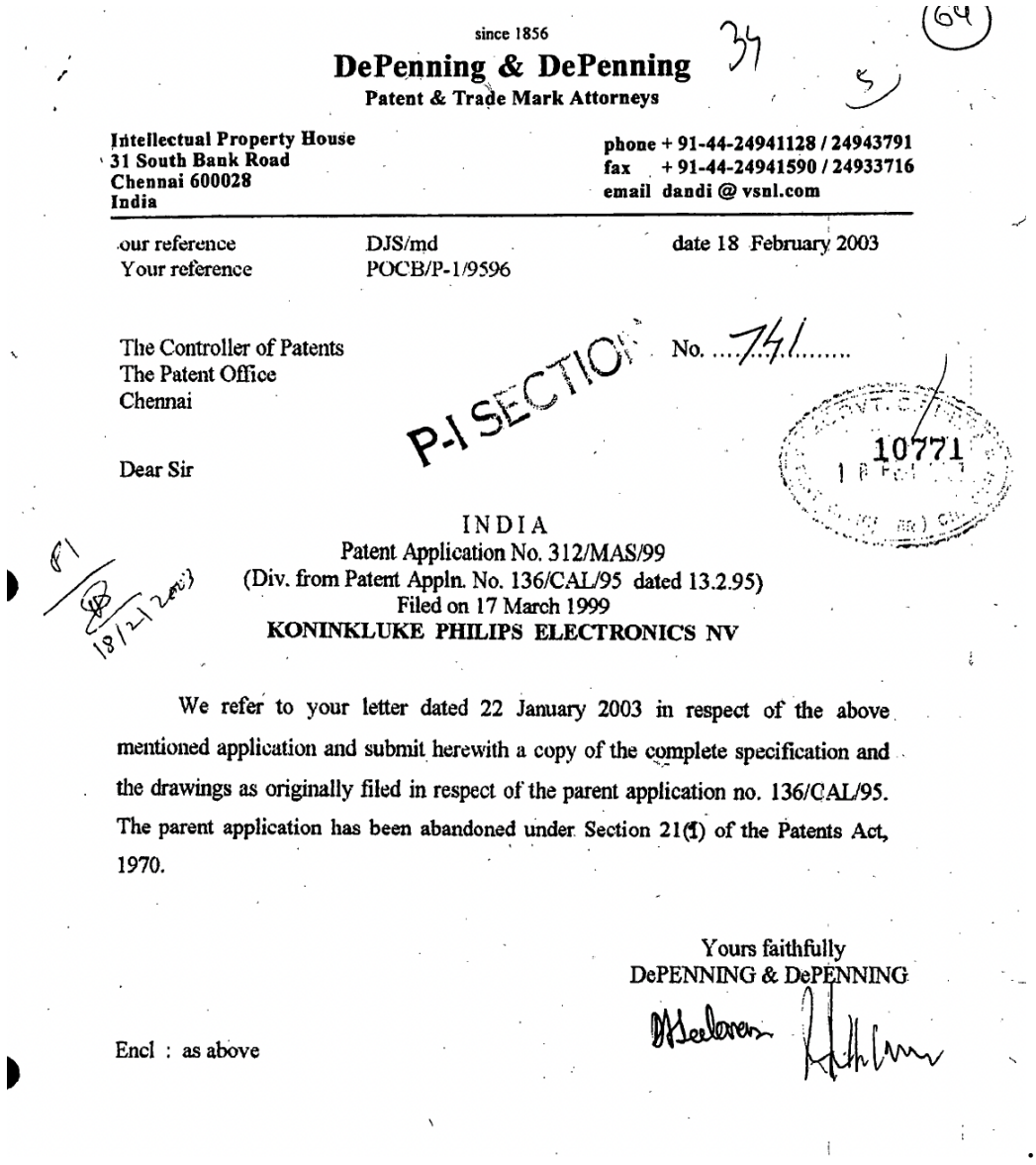
91. The Defendants asserted that the Plaintiff deliberately withheld information regarding the abandonment of the Parent Application, alleging that while the Parent Application lapsed, the Plaintiff pursued the Divisional Application, ultimately securing the grant of the Suit Patent. However, this assertion is flawed. Under the framework of the Patents Act, a divisional

[48] "1972 Rules."

application can be filed while the parent application is pending, and has not culminated in the grant of patent. The Parent Application in this case was filed on 13th February, 1995 and was deemed abandoned on 22nd March, 1999 under Section 21 of the Patents Act because the necessary procedural steps for its prosecution were not completed within the prescribed timeframe.

92. Clearly, the Parent Application lapsed after the Divisional Application had already been filed on 17th March, 1999. Consequently, there was no legal impediment preventing the Plaintiff from filing the Divisional Application. Furthermore, the Defendants have also failed to provide cogent evidence, demonstrating the Plaintiff's intent to circumvent the provisions of the Patents Act. Therefore, the subsequent abandonment of the Parent Application due to efflux of time has no bearing on the validity of the filing or scrutiny of the Divisional Application.

93. Further, the Plaintiff ensured that all necessary details regarding the Parent Application were available to the examiner during the scrutiny of the Suit Patent. This is evinced from the clear reference to the Parent Application in Form 1 of the Divisional Application. Far from suppressing this information, the Plaintiff explicitly informed the Patent Office on 18th February, 2003 about the deemed abandonment of the Parent Application while prosecuting the Divisional Application. The letter dated 18th February 2003, issued by the Plaintiff's patent agent to the Patent Office is extracted below:



since 1856

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our reference DJS/md date 18 February 2003
Your reference POCB/P-1/9596

The Controller of Patents
The Patent Office
Chennai

P-I SECTION No. 741

10771

Dear Sir

INDIA
Patent Application No. 312/MAS/99
(Div. from Patent Appln. No. 136/CAL/95 dated 13.2.95)
Filed on 17 March 1999
KONINKLUKE PHILIPS ELECTRONICS NV

We refer to your letter dated 22 January 2003 in respect of the above mentioned application and submit herewith a copy of the complete specification and the drawings as originally filed in respect of the parent application no. 136/CAL/95. The parent application has been abandoned under Section 21(1) of the Patents Act, 1970.

Yours faithfully
DePENNING & DePENNING

Encl : as above

94. The Plaintiff has thus, demonstrated that they acted in compliance with the statutory framework and maintained transparency with the Patent Office. The abandonment of the Parent Application was not a result of any deliberate action on the Plaintiff's part, but a legal consequence of non-prosecution within the statutory timeline. The absence of an express mandate to disclose reasons for abandonment, coupled with the compliance

in submitting the Parent Application's details upon request, supports the Plaintiff's position that there was no suppression or misrepresentation during the prosecution of the Suit Patent. This procedural aspect highlights that the Divisional Application for the Suit Patent was filed in accordance with the statutory framework in place, at that time.

III.III.II. ***Re: Overlap in the claims of the Parent Application and the consequential divisional applications***

95. It is well established that a patent applicant may file a divisional application to seek protection for multiple inventions disclosed in the original application provided they do not constitute a single invention or a single inventive step.[49] Section 16(2) of the Patents Act mandates that a divisional application must be accompanied by a complete specification that does not introduce new matter beyond what was disclosed in the parent application. This ensures that the divisional application remains substantively linked to the original disclosure, safeguarding the integrity of the patent process, and preventing the introduction of novel content that was not part of the original filing. Further, Section 16(3) requires that the claims of the divisional application should not overlap with those of the parent application to prevent double-patenting. Double-patenting occurs when an applicant attempts to obtain more than one patent for the same invention, which undermines the principle of limited patent exclusivity and can unfairly extend monopoly rights.

96. At the same time, it is important to comprehend that a divisional application inherently stems from a parent application, and by its very

[49] *See*: ***Syngenta Limited v. Controller of Patents and Designs***, 2023 SCC OnLine Del 6392.

nature, will contain claims that correspond to disclosures made in the original filing. This principle is expressly recognized under Section 16 of the Patents Act, which empowers the Controller to permit or require the division of an application where it discloses more than one invention. The provision ensures that an applicant can pursue distinct aspects of an invention separately, without jeopardizing the integrity of the original disclosure. The critical requirement, however, is that the claims in the divisional application must find their basis in the parent application – they cannot introduce new subject matter beyond what was originally disclosed.

97. Thus, the statutory framework acknowledges that an invention often comprises multiple technical advancements, which may merit distinct patent protection. By allowing division, the Patents Act strikes a balance between preventing claim proliferation and ensuring that applicants can adequately protect all disclosed innovations. The claims in the divisional application must however, be derived from the parent application, and nothing new can be introduced beyond the original disclosures. This ensures that the divisional application remains a lawful extension of the original filing rather than an attempt to circumvent the principles of patent law by introducing fresh claims *post facto*.

98. The Plaintiff has substantiated its position that the Divisional Application leading to the Suit Patent was lawfully derived from the Parent Application, in terms of Section 16. The responses elicited during cross-examination confirm that the Parent Application originally disclosed multiple aspects of the inventive concept, necessitating their segregation into separate divisional patents. This can be seen from the following responses of PW-2:

Cross-examination conducted on 06th August, 2014:

"Q.327 You have studied the records of the internal file reference No. 14.746 of which the suit patent forms the family. I put it to you that in India, this family consists of one parent patent application 136/CAL/ 1995, which was abandoned, and five Divisional Patents to the same invention being Patent Nos. 185349, 184753, 221405, 221406 and 218255?

Ans: ***That is correct. However, the divisional patents relate to different aspects of the same invention.***

xx ... xx ... xx

Q.331 Please refer to your answer to Q.327 where you stated that the divisionals related to the different aspects of the same invention. Were these different aspects of the same invention not present in the parent application 136/CAL/1995 which was abandoned?

Ans. ***They were all present in the parent application***."

[Emphasis Supplied]

Cross-examination conducted on 06th August, 2014:

"*Q.397 I put it to you that all six documents i.e. the patent specification of 136/CAL/1995, Indian Patent No.184753, Indian Patent No. 185349, Indian Patent No.221405, Indian Patent No.221406 and Indian Patent No.218255 contain claims which are overlapping each other in the respective documents.*

Ans. ***The patent specification of the parent 136/CAL/1995 contained all claims relating to different aspects of the inventive concept, but has not been granted. Hence, this patent specification cannot be taken into account. The granted patents all contain different claims relating to different aspects of the same inventive concept, and as such, those claims all have different scopes and are not considered to be overlapping***."

[Emphasis Supplied]

99. Under Section 16 of the Patents Act, a divisional application can be filed if the original patent application discloses multiple inventions that do not form a single unified inventive concept. This means that the patent specifications or claims encompass multiple inventions or a group of inventions that do not share a single overarching inventive concept, and fall under different categories. This provision ensures that each distinct

invention is examined and patented separately, preventing the inclusion of unrelated claims within a single application. Here, the Parent Application consisted of 39 claims, covering various aspects such as system, method, coding device, signal, record carrier, decoding device, and reading device. These claims were subsequently divided, with method claims 2-12 and the record carrier (claim 33) eventually forming the 13 claims of the Suit Patent.

100. In response to Q.327, PW-2 acknowledged that the Suit Patent, along with five other patents, stemmed from the same Parent Application, reinforcing the argument that the claims were divided to protect distinct facets of a broader invention. Further, in response to Q.331, the witness affirmed that all the claimed aspects in the divisional patents were originally disclosed in the Parent Application, negating any suggestion of an improper extension of scope. When confronted with Q.397 regarding overlapping claims, PW-2 clarified that while the Parent Application encompassed all aspects of the invention, the granted divisional patents were structured to protect different elements, each maintaining a distinct scope.

101. The Defendants' argument that the Divisional Application for the Suit Patent impermissibly overlaps with the Parent Application overlooks the statutory mandate that a single patent application cannot encompass multiple inventions. The Defendants have failed to establish a credible challenge to the Suit Patent based on non-compliance with Section 16. Their objection is solely premised on the alleged overlap of claims between the Parent and Divisional Applications, lacking substantiation. Given that the Divisional Application originated from the Parent Application, the Parent Application is expected to originally contain the same or related claims. The afore-noted analysis confirms that the claims in Suit Patent are distinct from those in the

Parent Application, thereby meeting the legal requirement under Section 16 to avoid double-patenting.

Conclusion

102. The Plaintiff has demonstrated that the Suit Patent complies with the statutory requirements for divisional applications under Section 16 of the Patents Act. The fact that the Parent Application was abandoned does not invalidate the Divisional Application so long as the latter met the statutory conditions before the Parent Application's grant or termination. Pertinently, it was filed while the parent was still pending. The evidence confirms that the Divisional Application claims a distinct invention without overlapping the claims of the Parent Application, and there is no evidence of procedural impropriety or double-patenting. Hence, this ground of invalidation of the Suit Patent is rejected.

III.IV. *Whether the claims of the Suit Patent lack clarity and whether the complete specification fails to sufficiently and fairly describe the invention or disclose the best method of performing it, thereby rendering the patent liable for revocation under Section 64(1)(h) and (i) of the Act.*

III.IV.I. *Sufficiency of Disclosure under Section 64(1)(h) and claim scope and fair basis under Section 64(1)(i)*

103. Section 64(1)(h) provides that a patent is liable to be revoked if the complete specification does not sufficiently and fairly describe the invention and the method by which it is to be performed. This requirement is fundamental for ensuring that a patent applicant fully discloses their

invention in exchange for exclusive rights. The test under Section 64(1)(h) primarily revolves around two key aspects:

(a) *Enabling Disclosure* – the specification must provide enough detail for a person skilled in the art to replicate and use the invention without undue experimentation. If the description is vague, ambiguous, or leaves significant gaps, the patent may be revoked; and

(b) *Best Mode Requirement* – the applicant must disclose the best method of performing the invention known to them at the time of filing. This prevents patentees from securing broad protection while withholding critical implementation details.

104. Section 64(1)(i) deals with two distinct but related concerns, namely:

(a) *Lack of Clear Definition*: if a patent claim is vague, excessively broad, or ambiguous, it fails to meet the requirement of definiteness. The claims must be precise enough to inform third parties of the exact boundaries of the patentee's rights; and

(b) *Fair Basis in Specification*: the claims must be supported by the disclosure in the complete specification. This ensures that a patentee does not claim more than what is actually described and enabled in the patent.

105. The Defendants contended that the complete specification of the Suit Patent does not sufficiently and fairly describe the invention, making it impossible for a person skilled in the art to work the invention without undue effort. They claimed that certain critical aspects of the technology are either missing or ambiguously described, rendering the Suit Patent susceptible to revocation. According to the Defendants, the scope of claim 12, which pertains to the record carrier, is unclear and overly broad, making it difficult to determine what falls within its ambit. The claims do not clearly

distinguish between the encoding method and the resulting product, leading to an alleged lack of fair basis in the specification. They highlight that during cross-examination, the Plaintiff's witness could not provide precise answers regarding specific implementation details, which, according to the Defendants, highlights ambiguity in claim scope.

106. The Defendants' objections regarding the alleged insufficiency of disclosure in the Suit Patent pertain to the following aspects:

106.1. Lack of clarity on the modulated signal formation: The Suit Patent fails to describe how information words are converted into a modulated signal in a manner reproducible by a person skilled in the art.

106.2. Unclear description of modulator circuit: While the complete specification mentions a modulator circuit, it does not provide adequate technical details on how it functions.

106.3. Computation of Digital Sum Value[50] not defined: There is an insufficiency in describing the computation of DSV and its relationship with new DSV values.

106.4. Ambiguity in Customary Type: Using the phrase "customary type" to describe the control circuit 141 makes it impossible for a skilled person to replicate the functioning of the invention.

106.5. Claim 12 does not explain how a record carrier is "provided" with a modulated signal: claim 12 lacks sufficient guidance on how a modulated digital signal is stored on a record carrier.

106.6. Difference between the Suit Patent and DVD Specifications: The code words in the Suit Patent do not match the DVD format, and therefore, are inapplicable to DVDs.

106.7. Missing columns in Figures 2B and 2D: Columns are missing in the Suit Patent's tables, making it impossible for a skilled person to carry out the conversion of information words to code words.

The legal principles

107. The Courts have consistently emphasized that a patent is not a mere idea – it must provide sufficient information to be carried into effect. The standard applied is that of a person skilled in the relevant art. If such a person is unable to work the invention based on the disclosure, the patent may be revoked. The key consideration is whether the disclosure enables a skilled person to put the invention into practice without undue effort. In ***Novartis AG v. Union of India***,[51] the Supreme Court emphasized the importance of a clear and complete specification, holding that an invention must be fully and precisely disclosed so that it can be worked by others after the patent expires. In ***Bishwanath Prasad Radhey Shyam v. Hindustan Metal Industries***,[52] the Supreme Court ruled that a lack of clarity or definiteness in claim scope may render a patent vulnerable to revocation. The Division Bench of this Court, in ***Merck Sharp and Dohme Corporation*** *(Supra),* held that claims must be fairly based on the specification and that any speculative extension beyond the disclosed invention would be impermissible.

108. The requirement as per Section 64(1)(h), as discussed above, is that the complete specification must disclose the invention in a manner that enables a person skilled in the art to implement it without undue

[50] "DSV."
[51] (2013) 6 SCC 1.
[52] (1979) 2 SCC 511.

experimentation. It must also include the best method known to the patentee for carrying out the invention at the time of filing. However, the courts have consistently held that a patent cannot be revoked merely on the ground that the language of the specification is imperfect or lacks technical elegance. The law does not require a patent specification to exhaustively detail well-established scientific principles or routine design choices that a person skilled in the art would naturally infer, without undue effort. Proceeding on this basis, the Court now examines the Defendants' contentions.

Modulation process and sufficiency of description

109. A key contention of the Defendants is that claim 1 of the Suit Patent fails to sufficiently describe the conversion of code words into a modulated signal. They argued that while the claim preamble refers to a method of converting information words into a modulated signal, the subsequent claim elements only describe the conversion of information words into code words. The Defendants assert that the modulation step is unclear, and the modulator circuit (58), which purportedly performs this step, is not explicitly detailed. However, this argument does not hold merit. PW-2, in his cross-examination in CS (COMM) 519/2018, clarified that the claims of the Suit Patent describe a process that follows the rules provided in the patent specification, and that the necessary modulation process is inherent in the claimed method. He stated as under:

> *"Q.127 Please refer to the coding tables which are attached to the specification of the suit patent PW-2/A/5 and particularly pages 39 to 50 of the court file i.e. Figures 2A, 2B, 2C, 2D, 2E, 2F, 2G, 2H, 2J, 3a, 3b and 3c. Is it correct that every time the method of EFMPlus is required to be used for channel modulation these tables have to be referred to?*

Ans. *The tables which are specified in the DVD Disc Specifications are used when employing the method of the claims of the patent in suit.*

xx *…* *xx* *…* *xx*

Q.183 *Please turn to the patent specification in suit (Exh. PW-2/A/5) and please turn to the Figures 2A to 2J and particularly look at figures 28 and 2D. Will it be Possible for a person in the absence of those state columns in those figures to convert information words to code words as envisaged in claim 1 of the suit patent?*

Ans. ***For a person skilled in the art it would be possible because the essence of the invention is not in the state column of V4.***

Q.184 *Would it be possible for him to code all information words in the absence of those states as envisaged in the claims? Emphasis being on all information words.*

Ans. ***In my view, a person skilled in the art would be able to do so****."*

[Emphasis Supplied]

110. Further, PW-2, when confronted with the differences between the coding tables in the Suit Patent and those in the DVD Standard, clarified that the coding tables are mere embodiments and not limitations of the claims:

"Q.131 *I now show you Exh. PW-2/A/6 and particularly pages 98 to 104 and simultaneously look at the coding tables referred to in Figures. Can you identify any differences between the coding tables provided in Exh. PW-2/A/6 and the coding tables attached to the patent specification of the suit patent PW-2/A/5? Please take your time as this is crucial to this case.*

Ans. ***First of all, I want to mention that even if there are differences between the coding table in the patent in suit and the coding table in the DVD Disc specifications, this is not relevant because the claims of the patent in suit do not contain a coding table. A coding table is only an embodiment used while performing the method of the claims of the patent in suit****.*

I will now compare data symbol 46 of the main conversion table of Fig.2B with the conversion table in the DVD Disc specifications on internal page PH-56 and I see that for state 1 in the DVD specifications the code word reads as 0010010010000010 and in the Fig. 28 of the patent specification it reads for the same state 1, 0000010000000010. So, those code words are different but as said before, this is immaterial to the question of infringement of the claims of the patent in suit."

[Emphasis Supplied]

111. This statement is significant because it reinforces that the coding methodology is not limited to any particular table, but rather to the conversion principles disclosed in the Suit Patent. Furthermore, the patent specification itself provides sufficient technical detail on how the modulated signal is generated using a series of n-bit code words. The modulator circuit (58), while not described in exhaustive hardware detail, is an industry-standard component whose operation would be readily understood by a person skilled in optical storage technology. The law, as discussed above, does not require a patent to provide a step-by-step guide on implementing well-known components, so long as the disclosure enables a skilled person to perform the invention without undue experimentation.

112. In light of the above, the Defendants' challenge on this aspect under Section 64(1)(h) of the Patents Act fails, as the Suit Patent sufficiently and fairly describes the invention and the method by which it is to be performed.

Computation of DSV and enabling disclosure

113. The Defendants next contended that the Suit Patent does not provide sufficient details on how the DSV is computed, particularly in relation to Figure 4. They argued that the absence of explicit formulae or computational mechanisms makes it impossible for a skilled person to determine the DSV or the new DSV.

114. However, this contention ignores the fact that the computation of DSVs is a standard part of Run-Length Limited coding used in optical storage technology. The DSV adjustments are an inherent part of ensuring reliable modulation and playback – a concept well understood by anyone skilled in digital modulation techniques. PW-2 clarified in his cross-

examination in CS (COMM) 519/2018 that DSV computation is a standard practice in digital storage technology. He stated:

> *"Q.152 I request you to look to the suit patent specification (Exh. PW2/A/5) and particularly the drawings Fig. 2A to 2J at pages 39 to 47. In for e.g., Fig 2A, is it correct to say that the string of numbers shown in columns VI, V2, V3 and V4 represent the code words mentioned in the specification and the claims?*
>
> *Ans. They represent an embodiment of the set of code words mentioned in the claims and specification.*
>
> *Q.153 Do each of the numerals within the code words represent a channel bit?*
>
> *Ans. That is correct.*
>
> *Q.154 And I am again referring to the same figures 2A to 2J to the numbers appearing between these columns VI, V2, V3 and V4. Do they represent data symbols or information words?*
>
> *Ans. No. They do not.*
>
> *Q.155 Then what do they represent?*
>
> *Ans. They represent states.*
>
> *Q.156 And what do the first column of numbers on all these drawings starting from page 39 to 47 i.e. Number _0' to _255' represent.*
>
> *Ans. Covered by the claims of the patent, they represent data symbols and/or information words of an embodiment of the main conversion table of the invention.*
>
> *Q.157 Can you give me example of any other embodiment of these data symbols that are possible besides what is given in this first column?*
>
> *Ans. There is another embodiment of the main conversion table including the first column in the DVD Disc specifications (Exh. PW-2/A/6).*
>
> *xx ... xx ... xx*
>
> *Q214 What are the rules of logic for including each channel bit for forming the code word?*
>
> *Ans. The whole coding table is formulated such that it complies with all aspects of the invention - for example there are separate features concerning the d/k constraints, DC contents of the modulated signals, next code words identification etc. which determine where there should be a '0' or where there should be 1 in the code word."*

115. The Suit Patent does not claim the computation of DSV as an inventive feature; rather, it applies known DSV balancing techniques as part

of the encoding process. The Defendants' argument, therefore, seeks an unnecessary level of disclosure that is not legally required.

Claim 12 and the record carrier with modulated signal

116. The Defendants' objection regarding ambiguity in claim 12 is misplaced. The scope of claim 12 is precisely defined – it pertains to a record carrier (such as a DVD) that contains the EFM+ encoded signal, regardless of how it is manufactured. The claim construction suggests that DVDs containing the specific encoded format resulting from the patented method are included within claim 12. The claims are fairly based on the matter disclosed in the specification.

117. Claim 12 pertains to a record carrier containing the modulated signal obtained by the claimed method. The Defendants argued that the Suit Patent does not explain how digital values are recorded onto a physical track, and the term "providing" a record carrier with the modulated signal lacks clarity. However, claim 12 is directed at a record carrier that stores the modulated signal produced by the claimed method. The defining feature of the record carrier is the presence of the encoded modulated signal, not the specific technique used to store it. The Suit Patent does not claim novelty in the storage medium itself – rather, it claims the encoding method that results in the modulated signal. As long as the record carrier contains the modulated signal, it falls within the scope of claim 12. This technical distinction was clearly addressed in the cross-examination of PW-2 in CS (COMM) 519/2018, who stated:

> *"Q.171 If as the plaintiff alleges that the Defendant has made and sold a DVD, will it be possible for the defendant to make a DVD specifically using the code words appearing in the columns VI, V2, V3 and V4 of Fig. 2A to 2J of Exh PW-2/A/5.*

Ans. ***It will be possible to make a optical disc specifically using these code words but it may not be called a DVD because it would not comply with the DVD by the claims of the Patent in suit.***

Q.172 According to the tests that you have done on the Defendants' alleged optical discs, have they used the conversion tables according to the patent specification (Exh. PW-2/A/5) or the conversion tables according to the DVD specification (Exh. PW-2/A/6).

Ans. They have used the conversion tables according to the DVD specification"

[Emphasis Supplied]

118. Thus, while claim 12 is broad, it is not ambiguous. The presence of the modulated signal is the defining characteristic, and the choice of storage medium remains flexible, making it fully compliant with the requirements of the Patents Act. Accordingly, the Defendants' challenge to the Suit Patent under Section 64(1)(i) fails.

Ambiguity in the description of Control Circuit 141

119. The Defendants claimed that the phrase "customary type" used to describe Control Circuit 141 is vague and does not enable a skilled person to reproduce it. This contention lacks force since the Suit Patent does not claim innovation in the design of Control Circuit 141, it merely refers to it as a conventional component that generates control signals for a write head, which then inscribes the modulated signal onto the record carrier. The term "customary type" simply indicates that this is a standard circuit well known in the industry, making further elaboration unnecessary.

120. This point was explicitly addressed by PW-2 in cross-examination in CS (COMM) 519/2018, who confirmed as under:

"Q.183 Please turn to the patent specification in suit (Exh. PW-2/A/5) and please turn to the Figures 2A to 2J and particularly look at figures 28 and 2D. Will it be possible for a person in

the absence of those state columns in those figures to convert information words to code words as envisaged in claim 1 of the suit patent?

Ans. ***For a person skilled in the art it would be possible because the essence of the invention is not in the state column of V4.***

Q.184 Would it be possible for him to code all information words in the absence of those states as envisaged in the claims? Emphasis being on all information words.

Ans. ***In my view, a person skilled in the art would be able to do so.***

Q.185 Are you such a person skilled in the art?

Ans. I have good general knowledge of optical storage technology. I think with the help of experts I would be able to retrieve the missing information.

Q.186 You are speaking on behalf of yourself or on behalf of experts?

Ans. ***I am speaking on behalf of both****."*

[Emphasis Supplied]

121. The Patents Act does not require a patentee to provide exhaustive design details of known components. It is sufficient if the description, when read as a whole, allows a skilled person to implement the invention without undue effort. The Defendants have failed to demonstrate how a skilled professional in optical storage technology would struggle to implement a control circuit that simply generates a signal for a write head – a fundamental and well-documented function in the industry.

122. Furthermore, Control Circuit 141 is described in conjunction with the broader system architecture, ensuring that a skilled person can understand how it integrates with the rest of the invention. The specification provides clear guidance on the modulation process and signal encoding, which are the core inventive aspects of the Suit Patent, leaving the implementation of standard hardware components to well-established engineering knowledge.

123. Thus, this objection also lacks merit and does not meet the threshold required under Section 64(1)(h).

Variations in coding tables and alleged missing information

124. The Defendants claimed that the Suit Patent's coding tables differ from those in the DVD Standard. Certain states are missing from Figures 2B and 2D, making full implementation impossible. However, PW-2's testimony in CS (COMM) 519/2018 refutes this assertion. The relevant portions are reproduced below:

> *"Q.133 Therefore logically, if a person strictly uses the coding tables disclosed in the patent specification, which coding tables are referred to in Q.127 and which you have answered to Q. 131 may not conform to the coding tables of the DVD Disc specification, it is not possible to generate modulated signals that could be recorded on a disc which is capable of being considered as a "DVD".*
>
> *Ans.* ***Both a disc produced with the modulated signals of the coding tables of the patent in suit and a disc produced with the modulated signals of the coding tables of the DVD Disc specification would be covered by all claims of the patent in suit*** *and only the disc produced with the coding tables of the DVD disc specifications could be called a DVD."*
>
> *xx ... xx ... xx*
>
> *Q.169 I put it to you that nowhere in the specification of the suit patent the applicant stated that the code words are mere embodiments and that alternative embodiments of the code words are possible.*
>
> *Ans. In the patent specification it is several times mentioned that there are different embodiments. At internal page 11, line 3 of the patent specification, it reads _Fig. 2 shows by way of illustration', etc. I interpret this as an indication of an example 'embodiment'. At internal page 21, line 13, it is stated that Fig 12 by way of example a record carrier etc'. I interpret this as an embodiment.*
>
> *xx ... xx ... xx*
>
> *Q.171 If as the plaintiff alleges that the Defendant has made and sold a DVD, will it be possible for the defendant to make a DVD specifically using the code words appearing in the columns VI, V2, V3 and V4 of Fig. 2A to 2J of Exh PW-2/A/5.*
>
> *Ans. It will be possible to make a optical disc specifically using these code words but it may not be called a DVD because it*

would not comply with the DVD by the claims of the Patent in suit."

Emphasis Supplied]

125. The tables are embodiments, not limitations. The invention is not restricted to one specific table, and a skilled person can apply the method using different tables. The missing columns in Figures 2B and 2D do not prevent implementation, as a skilled person could derive the necessary values based on the principles disclosed.

Best method disclosure

126. The Defendants also contended that the Suit Patent fails to disclose the best method of performing the invention. However, this argument is misplaced. The requirement to disclose the best method known to the patentee does not necessitate an explicit statement identifying a single, definitive method. Rather, it suffices if the complete specification, when read as a whole, provides adequate guidance for a person skilled in the art to implement the invention without undue effort and achieve the intended technical effect. The evidence demonstrates that the Suit Patent discloses multiple embodiments of coding techniques, offering sufficient guidance to skilled persons in the field. The primary technical goal of the Suit Patent is to encode data in a manner that maximizes storage density and ensures reliable retrieval. The patent provides clear and structured instructions on: (a) mapping information words to code words, (b) maintaining DSV constraints, and (c) optimizing the encoded signal for error correction and efficient playback. These disclosures collectively ensure that the claimed invention functions equip a skilled person with the necessary knowledge to reproduce the invention without speculative guesswork. PW-2, during his

cross-examination, confirmed that the method is fully reproducible by a skilled person. He explained that the presence of multiple embodiments does not create ambiguity, rather offers alternative implementations of the same inventive concept. He also clarified that the modulated signal generated using the coding table in the Suit Patent is distinct, but fully covered by the claims, ensuring that a skilled person can execute the method. The relevant extract of his testimony is extracted hereinunder:

> *"Q.199 I now ask you to look at patent no.185349 (already exhibited as Ex.PW/D-9) which relates to the device for coding and since the description is substantially the same as the description of the suit patent specification. Could you point out from the specification and the drawings of the suit patent (already exhibited as Ex.D-6) which are the device or devices or the description of these device or devices which form the inventive feature of patent no.185349?*
>
> *Ans:* ***At internal page 2 of the suit patent, (portion C to CI at Internal page no.2 of the suit patent Ex.D-6) is stated that the invention further relates to a coding device for performing the method as claimed, this device comprising an m-to-n bit converter for converting the m-bit information words to n-bit code words, and means for converting the n-bit code words to a modulated signal.***
>
> ***At internal page 6 of the suit patent at paragraphs (marked D to DI at internal page no.6 of the suit patent Ex.D-6) At internal page 8 of the suit patent at paragraphs (marked E to E1 at internal page no.8 of the suit patent Ex.D-6 excluding figures 11, 12 and 13) a short description of the figures it reads Figs. 6, 7, 8 and 9 shows various embodiments for coding devices. Fig.7 shows an embodiment for a selection circuit to be used in the coding device shown in Fig.6; Fig.14 shows a recording device which includes a coding device; Fig.10 shows an adaptation of the coding device of Fig. 6 for the insertion of sync words. Starting at internal page 17 line 13 to internal page 22 line 21 (marked F to F1 at internal page no.8 of the suit patent Ex.D-6) the figures 6, 7, 8 and 10 are described.***
>
> ***At internal page 24 line 30 to internal page 25 line 4 (marked G to G1 at internal page no.24 and 25 of the suit patent Ex.D-6) and of course the portions which describe the method of coding at internal page 2 first paragraph (marked***

H to H1 at internal page no.2 of the suit patent Ex.D 6). At internal page no.5 third paragraph to internal page 6 first paragraph (marked I to I-1 at internal page no.5 and 6 of the suit patent Ex.D 6). At internal page 8 with the short description of the figures 1 to 4, 16 and 17 (marked J to J1 and K to K1 at internal page no.8 of the suit patent Ex.D-6). At page no.8 line 30 to internal page no.17 line 12 (marked L to LI at internal page no.8 to 17 of the suit patent Ex.D-6). At internal page 23 line 12 to internal page 24 line 12 (marked M to M1 at internal page no.23 & 24 of the suit patent Ex.D-6) and figures 1, 2, 3, 4, 6, 7, 8, 9, 10, 14, 16 and17.

Q200 I now ask you to look at patent no.184753 (already exhibited as Ex.PW/D 8) which relates to the device for de-coding and since the description is substantially the same as the description of the suit patent specification. Could you point out from the specification and the drawings of the suit patent (already exhibited as Ex.D-6) which are the device or devices or the description of these device or devices which form the inventive feature of patent no.184753?

Ans: At internal page 3 first and second paragraph respectively (marked N to N1 at internal page no.3 of the suit patent Ex.D-6) mention the de- coding device and a reading device in which a decoding device of this type is used. At internal page 8 short description of the figure 11 and figure 15. Page 22 line 22 to page 23 line 11 (marked 0 to O-1 at internal page no.22 & 23 of the suit patent Ex.D-6). Page 25 line 5 to 12 (marked P to P1 at internal page no.25 of the suit patent Ex.D- 6) and figures 11 and 15.

Q201 I now show you an article titled "EFMPlus: The Coding Format of the Multimedia Compact Disc" (now exhibited as Ex.PW-2/D-12). Is it correct that this article was written by the inventor of the suit patent?

Ans. That is correct.

xx … xx … xx

Q209 What would be the difference in the modulated signal if the coded words provided in figures 2A to 2JI of the patent specification (Ex.PW-2/A/5) were to be used for converting the information words (data symbols) as compared to the modulated signal produced using the coded words provided in the DVD physical specification for the same data symbols (Ex.PW-2/A/6). You may assume that the same set of information words / data symbols are used in both cases.

*Ans. **If the coding table which is shown in the patent in suit is used the modulated signal would be according to this table. If***

the coding table of DVD Disc physical specification is used the modulated signal would be according to that table.

Q210 Will the two respective modulated signals given in answer to Q.209 be different?

Ans. Yes. (Vol.) But both are still covered by the claims of the patent in suit.

Q211 Please look at US Patent No.5206646 (Ex.PW-2ID-7), the Sony Patent. If the coding table which is shown in figures 28 to 2H are Used for converting the information words (data symbols) as compared to the modulated signal produced using the coded words provided in the DVD physical specification for the same data symbols (Ex.PW-2/A/6), will the modulated signals be different or same? You may assume that the same set of information words / data symbols are used in both cases.

Ans. It would be different and not according to the claims of the invention of the patent in suit."

[Emphasis Supplied]

127. Significantly, PW-2, in his cross-examination, confirmed that the method is fully reproducible by a skilled person. He further clarified that the presence of multiple embodiments does not create ambiguity, as they simply offer alternative implementations of the same inventive concept.

Conclusion

128. The complete specification of the Suit Patent clearly lays out the invention, including the method of encoding and the structure of the record carrier. The technical description provides a step-by-step breakdown of the modulation process and the rationale for using the EFM+ coding technique.

128.1 The Defendants have failed to show any evidence that a skilled person in the field of optical disc technology would be unable to implement the invention using the provided disclosure. The cross-examination of PW-2 confirms that the Suit Patent details the coding process sufficiently, allowing manufacturers to adopt and implement the technology. The best method of

performing the invention was disclosed to the extent known at the time of filing.

128.2 The Defendants have not demonstrated that the Plaintiff withheld any superior method available to them. PW-2 in his cross-examination confirmed that the specification describes the EFM+ modulation technique and its integration into a record carrier. Further, he has established that the Suit Patent fully details the method used for encoding, addressing concerns about sufficiency.

128.3 Thus, the Defendants' objections under Section 64(1)(h) and 64(1)(i) of the Patents Act are without merit, as the disclosure meets the required standard and enables a skilled person to work the invention without undue experimentation.

III.V. ***Whether the claims of the complete specification of the Suit Patent are not patentable or not an invention under Section 64(1)(k) and Section 64(1)(d)?***

129. The Defendants raised objections under Section 64(1)(k) and Section 64(1)(d), contending that the claims of the Suit Patent are not patentable under the Patents Act, and do not qualify as an 'invention.' Their submissions and evidence in this regard are set out below:

129.1. The method disclosed in the Suit Patent involves performing a mental act according to a set of rules or schemes and therefore, does not qualify as an invention under Section 3(m) of the Patents Act.

129.2. The mental act claimed in the Suit Patent, when executed by a device using a computer program, simply accelerates the process of selecting information words and converting them into code words analogous

to a modulated signal. As these operations are carried out by a device through a computer program that follows an algorithm for a coding technique, the invention falls within the exclusions of Section 3(k), which bars computer programs *per se* from patentability.

129.3. The Suit Patent discloses a computer-related invention executed through non-novel hardware, which is the subject matter already covered by the Suit Patent. Thus, the Suit Patent lacks the requisite novelty, and is therefore, not patentable.

129.4. Referring to the affidavit of Mr. Chirag Tanna, DW-2, the Defendants argued that the European Patent Office considers computer programs patentable only if they provide a technical contribution in comparison with the prior art. However, the Suit Patent does not meet this criterion. The prior art already disclosed the conversion of 8-bit information words to 16-bit code words, including the selection of a code word from a group of possible code words based on a preceding code word. This indicates that the core aspects of the process in the Suit Patent were known before its filing.

129.5. The structure of the claims in the Suit Patent includes a "characterized in that" portion. The prelude to this section in the claim refers to a method of converting m-bit information words to a series of n-bit code words. This prelude is well-established in prior art. Specifically, the use of d,k constraints to obtain code words and modulated signals was already known in the field. The "characterized in that" portion of the claim only pertains to a method of classifying code words to form look-up tables. This step, central to the claimed invention, is purely a mathematical operation and lacks any technical contribution that would advance the state of the art. The

Suit Patent, as claimed, represents an advancement confined to mathematical classification without any substantial technical application or contribution that differentiates it from prior art. While advancements in mathematical theory can be significant, they do not qualify for patent protection unless they provide a tangible, technical effect beyond the abstract theory itself.

129.6. The claims in the Suit Patent lack any specific hardware elements, focusing instead on the steps that describe instructions for converting m-bit information words into a series of n-bit code words selected from a group of code words. The claims essentially describe a process that could be executed by software, and as such, fall within the exclusion under Section 3(k) of the Patents Act.

129.7. If software is integrated with hardware elements, but the inventive contribution lies primarily in the software – or if the software is combined with generic hardware such as components of a general-purpose computer or an information storage medium – then the claim should not be deemed patentable. The threshold for patentability would only be met if the hardware itself represents an inventive contribution that meets the statutory criteria of novelty, non-obviousness, and industrial applicability.

129.8 The claims in the Suit Patent fail to meet this standard as they do not disclose any novel hardware elements or suggest that the claimed process yields a technical effect through a specific hardware configuration. While hardware may be referenced in the specification, the inventive step must reside within the claimed subject matter, not just in the implementation details described.

129.9. Claim 1 of the Suit Patent does not involve any tangible output from the software, apart from producing a series of code words represented

as numerical values in binary format. This input and output data structure reinforces that claim 1 represents an algorithm executed by a software program, without any inventive step in hardware. This method can be executed using common programming languages such as PHP (Hypertext Pre-processor) to achieve the conversion of information words to coded words, which emphasizes that the claims are based purely on a software-driven algorithm.

129.10. Claims 1 to 11 of the Suit Patent pertain solely to a computer program *per se* or a mathematical act, and therefore, fall under the exclusions of Section 3(k) of the Patents Act, rendering them non-patentable. Claim 12 merely refers to a storage medium containing a signal derived from this method, which itself is generated by a computer program or mathematical process outlined in the earlier claims.

130. The contentions raised by the Defendants involve examining both the substance of the claims and their compliance with the legal requirements of patentability and inventiveness, which the Court shall examine separately in the following sections.

III.V.I. *The claimed invention does not fall under the embargo of Section 3(m) of the Patents Act*

131. The process claimed in the Suit Patent is embodied in Figures 6 and 8 entailed in accompanying the complete specification [Ex. PW-2/4 in CS (COMM) 423/2016], which are reproduced below:

Figure 6

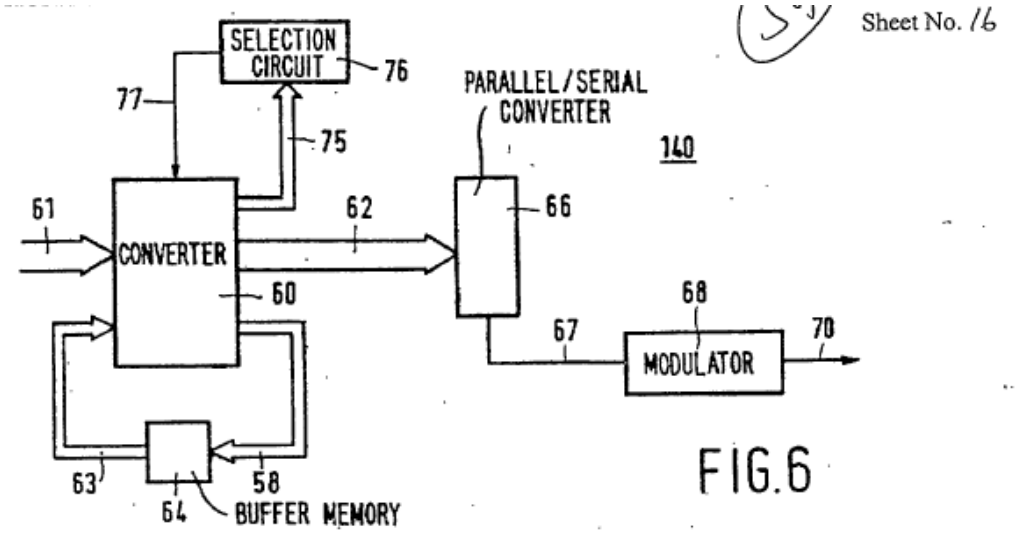


FIG.6

Figure 8

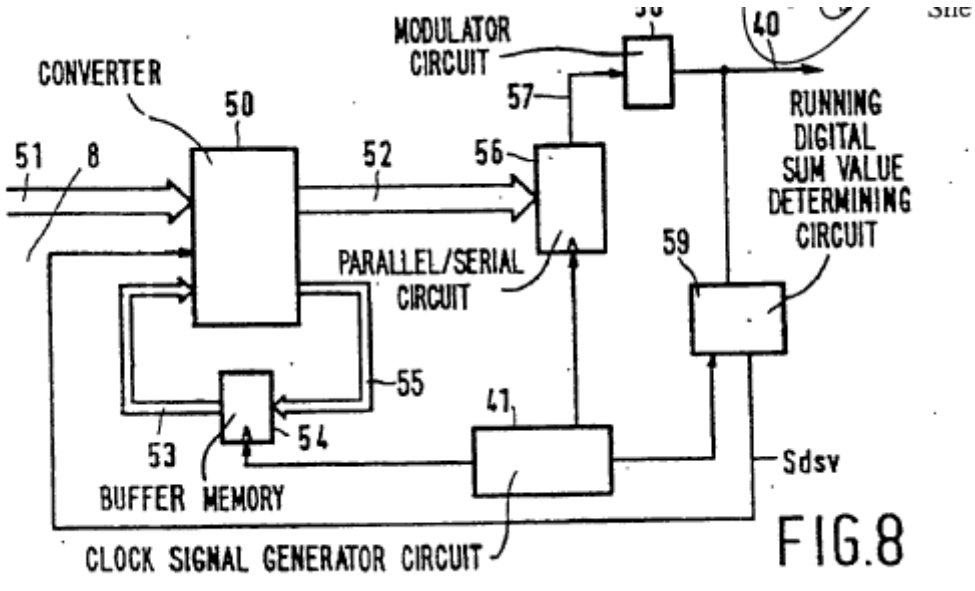


FIG.8

132. Figure 6 extracted above demonstrates that the invention claimed in the Suit Patent comprises various structural and functional components, including a converting means (referenced as numeral 60), a bus (numeral 58), memory (numeral 64), inputs connected to the bus (numeral 58), and a modulator circuit (numeral 68). These tangible elements form an integral part of the claimed invention and facilitate the conversion process described in the Suit Patent. Figure 8 further demonstrates that the claimed method involves the conversion of information words into a modulated signal, which is then written onto a record carrier.

133. Section 3(m) of the Patents Act excludes from patentability any scheme, rule, or method for performing a mental act. The method claimed in the Suit Patent goes beyond mere mathematical operations or theoretical processes. It embodies a series of steps carried out by physical means and results in a tangible product, which removes it from the purview of Section 3(m). The process described in the claims necessitates technical implementation involving circuits, buses, and modulator components that cannot be performed mentally or theoretically. Thus, the claims of Suit Patent pertain to a technical process that involves physical components and produces a tangible output. The method, as defined in the complete specification and illustrated through the figures, is neither an abstract mathematical operation nor a theoretical mental act. This process cannot be replicated through mental steps alone due to the technical nature of the elements involved and the interaction between hardware components to achieve the final modulated signal. The output – a modulated signal inscribed onto a physical record carrier – demonstrates the tangible and practical nature of the claimed invention. The tangible output and the

technical nature of the invention affirm that it meets the statutory requirements for patentability. Therefore, the claimed invention falls outside the exclusions set out under Section 3(m) of the Patents Act, and is patentable.

134. The Defendants' argument suggesting that the claims only describe a mental act overlooks the practical and technical nature of the invention as disclosed in the complete specification and accompanying drawings. A person skilled in the relevant art, when reviewing the Suit Patent in its entirety, would discern that the invention involves the conversion of a video signal into a digital format and its subsequent storage on a DVD in the form of codewords. This process arises from tangible input (the video signal) and results in the tangible output (the stored codewords on the DVD), which can be later retrieved and converted back into the original video signal.

135. In the judgment of ***Diamond, Commissioner of Patents and Trademarks v. Diehr et. al.,***[53] the Supreme Court of the United States held that when a claim involving a mathematical formula integrates or applies that formula within a structure or process that, as a whole, performs a function aligned with the objectives of patent law – such as transforming or reducing an article to a different state or form – it meets the requisite criteria. In this case, the Suit Patent is not an abstract process confined to theoretical concepts or mental operations. It describes a real-life process that involves both hardware and software working in concert to produce a practical and physical result. The mathematical formula serves a purpose beyond merely solving an equation or performing a numerical calculation; it is being employed to achieve a tangible and inventive outcome. The

conversion of video signals into codewords and their storage on a digital medium require an interplay of technical elements that go beyond a mere mental act or theoretical scheme.

136. In this regard, the Court also relies upon the Manual of the Patent Office Practice and Procedure issued by the Indian Patent Office.[54] The Patent Manual outlines examples of inventions that fall under Section 3(m) of the Patents Act, such as methods of playing chess or teaching methods. These examples are illustrative of the processes that do not engage with tangible outputs or technical processes and remain purely in the realm of mental acts. The Suit Patent, in contrast, deals with a concrete and practical technological application, which is a patentable subject matter.

III.V.II. *The claimed invention does not fall under the embargo of section 3(k) of the Act*

137. The Defendants raised a challenge to the patentability of the Suit Patent, contending that the Suit Patent comprises steps that constitute a mathematical act or a computer program *per se*.

138. In the context of computer-related inventions, the Patents Act explicitly excludes a mathematical or business method and a computer program *per se* from patentability, under Section 3(k). If the inventive step resides solely in the software instructions, and there is no evidence of an inventive hardware feature or a significant technical effect, the claims may indeed fall within the excluded category of patentability. Claims that recite only a set of instructions or algorithmic steps – without tangible, inventive

[53] 1981 SCC OnLine US SC 41 or 450 US 175 (1981).
[54] "Patent Manual."

hardware integration – are deemed non-patentable under Section 3(k) of the Patents Act.

139. Therefore, while assessing the Defendants' objection under Section 3(k), the Court must consider whether the method described in claim 1 and other related claims of the Suit Patent goes beyond mathematical or software-based processes and incorporates hardware components that contribute to the inventive step. The mere involvement of a computer-based method would not render an invention inherently non-patentable. Such inventions may still qualify for patentability, provided they introduce a technical advancement, or demonstrate a technical effect, offering a technical solution to a technical problem.[55] Thus, for a software-based claim to be patentable, it must demonstrate a technical effect or a tangible interaction with hardware that goes beyond the algorithm itself. The determination of whether an invention is merely abstract or constitutes a patentable innovation hinge on assessing its technical effect and its relationship with associated hardware. This technical contribution must be significant enough to shift the claim from being a purely abstract software process to a patentable invention with a practical application. The key principle is to evaluate whether the claimed invention operates purely in a theoretical realm, or whether it applies to a real-world process or product with tangible and practical applications. This requires the Court to assess whether the claims, as interpreted, extend beyond software algorithms to include elements that produce a tangible, technical effect, or demonstrate an inventive integration with hardware.

[55] ***Microsoft Technology Licensing LLC v. Assistant Controller of Patents and Designs,*** 2023 SCC OnLine Del 3370.

140. In determining the patentability of a computer related invention, the Court must also refer to the Guidelines for Examination of Computer Related Inventions, 2017 issued by the Office of the Controller General of Patents, Designs and Trademarks,[56] which mandate an assessment of the core substance of functionality of the method expressed in the invention. The CRI Guidelines 2017 explicitly recognize that a computer-related invention may be patentable if it provides new functionality or improvements that are technically significant, even when using existing hardware components. The focus is thus, on the underlying substance of the invention, rather than the specific form in which it is claimed. Clause 4.5 of the CRI Guidelines 2017 requires that the claims must be considered as a whole. The Guidelines shift the focus to the technical contribution and practical effect, rather than the novelty of the hardware itself.

141. The invention claimed in the Suit Patent embodies a novel mechanism involving EFM+ technology, which enhances data storage capabilities on DVDs. This technology achieves a significant technical effect by reducing the number of bit cells per information word and counteracting the reduction of the number of unique bit combinations. The invention optimizes the way information is encoded, thereby increasing the storage capacity of DVDs. The practical result of this innovation is the efficient utilization of physical space on a disc, enabling greater data storage – an advancement with substantial real-world implications. The Suit Patent outlines distinct hardware elements, such as the converting means, bus structures, and modulator circuits, which interact with the software to achieve the desired outcome. The complete specification of the Suit Patent discloses hardware

[56] "CRI Guidelines 2017"

components that operate alongside software to achieve the technical effect described in the invention. The Suit Patent integrates multiple elements, arranged in a specific configuration, to form a coding device that converts m-bit information words into n-bit code words, which are then transformed into a modulated signal. This method, central to the Suit Patent, leverages EFM+ technology – an enhancement over traditional EFM – known for optimizing data storage on DVDs. EFM+ technology enables the efficient conversion and encoding of digital data into a format that enhances storage density and readability. This involves converting each 8-bit information word into a 16-bit code word, ensuring compliance with specific constraints which improve signal integrity and minimize reading errors. The practical outcome is a tangible product – a modulated signal stored on the physical medium – which extends beyond theoretical or abstract concepts. This process results in a significant technical effect, enhancing data storage capacity without merely relying on a mathematical method or algorithmic steps.

142. The technical effect of the Suit Patent has been explained by PW-2 in his evidence by way of affidavit in CS (COMM) 423/2016, in the following terms:

> *"19. I say that the Defendants have alleged in their Counter-Claim that the suit patent is not patentable as it is merely a computer programme or algorithm. I say that the suit patent discloses elements which are clearly hardware elements. The arrangement of these hardware elements ensure that the objective of the suit patent i.e. the conversion of the information words to a modulated signal is achieved. The method claims of the suit patent refer to a technical process following the arrangement of several hardware elements in a manner to form a coding device which converts m-bit information words to n-bit code words and then, into a modulated signal.*
>
> *20. I further say that the code words are not analogous to a modulated*

signal as a modulated signal may be decoded to a series of bits. However, all the bits are not part of code words, several synchronization words are also included so as to ensure that rules of conversion of information words to code words are complied with. I say that this process has a technical effect of providing a greater density of data storage on an optical disc and that the claims of the suit are not directed to a computer program per se or an algorithm.

21. Further, I say that the Defendants have alleged in paragraph 9 of their Counter-Claim that the suit patent is merely a state machine and that it would have been obvious for a person skilled in the art to combine a number of prior art teachings to arrive at the suit patent. I say that the state machines are well known and are often used to describe the behaviour of a system. Any system may be exemplified by way of a state machine. However, I say that the suit patent does not pertain to a state machine but to the classification of code words in certain groups and to the properties attributed to the code words in the said groups."

Conclusion

143. In light of the above discussion, the Suit Patent, while involving algorithmic processes for converting information words to codewords, operates in conjunction with hardware elements that facilitate the modulation and storage of digital signals. The Suit Patent claims, though involving software-driven processes, contribute to technical advancement in the field of data modulation and storage. Therefore, the Defendants' objection that the Suit Patent is unpatentable because it relies on known or general-purpose hardware must fail.

Findings on the objections relating to the plea of invalidity of the Suit Patent

144. The insufficiencies in compliance with Section 8 of the Patents Act, pointed by the Defendants do not justify revocation of the Suit Patent under Section 64(1)(m) of the Patents Act. The evidence indicates that the omission of particulars concerning corresponding foreign applications was

neither material, nor intentional to warrant revocation. The Plaintiff's corrective measures to address the oversight and rectify the Patent Office's records demonstrate their intention to comply with statutory obligations. The Defendants have failed to discharge the burden of proving deliberate non-disclosure, a crucial element for revocation under Section 64(1)(m) of the Patents Act.

144.1 The contest to validity of the Suit Patent under Section 64(1)(e) is without merit. The Defendants have not demonstrated that the Sony Patent comprehensively discloses all the features of the Suit Patent, which is a requisite to establish disclosure or anticipation in the prior art.

144.2. The allegations that the Suit Patent was obtained on a false suggestion or representation do not persuade the Court. There is no evidence to demonstrate procedural impropriety or double-patenting as regards the filing and grant of the Divisional Application. Consequently, the Defendants' challenge to validity of the Suit Patent under Section 64(1)(j) is rejected. The Court also rejects the Defendants' objections under Section 64(1)(h) and 64(h)(i) as the complete specification of the Suit Patent sufficiently describes the underlying invention, enabling a person skilled in the art to ascertain the invention without undue effort.

144.3. The Defendants' arguments for revoking the Suit Patent under Section 64(1)(d) and Section 64(1)(k) are premised on their contention that the Suit Patent does not meet the patentability criteria outlined in Sections 3(m) and 3(k). The Suit Patent facilitates the conversion of m-bit information words into n-bit code words, producing a modulated signal stored on physical media. This technology surpasses simple mathematical operations or theoretical processes by incorporating a series of steps

executed through physical means, culminating in a tangible product. As such, it falls outside the scope of Section 3(m). Applying the established legal principles, the Suit Patent, when taken as a whole, discloses a comprehensive method that results in a tangible output – a modulated signal that is stored on a physical record carrier. It demonstrates a technical solution to a defined problem in the field of data storage and retrieval, providing practical utility and a measurable technical effect. The interaction between the software processes and hardware components is central to this outcome, affirming that the invention functions beyond an abstract concept and serves a tangible purpose in technology. The combined hardware-software system in the Suit Patent exemplifies a technical solution that solves real-world problems related to data modulation and storage. The claimed invention transcends the scope of being a mere "mathematical method," "algorithm," or "computer program *per se*."

144.4. In view of the foregoing, the Court answers issues No. 2, 5, and 6 in CS (COMM) 423/2016, issues No. 3 and 6 in CS (COMM) 519/2018, and issues No. (ii) and (iii) in CS (COMM) 499/2018, in favor of the Plaintiff, and against the Defendants. The Suit Patent is accordingly held to be valid, in compliance with the Patents Act.

IV. WHETHER PLAINTIFF'S EVIDENCE DEMONSTRATE ESSENTIALITY OF THE SUIT PATENT?[57]

145. The Patents Act establishes the rights of patentees to exclude others from using their patented inventions without authorization, as set out in Section 48. This right extends to preventing the unauthorized use of a

[57] In this segment, the Court answers issue No. (iv) – "*whether the impugned suit patent is an essential*

patented process or product that directly or indirectly incorporates the claimed invention. Although the Patents Act does not explicitly define or address the concept of SEPs, its framework facilitates the enforcement of patent rights in the context of industry standards. The Courts have recognized SEPs, particularly in cases involving standardized technologies, as integral to ensuring the uniform application of technical standards across industries. Recently, in ***Lava International*** *(Supra)*, this Court, after conclusion of trial, upheld the enforceability of SEPs by emphasizing their essentiality to standardized technology and the necessity of licensing them on fair, reasonable, and non-discriminatory terms.[58] SEPs are patents that are considered essential for implementing specific industry standards established by Standard Setting Organisations.[59] These organizations meticulously evaluate and identify the key features that must be incorporated into a standard to ensure that it includes the most effective technologies, which may also involve proprietary inventions. To achieve this, SSOs invite contributions from inventors to ascertain which features should be incorporated into the standard. When a proprietary technology becomes part of a standard, the inventor is required to license it to all implementers on FRAND terms.

146. An essential patent thus, refers to a patent that discloses and claims one or more inventions necessary to implement a specific industry standard. Essentiality means that it is technically impossible, considering the prevailing technical practices and state of the art, to develop or use standard-compliant equipment or methods, without infringing the patent. SEPs are

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patent in respect of DVD technology? OPP" framed in CS (COMM) 499/2018.

[58] "FRAND terms."

crucial in promoting interoperability, market dynamics, and invention while ensuring fair compensation to patent holders for their contributions.

147. In this case, the Plaintiff contended that the Suit Patent is critical to the technology underlying the replication of DVDs, as outlined in the DVD Standard developed by the DVD Forum [Ex. PW-2/6 in CS (COMM) 499/2018]. The technology protected by the Suit Patent has been included in the DVD Standard. They submitted that the DVD Forum is an international association comprising hardware manufacturers, software firms, content creators, and other key stakeholders in DVD technology. Members of the Forum include leading industry players, such as IBM, Microsoft, Paramount Pictures, Walt Disney, Lenovo, Sony, Philips, Toshiba, among others. The DVD Forum sets technological standards to ensure compatibility and interoperability across industries and countries.

148. The Plaintiff further claimed that the relevant claims in the Suit Patent align with the corresponding claims in their US and European patents, which have been analyzed and deemed essential for the DVD Standard [Ex. PW-2/7 (colly)]. These essentiality reports for the Plaintiff's corresponding US and European patents affirm that the Suit Patent is essential for meeting the DVD Standard. To substantiate their claims, the Plaintiff has also presented the following oral evidence:

148.1. Affidavit by way of evidence of PW-1 marked as Ex. PW-1 in CS (COMM) 499/2018:

> "*10. I say that the Plaintiff is the holder of Indian Patent No.218255 (referred to as the 'suit patent'). 1 am advised to say that by virtue of the said grant of patent, the Plaintiff enjoys an exclusive right to prevent third parties, who do not have its consent, from using the*

[59] "SSO."

process claimed in the suit patent and/or from making, using, offering for sale, selling or importing any product made from the process claimed in the suit patent and/or covered by the suit patent. Further, the Plaintiff enjoys the right to extend the above mentioned rights to its licensees.

11. *I am advised to say that the suit patent is one of the essential patents, i.e. patents which are the outcome for the process of replication/manufacturing of DVDs and the DVDs resulting from this process, in India.*

12. *I say that until June 30, 2012, the Plaintiff operated a worldwide standard and non-discriminatory licensing program under which the Plaintiff through its subsidiary in India, inter alia, offered licenses under its patents essential to the DVD Standard. Further, I say that as of July 01, 2012 the Plaintiffs optical licensing activities are being offered through the licensing company, One-Red, LLC. I say that the terms and conditions of the licensing program are Fair, Reasonable and Non-Discriminatory (FRAND) and the licensing fee is fixed at a commercially viable rate for all manufacturers and the Plaintiffs licenses are readily available to all or any applicant on standard terms. Further, every license granted by the Plaintiff authorizes the licensee to market the licensee's products globally. Under that licensing program the Plaintiff offered two types of patent licenses for DVD Video Disc and DVD ROM Disc Patent Licenses:*

    (a) The PHILIPS ONLY version offering only the patents of PHILIPS; and
    (b) The JOINT version offering the patents of PHILIPS, SONY, PIONEER and LG:

13. *I am advised to say that due to the concurrent R&D going on in the field of optical disc technology, several leading manufacturing companies have collaborated with their research results and created patent packages known as patent pools. These pools include technology for optical storage media as well as for the player. I am advised to say that the Plaintiff participates in several such patent pools in the field of optical disc technology and holds multiple essential patents that are part of these patent pools. I am advised to say that the above stated 'JOINT version patent license' is a part of one such patent pool.*

14. *I say that under the Plaintiffs licensing models, the applicant has the complete and exclusive liberty to choose between the PHILIPS ONLY and JOINT patent license. I say that the Plaintiff continues to make its patents essential to the DVD-standard available to applicants in a transparent manner as described above earlier through the Plaintiff and since July 1, 2012 through the licensing company One-Red, LLC.*

I say that the entire details of the Plaintiffs licensing programs are transparently available on the websites <www.ip.philips.com> & <www.one-red.com> so that the same can be readily available to any interested party.

15. I say that the Plaintiffs patents including it's various essential patents and the suit patent and its foreign equivalents in scope are widely acknowledged and used within the industry and across the world. I further say that at the time of institution of the suit there were about 220 DVD Video / ROM Disc Patent Licenses issued by the Plaintiff worldwide. I say that the Plaintiff has successfully licensed its essential patents corresponding to the relevant DVD Video Discs and DVD ROM Discs to a number of leading companies in India. I say that a non-exhaustive list of the Plaintiffs above mentioned licensees provided in paragraph 20 of the plaint may be referred to."

148.2. The affidavit by way of evidence of PW-2, the technical expert, marked as Ex. PW-2/A in CS (COMM) 499/2018, reads as under:

"*9. I say that the manufacturing process used for replication of Video Compact Discs (VCDs) and DVD Video and DVD ROM Discs (DVDs) and its resulting discs requires exploitation of several patented technologies. Due to concurrent research and development (R & D) in the field of optical disc technology, several leading manufacturing companies have collaborated their research results and created patent packages known as patent pools. These pools include technology for optical storage media as well as for the disc player. The Plaintiff participates in several such patent pools in the field of optical disc technology and holds multiple essential patents that are part of these patent pools. An essential patent or standard-essential patent is a patent that claims an invention that must be used to comply with a technical standard. Standards organizations, therefore, often require members to disclose and grant licenses for their patents that cover a standard that the organization is developing.*

10. I say that the standard of technologies used in DVDs has been set by the DVD Forum, which is an international association of hardware manufacturers, software firms, content providers and other users of Digital Versatile Discs. The members of the DVD Forum include IBM Corporation, Microsoft Corporation, Paramount Pictures Corporation, Walt Disney Pictures & Television, Lenovo Group, Yamaha Corporation, Philips, Sony, Pioneer, LG Hitachi, Mitsubishi Electric, Panasonic, Samsung, Sanyo, Sharp, Toshiba JVC, Warner Bros and others.

11. I say that the DVD Forum works towards exchange and distribution of ideas and information about the DVD Format and its technical capabilities, improvements and innovations. Further, the Forum

works to promote broad acceptance of DVD products on a worldwide basis, across entertainment, consumer electronics and IT industries.

12. *I say that the DVD Forum sets the standards of technology to be used such as to ensure standardization and interoperability across the many different manufacturers across the globe. Several of the Plaintiff's technologies have been included in the DVD Standard Specifications. These technologies are the Plaintiffs inventions which have been patented by the Plaintiff.*
13. *I say that the Plaintiff is one of the primary inventors of the DVD replication technology required to replicate/manufacture a DVD according to the DVD Specifications for Read-Only Disc - 1 - Physical Specifications ROM Standard of the DVD Forum. I say a copy of the DVD Video Standard referred to above has been filed at pages 95 to 228 under Index dated 4th September 2012. A fresh print out of the said Standard has been filed herewith and I crave leave to exhibit the same as Ex. PW-2/6.*
14. *I say that an essential patent is one which claims one or more inventions that are required to practice a given industry standard and the essentiality of a patent necessarily implies that it is technically not possible, taking into account normal technical practice and the state of the art generally available, to make, sell, lease, otherwise dispose of, repair, use or operate equipment or methods which comply with a standard without infringing that specific patent.*
15. *I say that the suit patent is an essential patent for replication/manufacturing of DVDs and that in any combination of processes for the replication/manufacturing of DVDs, or DVDs resulting therefrom, the Plaintiffs patent is necessarily exploited.*
16. *I say that the scope of the claims in the suit patent corresponds to the Plaintiffs relevant claims of US and EP patents that have been analyzed for essentiality, with respect to DVD Specifications for Read-Only Disc - Part 1 - Physical Specifications ROM Standard. I say that printouts of the said Essentiality Reports have been filed under Index dated 23rd January 2013 at pages 1 to 27. Further, I say that fresh print outs of the said Essentiality Reports are filed along with the present affidavit and I crave leave of this Hon'ble Court to rely upon these Essentiality Reports and to exhibit the same as Ex. PW-2/7 (Colly).*
17. *I say that I have prepared a typed Claim Chart comparing the claims of the suit patent with the DVD Specifications for Read only Disc - Part 1 - Physical Specifications ROM Standard which is filed in the present proceedings at pages 58 to 64 under Index dated 4th September 2012. I say that a fresh printout of the said Claim Chart has been filed along with the present affidavit and I crave leave of this Hon'ble Court to exhibit the same as Ex. PW-2/8. I say that this Claim Chart shows that the claims of the suit patent are a part of the DVD*

Specifications for Read-Only Disc - Part 1 - Physical Specifications ROM Standard.

18. *I further say that the Plaintiff operated a worldwide standard and non-discriminatory licensing programme offering its patents essential to the DVD Standard available to applicants in a transparent manner earlier through itself and since July 2, 2012, through a licensing company, One-Red, LLC.*

19. *I say that due to a number of considerations, including also the desire to increase the data density of optical discs, the original data is modulated, thereby obtaining a modulated bit-stream, before being put on the disc. I say that modulation refers to coding of each 8-bit information word with a corresponding code word consisting of more than 8 bits in such a way that the resulting modulated bit-stream satisfies certain requirements that could not be satisfied if said modulation would not take place. Despite the increase in the number of bits used to represent a single information word, those code words can be more densely inscribed on the optical disc than would be possible with the original information words. The configuration of optical discs has been explained by me at paragraph 8 and the specific requirements that must be satisfied by any modulation scheme for optical discs have been explained by me in my affidavit exhibited as EX PW 2/B at paras 8 and 11 respectively, which may be kindly referred hereto.*

20. *I say that an optical disc reading device is able to recognize only an optical disc that has been recorded using a particular known modulation method. I say that the modulation known in the state of the art used for data modulation on CDs i.e. Compact Discs is EFM modulation (from the English phrase "Eight to Fourteen Modulation"). EFM modulation translates, with the aid of a table, every specific 8-bit information word to a unique 14-bit code word, and additionally, inserts 3 merging bits between successive code words.*

21. *I say that the EFM+ modulation i.e. Eight to Fourteen Modulation plus which effectively means each 8-bit information word is encoded with a 16-bit code word. The modulation technique has been explained by me in my affidavit exhibited as Ex PW 2/B at paragraph 17 and the same may be referred to herein. I state that the modulation method specified by the DVD standard devices described in European Patents EP 0 745 254 B1 (and the corresponding IN patent(s)), and falls under the scope of its claims (and of the suit patent). This modulation method has been named "EFM+", to indicate that it is an improvement over the EFM modulation.*"

149. Apart from the above oral testimonies, in assessment of essentiality of

a patent, mapping of the patent specifications to the relevant feature of the standard is crucial. The judgment of the Division Bench in ***Intex Technologies*** *(Supra)* also recognizes the importance of claim mapping in establishing SEP status. Claim mapping charts are critical in clarifying the relevance of the patent to standards. If the patentee's invention aligns with the standard, the patent would qualify as an SEP. In this case, the Plaintiff's expert witness [PW-2] presented a claim chart [Ex. PW-2/8 in CS (COMM) 499/2018], correlating the claims of the Suit Patent with the specifications outlined in the DVD Standard.[60] The claim chart provides a convincing argument that the Suit Patent is an SEP. The DVD Standard mandates specific technological requirements, including channel modulation through EFM+ encoding, which ensures data efficiency and compatibility across devices. Claim 1 of the Suit Patent describes a method of encoding data into modulated signals by converting m-bit data words into n-bit code words with controlled constraints. This functionality aligns seamlessly with the channel modulation process prescribed by the DVD Standard, which is integral to ensuring uniformity and interoperability in DVD production. Further, the dependent claims (2-11) of the Suit Patent provide refinements and variations to the encoding method detailed in claim 1. These claims address specific technical challenges, such as ensuring run-length limitations and digital sum control, which are essential for compliance with the DVD Standard. The Plaintiff has substantiated the essentiality of these claims through technical references, which signifies that the patented technology is indispensable for implementing the standard. Moreover, claim 12 of the Suit Patent pertains to the tangible output of the encoding process – a record

[60] For ease of reference, Ex. PW-2/8 is appended as Annexure A to this judgment.

carrier, such as a DVD, that stores data encoded using the EFM+ technique. This claim directly maps to the physical requirements of the DVD Standard.

150. The inclusion of the Suit Patent claims within the technical framework defined by the DVD Forum is substantiated by the essentiality reports collectively marked as Ex. PW-2/7 in CS (COMM) 499/2018. These reports confirm that the Plaintiff's corresponding patent applications in the US and European Union, from which the Suit Patent claims priority, have been recognized as SEPs under the DVD Standard. Furthermore, the standard and essential nature of the Suit Patent is reinforced by the significant licensing agreements executed by the Plaintiff with implementers in India. The Suit Patent has been recognized as a core component of the DVD Standard technology framework, establishing its essential role within the technological ecosystem of the relevant industry.

Findings

151. The recognition of the Suit Patent as an SEP for DVD technology is well-established through witness testimony, claim mapping, and technical analysis. The Plaintiff has convincingly demonstrated that the claims of the Suit Patent align with the DVD Standard, making its implementation unavoidable for any manufacturer adhering to the standard.

151.1 The Defendants have failed to present a credible defence to challenge this essentiality. They have neither proposed an alternative mechanism that bypasses the Suit Patent nor demonstrated that the DVD Standard can be implemented without infringing it. The Plaintiff's expert testimony, reinforced by the claim chart analyzing the Suit Patent claims, remains uncontroverted.

151.2 Accordingly, the Court finds that the Suit Patent qualifies as an SEP for DVD technology. Issue No. (iv) in CS (COMM) 499/2018 is answered in favour of the Plaintiff and against the Defendants.

V. WHETHER THE DEFENDANTS HAVE INFRINGED THE SUIT PATENT?[61]

V.I. *Understanding the Defendants' defence in the suits*

152. It is undisputed that the Defendants are engaged in the business of the replication of DVDs. They argued that their replication process does not infringe upon claims 1 to 12 of the Suit Patent and thus, there is no infringement. This argument is premised on the fact that their replication process simply reproduces content from a master DVD, and does not involve the original burning or encoding process. Conversely, the Plaintiff asserted that the process of replication of DVDs based on an original licensed burnt DVD, too, falls within the scope of claim 12 of the Suit Patent despite the Defendants admittedly not undertaking the process of burning using EFM+ coding anywhere as part of their replication process. This interpretation raises an important question regarding the scope of claim

[61] In this section, the Court shall proceed to decide the following issues:

In CS (COMM) 423/2016

a. *Issue No. 3- Whether the defendant has infringed the patent of the plaintiff, as alleged in the plaint? OPP*
b. *Issue No. 4- Whether the plaintiff is entitled to the injunction sought by it? OPP*

In CS (COMM) 519/2018

a. *Issue No. 4 - Whether the defendants/ counter-claimants have infringed the plaintiff's registered patent No. 218255? (OPP)*
b. *Issue No. 5- Whether the plaintiff is entitled to a permanent injunction as prayed for in para 48(i) of the prayer clause? (OPP)*

In CS (COMM) 499/2018:

a. *Issue No. (v) - Whether the defendants/ counter-claimants have infringed the plaintiff's/ respondent's registered patent No. IN 218255? OPP*
b. *Issue No. (viii) - Whether the plaintiff/ respondent is entitled to a permanent injunction in terms of paragraph 45 (i) and (ii)? OPP*

12 – whether it extends beyond the original burning process to encompass subsequent reproductions that maintain the original encoded signal.

153. To fully appreciate and contextualize this Court's findings, it is essential to first set out the Defendants' contentions in response to the Plaintiff's claims, which are as follows:

153.1. The claims of the Suit Patent entail the interpretation of compression of data using binary codes known as 'lands and pits,' which are signified by the digits 0 and 1, respectively. A DVD stores information using a technique called "optical disc recording," which involves burning tiny pits into a glass disc using a laser. These pits and the areas between them (called lands) represent the 1s and 0s of digital data. The data is read by shining a laser onto the disc and measuring the reflection.

153.2. The Defendants' replication process involves the use of a 'source master DVD,' which is obtained from a licensed entity (such as Moser Baer) or directly from a copyright owner, who provides the content in a pre-burnt format on a DVD-R. The manufacturing of the original DVD (source master) by a manufacturer necessarily involves the use of the process of Suit Patent (*i.e.*, clams 1 to 11), whereas plain and simple replication process carried on by Defendants is a different process altogether. Their operations solely involve the job work of replicating DVDs according to customer specifications. They clarify that nickel stampers, essential for the replication process, are obtained from licensed third-party providers, such as Moser Baer, who hold licenses from the Plaintiff. These stampers are produced from the source masters and facilitate the subsequent replication of DVDs using moulding techniques, which do not fall within the scope of the claims of the Suit Patent.

153.3. Defendants' business does not involve manufacturing or burning DVDs using any form of laser compression technique; instead, it focuses solely on replicating existing content from a source master. The Plaintiff has mistaken the Defendants' replication process to it its own compression technique. The compression of data through lands and pits is within the scope of the Suit Patent, but the Defendants are far from using the above-mentioned laser technique of the Plaintiff.

153.4. The Division Bench of this Court, in ***Siddharth Optical Disc Pvt. Ltd. and Ors. v. Union of India and Anr***. [Ex. DW 1/2 in CS (COMM) 519/2018],[62] acknowledged the non-production of blank DVDs by Siddharth Optical, albeit in the context of excise duty. The judgment recognized that Siddharth Optical simply replicates pre-recorded DVDs and that, at no stage in the process, does a blank DVD come into existence.

153.5. PW-1, the Plaintiff's alleged constituted attorney, is himself unclear on the specifics of the DVD replication process, which forms the heart of the present suits. PW-1 simply stated that the production of any DVD would necessarily align with the DVD Standard, and by extension, the claims of the Suit Patent. When specifically questioned, he enlisted the elements involved in the Defendants' replication process – granules of polycarbonate, glass master, stampers, moulding, lacquering and label printing, but did not provide a clear or conclusive response. This line of questioning exposes a significant gap in the Plaintiff's case, as they failed to demonstrate how the replication process employed by the Defendants mapped onto any of the patented methods or claims outlined in the Suit Patent.

153.6. Claim 12 explicitly pertains to a record carrier obtained through the modulation method delineated in claims 1 to 11. Therefore, unless they perform the initial encoding process, they cannot be said to infringe claim 12. It is argued that consistent with their interpretation of claim construction, the lands and pits formed on the surface of DVDs during the replication process do not fall within the subject matter of the Suit Patent. These lands and pits, which physically represent the coded information on the disc, constitute the content itself, and are protected under copyright law as the creative work of the content owner. Conflating the replication process with the act of infringement effectively turns a patent claim into a *de facto* copyright claim.

153.7. The Plaintiff's rights under the Suit Patent are confined to the method and technology of modulation and burning using the EFM+ coding technique and do not extend to the physical manifestation of that technology – the lands and pits – since these are mere carriers of the encoded content, subject to copyright and variable depending on the content which is replicated. Consequently, the process of mechanical replication, which involves copying the lands and pits from an original licensed master DVD without engaging in the patented EFM+ modulation process, does not constitute proof of infringement. The Plaintiff's assertion that all DVDs, even those produced through replication, infringe the Suit Patent due to the specific pattern of lands and pits is misleading. This interpretation, extends the scope of the Suit Patent far beyond what is supported by the specification and claims. Neither the claims nor the specification of the Suit Patent justify this expansive reading.

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[62] Judgment dated 11th January, 2013 in W.P.(C) 13231/2009.

153.8. Plaintiff has claimed that the Suit Patent relates to replication of DVDs, and not manufacturing of DVDs. This assertion is however, controverted by the Licence Agreements offered by the Plaintiff, where they allow the licensee the right to manufacture DVDs. In this regard, the relevant extract from the cross-examination of PW-1, relied upon by the Defendants, is as follows:

> "*Q.112 Is it correct to say that the suit patent do not cover manufacture of DVD Video discs / DVD Rom Discs but covers only replication?*
>
> *Ans: In my general understanding the suit patent covers replication of DVD Video discs / DVD Rom Discs and not "manufacture" which is generally used and probably associated with "burning" of discs. However, this can further be explained by PW-2 if so required.*
>
> *Q.113 In your letter to defendant dated May 9, 2005 (Ex.PW- 1/35) you have only asked the defendant to take a license for manufacture of DVD Video discs / DVD Rom Discs giving an impression that the license will entitle the Defendant to manufacture DVD Video discs / DVD Rom Discs. Is the representation correct?*
>
> *Ans: While the said letter does use the word "manufacture" the letter also has a complete set of the patent license agreement and its annexures which clearly would indicate that the license sought for was for replication of disc. Moreover in the last para of the said letter it is clearly offered to the defendant that should he need any further clarification, he can contact the signatory of the letter.*
>
> *Q.114 Can you go through the reference copy of the DVD Video discs and DVD Rom Discs patent license agreement and mark the portion where it entitles the licensee to replicate DVD Video discs / DVD Rom Discs?*
>
> *Ans: Since the agreement runs into several pages just by way of an example at page 584 of the Ex.PW-1/35 the definition of "DVD-Video disc" uses the term "replicated".*
>
> *Q.115 Is it correct that the reference copy of draft of DVD Video Disc and DVD Rom disc patent license at page 583 relate to replicated DVD Video discs / DVD Rom Discs and not the process of replication?*
>
> *(Objected to by the counsel for the Plaintiff on the ground that the question is vague and concerns interpretations of a written document and is therefore not permissible under Section 91 of the Evidence Act).*
>
> *Ans: Since the agreement may have to be read as a whole I would leave the same for interpretation when argued between the parties.*"

153.9. PW-2, the Plaintiff's technical expert, neither has the qualification nor the expertise in optical storage. He himself has conceded that he was not involved in the filing or prosecution of the Suit Patent, yet the Plaintiff has appointed him to depose in its behalf solely to serve their own interest. Under cross-examination, PW-2 admitted that his technical report, intended to establish the infringement of the Suit Patent, was prepared under instructions from Mr. Farokh N. Bhiwandiwalla. Furthermore, the affidavit asserting the infringement of the Suit Patent was communicated to PW-2 through e-mail correspondence, raising questions about its independent preparation. This, weakens the credibility of the affidavit, as it suggests that PW-2 did not draft it autonomously, but rather under external direction, thus affecting its evidentiary value.

153.10. PW-2's opinion of infringement assumes that the discs under scrutiny originated from the Defendants. However, on a specific query, PW-2 was unable to confirm whether the discs submitted in evidence were examined by him. Further, in his cross-examination, PW-2 was unable to answer the questions regarding the number of discs and equipment or machine used for assessing infringement of the Suit Patent. He also conceded that he was instructed by another person on the manner in which he was supposed to take the measurements of the discs alleged to be infringing the Suit Patent. This shows that neither was his opinion independent, nor was he skilled to examine the discs himself and accordingly prepare a report on the possibility of infringement. Lastly, the report of PW-2 filed as affidavits in all three suits are identically worded, entailing identical findings in three independent suits concerning different entities. In light of the above, his affidavits cannot serve as conclusive

evidence to show that either the discs examined by him belonged to the Defendants or were infringing the Suit Patent.

153.11. In addition to the above, PW-2 was cross examined on the aspect of steps adopted by Defendants for replication of DVDs, but he was unable to identify the stage and specific claims of the Suit Patent that were infringed.

153.12. PW-2 reported the details regarding the technicalities of the infringement to PW-1. However, PW-1 was unable to answer technical queries, stating that he is not a technical expert on the subject. In light of these facts, it emerges that the Plaintiff's witnesses lacked clarity regarding the Suit Patent and had submitted affidavits based on third-party opinions. Conversely, Defendants' witnesses consistently deposed that their activities do not infringe any of the claims of the Suit Patent. The Defendants procure the source master for replicating the DVDs from licensees of the Plaintiff.

V.II. ***Infringement Analysis***

154. The Defendants have admitted that the DVDs they manufacture contain data stored in the land and pit format, conforming to the DVD Standard specifications. Despite this acknowledgment, their defence hinges on the argument that their replication process does not involve the initial laser beam burning process described in the Suit Patent. Instead, they claim to rely on mechanical replication techniques to reproduce an already encoded master disc.

154.1 By making this distinction, the Defendants do not dispute that the structure and data arrangement on their DVDs align with the method of modulation and data encoding described in claims 1 to 11 of the Suit Patent.

Rather, their contention is that because they do not perform the EFM+ encoding process themselves, their actions do not amount to infringement. However, this argument implicitly acknowledges that the claims of the Suit Patent, particularly those related to encoding and modulation, are reflected in their end products.

154.2 In light of the above, the mapping of claims 1 to 11, and 13 to the infringing product becomes redundant for further analysis. The crux of the Defendants' defence rests on the interpretation of claim 12, which pertains to the record carrier with the modulated signal. Accordingly, the Court now proceeds to examine the construction of claim 12 in the context of the Defendants' arguments.

V.II.I *Claim construction of the Suit Patent*

155. The Defendants' objections regarding the construction of claim 12 focus on its scope and applicability. They contended that claims 1 to 11 of the Suit Patent pertain exclusively to the method of converting information into a modulated signal using EFM+ coding. Claim 12 is directed at the resulting product, a record carrier which stores the modulated signal obtained through the execution of this method. They further asserted that none of the claims encompass the physical manifestation of modulated data as represented by the lands and pits on a DVD. According to the Defendants, the Suit Patent covers only the process of compressing and encoding information using EFM+ technology, and does not extend to the final physical arrangement of data on the disc. Therefore, they contended that the Plaintiff's assertion that any DVD with this specific pattern automatically infringes the Suit Patent overreaches the scope of its claims.

156. It needs no emphasis that the first and essential step in assessing a suit for patent infringement is claim construction, which involves interpreting the language and scope of the patent claims to delineate the precise boundaries of the patentee's rights. This interpretation determines whether the acts of the Defendants fall within the ambit of the patented invention and, consequently, whether infringement has occurred.

157. Claims are intended to be concise delineations of the scope of monopoly, drafted in light of the more detailed description in the specification. They are to be read in conjunction with the complete specification. The claims, when considered alongside the accompanying complete specifications, convey their exact scope to the Court.[63] The words used to describe the claims – interpreted by a person of ordinary skill in the art – define the breadth of the monopoly granted by the patent, triggering the substantive and substantial rights under Section 48 of the Patents Act. The Court, therefore, must carefully analyse the language of the claims in conjunction with the complete specification of the Suit Patent to fully comprehend the extent of the Plaintiff's rights and the defences presented by the Defendants.

158. Claims 1 to 11 of the Suit Patent are specifically directed to a method of modulation, coding, or compression, namely, EFM+ coding, whose primary objective is to convert m-bit information words into n-bit code words, resulting in a modulated signal, as captured in claim 1. Claims 2 to 11 and 13 are dependent on claim 1 and elaborate on this method by introducing variations or additional details that refine the modulation

[63] *See*: Cornish, Llewelyn and Aplin, *Intellectual Property*, Seventh Ed, Sweet and Maxwell, pages 182-3, "*Cornish;* ***Merck Sharp and Dohme Corporation*** *(Supra);* and ***Allergan Inc. v. The Controller of Patents,***

process. These dependent claims should be read in conjunction with claim 1 to form a cohesive understanding of the method and its various embodiments. They collectively enhance and define the scope of the patented method, emphasizing the specific process of conversion and modulation.

159. Claims 1 to 11 and 13 of the Suit Patent are method claims that do not pertain to the physical manufacturing process of DVDs themselves. Rather, they are directed towards the method by which information – whether multimedia, songs, audio, or video – is converted into binary digits or code words (comprising bit strings of 16 bits). This method further details how such information is compressed and organized on a record carrier, allowing significantly greater data storage compared to prior technology. The Plaintiff had also pointed out that the claimed method under the Suit Patent enables the storage of approximately 4.9 GB on a DVD, a stark improvement over the 700 MB capacity of a VCD, highlighting the substantial technical advancement.

160. Claim 12, however, diverges from the process focus and includes a "*record carrier on which the modulated signal obtained by the method claimed in any one of the preceding claims is provided in a track.*" Claim 12 covers the tangible product which stores the modulated signal resulting from the method covered in claims 1 to 11 and 13: a record carrier, such as a DVD, that stores the modulated signal created using the EFM+ coding process described in the preceding claims. This claim emphasizes the outcome of the patented method by covering any disc encoded using the EFM+ process, ensuring that the data stored on the medium adheres to the

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constraints and benefits of this particular modulation technique.

161. The term ‘record carrier’ refers to any medium or material that serves as a vessel for storing information, whether in analogue or digital form. The complete specification of the Suit Patent, delineates two primary types of record carriers – the ‘optically detectable type’ and the ‘magnetically readable type.’. Medium such as CDs, DVDs, tapes, and cassettes. CDs and DVDs fall under the optically detectable type of record carriers as they are read or written using optical technologies, such as lasers. On the other hand, magnetically readable record carriers include cassette tapes and vinyl records. Claim 12, shifting the focus from procedural aspects to the resulting product, describes a record carrier that embodies the technical characteristics imparted by the EFM+ coding process. This enables the claim to extend its scope to any medium that stores high-density data encoded according to the EFM+ method. The flexibility of the term ‘record carrier’ allows it to cover a range of storage media, including but not limited to DVDs, CDs, Blu-ray discs, or future technologies capable of adopting similar encoding formats. The defining criterion for the applicability of claim 12 lies not in the type of medium, but in its encoded content – specifically, whether it holds a modulated signal created using the patented EFM+ process. This means that any storage medium meeting these technical specifications falls within the protection of claim 12.

162. It must also be emphasised that claim construction must be undertaken objectively without regard to the alleged infringer’s conduct or the nature of the infringement itself. While judicial scrutiny naturally focuses on the contested aspects of a patent, it is imperative to avoid construing claims with an implicit eye on infringement. Accordingly, the

Court, in undertaking this analysis, has ensured that its construction of the Suit Patent is guided solely by legal principles and technical disclosures, without being swayed by the specific allegations in the present case. At this juncture, it must also be emphasised that claim construction requires a purposive approach to ascertain the true scope and intent of the patent's protection. When construing the claims and complete specification of an invention, the courts are not to adopt a rigid, overly literal interpretation. Instead, the doctrine of purposive construction mandates that claims be interpreted in a manner that reflects the inventor's intended technical contribution to the field while ensuring that the scope of protection is neither unduly broadened nor unduly narrowed. In ***Tickner and Anor v. Honda Motor Co Ltd. and Ors.,***[64] the High Court of Justice, Chancery Division emphasized the significance of descriptions and drawings entailed in the complete specification to interpret patent claims. The pertinent observations of the Court are as follows:

> *"The whole approach goes by the sobriquet 'purposive construction'. You learn the inventor's purpose by understanding his technical contribution from the specification and drawings. You keep that purpose in mind when considering what the terms of the claim mean. You choose a meaning consistent with that purpose – even if that involves a meaning which, acontextually, you would not ascribe to the word or phrase. Of course in this exercise you must also be fair to the patentee—and in particular must not take too narrow a view of his purpose—it is the widest purpose consistent with his teaching which should be used for purposive construction."*

163. It follows that the drawings and description are only being used to resolve any ambiguity. The claims are to be construed purposively – the inventors' purpose being ascertained from description and drawings. In the

[64][2002] EWHC 8 (Patents).

present context, the scope of the claim is clear to a hypothetical person possessing the ordinary level of skill in the pertinent art. Seen through the lens of a person skilled in the art, the claim to a record carrier is fully understood, even though there is a little disclosure about the land/ pit/ use of the 16-bit information etc. The methods are described in figures 6 to 17 of the complete specification, which fully support the claim to a record carrier.

164. The witness testimony also supports this conclusion. PW-2, during cross-examination in CS (COMM) 423/2016, categorically stated that the Suit Patent is not restricted to any particular method of making a DVD, as follows:

> "*Q.520 So therefore according to you the aspect of the suit invention claimed in the present suit patent is the record carrier. Is that correct?*
>
> *Ans: The aspect of the invention in the claims of the present suit patent is a record carrier and a method of encoding because the record carrier claim refers to this method of encoding.*
>
> *Q. 521 Can you then explain why in set 3 Exh.PW-2/D-3 there are no claims in relation to a method of encoding and these method claims were specifically asked to be deleted from the set of claims originally filed (Set No.2) in accordance with your local agents DePenning & DePenning letter dated 31st August, 2004 addressed to the Controller of Patents, Chennai in response to the office action dated 14th May 2003 which stated that "in view of the objections the claims 1 to 11 (the method claims) have been deleted" and this was under the instructions of the Plaintiff's letter to their counsel dated 16th July 2004 which is exhibited as Exh.PW-2/D-4?*
>
> *Ans: Set 2 related to a method of producing a record carrier. Those kind of claims are considered less valuable to Plaintiff because we were seeking protection for a record carrier as such. In the process of prosecution which means the interaction between patentee and Indian examiner through its local agent the examiner raises objections which are responded to by patentee through its local agent. The patentee was seeking protection for a record carrier and finally set 1 was considered as being grantable. It is not relevant which claim sets during the prosecution were proposed by the patentee. The claims as granted have been found patentable by*

> *the examiner and the scope of these claims covers a record carrier which was the wish of the patentee. I did not prosecute this case so it is very difficult for me to go into details about the why and how of the whole prosecution process of this case.*"

165. Upon a careful analysis of the claims and specifications, the Court concludes that claim 12 is not restricted to discs produced through any particular manufacturing process, such as laser burning, nor is it confined to a specific technological method. Instead, it broadly encompasses any record carrier that incorporates the encoded EFM+ signal, irrespective of how it was created. This distinction between the process of manufacturing and the existence of a product is clearly articulated in the complete specification of the Suit Patent.

166. The broad language of claim 12 implies that any record carrier containing the EFM+ modulated signal, regardless of the method of creation, falls within the scope of the Suit Patent. This interpretation counters the Defendants' argument that their replication process does not infringe because it only reproduces content from a master DVD, and does not involve the original burning or encoding process. The Plaintiff's claim rests on the presence of the EFM+ modulated signal within the replicated product, which aligns with claim 12's requirements.

167. The DVDs at issue in these proceedings are Read-Only Memory DVDs, which are not writable with a laser. Instead, these DVDs are produced through a process known as mould replication used by the Defendants. It is important to note that the EFM+ signal specified in the Suit Patent can only be recorded using a laser on writable DVDs, such as DVD-R or DVD-RW formats. Therefore, should the Defendants' replicated DVDs

embody the EFM+ signal created as described in claim 1, they would, without a doubt, infringe upon claim 12. This conclusion holds regardless of the method used for replication, as claim 12 encompasses any record carrier that contains the modulated EFM+ signal. The essential element is the presence of the specific encoded signal on the disc, aligning with the scope of claim 12. Consequently, if the Defendants' actions result in producing DVDs that replicate the patented modulation, it constitutes infringement of claim 12, confirming liability under the asserted patent rights.

V.II.II. *The Replication Process of the Defendants*

168. The arguments raised by the Defendants require the Court to assess whether the replication process, as carried out by them, implicates the use of the patented technology itself, or whether it merely reproduces the final product that incorporates such technology, thereby shifting the focus to copyright protection. To make this determination, it is essential to first examine the replication process employed by the Defendants.

169. The replication method submitted in evidence as Mark Y in CS (COMM) 423/2016, Mark DW-1/1 in CS (COMM) 519/2018, and Ex. DW-1/3 in CS (COMM) 499/2018, is consistent for all Defendants, encompassing identical elements across stages. The Defendants explained that their customers provide DVD master stampers to them. Each stamper contains a spiral groove formation of pits and lands, which is the customer's data in physical format. Each stamper contains a spiral groove of a particular DVD title, and hence can be used to mould the particular DVD title only. A stamper is a mould made of nickel alloy, 0.3 mm thick with an outer diameter of 140 mm, used to carry data in the form of impressions

(commonly known as pits and lands). These impressions are later read by a laser and decoded into their original format, which is then consumed by the user. The stamper is fitted into the cavity of a plastic moulding machine, where the data impressions are transferred onto molten plastic during the moulding process. Two stampers are required for DVD moulding – one is referred to as the layer 0 stamper, and the other as the layer 1 stamper.

170. The Defendants provided the following detailed description of their replication process to illustrate its mechanical nature, and to emphasize that it diverges from the patented methods claimed by the Plaintiff:

i. *Stage 1*: The DVD moulds are prepared using polycarbonate granules. These polycarbonate granules are first dried to remove moisture content, using a drier and then fed to injection moulding machines. They are converted into liquid state inside the moulding machines, using heating devices.

ii. *Stage 2*: The stamper provided by the customers is fixed into the mould cavity. Two DVD master/ nickel stampers – layer 0 and layer 1 – for a given audio/ video title are fixed to mould cavities of two moulding machines. Since the stamper is a removable component of the mould or die, the moulding machines cannot operate without it being fixed in place. Once the stamper is installed, each mould cavity is essentially used to produce one half of a DVD.

iii. *Stage 3*: Next, liquefied plastic is automatically injected into the mould cavity, filling both the cavity and the pits on the metal stamper with molten plastic. The mould is then allowed to cool for 2 to 3 seconds, forming a transparent plastic disc, 0.6 mm thick, with the same spiral groove pattern of pits and lands as the stamper. Once cooled, the mould cavity

opens, and the transparent disc is removed by an automated process. These transparent DVD halves, referred to as layer 0 and layer 1, are transferred to a long cooling conveyor. By the time they reach the end of the conveyor, the discs are fully cooled.

iv. *Stage 4*: A reflective layer of silver is applied to the layer 0 plastic mould, while the layer 1 disc from the other machine is coated with aluminium.

v. *Stage 5*: The two DVD halves moulded by the machines are bonded together using glue and a pressing mechanism. After being pressed, the discs are spun at high speed to remove any excess glue. During the process, glue is dispensed onto the top of layer 1, and layer 0 is placed on top of it by a robotic arm before pressing.

vi. *Stage 6*: The bonded discs are dried under an ultraviolet lamp. Once dried, the DVDs are ready for playback on any DVD player. An online scanner is used to identify and separate defective discs, while the good discs are sent to an offset printing machine for label printing.

vii. *Stage 7*: The final DVDs are label-printed with titles based on the artwork provided by the clients.

viii. *Stage 8*: The label-printed DVDs are then packed and dispatched.

V.II.III. *Is the Defendants' replication process covered by Suit Patent claims?*

171. The Plaintiff's patent claims are drafted to cover not only the process of encoding data through EFM+ modulation, but also the resultant record carrier that embodies this encoded data. The Defendants' interpretation,

which restricts the scope to the act of laser burning alone, disregards the clear intent and language of the claims. Such an interpretation not only misrepresents the scope of the Suit Patent, but also undermines the technological advancements it seeks to protect, including the compatibility and standardization achieved through EFM+ encoding.

172. The Courts are required to interpret the claims as written, without rewriting or narrowing them in ways that conflict with the patentee's intended protection. In this case, the Defendants' narrow interpretation overlooks the invention, which explicitly encompasses the creation and use of record carriers containing the encoded signal, irrespective of the specific method used to produce them. By attempting to limit the Suit Patent to certain production methods, the Defendants fail to recognize that the claims extend to any DVDs that incorporate the patented EFM+ technology, including those produced using pre-encoded stampers. This misinterpretation reflects a fundamental misunderstanding of the scope of the claims, and ignores the principle that the patentee's definition of their invention, as captured in the claims, is legally binding.

173. The Defendants' replication process for manufacturing DVDs comprises two critical stages: (i) the creation of the glass master and stamper, and (ii) the replication process. In the first stage, which is outsourced to entities like Moser Baer, the EFM+ encoding is embedded onto the stamper. This step is pivotal, as it incorporates the modulated signal described in the Suit Patent onto the stamper, ensuring compatibility with the standardized DVD format. The second stage, executed by the Defendants, involves a mechanical stamping process, where the encoded stamper is pressed against hot, moulded polycarbonate material to replicate

DVDs. This method enables mass production, yielding hundreds or thousands of discs that inherently contain the EFM+ encoded signal. The evidence and disclosures provided by the Defendants thus, unequivocally establish infringement.

174. The oral evidence of PW-1 and PW-2 recorded during cross-examination also suggests that all steps of replication – from stamper production to the final disc – infringe the Suit Patent. The relevant extracts from the cross-examination of the Plaintiff's witnesses in CS (COMM) 423/2016 are as follows:

Cross-examination of PW-1 conducted on 25th February, 2014

"Q.199 By looking at DVD Video disc, can you identify whether it is an infringing DVD or not?

Ans: In the training given to us earlier we have been explained that a DVD video disc has to be made as per DVD Standard to ensure compatibility of the same. Basically, if a DVD disc plays on a DVD player it would be as per DVD Standard. Further we have also been told that any party replicating any DVD Video Disc will necessarily be infringing the DVD patents of the Plaintiff.

xx ... xx ... xx

Q.201 If I show you some DVD Disc which could be played on a DVD player, will you be in a position to identify as to whether or not it is infringing?

Ans: As mentioned earlier, in such an event it would be presumed to be infringing and when necessary proof of infringement is required then it will be specifically analyzed by technical expert which also was what was done in the present suit matter.

xx ... xx ... xx

Q.203 Do you mean to say that every DVD Video Disc which could be played on DVD player is with DVD Standards and is infringing?

Ans: I mean to say that if a DVD Video disc is playable on a DVD player it necessarily has to be as per DVD Standards and thereby infringing the patents of the Plaintiff. If a party deliberately makes a DVD Video disc which is not playable on a DVD player it would not be an infringing DVD disc but such disc will not have commercial value in the market."

Cross-examination of PW-2 conducted on 07th August, 2014

"Q.119 I put it to you that if a manufacturer or a replicator manufactures or replicates a DVD Disc and does not apply the logo and plays that disc on his own hardware, such manufacture or replication is possible. Is this correct?

Ans. If the manufacturer replicates or manufactures a DVD Disc and does not apply the logo, it may be possible to play such Disc on his own hardware if his hardware complies with the DVD Disc Standards. Applying the logo or not does technically not add any technical feature to the disc. It only shows that the DVD disc is a DVD disc complying with the standard."

xx ... xx ... xx

Q.123 The Optical Discs manufactured in China not bearing the DVD logo have the same or more compression that even the Optical Discs manufactured under the DVD logo. Is that correct?

Ans. It depends on the type of Optical Disc those manufacturers produce, but in theory it is possible to produce an optical disc with a larger storage capacity than a DVD disc manufactured according to the DVD standards but this disc may never be called a DVD Disc. Your term 'compression' is not equivalent to storage capacity. The compression used is independent of the type of disc.

xx ... xx ... xx

Q.356 I now show you the steps being taken for replication of DVDs filed by the Defendants on pages 683 to 686 of the list of documents dated 27.08.2012. The replication process of the Defendants starts from loading a stamper to a moulding machine. Does this step of loading a stamper to a moulding machine violate any claim of the suit patent?

Ans. Yes. It violates all claims of the suit patent.

Q.357 Does the next step of injection moulding of a disc in the moulding machine violate any claim of the suit patent?

Ans. Yes. It violates all claims of the suit patent.

Q.358 Does the following step of aluminium sputtering or silver sputtering violate any of the claims of the suit patent?

Ans. Yes. It violates all claims of the suit patent.

Q.359 Would your answer be different if instead of a dual layer disc only a single layer disc is injection moulded?

Ans. No. My answer would be the same.

Q.360 In the next step, if there are two discs, the discs are glued using centrifugal force or pressing. Would this step violate any of the claims of the suit patent?

(Objected to for the reason that hypothetical situations are being put before the witness who is not an independent expert but the Plaintiff's witness).

Ans. Yes. It would violate all claims of the suit patent.

Q.361 In the last step the glue is dried in a UV drying apparatus as disclosed. Does this step violate any claims of the suit patent?

Ans. Yes. It would violate all claims of the suit patent

xx ... xx ... xx

Q.370 Is it correct to say that when video data stored in a computer hard drive is burnt on to a blank compact disc, the person who is burning the disc will necessarily need to use a channel coding format?

Ans. The channel coding format of the compact disc (CD) will have to be used, which is called EFM.

Q.371 In case the blank disc is a DVD-R, what will be the channel coding format that will be required to be used for burning such a disc?

Ans. That will be EFM+ which is the technology also described in the suit patent

xx ... xx ... xx

Q.392 I put it to you that the source master disc is itself written by using EFM+ channel coding on a DVD Writer from a data source in which data is first converted into 8 bit blocks and these 8 bit blocks are then converted into 16 bit information words?

Ans. That is incorrect. The 8 bit blocks are converted into 16 bit code words.

Q.393 But it is correct that for making the source master, an author will necessarily have to use the method of the claims of the suit patent?

Ans. That is correct. Q.

Cross-examination of PW-2 conducted on 27th August, 2014

"Q.430 Please see Exh. PW-1/D2, Exh. PW-2/8, Exh. PW-2/9.

Ans. I would also like to see my technical affidavit and my measurement report. After seeing my technical affidavit Exh. PW-2/B and my measurement report Exh. PW-2/10 and the discs, I observe that these boxes have been damaged probably because of the pressure of the Court file. Further I see the three DVD discs which I examined because I recognize the internal investigation number written on them. Furthermore, I notice that the DVDs are in poor condition at this moment. This condition is different from the condition when I investigated them but I can confirm again that these are the same

which were investigated by me because of internal investigation number written on them. I suppose the pressure of the file has not been beneficial to the condition of the discs.

Q.431 Do you remember that how many DVDs you have examined like you examined the DVD in Court file?

(Objected to by the learned counsel for the Plaintiff on being irrelevant)

Ans. I do not remember the exact number but certainly more than ten.

xx … xx … xx

Q.438 I suggest to you that neither you have examined nor you are aware about the instruments or machines which are required to examine the DVDs confirming about their infringements of suit patent.

Ans. That is completely incorrect because I carried out the measurements myself.

xx … xx … xx

Q.448 As an expert, will you be in a position to tell as to whether or not there will be two different examination reports in respect of an infringing DVD and a non-infringing DVD? (Objected to by the leaned Counsel for the Plaintiff on the ground of convoluted construction).

Ans. A DVD which does not use DVD patent is not possible. Hence the answer to the question cannot be given because the term non-infringing DVD is a contradiction in itself.

Q.449 I suggest to you that there will be no difference in the investigation report for a licensed replicated DVD and a nonlicensed replicated DVD of the suit patent.

Ans. An investigation report is normally not made for a licensed replicated DVD, but if it were performed, the technical result of the investigation report would be the same.

Cross-examination of PW-2 conducted on 28th August, 2014

"Q. 481 Please specify the suit patent manufacturing process, if any, used for replication of DVD ROM.

Ans: The suit patent claims a method of encoding and a record carrier. The manufacture of record carrier uses all claims of the suit patent. I do not understand what you mean by the suit patent manufacturing process.

Q.482 By saying suit patent manufacturing process I want you to specify as to which part of your suit patent relates to "manufacturing process" used for replication of DVD ROM.

Ans: The claims of the suit patent define the scope of protection of suit patent. During the manufacturing of DVD ROM all claims are used. The end result is a DVD ROM disc which also uses all claims of the suit patent.

Q.483 In view of your answer to question 482, will it be correct to say that each and every claim of the suit patent is related to the manufacturing process for replication of DVD ROM discs?
Ans: That is correct."

175. The Plaintiff's witnesses have thus, established that if a disc plays on a DVD player, then it complies with the DVD Standard, and therefore, infringes the Suit Patent. The Defendants, through their witness, DW-2, have been unable to adequately rebut this assertion. This is evident from the following:

"Q200 In your opinion did the DVDs in the suits mentioned above comply with the said standard or not?
Ans. I am not sure.
Q201 You did not verify whether the DVD Video Discs mentioned above complied with the DVD standard?
Ans. No.
Q202 Will the DVD Video discs mentioned above run on a Sony DVD player, in your opinion or do you have any reason to doubt this?
Ans. I do not know.
Q203 Did the DVD video discs not say that there were DVD video discs?
Ans. I do not remember.
Q204 Is there any reason on earth that you would entertain a doubt on their capability to run on any standard DVD player?
Ans. Yes. There could be plenty of reasons.
Q205 Please state them?
Ans. Making of a bad stamper. Making a bad glass master. Having bad injection moulding equipment. These are just some of the reasons.
Q206 Are you suggesting that all the DVD Video discs made by each of the defendants who you have advised as consultant in the aforesaid suits have produced 100% of their output on using bad stampers, bad glass masters, bad processes for injection moulding?
Ans. I am not suggesting anything.
Q207 I am asking you to give your views as a neutral technical expert on whether the DVD Video discs mentioned by you above would run on Sony DVD player or any other standard DVD player and I am

obviously not talking about some stray, reject pieces. Would they or would they not?

Ans. I am not sure. I have not tested them on Sony DVD Player or any other standard DVD player.

Q208 I put it to you that your reluctance to give a straight response is either deep-rooted in your understanding of the poor quality of the DVD Video discs which you have come cross in this case and the related cases or demonstrative of a clear bias on account of which you are struggling to admit that a DVD is a DVD.

Ans. I disagree. My answers are just statements of facts based on just my physical verification of the discs."

176. Further, the cross-examination of the Defendants' technical witness, DW-2, in CS (COMM) 423/2016 also demonstrates that the replication process of the Defendants utilizes discs which have the EFM+ modulated signal on it, thus proving infringement:

Cross-examination conducted on 30th April, 2016

"Q42 Do I understand correctly that the act of replication of a disc is the process by which there is one master copy on which a certain content has been loaded: The content may be a film or some educational programme such as a series of lectures or music. The objective of replication is to produce several thousand discs each of which has identical content to that appearing on the master. The machine by which this mass copying is done has a provision for inserting a blank disc and the master and the output is the result of copying from the master on the blank disc. Thousands of copies can be produced in a minute and the end result is that from one master say of a film, at the end of the day, thousands of discs having the same content are available. Please confirm that our understanding of replication is the same.

Ans. The idea of replication is right. However, in the process there are no blank discs used on the output side. Content – loaded discs are directly made by a process which involves moulding to obtain the output through the replication line."

Q43 Therefore, what you are saying is the polycarbonate granules are inserted into the machine which moulds a disc and loads content from a master onto the said discs and this action is simultaneously done?

Ans. Yes.

Q44 And that is the reason why the Defendants do not purchase blank DVDs or discs from elsewhere. Correct?

Ans. *For the output side, yes."*
Q46 *The input to the machine is not a disc but polycarbonate granules. Correct?*
Ans. *One of the inputs, yes.*
Q47 *To be clear, none of the inputs is a disc since the machine itself produces the disc?*
Ans. *OK.*
Q48 *Does OK mean you agree?*
Ans. *Yes."*

V.II.IV. *Discerning the extent and implication of Defendants' infringement*

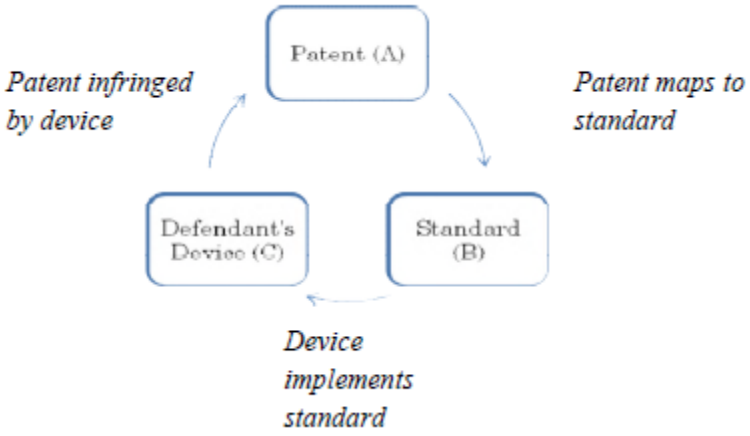
177. In the context of SEPs, the assessment of infringement liability involves two potential tests: direct infringement and indirect infringement. Direct infringement is determined by directly comparing the claims of the Plaintiff's patent with the Defendant's product. Whereas, indirect infringement requires a more comprehensive approach. It involves first mapping the Plaintiff's patent to the relevant standard to establish whether it qualifies as an SEP, followed by positive evidence demonstrating that the Defendant's product also aligns with the standard.

178. Regarding direct infringement, as discussed above, the Defendants' replication process involves discs that incorporate the EFM+ modulated signal, which directly infringes the Suit Patent. All stages of replication process of the Defendants – from stamper production to the final DVD – fall within the scope of the Suit Patent's claims. Furthermore, under Section 48 of the Patents Act, the patentee holds the exclusive right to prevent third parties, from using the patented process or from selling products obtained directly from that process, without their consent. Consequently, the Plaintiff is entitled not only to prevent the use of their patented method, but also to

stop the sale of DVDs produced using the patented process by the Defendants.

179. In assessing whether the DVDs replicated by the Defendants conform to the established standards, guidance must be drawn from the Division Bench ruling in ***Intex Technologies*** *(Supra)*, which laid down the appropriate test for such an evaluation, as follows:

> "*93. There is the direct test of infringement which is applied in all standard patent cases. The other is the indirect method which involves proving the following steps:*
> *(i) Mapping patentee's patent to the standard to show that the patent is a Standard Essential Patent.*
> *(ii) Showing that the implementer's device also maps to the standard.*
> *94. This is akin to the Law of Transitivity, i.e., if A=B and B=C, then A=C, where A= Patent ; B = Standard ; C = Defendant's device*



> *95. To show that the patent maps on to the standard (A=B), courts take into consideration "claim charts," which show that the claims of a patent are also present in the technical features of a standard.*
> *96.* ***To show that the implementer's device conforms to the standard (B=C), courts can either consider authentic sources like test reports which show that the device conforms to the standard. However, this is not a necessary requirement, as most devices declare their compliance with a given standard****. For instance, all mobile phones declare that they are 3G/4G/5G compliant.*
> *97. The indirect test for proving Standard Essential Patent infringement is decades' old. For instance, the US Court of Appeals for the Federal Circuit in* ***Fujitsu Ltd v. Netgear Inc****. (620 F.3d 1321) held:*

> *"We hold that a district court may rely on an industry standard in analysing infringement.* ***If a district court construes the claims and finds that the reach of the claims includes any device that practices a standard, then this can be sufficient for a finding of infringement.*** *We agree that claims should be compared to the accused product to determine infringement. However,* ***if an accused product operates in accordance with a standard, then comparing the claims to that standard is the same as comparing the claims to the accused product****."*
>
> [Bold in original; underscoring supplied]

180. The two-step criteria explicated by the Division Bench, was also reaffirmed by a coordinate Bench of this Court in ***Lava International Limited*** *(Supra)*. Moreover, the indirect test of infringement, developed in reference to SEPs, is also acknowledged in the Delhi High Court Rules Governing Patent Suits, 2022.[65] Rules 2 and 3 of the Delhi High Court Patent Rules govern the filing and contents of pleadings in patent-related suits. In cases involving SEPs, these Rules require the submission of claim charts that map the Defendants' product against the established standard to demonstrate infringement. Additionally, the Defendants are obligated to disclose whether their products comply with the relevant standard. Therefore, conformity with the prevalent standard, delineated by an SSO, is sufficient to establish infringement of an SEP.

181. In the present cases, it is undisputed that the Defendants are replicating and selling DVDs that are compatible with a DVD player. PW-2, in his testimony, has clarified that the fact that a DVD can be played on a player indicates that it incorporates the DVD Standard, and by extension, the process outlined in the Suit Patent. The Defendants' compliance with the

[65] "Delhi High Court Patent Rules."

DVD Standard is apparent from the use of the logo "" on the packaging of the DVDs sold by them [Ex. PW-1/18 and Ex. PW-1/20 in CS (COMM) 423/2016; Ex. PW-1/43 and Ex. PW-1/44 in CS (COMM) 499/2018; Ex. P-25 to Ex. P-27 in CS (COMM) 599/2018]. This logo indicates that the discs are compatible with DVD players designed to read discs in accordance with the DVD Standard.

182. The Plaintiff has presented test reports prepared by their expert, analyzing the Defendants' DVDs purchased by the Plaintiff [Ex. PW-2/10 in CS (COMM) 423/2016]. These test reports conclude that the Defendants' tested discs were encoded using the EFM+ coding rules of the DVD Standard. Since the technical expert's findings are similar across all Defendants, for brevity, the pertinent excerpts from the Test Reports filed in CS (COMM) 423/2016 are reproduced below:

> *"**5 Conclusions***
>
> *The DVD disc, specified on page 1 of this report, has been tested on the use of EFM+ modulation. The results have been presented in section 4 and show that EFM+ modulation is used in the DVD disc.*
> *Based on the demodulation results, we conclude that the code words in the EFM+ data on the disc are divided into two groups, i.e. code words which uniquely represent a data symbol and code words that may be decoded into two data symbols. Which of the two data symbols is represented by the code words of the second type depends on the state (State 2 or State 3) of the next code word. The code words of the second type, which appear in the EFM+ data on the tested disc and for which look-ahead is needed during demodulation have a minimum of 2 and a maximum of 5 ending zeroes. We also conclude that in case no look-ahead is needed the code words on the disc have less than 2 or more than 5 ending zeroes.*
> *Based on the demodulation results, we conclude that in the EFM+ data on the disc the state of a next code word (State 2 or State 3) can be detected from certain bits in the next code word, in particular from the bits in the first and thirteenth bit position.*

Based on the demodulation results, we conclude that in the EFM+ data on the disc different synchronization codes are used for different states, while, in case the preceding code word is of the second type, this code word can be decoded into the correct data symbol by looking ahead at specific non-consecutive bit positions of the synchronization code, in particular the first and thirteenth bit positions.
Based on the demodulation results, we conclude that each synchronization code in the EFM+ data on the tested disc contains a bit cell pattern that does not occur in combinations of code words or in part of a synchronization code in combination with a code word.
From the observation of the RDS values and the spectrum data, and from the demodulation results, which show the use of the Main Conversion Table and the Substitution Table, we conclude that low frequencies are being suppressed in the tested channel bit data by selecting code words from the pairs of code words included in the Main Conversion Table and the Substitution Table.
The results in section 4.2 show that when decoding the sequence of code words in the Control Data Zone, using a DVD compliant EFM+ decoder, the results are meaningful and as expected. This is a further indication that this sequence has been encoded according to the EFM+ coding rules in the DVD standard."

183. The methodology employed and findings of the technical expert, PW-2, are elaborated in his affidavit submitted as evidence. For example, in CS (COMM) 423/2016, PW-2 stated:

"14. I state that when the Plaintiff was informed about the sale of DVD discs by the Defendants, I was instructed to carry out a technical analysis of certain DVD discs replicated by the Defendants. The results of the technical analysis are set out in my affidavit dated 25th April, 2012 filed at pages 238 to 331 under Index dated 24th July, 2012 in the present suit. I have independently examined the Defendants' products using tests devised specifically for the purpose of determining whether the information on the DVD discs has been encoded by way of EFM modulation technique. I confirm that the Defendants discs carry information encoded by the EFM+ modulation technique. Therefore, the Defendants products infringe Indian Patent No. 218255. 1 summarize my observations herein below:

(a) A technical analysis of the channel bit data gives foolproof evidence and confirms that the DVD discs being manufactured and sold by the Defendants use the EFM+

modulation technique disclosed in the suit patent, hence amounting to violation of the Plaintiff's exclusive rights.

(b) Analysis of grabbed channel bit data clearly establishes whether EFM+ coding has been used on any disc. The next code words, which are used to correctly decode the data stored on the DVD disc to provide the accurate information on the basis of look ahead, are modified by changing the values at bit positions 1 and 13.

(c) The player used in the analysis plays the entire DVD disc used as reference and decodes the data encoded on the DVD disc without any problems i.e. the audio and video quality is good. This establishes that the DVD disc contains information encoded by way of the modulation technique disclosed in IN 218255 as the bit values 1 and 13 of the next code word are used for decoding the current code word of the second type into the correct data symbol.

(d) The player however, fails to correctly play that portion of channel bit data, wherein the next code words have been modified. This change in the next code words does not allow 'look ahead' of EFM+ decoding mechanism to work. The failure to correctly play the channel bit data with modified next code words is due to the fact that the DVD disc is encoded using the modulation technique disclosed in IN 218255, which refer to use of 'look ahead' mechanism as disclosed in the suit patent. Had the DVD disc not been encoded using the modulation technique as suggested by the method of Plaintiff's Patent No. 218255, the player would have been able to play the entire DVD disc with modified channel bit data without any problems. This therefore, proves that the content on the DVD disc is encoded using the method of converting a series of m-bit information words to a modulated signal."

184. Pertinently, during the final arguments, the Defendants did not dispute the findings of PW-2 on this issue. Nonetheless, on analysis of the uncontroverted evidence adduced by the Plaintiff, and material on record, it is clear that the DVDs produced by the Defendants conform to the DVD Standard. Therefore, the Defendants have infringed the Suit Patent, which is an SEP.

V.II.V. *Does procuring pre-encoded stampers from a licensed entity absolve infringement allegations?*

A. Inconsistencies between the Defendants' pleaded and argued case

185. Before addressing the merits of the Defendants' submissions, it is important to note that the arguments put forth by the Defendants during the final arguments – that the creation of the stamper and source master was conducted by Moser Baer as a licensed activity – is inconsistent with their original pleadings. Specifically, in their initial submissions, the Defendants did not claim that Moser Baer was a licensee authorized by the Plaintiff to produce stampers or source masters. Their written statement and affidavits by way of evidence of DW-1 in all suits emphasized that the Defendants were engaged in the job work of replication and that they sourced DVDs only after obtaining proper documents of copyright from the content owners or licensees. In fact, in addressing the claims made in paragraph 20 of the plaint, the Defendants have explicitly denied that Moser Baer held a valid license to undertake replication. This assertion defines the scope of Defendants' defence against allegations of infringement.

186. Specifically for Pearl Engineering, their pre-suit correspondence with the Plaintiff [Ex. PW-1/14 to Ex. PW-1/17 in CS (COMM) 423/2016], lacks any indication that Pearl Engineering relied on Moser Baer's alleged license as justification for their replication process. On the contrary, Pearl Engineering acknowledged that it had acquired a DVD replication line and sought a license for the Suit Patent from the Plaintiff by submitting an incomplete application form.

187. Similarly, in the communications preceding the institution of CS (COMM) 519/2018, Siddharth Optical never disclosed to the Plaintiff that it

had procured stampers from Moser Baer or any other licensee. They initially sought details about the Plaintiff's licensing arrangements [Ex. PW-1/40 in CS (COMM) 519/2018]. However, in a later communication dated 16th June, 2010, Siddharth Optical acknowledged replicating DVDs, but stated that they had ceased their business operations due to financial constraints [Ex. P-28].

188. It is evident that the Defendants' defence that Moser Baer produced the stampers under a valid license, was introduced for the first time during final arguments, without any foundation in the pleadings. Introducing this argument at the final stage undermines the credibility of the Defendants' defence. It suggests an attempt to introduce an exculpatory explanation without foundational support in the original pleadings or affidavits by way of evidence. Such omissions are particularly significant given that the Plaintiff has adduced documentary evidence, including correspondence from Moser Baer, confirming the delivery of 3031 stampers to Pearl Engineering and 5427 to Powercube Infotech. The Defendants have neither asserted nor proven that Moser Baer was authorized to pass on replication rights under any valid licensing agreement. The absence of this defence in their written statement and failure to substantiate their claim or present any evidence, raises serious doubts about the Defendants' case. On the contrary, it lends credence to the Plaintiff's allegations that the replication activities in question were unauthorized and in violation of the suit patent.

B. The effect of replication process outsourced to Moser Baer?

189. Notwithstanding the absence of foundational pleadings and evidence in this regard, the Court proceeds to evaluate the merits of the defence raised

by the Defendants. This assessment involves determining: (*a*) whether Moser Baer, as a licensee of the Plaintiff, was authorized to transfer replication rights to the Defendants; and (*b*) whether replicating pre-recorded DVDs supplied by Moser Baer absolves the Defendants of liability for patent infringement.

Covenants of the Standard License Agreement between Moser Baer and the Plaintiff

190. Due to the lack of foundational pleadings, no issue to this effect was framed and none of the parties have adduced evidence regarding Moser Baer's supplying glass stampers to the Defendants for replication. The Plaintiff however has tendered a Standard DVD Video and DVD ROM Disc Patent License Agreement[66] shared with the Defendants in the communications preceding the suits, in evidence.[67] For convenience, the Court shall refer to the document submitted in CS (COMM) 423/2016. The record reveals that Moser Baer had executed a similar license agreement with the Plaintiff. In the absence of detailed evidence, the Court has nonetheless, reviewed the terms of Ex. PW-1/21 in CS (COMM) 423/2016 to assess the scope of Moser Baer's obligations in the limited context of Defendants' infringement liability.

191. Through the DVD License Agreement, the Plaintiff grants a non-exclusive and non-transferable license of *inter alia*, the Suit Patent (defined as "Licensed Products"). Under Clause 2.1 and 2.3 of the DVD License Agreement, the licensee acquires a right to manufacture and sell the

[66] "DVD License Agreement."
[67] Ex. PW-1/21 and PW-2/D-23in CS (COMM) 423/2016, Ex. PW-1/6 in CS (COMM) 499/2018, and Ex. PW-1/32 in CS (COMM) 519/2018.

Licensed Products. Specifically, Clause 2.8 reads as under:

> *"2.8. IT IS EXPRESSLY ACKNOWLEDGED AND AGREED THAT:*
> *(I)* ***THE LICENSES AND LICENSE UNDERTAKING HEREIN CONTAINED WITH RESPECT TO THE MANUFACTURE OF LICENSED PRODUCTS DO NOT EXTEND TO*** *METHODS OR THE MANUFACTURE OR SALE OF EQUIPMENT FOR COMPRESSION AND/OR DE-COMPRESSION OF AUDIO SIGNALS (INCLUDING, BUT NOT LIMITED TO THE SYSTEM KNOWN AS MPREG AUDIO) OR FOR COMPRESSION OR DE-COMPRESSION OF VIDEO SIGNALS IN ACCORDANCE WITH THE SYSTEM KNOWN UNDER THE NAME MPREG VIDEO, NOR TO MASTER RECORDING MACHINES,* ***EQUIPMENT OR METHODS FOR THE REPLICATION OF DISCS*** *NOR TO THE MANUFACTURE OF MATERIALS OR REPRODUCTION RIGHTS FOR INFORMATION (SUCH AS AUDIO, VIDEO, TEXT AND/OR DATA-RELATED INFORMATION), CONTAINED ON DISCS TO BE PLAYED BACK ON A PLAYER. FURTHER, THE LICENSE UNDERTAKING WITH RESPECT TO THE MANUFACTURE OF PLAYERS DO NOT EXTENDED TO THE MANUFACTURE OF COMPONENTS FOR PLAYERS (INCLUDING BUT NOT LIMITED TO SEMICONDUCTOR DEVICES, INTEGRATED CIRCUITS AND/OR SYSTEM ASPECTS SPECIFIC TO THE DVD SYSTEMS;*
> *(II) THE RIGHTS AND LICENSES GRANTED UNDER THIS AGREEMENT DO NOT EXTEND TO ANY COMBINATION OF ONE OR MORE LICENSED PRODUCTS OR PLAYERS WITH ANY OTHER ELEMENTS, PRODUCTS, SYSTEMS, EQUIPMENT OR SOFTWARE OTHER THAN THE COMPOSITION OF A LICENSED PRODUCT AND A DVD PLAYER."*
>
> [Emphasis Supplied]

192. Clause 2.8 thus, explicitly clarifies that the license does not include authorization for equipment, such as stampers, used in the replication process. As per this clause, Moser Baer's activities under the DVD License Agreement were not intended to involve creating or distributing stampers for third-party use, such as the Defendants' replication processes. Further, while Clause 3.1 permits the licensee to get the Licensed Products manufactured by third parties, they are obligated to adequately disclose the details of the third-party manufacturers to the Plaintiff. Even if the licensee (Moser Baer)

purchased DVDs from third-party manufacturers authorised by the Plaintiff, in terms of Clause 4.2, they would be exempted from royalties, provided such manufacturer had duly paid royalties to the Plaintiff.

193. The covenants outlined in the DVD License Agreement clearly establish that the rights granted to licensees, including Moser Baer, were strictly limited to replication and distribution activities under their own brand. These rights did not extend to facilitating third-party replication or branding for entities other than the licensee. In the present cases, it is undisputed that the Defendants did not manufacture or replicate DVDs for Moser Baer's use. Instead, they supplied the DVDs directly to end-consumers and content owners under their own brand. The Plaintiff has produced sufficient evidence to establish that, even assuming Moser Baer held a valid license, its scope was confined exclusively to the production and sale of DVDs under its own brand. There was no authorization for third-party replication or manufacturing, further substantiating the Plaintiff's claim of unauthorized use and infringement by the Defendants.

194. The Defendants have failed to provide any evidence demonstrating that Moser Baer was authorized to produce stampers on their behalf. This absence of authorization indicates that the Defendants' replication activities, relying on stampers produced by Moser Baer, exceeded the bounds of any license Moser Baer may have held. The Plaintiff's argument remains compelling that any use of the Suit Patent in the replication process involving third parties falls outside the permissible scope of the DVD License Agreement. The restrictive terms of Moser Baer's license agreement unequivocally preclude any interpretation that would validate the Defendants' use of stampers for replication under their own or any other

third-party brand.

195. Furthermore, the Defendants have admitted that the glass stampers or source masters for the DVDs are supplied either by Moser Baer or by their customers. However, any alleged authority of Moser Baer to provide such stampers or masters cannot be extended to justify the Defendants' replication of DVDs based on consumer requests. The mere receipt of these materials does not confer a license or authorization to engage in replication activities that fall outside the permissible scope of the Suit Patent or any licensing agreement.

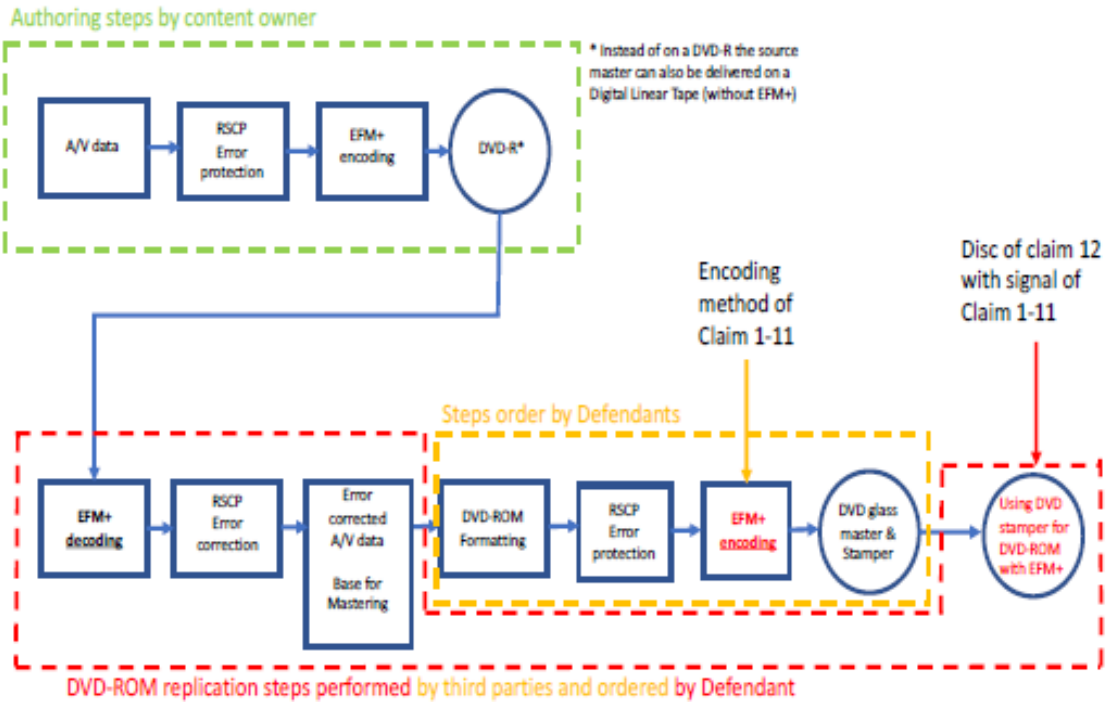
Liability for indirect infringement of the Suit Patent

196. Next, the Court shall analyse the argument of indirect infringement. As elaborated above, despite clear evidence of infringement, the Defendants sought to deflect liability onto Moser Baer and other suppliers of glass stampers, who execute the patented process by asserting that they themselves do not engage in the EFM+ encoding process protected by the Suit Patent. Instead, the Defendants argued that their role is limited to replication, which does not directly infringe the method claims of the Suit Patent.

197. In light of this defence, a key issue for consideration arises – whether the glass master or stampers produced by Moser Baer or third parties utilize the method claimed in the Suit Patent, and the extent to which the Defendants' involvement in the use of these stampers implicates them in indirect infringement.

198. The Plaintiff refuted this defence, and argued that the Defendants cannot escape liability merely by outsourcing critical components of the

replication process. The Plaintiff relied on the principles of vicarious liability and joint tort-feasorship, emphasizing that the Defendants instructed third parties to perform steps that directly fall within the scope of the Suit Patent. The Plaintiff, during final arguments, presented the following chart, which provides a clear visualization of the replication and encoding processes utilized by the Defendants and their suppliers, including Moser Baer:



199. The above chart indicates that Moser Baer/ suppliers, acting on the Defendants' behalf, conducted steps that included EFM+ encoding, thus potentially infringing claims 1 to 11 and 13 of the Suit Patent. The chart's layout delineates the specific stages where the EFM+ encoding occurs, highlighting how the Defendants sourced the encoded master for their replication activities. By stressing upon their involvement, the Plaintiff has

invoked the doctrine of 'indirect infringement,' arguing that the Defendants' utilization of the stampers that admittedly entail the patented claims, constitutes infringement of the Suit Patent.

200. There can be no cavil that the manufacture of the stampers by Moser Baer or other suppliers of the Defendants necessarily involves encoding data using the EFM+ method outlined in claims 1 to 11 and 13 of the Suit Patent. This process entails converting information words into a series of code words through modulation, aligning precisely with the Plaintiff's patented method. These encoded stampers form the foundation for the replication process that the Defendants' use, embedding the EFM+ encoding in the resulting DVD-ROMs. Claim 12 specifically covers a record carrier, *i.e.*, an object or article that carries the EFM+ encoded data on it, including a DVD. The DVDs replicated by the Defendants, using stampers produced by Moser Baer, meet the criteria of claim 12 by embodying the modulated signal. Thus, the end-product produced through the Defendants' replication process matches claim 12. The Defendants' argument regarding the origin of the EFM+ encoding – whether performed by Moser Baer or otherwise – is immaterial to the question of infringement. The existence of the EFM+ encoded signal on the replicated DVDs alone establishes infringement of claim 12, as corroborated by the testimony of PW-2. The replication process directly results in DVDs that satisfy the parameters of claim 12, rendering the Defendants liable for indirect infringement.

201. Even if the Defendants themselves do not perform the process detailed in the claims of the Suit Patent, they are producing and selling DVDs that are the direct outcome of the patented process. This activity also infringes the Plaintiff's exclusive rights under Section 48 of the Patents Act.

Indirect infringement applies where a party facilitates, induces, or otherwise enables another to commit direct infringement, even if the facilitating party does not itself engage in the infringing activity. This principle ensures that the liability extends to those who contribute substantially to infringement without executing all the infringing steps themselves. Since no judgment from Indian courts addressing the principle of indirect infringement in patent law has been cited or brought to the attention of the Court, guidance may be drawn from the jurisprudence of the Court of Appeals for the Federal Circuit in the United States.[68] In ***BMC Resources v. Paymentech L.P.***,[69] the Federal Circuit Court held as follows:

> *"The case presents the issue of the proper standard for joint infringement by multiple parties of a single claim. As the parties agree, Paymentech does not perform every step of the method at issue in this case. With other parties performing some claimed method steps, this court must determine if Paymentech may nonetheless be liable for direct infringement under 35 U.S.C. § 271(a) (2000).* ***Section 271(a) states:***
>
> > ***Except as otherwise provided in this title, whoever without authority makes, uses, offers to sell, or sells any patented invention, within the United States or imports into the United States any patented invention during the term of the patent therefor, infringes the patent.***
>
> *Direct infringement requires a party to perform or use each and every step or element of a claimed method or product. Warner-Jenkinson Co., Inc. v. Hilton Davis Corp., U.S. 17, 117 S.Ct. 1040, 137 L.Ed.2d 146 (1997) (holding that the doctrine of equivalents, like literal infringement, must be tested element by element); Canton Bio-Med., Inc. v. Integrated Liner Techs., Inc., 216 F.3d 1367, 1370 (Fed. Cir. 2000); Gen. Foods Corp. v. Studiengesellschaft Kohle mbH,: 972 F.2d 1272, 1274 (Fed. Cir. 1992). For process patent or method patent claims, infringement occurs when a party performs all of the steps of the process. Joy Techs., Inc. v. Flakt, Inc., 6 F.3d 770, 773 (Fed. Cir. 1993).*
>
> ***When a defendant participates in or encourages infringement but does not directly infringe a patent, the normal recourse under the law is for the***

[68] "Federal Circuit Court."
[69] 498 F.3d 1373.

court to apply the standards for liability under indirect infringement. Indirect infringement requires, as a predicate, a finding that some party amongst the accused actors has committed the entire act of direct infringement*. Dynacore Holdings Corp. v. U.S. Philips Corp., 363 F.3d 1263, 1272 (Fed. Cir. 2004).*

*These rules for vicarious liability might seem to provide a loophole for a party to escape infringement by having a third party carry out one or more of the claimed steps on its behalf. Cross Med. Prods. v. Medtronic Sofamor Danek, 424 F.3d 1293, 1311 (Fed. Cir. 2005). To the contrary, the law imposes vicarious liability on a party for the acts of another in circumstances showing that the liable party controlled the conduct of the acting party. Engle v. Dinehart, 213 F.3d 639 (5th Cir. 2000) (unpublished decision) (citing Restatement (Second) of Agency § 220 cmt. d****). In the context of patent infringement, a defendant cannot thus avoid liability for direct infringement by having someone else carry out one or more of the claimed steps on its behalf*** *[…]*

Infringement requires, as it always has, a showing that a defendant has practiced each and every element of the claimed invention. Warner-Jenkinson, 520 U.S. at 40, 117 S.Ct. 1040 (element-by-element analysis for doctrine of equivalents). This holding derives from the statute itself, which states "whoever without authority makes, uses, offers to sell, or sells any patented invention within the United States, or imports into the United States any patented invention during the term of the patent therefore, infringes the patent." 35 U.S.C. § 271(a) (2000). Thus, liability for infringement requires a party to make, use, sell, or offer to sell the patented invention, meaning the entire patented invention.

Where a defendant participates in infringement but does not directly infringe the patent, the law provides remedies under principles of indirect infringement. However, this court has held that inducement of infringement requires a predicate finding of direct infringement. Dynacore, 363 F.3d at 1272 […]

A party cannot avoid infringement, however, simply by contracting out steps of a patented process to another entity. In those cases, the party in control would be liable for direct infringement. It would be unfair indeed for the mastermind in such situations to escape liability*. District courts in those cases have held a party liable for infringement. See Shields v. Halliburton Co., 493 F.Supp. 1376, 1389 (W.D.La.1980).*

This court acknowledges that the standard requiring control or direction for a finding of joint infringement may in some circumstances allow parties to enter into arms-length agreements to avoid infringement. Nonetheless, this concern does not outweigh concerns over expanding the rules governing direct infringement. For example, expanding the rules governing direct infringement to reach independent conduct of multiple actors would subvert the statutory scheme for indirect infringement. Direct infringement is a strict-liability offense, but it is limited to those who practice each and every

> *element of the claimed invention. By contrast, indirect liability requires evidence of "specific intent" to induce infringement. Another form of indirect infringement, contributory infringement under § 271(c), also requires a mens rea (knowledge) and is limited to sales of components or materials without substantial non infringing uses. Under BMC's proposed approach, a patentee would rarely, if ever, need to bring a claim for indirect infringement.*
>
> *The concerns over a party avoiding infringement by arms-length cooperation can usually be offset by proper claim drafting. A patentee can usually structure a claim to capture infringement by a single party. See Mark A. Lemley et al., Divided Infringement Claims, 33 AIPLA Q.J. 255, 272-75 (2005)[…]"*
>
> [Emphasis Supplied]

202. The US Federal Circuit Court has held that allowing infringers to escape liability simply by outsourcing steps of a patented process would create a loophole contrary to the statutory scheme. Vicarious liability arises where one party exercises control over another's conduct to execute the claimed invention. While this standard aims to prevent unfair exploitation, it also cautions against over extending direct infringement liability, ensuring that indirect infringement remains the appropriate remedy where multiple actors are involved in performing the claimed steps. This principle is particularly relevant in cases like the present, where the Defendants outsourced critical steps of the patented process to third parties like Moser Baer, yet retained control over the replication process. By directing the production of stampers incorporating the EFM+ encoding and subsequently using these stampers in their replication process, the Defendants' actions align with the framework of indirect infringement, as established in ***BMC Resources*** *(Supra)*.

203. Further, in ***Akamai Technologies INC v. Limelight Networks***,[70] while

[70] MANU/USFD/0165/2015.

interpreting the phrase "*exercises sufficient direction or control*" from ***BMC Resources***, the Federal Circuit Court held that an indirect infringer could be vicariously liable in scenarios involving a principal-agent relationship, a contractual arrangement, or a joint enterprise, where parties function as mutual agents. Notably, the decisions in ***BMC Resources*** *(Supra)* and ***Akamai Technologies INC*** *(Supra),* were rendered in the context of Section 271(a) of the U.S. Patent Act, which parallels Section 48 of the Indian Patents Act.

Conclusion

204. The Defendants, in an attempt to deflect liability, raised the defence that their manufacturing activities were outsourced to a licensee of the Plaintiff only at the stage of final arguments. This argument was neither pleaded nor substantiated during trial, and no evidence was led to demonstrate that Moser Baer or any other supplier held a valid and subsisting license covering the production of stampers for third-party replication. The belated nature of this defence, coupled with the absence of supporting evidence, renders it untenable.

204.1 Under the doctrine of indirect patent infringement, a third-party infringer can be held liable for the actions of others if they collaborated and acted in a concerted manner to undermine the patentee's rights. In cases involving SEPs, the doctrine of indirect infringement gains significance. A party may be held liable for indirect infringement if they facilitate or enable the use of a patented technology covered by the standard. For instance, this could include manufacturing or supplying components specifically designed for standard-compliant products, or providing technical assistance to

implementers.

204.2 The replication process ordered and outsourced by the Defendants involves steps directly covered by the Suit Patent. The final DVD-ROMs replicated under this process contain the EFM+ encoded signals as stipulated in claims 1 to 11 and 13 of the Suit Patent. Thereafter, the Defendants employ a process of physical stamping, by which the same pits and bumps are transferred onto discs in large quantities. This act of replication, which culminates in DVDs produced by the stamping process described above, constitutes an infringement of claim 12. By commissioning and utilizing stampers embedded with the patented encoding, the Defendants knowingly facilitate the production of infringing DVDs. The acts of third parties such as Moser Baer, who manufacture the stampers containing the EFM+ encoding at the Defendants' request, does not absolve the Defendants' liability. Under the law of agency and vicarious liability, the Defendants bear responsibility for the acts of Moser Baer as their agent. This shared intention and execution of actions that result in the production of infringing DVDs underscore the existence of a common design, making both the Defendants and their collaborators equally liable for patent infringement.

204.3 The Defendants and Moser Baer acted collaboratively, contributing to the production and replication of DVDs that incorporated the patented technology. This collaboration does not exonerate the Defendants from liability, as both parties contribute to the same infringing outcome and are equally accountable under the principles of joint tortfeasance.

Findings

205. In view of the foregoing analysis, the following issues are answered in favor of the Plaintiff, and against the Defendants holding them liable for

infringement of the Suit Patent:

i. Issues No. 3 and 4 in CS (COMM) 423/2016,

ii. Issues No. 4 and 5 in CS (COMM) 519/2018, and

iii. Issues No. (v) and (viii) in CS (COMM) 499/2018.

VI. RELIEF[71]

206. The Suit Patent lapsed on 12th February, 2015, while the present suits were pending adjudication. Consequently, the relief of injunction originally sought in the plaint is no longer maintainable. Regarding monetary relief, the Plaintiff had the option to seek either damages or an account of profits. However, before the framing of issues and the commencement of trial, the Plaintiff elected to confine its claim to damages in accordance with Section 108(1) of the Patents Act. This decision is reflected in their statements recorded in order dated 30th November, 2012 in CS (COMM) 423/2016 and CS (COMM) 499/2018, and order dated 27th November, 2012 in CS (COMM) 519/2018.[72]

207. In patent law, damages serve as a fundamental remedy to compensate the patentee for losses resulting from infringement. Under Section 108 of the

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[71] In this segment, the Court shall decide the following issues:
In CS (COMM) 423/2016
Issue No. 8 – Relief

In CS (COMM) 519/2018
Issue No. 7 – Relief

In CS (COMM) 499/2018
a. *Issue No. (ix) – Whether the Plaintiff is entitled to damages? OPP*
b. *Issue No. (x) – Relief*
c. *Issue No. (vi) – Whether the Defendants/Counter-Claimants were aware of the Plaintiffs/Respondent's DVD patents and their licensing programs and despite that continued wilful infringement? OPP*
d. *Issue No. (vii) – Whether the Defendants/ Counter-Claimants are liable to pay any license fee to the Plaintiff/Respondent and if so, at what rate? OPP*

Patents Act, once infringement is established, the patentee is entitled to relief, which may include damages or an account of profits, at its discretion. The objective of awarding damages is to place the patentee in the position they would have been in, had the infringement not occurred, ensuring that the unauthorized use of patented technology does not go uncompensated. In cases involving SEPs, where patented technology is indispensable for compliance with industry standards, the failure to adequately compensate the patentee not only impacts its exclusive rights, but also undermines the framework of fair licensing and innovation incentivization.

208. The Court has determined that the Suit Patent is essential to the standard for DVD manufacturing and production, as recognized by the DVD Forum. As a result, all entities engaged in DVD manufacturing, known as implementers, are required to obtain a license from the Plaintiff – the patent owner. In such a scenario, the Plaintiff is obligated to provide a license on FRAND terms. This includes granting licenses at reasonable royalty rates that reflect both the value of the patented technology and the competitive balance within the industry.

209. The measure of damages in cases involving SEPs requires a comprehensive assessment of multiple factors, including the nature of the patented invention, the royalty rates typically received by the patentee under its licensing arrangements, the willingness (or reluctance) of the Defendants to enter into licensing negotiations, the duration and scale of infringement, the intent of the infringers, and the financial impact on the Plaintiff.[73]

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[72] *See*: paragraph 21 of this judgment.

[73] *See:* ***Gerber Garment Technology Inc v. Lectra Systems Ltd.,*** [1997] RPC 443; ***Lava International Limited*** *(Supra);* ***Strix Ltd. v. Maharaja Appliances Limited,*** 2023 SCC OnLine Del 7128; and ***Koninklijke Philips Electronics N.V. v. Rajesh Bansal,*** 2018 SCC OnLine Del 9793.

Specifically in cases involving SEPs, the FRAND rates at which Plaintiff uniformly offers licenses to all entities, hold significance. In the seminal judgment of the Supreme Court of the United Kingdom in ***Unwired Planet International Ltd. and Anr. v. Huawei Technologies (UK) Co. Ltd. and Anr.,***[74] which shaped the landscape of SEP litigation, it was held that the quantum of damages awarded by a court for an SEP infringement is typically based on royalties that would have been payable under a FRAND license. This principle has been recognised by, and reaffirmed in, the Indian jurisprudence as well. The Division Bench of this Court in ***Xiaomi Technology and Anr. v. Telefonaktiebolaget LM Ericsson (PUBL) and Anr.,***[75] and a Coordinate Bench in ***Lava International Limited*** *(Supra)* have both affirmed that the FRAND rates serve as the most appropriate basis for calculating damages in SEP infringement cases.

210. In the present cases, the Defendants have neither meaningfully contested the essentiality of the Suit Patent nor provided evidence disputing the fairness of the royalty rates quoted by the Plaintiff. The Defendants, by choosing to manufacture and distribute DVDs without securing a FRAND license, circumvented the essential framework governing the use of SEPs. Their refusal to engage in licensing negotiations and failure to compensate the Plaintiff for the use of the Suit Patent necessitate the award of damages to remedy the proven infringement. In light of the circumstances discussed above, the Court is not required to adjudicate whether the Plaintiff's proposed royalty rates comply with FRAND terms, so long as the Plaintiff demonstrates that they remain willing to license the Suit Patent on the same

[74] [2020] UKSC 37.
[75] 2014 SCC OnLine Del 7688.

uniform and non-discriminatory terms extended to other implementers. At the same time, the Defendants' deliberate avoidance of a licensing arrangement, despite their knowledge of the Suit Patent's essentiality, is a relevant consideration in determining their financial liability. Accordingly, the Court now proceeds to assess the quantum of damages based on the evidence presented.

VI.I. ***FRAND/ Royalty rates for the Suit Patent***

211. The Plaintiff submitted that the standard royalty rate for manufacturing or production of DVD using the Suit Patent is USD 0.03 per unit. In support, the Plaintiff relied upon Ex. PW-1/21/ PW-2/D-23 in CS (COMM) 423/2016, Ex. PW-1/6 in CS (COMM) 499/2018, and Ex. PW-1/32 in CS (COMM) 519/2018, which is a Standard DVD License Agreement. This DVD License Agreement, as discussed previously, has not been controverted by the Defendants.

212. The deposition of PW-1 in CS (COMM) 423/2016 which is consistent with evidence produced in CS (COMM) 519/2018 and CS (COMM) 499/2018, demonstrates that the DVD License Agreement is based on standard terms, and complies with FRAND obligations:

> "*12. I say that until 30th June, 2012, the Plaintiff operated a worldwide standard and non-discriminatory licensing programme under which the Plaintiff, inter alia, offered licenses under its patents essential to the DVD Standard. I say that the terms and conditions of the licensing programme are Fair, Reasonable and Non-Discriminatory (FRAND) and the licensing fee is fixed at a commercially viable rate for all manufacturers and the Plaintiff's licenses are readily available to all or any applicant on standard terms. Further, every license granted by the Plaintiff authorizes the licensee to market the licensee's products globally. Under that licensing programme the Plaintiff offered two*

types of patent licenses for DVD Video Disc and DVD ROM Disc Patent Licenses:

(a) The PHILIPS ONLY version offering only the patents of PHILIPS; and

(b) The JOINT version offering the patents of PHILIPS, SONY, PIONEER and LG.

13. I say that under its licensing models the applicant has the complete and exclusive liberty to choose between the PHILIPS ONLY and JOINT patent license. I say that the Plaintiff continues to make its patents essential to the DVD-standard available to applicants in a transparent manner as described above earlier through the Plaintiff and since July 2, 2012 through the licensing company One-Red, LLC. I say that the entire details of the Plaintiffs licensing programs are transparently available on the websites <www.ip.philips.com> & <www.one-red.com> so that the same can be readily available to any interested party."

213. In view of the uncontroverted evidence establishing that the Suit Patent was licensed at a uniform and commercially viable rate, the Court finds that the standard royalty rate for the Suit Patent stands at USD 0.03 per DVD. Consequently, damages shall be computed on the basis of this established rate in all the three suits.

VI.II. ***Effect of Defendants' pre-suit and trial conduct on damage assessment***

VI.II.I *Correspondences preceding the suits*

CS (COMM) 423/2016

214. Pearl Engineering was previously a licensee of the Plaintiff's patents pertaining to VCDs, including Indian Patent No. 175971. During the subsistence of this VCD License Agreement, the Plaintiff discovered that Pearl Engineering was also engaged in DVD replication, which involved the use of technology protected by the Suit Patent. Consequently, the Plaintiff

addressed a letter dated 31st August, 2006 [Ex. PW-1/14], notifying Pearl Engineering of their rights in the Suit Patent, and requesting confirmation regarding acquisition of a DVD replication line. A reminder letter was subsequently sent on 27th September, 2006 [Ex. PW-1/15].

215. In response, Pearl Engineering responded *via* e-mail dated 31st May, 2007, and acknowledged that they had procured a DVD replication line and requested the necessary documentation to secure a license. This communication, along with the ensuing correspondences, collectively marked as Ex. PW-1/17, are reproduced below:

> *"Dear Bhiwandiwalla,*
> *Please refer to our discussions of date. We are pleased to inform you that we have procured one DVD line. You are requested to send necessary documents as discussed.*
> *Regards,*
> *Behl"*
>
> *"2007-06-01 09;07 AM*
>
> *Dear Mr. Behl,*
> *Please find attached an Application Form which needs to be filled in and signed after affixing your company's rubber stamp. Please note that as always you will be at liberty to decide whether you would prefer to take a Joint license or a PHILIPS Only license.*
>
> *[attachment "APPLICATION FORM.doc" deleted by F. Bhiwandiwalla/MUM/IPS/PHILIPS]*
>
> *Please further note that with regard to the Video CD Disc Patent License Agreement executed on 28th January, 2005, you have been repeatedly been non-compliant. As on date we have not received the Royalty Reports for the period 1st October, 2006 to 31st December, 2006 and also 1st January, 2007 to 31st March, 2007. Further, you have also not cleared the entrance fee payments inspite of having executed the Agreements in January, 2005. We would request you to please immediately sort this out.*
> *Regards*
> *Farokh N. Bhiwandiwalla*
> *Licensing Counsel - India"*

"2007-07-19 02:03 PM

Dear Mr.Behl,
I am in receipt of your Application Form. Before I can proceed with providing you the execution copies of the relevant Agreements I would require your clarification on the following:
1. In point 6 of the Application Form you have indicated DVD Audio Disc. I presume it is inadvertently marked. The DVD Audio Disc has a separate Patent License Agreement. The DVD Video & DVD ROM Disc is one common Agreement. Kindly confirm.
2. In point 8 you have not filled in the details. Please note that the past quantities manufactured alongwith the period needs to be provided for. Kindly provide the same.
Kindly let me have the above details so that I can do the needful.
Regards
Farokh N. Bhiwandiwalla
Licensing Counsel - India"

"2007-07-30 03:37 PM
Dear Mr.Behl,
I await your response to the undermentioned e-mail. Without this I cannot proceed further.
Regards
Farokh N. Bhiwandiwalla"

216. The sequence of events noted above makes it evident that Pearl Engineering was aware of the Plaintiff's proprietary rights over the Suit Patent and initially expressed a willingness to obtain a license. In furtherance of this intent, they submitted a partially completed application form [Ex. PW-1/16]. However, when the Plaintiff pointed out the deficiencies and requested for complete documentation along with the form through e-mails dated 19th July, 2007 and 30th July, 2007, Pearl Engineering ceased all communication and did not pursue the licensing process further.

217. Despite this, Pearl Engineering continued large-scale replication of DVDs without obtaining a license. In October 2010, the Plaintiff, in an effort to substantiate their claims of infringement, purchased sample DVDs

replicated by Pearl Engineering on 28th October, 2010. These samples were then examined by the Plaintiff's expert who confirmed that they incorporated the patented technology, amounting to infringement. Accordingly, the Plaintiff issued the following communication on 03rd November, 2010 [Ex. PW-1/21], reiterating their earlier demands and urging Pearl Engineering to cease unlicensed replication:

> *"Dear Sirs,*
> ***Sub: DVD Video & DVD ROM Disc Patent Licensing Program - Information***
> *We refer to our previous correspondence on the subject matter. On perusal of the correspondence we notice that you had submitted an Application Form for seeking the aforesaid patent license but have thereafter failed to reply to our clarifications sought with regard to the incomplete Application Form submitted by you.*
>
> *In the meantime, we have also learnt that you continue to rampantly replicate DVD Video Discs and/or DVD ROM Disc for various customers. We have reasons to believe that your product embodies technologies described in certain patent rights relating to the DVD Video & DVD ROM Discs owned by Koninklijke Philips Electronics N.V., the Netherlands (hereinafter referred to as "Philips") and its co-licensors. In spite of the fact that you have already earlier, in principle, applied for the aforesaid Patent License and you need not require any further details, we, by way of abundant caution, are once again providing you hereunder some basic information about our patent license program for DVD Video & DVD ROM Discs.*
>
> *In addition to its own patents Philips also licenses the applicable patent rights of Sony, Pioneer and LG. DVD Video &DVD ROM Disc manufacturers are required to conclude appropriate Patent License Agreements under standard terms and conditions before start of production in order to avoid possible infringement of the patents of Philips and its co-licensors.*
>
> *Your company is hereby offered and can choose to conclude either a Joint DVD Video & DVD ROM Disc Patent License Agreement (covering the patent rights of Philips and the above mentioned co-licensors) or a so called Philips Only DVD Video & DVD ROM Disc Patent License Agreement (for the use of Philips' patents only).*
> *For your information, the royalty rates applicable for DVD Video & DVD ROM Disc Patent License are explained below:*

1) <u>ROYALTY RATES FROM MAY 28, 2010</u>
<u>(for DVD discs replicated & sold for end use in India)</u>

	(In USD) <u>*Standard Rate*</u>	*(In USD)* <u>*Reward Rate*</u>
<u>*For PHILIPS Only*</u>		
DVD Video Disc	*0.03*	*0.0225*
DVD ROM	*0.03*	*0.0225*
	(In USD) <u>*Standard Rate*</u>	*(In USD)* <u>*Reward Rate*</u>
For Joint License <u>*(i.e. Philips. Sony, Pioneer & LG)*</u>		
DVD Video Disc	*0.05*	*0.0375*
DVD ROM	*0.05*	*0.0375*

2) ***ROYALTY RATES UPTO MAY 27, 2010***

	(In USD) <u>*Standard Rate*</u>	*(In USD)* <u>*Reward Rate*</u>
<u>*For PHILIPS Only*</u>		
DVD Video Disc	*0.03*	*0.0225*
AC-3 Technology	*0.0027*	*0.0027*
MPEG Audio	*NIL*	*NIL*
DVD ROM	*0.03*	*0.0225*
	(In USD) <u>*Standard Rate*</u>	*(In USD)* <u>*Reward Rate*</u>
For Joint License <u>*(i.e. Philips. Sony, Pioneer & LG)*</u>		
DVD Video Disc	*0.05*	*0.0375*
AC-3 Technology	*0.003*	*0.003*
MPEG Audio	*NIL*	*NIL*
DVD ROM	*0.05*	*0.0375*

<u>*NOTE*</u>*:*
For DVD Video discs manufactured and sold for end use in India effective from May 28,2010, the "AC-3 Technology" royalties are not applicable.
In each of the above versions (i.e. Joint or Philips Only) the proposed licensee would also have to pay a one-time non-refundable lumpsum entrance fee of US$ 10,000 out of which US$ 5,000 would be adjusted towards running royalties.
It may be mentioned that in both cases, the compliant royalty rates would be applicable only to those companies who are in full compliance with their obligations under the relevant Patent License Agreements and not otherwise.
It may be noted that in case of a party taking the relevant license after commencement of production the party would have to pay at the 'standard rate' for such quantity of past production.

In order that your company has all the required information please find enclosed the following:
1. An Application Form which may be returned duly completed.
2. A two letter country code to understand the Patent Lists.
3. Reference copy of DVD Video Disc and DVD-ROM Disc Patent License Agreement (Philips only) along with the Patent Lists.

We also inform you that several of the DVD pre-recorded Disc manufacturers in India are licensees of Philips. For your ready reference, as on date of this letter, the following parties are the licensees of Philips:
Moser Baer India Limited
Jet Speed Audio Private Limited
KRCD (India) Private Limited
Aftab Electronics Private Limited
Anant Electronics Private Limited
Futuristic Concepts Media Limited
IP Softcom (India) Private Limited
SPSoft Digital Media Private Limited
Baba International Private Limited
There are also a few other parties who have already applied for the aforesaid patent licenses and the issuance of the same is in process.

*We would appreciate if you complete the attached **Application Form** and return the same to us duly completed and signed with a clear indication of your company's intention to execute the appropriate DVD Video & DVD ROM Disc Patent License Agreement, especially in view of the fact that your company has already started commercial production of the DVD Video & DVD ROM Discs, at the under mentioned address […]"*

218. Despite being given multiple opportunities over several years, Pearl Engineering neither secured a license nor discontinued their replication activities, even after being made fully aware of the Suit Patent. In his affidavit by way of evidence, DW-1 attempted to justify this omission by arguing that Pearl Engineering did not manufacture DVDs before replication and, therefore, did not require a license. However, as established in the Court's infringement analysis, this defence is untenable. Further, the fact that Pearl Engineering initially applied for a license [Ex. PW-1/16], but later ceased communication further undermines their defence and casts doubt on their good faith.

CS (COMM) 519/2018

219. Siddharth Optical was also previously a licensee of the Plaintiff's patents pertaining to VCDs, including Indian Patent No. 175971. During the term of this VCD License Agreement, the Plaintiff acquired knowledge that Siddharth Optical was also engaged in DVD replication involving the use of the Suit Patent technology. Consequently, the Plaintiff addressed a letter on 09th May, 2006 [Ex. PW-1/35], informing Siddharth Optical of their rights in the Suit Patent. The Plaintiff further notified Siddharth Optical of their licensing framework, permitting the licensees to opt for either a 'Philips Only' or a 'Joint DVD' license. The licensing terms were also clearly disclosed in this communication. The relevant portion of Ex. PW-1/35 is extracted below:

> *"For your information, the royalty rates for DVD Video & DVD ROM Disc License + AC3 + MPEG Audio would be as under:*
>
> | | *Standard* | *Reward Rate* |
> |---|---|---|
> | *For Joint License (i.e. Philips. Sony, Pioneer & LG)* | | |
> | *DVD Video* | *0.05* | *0.0375* |
> | *DVD Video including AC-3* | *0.053* | *0.0405* |
> | *MPEG Audi incl. In DVD Video LA* | *NIL* | *NIL* |
> | *AC-3* | *0.003* | *-* |
> | *DVD ROM* | *0.05* | *0.0375* |
>
> | | *Standard* | *Reward Rate* |
> |---|---|---|
> | *For PHILIPS Only* | | |
> | *DVD Video* | *0.0300* | *0.0225* |
> | *DVD Video including AC-3* | *0.0330* | *0.0255* |
> | *MPEG Audi incl. In DVD Video LA* | *NIL* | *NIL* |
> | *AC-3* | *0.030* | *0.0300* |
> | *DVD ROM* | *0.03* | *0.0225* |
>
> *In each of the above versions (i.e. Joint or Philips Only) the proposed licensee would also have to pay a one-time non-refundable lumpsum entrance fee of US$ 10,000 out of which US$ 5,000 would be adjusted towards running royalties.*

> *It may be mentioned that in both cases, the compliant royalty rates would be applicable only to those companies who are in full compliance with their obligations under the relevant Patent License Agreements and not otherwise. It may be noted that in case of a party taking the relevant license after commencement of production the party would have to pay at the 'standard rate' for such quantity of past production.*
> *In order that your company has all the required information please find enclosed the following:*
> *1. Application Form.*
> *2. Reference copy of DVD Video Player and DVD-ROM Disc Patent License Agreement (Joint version).*
> *3 Reference copy of Patent License Agreement for the use of AC-3 Technology in the Manufacture of DVD Video Disc (Joint version)."*

220. The above communication dated 09th May, 2006 was also accompanied with a standard DVD License Agreement and other necessary documentation. However, no response was received from Siddharth Optical. In the meantime, the parties continued to correspond regarding the VCD Patent License secured by Siddharth Optical, which concluded with the expiry of the VCD Patent on 28th May, 2010.

221. Thereafter, in January 2010, the Plaintiff learnt that Siddharth Optical was also manufacturing/ replicating DVDs without a license from the Plaintiff. The Plaintiff then addressed another communication to Siddharth Optical on 05th February, 2010 [Ex. PW-1/36 (colly)], asserting their proprietary rights over the Suit Patent and reiterating their earlier license offer. As no response was received to this communication, the Plaintiff issued a reminder letter on 10th March, 2010 [Ex. PW-1/37 (colly)]. This time, Siddharth Optical replied on 16th March, 2010 [Ex. PW-1/38], denying any involvement in the replication of DVDs, citing low demand and inviable market pricing as reasons for the lack of commercial exploitation.

222. The Plaintiff responded to the above communication on 25th March,

2010, asserting that Siddharth Optical's position was false and incorrect, particularly in view of the cover jackets of DVDs sent along with the Plaintiff's letter dated 05th February, 2010. Accordingly, the Plaintiff once again requested them to obtain an appropriate license.

223. Pertinently, through letter dated 06th May, 2010 [Ex. PW-1/40], Siddharth Optical stated that they had not been earlier informed by the machine suppliers about the Suit Patent and sought details of licenses from the Plaintiff. The said communication reads as under:

> *"Licensing Counsel- India* *6-May-2010*
> *Philips India Ltd.,*
> *Technopolis Knowledge Park,*
> *2nd Floor, Mahakali Caves Road,*
> *Chakala, Andheri (E),*
> *Mumbai – 400 093*
>
> *Kind Atn. : Mr. F. N. Bhiwandiwalla*
>
> *Dear Sir,*
> *With reference to your letters regarding DVD - Licensing Program we would like to know complete details of this as we have not been informed by the Machinery Supplier about such Patent License and subsequent Royalty payment issues. Kindly provide complete detail about Patent License, its applicability. Date when it started and up to which date it is applicable on our products, Types of Patent License and Registration Fee payable, Royalty Rates applicable etc. so that we may take a stand on the issue.*
> *Thanking You.*
> *For Siddharth Optical Disc. Pvt. Ltd.*
> *Sd/-*
> *(Director)"*

224. Consequently, the Plaintiff once again sent a communication on 07th May 2010, outlining the terms of the licenses offered by them, including the royalty rates, along with the necessary documentation. Additionally, through their letter dated 19th May, 2010 [Ex. PW-1/42], the Plaintiff sought details

of the DVD replication lines procured by Siddharth Optical to ascertain the appropriate licensing arrangement. Given the lack of response from Siddharth Optical, the Plaintiff examined their Annual Reports and issued another communication on 09th June, 2010 [Ex. PW-1/43 (colly)], emphasizing on the large quantities of DVDs manufactured by Siddharth Optical.

225. Siddharth Optical issued the following response dated 16th June, 2010 [Ex. P-28] to the Plaintiff's repeated communications:

> *"Kind Atn.: Mr. F. N. Bhiwandiwalla*
> *Dear Sir,*
> *With reference to your letter regarding the royalty on DVD discs and mentioning the fact that the replication equipment supplier in its contract mentions the following general terms:*
> *a) the purchase of the Replication Line does not grant any license to the buyer of any third party intellectual property rights related to the manufacturing of discs; and*
> *b) the manufacture and subsequent sale of disc may require a separate patent license.*
> *We wish to inform you that your above contention is not correct as we have not entered into any contract with any machinery manufacturer for DVD lines and have in fact acquired a second hand machinery. Thus, no body has informed us about the royalty if any applicable on manufacturing of DVD discs and we have in fact came to know about this fact only on receipt of letters from you. Further on becoming aware of the above fact we have contacted some of the other manufacturers also who have also affirmed that no royalty is being paid by them to you. In fact you will also be aware of the above fact. You will appreciate that the industry is going through one of the most recessionary period and at present we are not even able to recover our cost and you will appreciate that even our company has incurred a loss during. the year ended 31.03.2009 and the same is the position in the year ended 31.03.2010. The above position have worsened during the current financial year due to increase in the prices of Polycarbonate Powder and decline in the Sales prices.*
> *Further we have stopped manufacturing the DVD till the picture becomes clear and all the manufacturers start paying the same so that the same can be recovered from the customer. In fact we will support any such endeavour on your part which will bring all the DVD manufacturers at par which will force the customer to pay the royalty amount.*

We hope that you will appreciate our position and take some positive steps to make all the manufacturers and customers pay the royalty.
Yours faithfully,
Sd/-
(Surinder Wadhwa)
Director"

226. Siddharth Optical thus stated that they became aware of the issue concerning the Suit Patent only upon receiving the Plaintiff's letters. Upon learning of this, they reached out to other manufacturers, who also confirmed that no royalty payments were being made to the Plaintiff. They emphasized that the industry was experiencing a severe recession, making it difficult to even recover costs. They referred to the losses incurred in the financial years 2009-2010, with the situation worsening further due to rising polycarbonate powder prices and declining sales prices. Siddharth Optical specifically stated that they had ceased DVD manufacturing until the situation regarding payment of royalties by manufacturers was clarified. The issuance of this communication has not been denied by Siddharth Optical. The negotiations between the Plaintiff and Siddharth Optical culminated with the Plaintiff issuing the communication dated 14th July, 2010 [Ex. PW-1/44], refuting these averments on the basis of the Annual Reports of Siddharth Optical.

227. Siddharth Optical initially sought details regarding the Plaintiff's license, however, they failed to take any further action on the matter. This conduct suggests that their request was not made in good faith, but was a delaying tactic to evade licensing obligations. The lack of any subsequent engagement and citing of frivolous and incorrect reasons for not obtaining a license indicates that Siddharth Optical was never interested in complying

with the Plaintiff's requests. Further, their communication dated 16th June, 2010 demonstrates a complete disregard of the Plaintiff's proprietary rights and legal obligations.

CS (COMM) 499/2018

228. The Plaintiff first issued a letter addressed to Defendant No. 1, Mr. G.S. Kohli, in his capacity as the director of Defendant No. 2, Balaji Optical Disc Private Limited, on 25th April, 2007 [Ex. PW-1/16]. Through this letter, the Plaintiff informed Defendant No. 1 and Defendant No. 2 of their licensing program in relation to the Suit Patent and the applicable royalty rates. This letter contained all necessary details to facilitate the application process and was accompanied with a standard DVD License Agreement and application form. Defendants No. 1 and 2 however, failed to respond.

229. Later, in February 2010, the Plaintiff procured four VCDs and three DVDs published by M/s. Eagle Home Entertainment Private Limited, all of which had been replicated by Defendant No. 2. Accordingly, on 08th February, 2010, the Plaintiff again wrote to Defendants No. 1 and 2, notifying them that it had acquired evidence of their unauthorized replication of DVDs and VCDs, and reiterated their earlier offer [Ex. PW-1/8]. Despite this communication, Defendant No. 2 continued its infringing activities without any response. Consequently, on 10th March, 2010, the Plaintiff sent a follow-up letter to Defendants No. 1 and 2, once again requesting to cease the infringing activities and obtain appropriate licenses [Ex. PW-1/17].

230. By November 2010, the Plaintiff learnt that Defendant No. 4 was also a director of Defendants No. 2 and 3. Given the continued inaction of

Defendants No. 1 and 2, the Plaintiff sent another letter on 03rd November, 2010 to Defendants No. 1, 2, and 4 [Ex. PW-1/19]. In this communication, the Plaintiff reiterated their offer to enter into a licensing agreement and provided a detailed explanation of the applicable royalty rates.

231. In the meantime, the Plaintiff learnt that Defendant No. 3 was also replicating and manufacturing DVDs without a license. Consequently, they sent a letter to Defendant No. 3 on 28th April, 2010 [Ex. PW-1/21], informing them about the licensing regime *vis-à-vis* the Suit Patent, which included the applicable royalty rates. This letter contained all the relevant information required for Defendant No. 3 to apply for a license, enclosing therewith an application form. However, Defendant No. 3 did not respond to the letter.

232. Having received no response, on 19th May, 2010 [Ex. PW-1/23], the Plaintiff sent a reminder communication to Defendant No. 3, urging them to obtain the appropriate patent license. With this letter, the Plaintiff included a copy of the cover jacket for the DVD disc titled "*Bhavnao Ko Samjho*," which had been replicated by Defendant No. 3.

233. Despite the Plaintiff's efforts, Defendant No. 3 continued to disregard their communications, prompting the Plaintiff to send a third letter on 08th September, 2010 [Ex. PW-1/26], once again requesting a response. In this letter, the Plaintiff reiterated that Defendant No. 3's replication of DVDs without the proper license constituted an infringement of the Plaintiff's Suit Patent. Given the lack of response, a final communication dated 29th October, 2010 [Ex. PW-1/32] was issued by the Plaintiff, urging Defendant No. 3 to cease the infringement and obtain the required license.

VI.II.II. *Defendants are unwilling licensees of the Suit Patent*

234. The evidence adduced clearly demonstrates that the Plaintiff, as the owner of an SEP, made diligent and repeated efforts to offer the Defendants a license under FRAND terms. In the letters addressed to all these Defendants, the Plaintiff clearly outlined its licensing framework, giving the Defendants the option to either procure a 'Philips Only' license, or a joint license covering the portfolio of patents owned by Plaintiff, Sony, Pioneer, and LG. The communication further detailed the proposed royalty rates and enclosed a DVD License Agreement, leaving no ambiguity regarding the Plaintiff's willingness to license the Suit Patent on non-discriminatory terms. The issuance and receipt of these communications have not been denied by the Defendants, thus reinforcing the conclusion that the Plaintiff met their FRAND obligations.

235. In ***Intex Technologies*** *(Supra)*, it was held that an implementer must either accept or present a counter-offer along with suitable security for the devices sold in the interregnum to demonstrate their *bona fide*. A failure to take these steps renders the implementer an 'unwilling licensee.' In such situations, following the judgments in ***Unwired Planet*** *(Supra)*, ***Xiaomi Technologies*** *(Supra)*, and ***Lava International*** *(Supra)***,** the Court is empowered to assess damages based on the royalties the Plaintiff would have earned had the Defendants obtained a license for the Suit Patent, which is an SEP. The Defendants' persistent refusal to engage in licensing negotiations, coupled with continued infringement, places them squarely within the category of an unwilling licensee, warranting an award of damages based on the established royalty rate.

VI.II.III. *Non-disclosure of production and sales data in relation to DVDs replicated by the Defendants*

236. The Plaintiff has not produced independent documentary evidence quantifying the number of DVDs replicated by the Defendants. In the absence of direct proof, the Plaintiff sought to obtain these details through the examination of DW-1. The Court now proceeds to assess the adequacy and sufficiency of the evidence presented by Plaintiff in support of their claim for damages.

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237. First and foremost, certain procedural developments during the trial merit consideration. On 10th January, 2015, the Plaintiff issued a Notice to Produce under Order XII Rule 8 of the Code [Ex. DW-1/P1], requiring Defendant No. 1 to furnish the following details:

> "i. *Originals of all sales/ purchase agreements entered into by the Defendants with supplier(s) for purchasing DVD Video/ ROM Disc Replication Lines from the year 2006 till date.*
> ii. *The monthly excise or any statutory returns filed by the Defendants with the original acknowledgement of the statutory authority for manufacture and sale of DVD Video/ ROM discs from January 2007 till date.*
> iii. *Defendants' complete annual accounts (including but not limited to – Directors' Report, Auditors' Report, Balance Sheet, profit & Loss Account and Notes on the Balance Sheet and Profit & Loss Account) filed with the Registrar of Companies or any other statutory authority along with necessary acknowledgement from the Registrar of Companies or any other such statutory authority from the year 2007 till date.*"

238. Pearl Engineering failed to comply with the notice. Thereafter, the Plaintiff filed I.A. 6548/2015 under Order XI Rules 12, 14, and 21 of the Code, seeking production of: (*a*) the original sales/ purchase agreements

concerning the DVD Video/ ROM Disc Replication Lines from 2006, (*b*) monthly excise and other statutory returns in relation to the manufacture and sale of DVD Video/ ROM discs commencing from January 2007, and (*c*) complete annual accounts from 2007, by Pearl Engineering. After hearing the detailed submissions of the parties, the Court allowed this application on 20th July, 2015 and ordered production of the above documents by Pearl Engineering. Pearl Engineering challenged this order in FAO (OS) 458/2015, however this appeal was dismissed on 19th January, 2016 by the Division Bench.

239. Following the dismissal of their appeal, on 04th March, 2016, Defendant No. 1 submitted the following affidavit:

> *"AFFIDAVIT*
>
> *I, Maj. (Retd.)Sukesh Behl, son of Mr. U.R. Behl, aged about 62 years, proprietor M/s. Pearl Engineering Company, C-169, Mayapuri Industrial Area Phase I, New Delhi - 110 064,presently in Goa, do hereby solemnly affirm and declare as under:*
>
> *1. That the deponent being the defendant in the above noted matter is well conversant with the facts and circumstances of the case and is competent to sign and verify the present affidavit.*
>
> *2. I state that vide Order dated 20.07.2015 passed in the present proceedings read with the contents of the Order dated 19.01.2016 (interalia including under the provisions of Order 11 Rule 14, CPC) passed in FAO(OS) No. 458/2015 titled "Maj. (Retd.) Sukesh Behl and another versus Koninklijke Philips Electronics N.V.", the deponent was directed to produce the following documents:*
>
> *I. Originals of all sales / purchase agreements entered into by the Defendants with supplier(s) for purchasing DVC Video / ROM Disc. Replication Lines from the year 2006 till date.*
>
> *II. The monthly excise returns or any statutory returns filed by the Defendants with the original acknowledgement of the statutory authority for manufacture and sale of DVC Video / ROM discs by the Defendants from January, 2007 till date.*
>
> *III. Defendants' complete annual accounts (including but not limited to – Directors' Report, Auditors' Report, Balance*

Sheet, Profit & Loss Account and Notes on the Balance Sheet and Profit &Loss Account) Filed with the Registrar of Companies or any other statutory authority along with necessary acknowledgement from the Registrar of Companies or any other such statutory authority from the year 2007 till date."

3. I state that the factory is lying closed and the aforesaid documents are not in the power possession and control of the defendant. The said documents along with certain other records of the firm are not traceable and cannot be located.

4. I state that the said fact has already come on record during the proceedings of the cross examination in respect of the said documents."

240. The affidavit submitted by Maj. (Retd.) Sukesh Behl, Defendant No. 1 [Ex. DW-1/PF] in response to the Court's order dated 20th July, 2015, reveals that Pearl Engineering has failed to produce key financial and business records pertaining to their DVD replication activities. These documents include purchase agreements for DVD replication lines, statutory excise and tax filings, and complete financial statements filed with the Registrar of Companies. Despite a clear direction from the Court, which was upheld by the Division Bench in FAO (OS) 458/2015, Pearl Engineering merely asserted that these records are unavailable due to the alleged closure of their factory.

241. Pearl Engineering's failure to produce these documents, despite having access to them in the past, suggests an intentional withholding of evidence. It is a well-established principle that when a party in possession of material evidence fails to produce it, the Court is justified in drawing an adverse inference against them. Their contention that the records are 'not traceable' lacks credibility, particularly in light of their prior statutory obligations to maintain financial records.

242. Despite Pearl Engineering's failure to produce documentary evidence of their DVD replication activities, the Plaintiff undertook independent efforts to gather relevant data. A notice was issued to Moser Baer, seeking details of the titles/stampers supplied to Pearl Engineering. In response, Moser Baer provided a list, which was submitted in evidence as Mark Q-1, where they confirmed having supplied 3031 stampers to Pearl Engineering from 14th July, 2008 to 30th May, 2015. The authenticity of this document, although marked and not exhibited, has not been contested by Pearl Engineering. Moreover, in absence of full disclosures, the Court accepts the same as evidence for the purpose of computation of damages.

243. In addition to documentary evidence, the Plaintiff sought to establish the scale of replication through cross-examination of DW-1. However, DW-1's responses were evasive and inconsistent. The relevant extracts are as follows:

> **Cross-examination on 11th February, 2015**
>
> "*Q.92 Have you got the documents mentioned in Q.1 in relation to notice dated 10.01.2015 (Exh. DW1/P1)?*
>
> *Ans. Our factory is on the verge of closure. None of my staff were there yesterday. The documents could not be located.*
>
> *Q.93 Was the notice Exh. DW-l/P1 brought to your attention and if so when?*
>
> *Ans. This was addressed in my name and when it was received I cannot say.*
>
> *Q.94 By which mode it was received?*
>
> *Ans. By post*
>
> *Q.95 I put it to you that this notice was sent to you by hand as also by fax and Registered A/D. Correct?*
>
> *Ans. I did receive it. I do not know by which mode.*
>
> *Q.96 I put it to you that the e-mail was sent to you around 10th January, 2015 itself and even if you did not receive it in your hand for a day or two, knowledge of this e-mail must have reached at the very latest by the 13th of January, 2015.*
>
> *Ans. Which e-mail ID?*
>
> *Q.97 info@pearlengineeringco.com*

Ans. This is an old e-mail ID and is not valid any more.

Q.98 Please tell us whether the copy which you are holding in your hand right now was received by e-mail, registered post or by hand delivery?

Ans. I have answered the question earlier.

Q.99 Can you please place a photocopy of your copy of Exh. DW1/Pl on record?

Ans. Yes. The same is Exh. DW-1/P2.

Q.100 I put it to you that you had sufficient time to put together the documents mentioned in the letter dated 10.01.2015 and therefore, your reasons given for not producing them yesterday or even today are incorrect and evasive.

Ans. I have not been keeping well for the last so many days. Also we have been undergoing lot of tension due to our company on the verge of closure. Also, certain responsible staff members have also left our company since it is on the verge of closure. So it is not been possible to procure the documents.

Q.101 Please turn to Q.44 and confirm if you have received this information from your production staff.

Ans. As I mentioned earlier, the factory was closed. The production staff could not be contacted.

Q.102 Were you knowing yesterday that the factory is closed?

Ans. As I mentioned earlier also I was out of station. So I was not in the knowledge.

xx … xx … xx

Q.108 Please see the Purchase Order Exh. DW-1/P3 and let us know how many stampers in all were supplied to you under this Purchase Order and how many DVDs were you to manufacture?

Ans. One stamper was supplied and the order was for 1,000.

Q.109 This purchase order was not from Moser Baer?

Ans. No.

Q.110 In other words, apart from Moser Baer there are others who supply stampers?

Ans. This stamper has been supplied by my customer.

Q.111 Can you answer Q.110?

Ans. Moser Baer is a manufacturer of stampers who manufacture stampers for various clients who want to replicate DVDs. This stamper has been got manufactured by my customer from Moser Baer.

Q.112 How many such customers would you have - hundreds or less?

Ans. I mentioned in my answer to Q.43 that the stampers are directly handed over to us by our various customers and we replicate the DVDs for them.

Q.113 Can you please answer Q.112?
Ans. It is difficult to quantify.
Q.114 Can you give us an approximate figure - thousands, hundreds, tens?
Ans. I cannot quantify.

Q.115 What is the difficulty in doing so?
Ans. I mentioned to you earlier also that I am not looking into day-to-day I production activities.

xx … xx … xx

Q.127 I am showing you downloads Exh. DW-1/P9 from your website www.pearldvd.com which show your claim of having delivered more than 10,00,00,000 DVDs. The said download is attached to an affidavit of one Mr. Subroto Panda under Section 65B of the Evidence Act. Correct?
Ans. That seems to be a marketing gimmick.
Q.128 Are you saying that this is a false number?
Ans. It seems to be a marketing gimmick. I cannot comment on the number.

Cross-examination on 17th March, 2016

Q201 Please see your answers to questions 41 and 43 and confirm that the expression "most of the cases" used in question 43 relates to those cases where you have got the stampers from the customers.
Ans. Yes
Q202 So essentially there are two categories which have been defined by you namely supply of stampers from your customers and secondly supply of stampers by Moser Baer. Correct.
Ans. Yes.
Q203 What proportion, very roughly would the supply of stampers from customers be, relative to the numbers supplied by Moser Baer?
Ans. I cannot comment.
Q204 Since you have said that most fall in the first category, would it be fair to say that more than 80% are from customers?
Ans. It is difficult for me to answer that.
Q205 Would it be fair to say that more than 70% fall in the first category?
Ans. Again, it is difficult for me to answer that.
Q206 Then kindly explain your choice of the expression "most of the cases" and the basis for using that expression.
Ans. During the time of running this plant, my staff used to come and mention this term and I never went into the details of that.

Q207 So could it be that your answer to question 43 is incorrect?
Ans. No.
Q208 It therefore would logically followed that the majority belonged to the first category. Correct?
Ans. Possibly it may be.

Q209 When did you last purchase stampers from Moser Baer i.e. which year?
Ans. 1 would like to mention here that I am an entrepreneur and do not go into these details of running the plant. So it is difficult for me to answer this question.
Q210 Who in your company is incharge of running day to day affairs?
Ans. The company has closed down and there is no incharge.
Q211 When did it close down?
Ans. About two months back, in early 2016.

Cross-examination on 18th March, 2016

Q.281 You were asked in the discovery application to produce a list of the total titles of DVDs replicated by you from 2007 onwards. This application was allowed by the learned Single Judge and order upheld by the Hon'ble Division Bench. Are you willing to produce this list now?
Ans. I have answered similar question many a times during my cross-examination by you. If the records were available I would have produced those.

(Objected to as in the order dated 20.7.2015 of the Hon'ble Court the documents to be produced are mentioned in para no. 2 and the question put do not include the production of titles of DVD).

Q.282 Going by your figure of 100 Million DVD Video Discs at a royalty rate of 0.03 US Cents the royalty figure comes to 3 million US Dollars or going by the current conversion rate of Rs. 67 per USD, the total royalty payable by Indian Rupees is over by Rs. 20 Crores.
Ans. I have mentioned earlier also that the figure of 100 million was just a marketing gimmick. It has no relevance for calculation of royalty whatsoever.

244. The Defendants' witness, who is also the proprietor of Defendant No. 2, provided evasive responses regarding the revenue and volume of sales generated from their replication activities. He admitted that stampers were supplied by both Moser Baer and customers, but was unable, or apparently

showed unwillingness to quantify the number of DVDs replicated. When confronted with documents from Pearl Engineering's own website boasting the production of over 100 million DVDs, DW-1 dismissed this as a 'marketing gimmick,' failing to provide any alternative figures. His inability to answer direct questions regarding the proportion of stampers sourced from Moser Baer versus customers, as well as the total volume of DVDs replicated, further undermines the credibility of the Defendants' case. The following exchanges illustrate the evasiveness in DW-1's testimony:

244.1 When asked to produce records of sales agreements and excise returns as directed by the Court (Q.92-Q.102), DW-1 claimed that the company was "on the verge of closure" and that documents were "not traceable."

244.2 In response to questions regarding the number of stampers supplied and DVDs replicated (Q.108-Q.115), DW-1 consistently refused to quantify figures, despite acknowledging that stampers were supplied by multiple sources.

244.3 When confronted with promotional material stating that Pearl Engineering had produced over 100 million DVDs (Q.127-Q.128), DW-1 characterized it as a "marketing gimmick" and declined to confirm or dispute the accuracy of the claim.

244.4 In subsequent cross-examination (Q.203-Q.211), DW-1 continued to avoid providing specifics, repeatedly stating that he was "not involved in day-to-day operations" and that he could not recall details of when stampers were last purchased from Moser Baer.

245. The evasiveness of DW-1, coupled with Pearl Engineering's failure to comply with court order to produce the relevant sales data, suggests

deliberate suppression of evidence. Given that Pearl Engineering's own promotional material referenced large-scale DVD replication, and in the absence of any contrary evidence, an adverse inference must be drawn against them regarding the volume of infringing DVDs produced. Moreover, apart from the cross-examination, as discussed above, the Plaintiff also pursued alternative legal avenues to obtain the necessary records, including issuing a Notice to Produce and securing a production order from this Court. However, these efforts were futile given the Defendants' continued non-compliance.

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246. In absence of evidence depicting the volume of sales and revenue generated by Siddharth Optical through the replication process, the Plaintiff served them with a Notice to Produce dated 09th March, 2015 [Ex. DW-1/PG]. Through this Notice, the Plaintiff sought production of original sales/ purchase agreements for DVD Video/ROM Disc Replication Lines, excise and statutory returns, annual accounts, and details of stampers with DVD Video/ROM Disc titles replicated by them. Siddharth Optical however, refused to furnish any documents. In fact, through their counsel, they communicated to the Plaintiff that their factory closed in 2013. This assertion however, lacked any documentary evidence.

247. The Plaintiff also directed specific questions to DW-1 to obtain clarity on the sales data. The relevant extracts from the cross-examination of DW-1 are as follows:

> **Cross-examination conducted on 18th May, 2015**
>
> "*Q.2 Is it correct that you have replication lines for replicating DVDs?*
> *Ans: Yes.*

Q.3 How many such replication lines do you have?
Ans: It was earlier two lines.
Q.4. And currently?
Ans: I have closed the unit.
Q.5 So you are no longer manufacturing DVDs?
Ans: Correct.
Q.6 When did you stop?
Ans: About 3 years back.

xx ... xx ... xx

Q.47 How many seconds does it take to replicate one DVD video disc on an average?
Ans: I think one DVD line has a capacity of about 4 to 5 thousand DVDs per day.
Q.48 In one kilogram of polycarbonate how many DVD video disc can be made?
Ans: One DVD has a grammage of about 18 grams.
Q.49 So about 50 DVDs?
Ans: You can calculate.
Q.50 Where did Sidharth Opticals get its stampers for DVD Video / ROM disc made?
Ans: Mostly from the customers.

Cross-examination conducted on 28th October, 2015

Q. 108 That the DVDs that are replicated by you are being sold in the market even today is a fact known to you or not?
Ans: What do you mean by even today?
Q.109 The suit is of 2012. By "today" I mean the last few months of 2015 such as the date of 31st August, 2015 relating to the sale of the five DVDs mentioned in a previous question today.
Ans: I have already answered this question that we have closed the Sidharth Optical Disc Pvt. Ltd. about3-4 years back.
Q.110 Can you please answer my question no.108?
Ans: No comments.

xx ... xx ... xx

Q.124 Please see the notice to produce dated 9th March, 2015 (Exh.DW-1/PG) which was sent to you by the Plaintiff and a reminder notice dated 22nd July 2015 (Ex.DW-1/PH) and confirm if you have now got these documents?
Ans: First of all we have challenged your patent. First you prove your patent and I don't know why you are asking for the records.
Q.125 Can you file in court a list of the DVD titles which you have replicated

in the name of Sidharth Optical Disc Pvt. Ltd. from the beginning of the business to now?

Ans: You should prove your patent first.

Cross-examination conducted on 29th October, 2015

Q. 187 According to the records of this case you have manufactured and sold at least 49 lac DVDs in the period 2006 to 2009.

Ans: I don't remember.

Q. 188 The royalty according to Standard Philips License paid by all other licensees for this period alone would come to Rs.59,38,203/-. Do you have any comment?

Ans: Royalty will come when you prove your patent.

Q.189 For the period 2009 to 2012 please let us know the quantity of DVDs manufactured and sold by you?

Ans: You prove your patent first.

Q. 190 I put it to you that for the period 2009 to 2012 your DVDs sold far in excess of 49 lacs DVDs i.e. the three year period 2006 to 2009 as you had an increasing sales each year.

Ans: You prove your patent first.

248. Siddharth Optical has not been forthcoming about its replication and sales of DVDs, indicating an attempt to evade royalty obligations to the Plaintiff. The cross-examination responses of DW-1, particularly questions 187 to 190, indicate a clear reluctance to disclose the volume of DVDs manufactured and sold. When confronted with specific figures derived from the Defendants' own records showing the sale of at least 49 lakh DVDs between 2006 and 2009, DW-1 merely stated, "I don't remember." Further, the refusal to provide a clear answer, especially regarding ongoing sales in 2015 (Q.108 and Q. 110), suggests an attempt to withhold relevant information. While DW-1 claimed to have ceased DVD manufacturing around 2011-2012, the question regarding DVDs still being sold in 2015 was answered with "no comments." This contradiction also raises doubts about the credibility of the claim that production had ceased.

249. The evasive responses coupled with the refusal to confirm or deny

whether DVD sales increased after 2009, strongly suggests an attempt of Siddharth Optical to withhold relevant information from the Court. Further, when asked about the corresponding royalty that would have been payable had the Defendants obtained a license under the standard DVD License Agreement from the Plaintiff, DW-1 deflected the question, asserting that royalties were contingent upon the Plaintiff proving its patent. This stance is legally untenable.

250. As the Defendants' witness failed to provide specific details, the Plaintiff relied on Ex. PW-1/31 to Ex. PW-1/34, which are the records submitted by Defendant No. 2 to the Registrar of Companies. These records indicate that between 2007 and 2009, Siddharth Optical manufactured a total of 49,48,503 DVDs. The breakdown is as follows:

Period	***DVDs sold***
Year ending on 31.3.2009	22,79,831
Year ending on 31.3.2008	26,36,297
Year ending on 31.3.2007	32,375
Total	49,48,503

251. DW-1's evasive responses and the annual reports reflecting DVD sales figures provide a reasonable basis for estimating damages. Given that Siddharth Optical has not rebutted these figures with any counter-evidence, the Court is justified in proceeding with a calculation based on the available records and industry-standard royalty rates.

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252. As with Pearl Engineering and Siddharth Optical, the Plaintiff sought to obtain information regarding DVD sales and revenue from Powercube

Infotech by cross-examining its proprietor, DW-1. The relevant portions from the cross-examination of DW-1 are as follows:

Cross-examination conducted on 01st August, 2016

Q86 On 30th July 2016 you were asked about when you started your DVD business (question no. 13) and your reply at that time was that you did not remember. Have you got the answer today?

Ans. No.

Q87 When did you allegedly stop the manufacturer of O DVDs as claimed by you in answer to question no. 43?

Ans. A few months back.

Q88 Please provide the year-wise titles of DVD Video /ROM Discs replicated by defendant no. 3 from the starting point to the end. Please also provide the total number of DVD Video /ROM Discs replicated by defendant no. 3 during this period. Additionally produce the invoices raised by defendant no. 3 for sale of these DVD Video /ROM Discs. Please provide a list of stamper titles of DVD Video /ROM Discs procured from each of your stamper suppliers?

Ans. I do not want to answer this question. Again said I cannot answer this question since I am not involved in day to day activities of the business of defendant no. 3.

Q89 Please provide the material sought in question no. 88 on the next date fixed in this matter?

Ans. Since all my staff has left but I can try to get the requirements furnished on the next date.

xx ... xx ... xx

Q93 How many replication lines for DVD Video /ROM Discs were being used by defendant no. 3?

Ans. One. I had for spare parts another line which was not in use.

Q94 Is it correct that it takes roughly 4 to 5 seconds to produce one DVD Video /ROM Discs?

Ans. I do not know.

Q95 I put it to you that in one kilogram of polycarbonate, roughly 55 DVD Video /ROM Discs are produced. Correct?

Ans. I do not know as I am not involved in day to day activities of production.

Q96 I put it to you that from one Stamper roughly 25000 DVD Video /ROM Discs are produced. Correct?

Ans. I do not know as I am not involved in day to day activities of production.

Q97 What is the average quantity of DVD Video /ROM Discs per title

that your company would replicate which of course is based on orders?

Ans. My production staff can answer this question.

Q98 Can you please check the information sought from you in the previous questions no. 94 to 97 and revert on the next date?

Ans. Since my production staff has already left still I will try my best.

Cross-examination conducted on 03rd September, 2016

Q140 Do you remember or can you provide the figures today or on the adjourned date, of the number of stampers (for DVD Video Discs) which were supplied to you by Moser Baer?

Ans. As there is no more staff with me, so I would not be, able to furnish this figure.

Q141 Do you remember from your memory a rough figure of DVD Video Disc Stampers supplied by Moser Baer.i.e. 1000 or 5000 or 10000 or 20,000 etc.?

Ans. I cannot remember.

Q142 I put it to you that according to Moser Baer for the period 2008 to 2016, the said company has. supplied you and your company with DVD Video Disc Stampers in excess of 5,400 and I show you their original letter and printout (Now marked as Mark DW 1/AX) giving full details dated 4.8.2016.

Ans. Moser Baer has given this record, they will know about it.

Q143 Can you deny the number provided to you now through the document Mark DW 1/AX or the details of the titles appearing in the said document?

Ans. I cannot admit or deny this.

xx … xx … xx

Q161 I put it to you that since most of your DVD Video Disc Stampers were provided by customers and Moser Baer itself provided more than 5400 stampers at the very lowest computation you have through your companies produced DVD Video Discs in relation to over 10,000 stampers.

Ans. I cannot calculate.

Q162 I put it to you that although the capacity per stamper is 25000 PVP Video Discs, to put it at the very lowest, you have produced a minimum of 10,000.,DVD Video Discs per stamper.

Ans. Since I was not involved in the day to day activities but I think this is your wrong calculation.

253. To substantiate the scale of replication, given the elusive responses of DW-1, the Plaintiff addressed a formal inquiry to Moser Baer, who responded by confirming that between 04th October, 2008 to 07th May, 2016, they had supplied 5427 stampers to Powercube Infotech [Mark DW-1/AX]. The Defendants failed to rebut this evidence or offer any reasonable explanation for the volume of stampers acquired from Moser Baer.

254. The cross-examination of DW-1 is replete with evasive responses. DW-1 repeatedly failed to furnish critical details regarding the commencement of DVD production, the number of DVDs replicated, and the stampers supplied. Despite being directly confronted with the records provided by Moser Baer, DW-1 neither admitted nor denied the figures, instead he deflected the responsibility to the staff members, who apparently remained unavailable. Even when asked for approximate numbers, DW-1 refused to provide any estimates. DW-1's failure to disclose crucial financial and operational details, despite specific questions, suggests that he knowingly withheld information that would have been unfavourable to their case. Accordingly, the Court shall rely on the Plaintiff's submitted records and reasonable estimates in computing damages.

VI.II.IV. *Effect of the Defendants' wilful withholding of information*

255. In ***Rajnesh v. Neha and Anr.***,[76] the Supreme Court held that details regarding a party's income, assets, and liabilities fall within special knowledge. Consequently, under Section 106 of the Evidence Act, the burden of proving such facts shifts to the party possessing this special knowledge. This principle was also affirmed in by this Court in ***Kusum***

Sharma v. Kumar Mahinder Sharma.[77] However, the question as to whether the burden to prove a particular matter is on the Plaintiff or the Defendant would depend upon the nature of the dispute. Under Section 114 of the Evidence Act, the Court is empowered to presume the existence of facts based on the natural course of business conduct. Specifically, Section 114(g) allows the Court to draw an adverse inference when a party withholds evidence that, if produced, would likely be unfavourable to them. In ***Union of India v. Ibrahim Uddin and Anr.,***[78] the Supreme Court affirmed that adverse inference may be drawn against a party that deliberately suppresses documents or evidence crucial to the opposing party's case. The Court further emphasized that when a party defies a court's order to produce relevant documents, the Court can draw an adverse inference against them. In ***National Insurance Co. Ltd., New Delhi Vs. Jugal Kishore and Others,***[79] the Supreme Court emphasized that it is the duty of the party which is in possession of a document that would be helpful in doing justice in the cause to produce the said document, and such party should not be permitted to take shelter behind the abstract doctrine of burden of proof.

256. In the landmark case of ***Gerber Garment Technology Inc*** *(Supra)* the Court of Appeal held that where a patentee is unable to prove actual loss, the Court may assess damages based on a reasonable royalty. In instances where the patentee is a manufacturer of the patented product, the reasonable profit that the patentee would have earned from the sale of the product can serve as

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Y[76] (2021) 2 SCC 324.
[77] 2020 SCC OnLine Del 931.
[78] (2012) 8 SCC 148.
[79] (1988) 1 SCC 626

a fair measure of damages. Thus, in patent infringement, damages need not always be confined to strict proof of lost profits. The courts have recognized alternative approaches, including reasonable royalty damages, which seek to compensate the patentee for the unauthorized use of their patented technology based on fair licensing terms. Given the nature of the infringement and the Defendants' unwillingness to engage in licensing, the Court finds it appropriate to award reasonable royalty damages to ensure that the Plaintiff is compensated for the unauthorized exploitation of their patented technology.

257. The award of damages in patent infringement cases also serves a deterrent function, ensuring that infringers do not benefit from their refusal to comply with licensing frameworks, particularly where a patent is standard essential. In such cases, damages should not merely be compensatory, but must also account for the broader market impact of an entity bypassing licensing obligations. Given the Defendants' persistent refusal to obtain a license despite repeated opportunities, the Court finds it appropriate to award reasonable royalty damages to the Plaintiff, ensuring that they receive fair compensation for the period of infringement.

258. Thus, while the absence of precise sales data constrains the Court from quantifying damages strictly based on actual losses, the legal principles discussed above warrant a different approach. The Defendants' deliberate failure to disclose critical sales and revenue data, despite specific directions, constitutes a wilful attempt to suppress material evidence and obstruct the Plaintiff's claim. The Defendants' non-disclosure, compounded by evasive responses in cross-examination, leaves no doubt that an adverse inference must be drawn against them. The law does not permit an infringer to benefit

from its own suppression of evidence. Since precise financial records have been withheld, this Court is entitled to proceed with an approximate, but fair damages calculation based on the best available evidence. The Defendants cannot now evade liability by asserting the absence of exact sales figures, when this omission is of their own making. Accordingly, the Court shall determine the damages through a combination of reasonable estimation, adverse inference, and extrapolation from the limited disclosed figures. In doing so, reliance shall also be placed on industry benchmarks, comparable licensing arrangements, and the Plaintiff's licensing history to ensure a just, equitable, and rational assessment of the damages owed.

VI.II.V. *Assessment of production of DVDs*

259. On the basis of conclusions drawn above, the production of the infringing products is computed as follows:

259.1. ***CS (COMM) 423/2016***: It is necessary to consider the point at which Pearl Engineering became aware of the Plaintiff's proprietary rights over the Suit Patent *i.e.*, when the Plaintiff formally asserted its rights through notice dated 31st August, 2006, informing the Defendants of their ownership of the Suit Patent and their obligation to obtain a license. Despite these pre-suit communications, Pearl Engineering neither secured a license nor engaged in good-faith negotiations, thereby falling into the category of an unwilling licensee. In SEP disputes, courts have held that a party that knowingly uses patented technology without obtaining a license, despite opportunities to do so, cannot evade liability merely due to procedural gaps in evidence production. The Plaintiff however filed the suit on 24th July 2012, accordingly, damages shall be computed for the period three years

prior to the filing of the Suit (*i.e.*, 24th July, 2009) until the expiry of the Suit Patent on 12th February, 2015.

259.2. Since Pearl Engineering has failed to provide sales records despite court directions, which warrants an adverse inference, the Court must estimate the number of DVDs replicated by them based on the best available evidence. In this context, the only reliable evidence that provides a definitive figure is the communication from Moser Baer [Mark Q-1], which confirms the supply of 3031 stampers to Pearl Engineering from 18th July, 2008 to 30th May, 2015. Considering these figures, the Court will extrapolate the figures for the stampers for the period three years prior to the filing of the suit until the expiry of the Suit Patent on 12th February, 2015 as 2500. The Defendants' own promotional material (Ex. DW-1/P9) advertised delivering over 100 million DVDs, which directly contradicts their attempt to downplay replication volumes. Sans any definitive evidence regarding the number of DVDs that can be produced from a single stamper, the Court adopts a reasonable estimate of 10,000 DVDs per stamper which shall apply in all the three suits. Accordingly, the total number of DVDs replicated is estimated as 2,50,00,000 DVDs.

259.3. ***CS (COMM) 519/2018***: Siddharth Optical's own Annual Reports reveal that between 2007 and 2009 alone, they sold approximately 49,48,503 DVDs. This data, extracted from their financial disclosures [Ex. PW-1/31 to Ex. PW-1/34], establishes a clear record of large-scale DVD replication activities. However, these figures pertain only to a limited period of three years, and do not account for sales before or after this timeframe. Given the nature of the replication business and the absence of contrary evidence from Siddharth Optical, a reasonable inference can be drawn that

similar replication activities continued throughout the period of infringement, warranting an extrapolated assessment of damages. The reason for the Court to adopt this approach is the Siddharth Optical's deliberate evasion to make disclosures.

259.4. DW-1, in his deposition, stated that Siddharth Optical ceased operations in 2011-12. The evidence further suggests that additional DVDs were produced beyond the 2006 to 2009 period. Considering the lack of sales records, the Court applies a reasonable and conservative projection based on the assumption that the production rate remained stable over the subsequent years. Since no evidence suggests a decline in output, and considering the industry practice of maintaining consistent production levels, the Court estimates that the DVD production would have only grown.

259.5. The Suit was filed on 28th May 2012 and Patent remained in force until 12th February 2015. Therefore, damages are being assessed from three years prior to the suit filing date (i.e., from 28th May 2009) until the cessation of business operations in 2012. Applying this estimation methodology, the Court determines that Siddharth Optical likely manufactured and sold approximately 65,00,000 DVDs during this period. This estimate shall serve as the basis for computing royalty damages.

259.6. This brings us to an important aspect related to the liability of Defendant No. 1 – Mr. Surinder Wadhwa in the infringement activities. Patent infringement is a statutory tort under the Patents Act. As Defendant No. 2-company is a distinct legal entity, the liability for infringement ordinarily attaches to the corporate body rather than its directors. Directors, by virtue of their position, are not automatically liable for the acts of the company unless specific circumstances warrant lifting the corporate veil.

However, a director may be held personally liable if it is established that the company was merely a means for its directors to engage in unlawful and infringing activities.[80] In such cases, courts are empowered to pierce the corporate veil and attribute personal liability. Additionally, directors may be jointly and severally liable with the company if there is substantial evidence that they actively authorized, controlled, or facilitated the infringing acts.

259.7. In this case, while Defendant No. 1 attempted to distance himself from the operations of Defendant No. 2, the record clearly establishes his direct involvement in the infringing activities. The pre-suit communications demonstrate his knowledge of the Suit Patent and the Plaintiff's licensing framework. Moreover, Defendant No. 1 played a key role in Defendant No. 2's refusal to obtain a license despite being fully aware of its necessity.

259.8. During cross-examination, Defendant No. 1 claimed that royalty payments to the Plaintiff were contingent on the Plaintiff proving the validity of the Suit Patent. However, the evidence unequivocally shows that he exercised control over or actively authorized the infringing acts. Additionally, he engaged in fraudulent and deceptive conduct by falsely representing in pre-suit communications that DVD replication had ceased.

259.9. Given these findings, it is evident that Defendant No. 1 allowed the wrongful acts of infringement and thus satisfies the legal standard for being held liable in personal capacity. Accordingly, relief is granted against Defendant No. 1 in his personal capacity as well.

259.10. ***CS (COMM) 499/2018***: Powercube Infotech has persistently

[80] *See*: ***State of Rajasthan and Ors. v. Gotan Lime Stone Khanij Udyog and Anr.,*** (2016) 4 SCC 469, and ***Delhi Development Authority v. Skipper Construction Company (P) Ltd. and Anr.*** (1996) 4 SCC 622.

failed to disclose the number of DVDs manufactured and sold during the period in question. Despite repeated opportunities, DW-1 provided evasive responses in cross-examination, declining to furnish any material details on their production and sales figures. In the absence of precise sales and production records from the Defendants, the only available reliable evidence is the information provided by Moser Baer [Mark DW-1/AX]. This communication confirms the supply of 5427 stampers to Powercube Infotech, from 04th October, 2008 till 07th May, 2016 which acts as a reasonable basis for estimating the scale of replication activities undertaken by the Defendants. Accordingly, in the absence of any contrary evidence, the Court accepts Moser Baer's records as a valid basis for computing damages. The suit was filed on 04th September, 2012 and the patent expired on 12th February, 2015. As per the applicable limitation period, damages shall be awarded from three years prior to the suit filing (*i.e.,* from 04th September, 2009) until the expiry of the Suit Patent. On the analysis of Mark DW-1/AX, it appears that for this relevant period 4993 stampers were supplied to Powercube Infotech. Assuming the industry-standard production capacity of 10,000 DVDs per stamper, the total number of DVDs replicated is estimated as 4,99,30,000 DVDs.

259.11. With respect to the grant of reliefs against Defendants No. 2 and 4, who were proceeded *ex-parte* and never joined the proceedings, the burden rested on the Plaintiff to establish, through cogent evidence, their involvement in infringement of Suit Patent. However, the Plaintiff has failed to discharge this burden. Consequently, the relief of damages is granted only against Defendants No. 1 and 3, from whom the recovery shall be made.

259.12. The next issue for consideration is the liability of Defendant

No. 1 for the infringing activities. Notably, Defendant No. 1 – Mr. G.S. Kohli, previously served as the director of Defendant No. 2, and in that capacity, received communications from the Plaintiff as early as on 25th April, 2007 – well before the filing of CS (COMM) 499/2018. During cross-examination on 30th July, 2016, it emerged that Defendant No. 1 resigned as a director of Defendant No. 2 at the end of 2009 (Q.22), subsequently assuming the role of director in Defendant No. 3. Pertinently, Defendant No. 1 has not denied the receipt of Plaintiff's communication dated 25th April, 2007.

259.13. As discussed above, the corporate veil may be pierced where a director has actively authorized, controlled, or facilitated the infringing acts. In this case, Defendant No. 1 was fully aware of the Plaintiff's proprietary interest in the Suit Patent and their licensing regime since at least 25th April, 2007. Yet, he continued to engage in unauthorised replication of DVDs through Defendant No. 2. Following his resignation, he proceeded to engage in similar infringing activities through Defendant No. 3, despite having full knowledge of the Plaintiff's rights.

259.14. When confronted with this aspect during cross-examination, Defendant No. 1 [DW-1] failed to demonstrate lack of knowledge or involvement in the infringing activities of Defendant No. 3. Notably, when specifically asked (Q. 22), he did not disclose the names of other directors or shareholder of Defendant No. 3. The record also establishes that Defendants No. 2 and 3 operated from the same premises, further underscoring Defendant No. 1's knowledge and involvement in infringement through Defendant No. 3. Moreover, Defendant No. 1 has failed to identify any other individual as a director of Defendant No. 3, which demonstrates that he was

solely responsible for Defendant No. 3's operations and fully controlled its daily functioning.

260. These facts clearly indicate that Defendant No. 1 played a pivotal role in Defendant No. 3's refusal to obtain a license and its continued engagement in infringing activities, despite being fully aware of the legal implications. Consequently, it is held that Defendant No. 1 played personally in the acts of infringement and is liable in his personal capacity.

VI.II.VI. *Currency exchange rate*

261. The Court holds that the Plaintiff is entitled to compensation at the standard royalty rate, which in this case is the FRAND rate of USD 0.03 per DVD. Since damages are being assessed based on royalties that ought to have been paid for each infringing DVD, the exchange rate for converting the USD-denominated royalty to INR must also be determined. On this issue, the courts apply either the historical exchange rate (at the time of infringement) or the current exchange rate (at the date of judgment). In these three suits, infringement occurred over an extended period of time and Defendants failed to persistently compensate the Plaintiff during the relevant period. Applying an outdated exchange rate would unfairly benefit the Defendants, who have already derived commercial gains from unauthorized use of the Suit Patent. Therefore, the Court must apply the currency conversion rate applicable on the date of the decree to ensure that compensation to the Plaintiff reflects the actual present-day value of the loss. Section 57(1) of the Evidence Act empowers the Court to recognize without formal proof, the existence and operation of economic facts such as official exchange rates, which presently is approximately INR 83 for one

USD. This would apply in all the three suits. This adoption of the current rate of conversion is consistent with the principles settled by the Supreme Court in ***Forasol v. Oil & Natural Gas Commission,***[81] and ***Renusagar Power Co. Ltd. v. General Electric Co.***[82].

VI.II.VII. *Award of interest*

262. The Plaintiff has also claimed interest on the award of compensatory damages. Indeed, award of interest would serve as compensation for the Plaintiff's loss on account of being deprived of monetary payments that were legally due for the unauthorized use of the Suit Patent. Interest is not a penalty but a recognition that money has a time value. In the present cases, the Defendants continued their infringing activities over an extended period, knowingly avoiding their obligation to pay royalties. Had the Defendants obtained a license in accordance with FRAND terms, the Plaintiff would have received timely compensation. Instead, the Plaintiff has been compelled to pursue the litigation for over a decade. The Court, therefore, deems it appropriate and necessary to award interest at the rate of 12% per annum on the total damages awarded, calculated from the date of filing of the suits, until the date of actual payment. This interest rate is justified in light of the Defendants' wilful and continued refusal to compensate the Plaintiff, despite having been notified of the Suit Patent's essentiality and their obligation to obtain a license. The award of both *pendente lite* and future interest serves the purpose of compensating the Plaintiff for the deprivation of the rightful use of money and ensures that the damages

[81] 1983 SCC OnLine SC.
[82] 1994 Supp (1) SCC 644.

awarded reflect the true economic value of the loss suffered due to infringement.

263. Accordingly, interest at 12% per annum shall apply across all three suits as *pendente lite* and future interest from the respective dates of filing its till the date of payment.

VI.II.VIII. *Aggravated damages for wilful infringement*

264. The question before the Court is also whether the Defendants' conduct warrants aggravated damages for wilful infringement. Patent infringement, as recognized under the Patents Act, is a statutory tort. Section 111 of the Act provides a safeguard against damages in cases of innocent infringement, where a Defendant proves that they had no reasonable grounds to believe that the patent existed at the time of infringement. This provision reflects the fundamental distinction between inadvertent and wilful infringement, the latter of which is marked by continued use of patented technology despite awareness of the patentee's rights. The present cases reflect a textbook example of wilful infringement, where the Defendants not only had knowledge of the Suit Patent, but actively evaded compliance with their legal obligations. Unlike an innocent infringer who might unknowingly violate patent rights, the Defendants were aware of the licensing framework, but deliberately chose to operate without a license. Moreover, throughout the proceedings, the Defendants withheld sales data related to DVD production, preventing the Court from making an accurate assessment of damages. The Defendants did not produce documents that would reveal the full scale of their infringing activities, further confirming their intent to obstruct the proceedings rather than

engaging in transparent disclosure. In each suit, the conduct of Defendants has been calculated to make a profit for themselves in a concealed manner which may well exceed the royalty payable by them. Given this conduct, the Defendants' actions warrant aggravated damages, which serve the dual purpose of compensating the Plaintiff and deterring similar misconduct in the future. This would apply to all the three suits.

VI.III. *Computation of damages and terms of Decree*

VI.III.I. *CS (COMM) 423/2016*

265. The Court, based on the available evidence and reasonable estimations, determines that Pearl Engineering replicated approximately 2,50,00,000 (two crore fifty lakh only) DVDs during the relevant period. Applying the established FRAND royalty rate of USD 0.03 per DVD, the minimum royalty damages payable by Pearl Engineering amount to USD 7,50,000/- (seven hundred fifty thousand only). This sum shall be converted into Indian Rupees at the exchange rate of INR 83 per USD, bringing the total royalty damages to INR 6,22,50,000/- (six crore twenty two lakh fifty thousand only). Additionally, interest at the rate of 12% per annum shall be levied on this amount from the date of filing of the suit until the date of full realization.

266. Accordingly, the suit is decreed in favour of the Plaintiff, and a decree is passed jointly and severally against both Defendants for a sum of INR 6,22,50,000/- (six crore twenty two lakh fifty thousand only), along with interest at 12% per annum from the date of filing of the suit until the date of full payment. Further, the aggravated conduct of the Defendants, including

wilful infringement, deliberate non-disclosure of sales records, and procedural misconduct, warrants award of additional damages of INR 1,00,00,000/- (one crore only), for which both Defendants shall be jointly and severally liable.

VI.III.II. *CS (COMM) 519/2018*

267. Based on the available evidence and reasonable extrapolation, the Court has estimated that Siddharth Optical between 2006 and 2012 replicated 65,00,000 (sixty five lakhs only) DVDs. Applying the FRAND royalty rate of USD 0.03 per DVD, the minimum royalty damages payable by the Defendant are calculated as follows:

Total DVDs Replicated: 65,00,000 (sixty five lakh only)
FRAND Rate per DVD: USD 0.03
Total Royalty in USD: USD 1,95,000/- (one hundred ninety five thousand only)
Exchange Rate (INR 83/USD): INR 1,61,85,000/- (one crore sixty one lakh eighty five thousand only)

268. The suit is decreed in favour of the Plaintiff, and a decree is passed jointly and severally against both Defendants for a sum of INR 1,61,85,000/- (one crore sixty one lakh eighty five thousand only), along with interest at 12% per annum from date of filing of the suit, until full realisation of the amount. Additionally, in light of the Defendants' wilful infringement, deliberate suppression of sales records, and procedural misconduct, this Court deems it appropriate to award aggravated damages of INR 1,00,00,000/- (one crore only), for which both Defendants shall be jointly

and severally liable.

VI.III.III. *CS (COMM) 499/2018*

269. The Court estimates the number of DVDs replicated by Powercube Infotech as 4,99,30,000 (four crore ninety nine lakh thirty thousand only) during the relevant period. Applying the FRAND rate of 0.03 USD per DVD, the royalties due to the Plaintiff would be USD 14,97,900/- (fourteen lakh ninety seven thousand nine hundred only) which when converted into Indian Rupees at the exchange rate of INR 83 per USD, brings the total royalty damages to in INR 12,43,25,700/- (twelve crore forty three lakh twenty five thousand seven hundred only).

270. Further, interest at the rate of 12% per annum shall apply on this amount from the date of filing of the suit until the date of full payment.

271. Accordingly, the suit is decreed in favour of the Plaintiff, and a decree is passed jointly and severally against both Defendants No. 1 and 3 for a sum of INR 12,43,25,700/- (twelve crore forty three lakh twenty five thousand seven hundred only), along with interest at 12% per annum from the date of filing of the suit, till the date of final payment. Further, the egregious conduct of the Defendants, including wilful infringement, deliberate non-disclosure of sales records, and procedural misconduct, warrants award of additional damages of INR 1,00,00,000/- (one crore only), which shall be recoverable jointly and severally by Defendants No. 1 and 3.

VI.IV. ***Litigation costs***

272. The question of whether the Defendants should bear the litigation

costs does not require much deliberation. The answer, in the Court's view, is self-evident. As outlined earlier, the Defendants have resisted these proceedings on every conceivable ground of revocation under the Patents Act. While a party is certainly entitled to contest a claim and advance all available legal defences, the Defendants' approach in these suits has been one of obstruction rather than substantive engagement with the issues. None of the grounds raised have been credibly supported by evidence or have met the legal threshold required to sustain a challenge to the Suit Patent.

273. What is particularly egregious is the Defendants conveniently altering defences to suit their strategy at different stages of the proceedings, thereby misleading the Court and prolonging the litigation. This approach has not only imposed an undue burden on the Plaintiff, which was compelled to defend its rights at every turn, but has also wasted judicial resources. These proceedings are a clear illustration of how a patentee, despite securing statutory protection under the Patents Act – especially for an SEP – finds itself embroiled in a protracted legal battle where revocation is sought at all costs, regardless of merit.

274. The sheer volume of filings, applications, and objections in the present suits has turned them into bulky, document-heavy cases, placing an additional strain on an already overburdened judiciary. The Defendants have undoubtedly capitalized on this, using delay tactics to extend the litigation until the patent lapsed. This, in turn, has reduced the Plaintiff's available remedies to only monetary relief, depriving them of the full benefit of injunctive relief that they originally sought. The Plaintiff has had to engage in extensive litigation to assert their rights, which were wrongfully denied by the Defendants' deliberate and meritless challenges. The Plaintiff must

not be burdened with any part of the costs they have incurred in defending their rights. Thus, keeping in view the principles expounded by the Supreme Court in ***Uflex Limited v. Government of Tamil Nadu and Ors.,***[83] and the Defendants' conduct, the Court is inclined to award full commercial costs in favour of the Plaintiff. Accordingly, in all the three suits, the Court awards full litigation costs in favour of the Plaintiff and against:

(a) Defendants No. 1 and 2 in CS (COMM) 423/2016,

(b) Defendants No. 1 and 2 in CS (COMM) 519/2018, and

(c) Defendants No. 1 and 3 in CS (COMM) 499/2018.

275. The Plaintiff shall file their bill of costs in terms of Rule 5 of Chapter XXIII of the Delhi High Court (Original Side) Rules, 2018 on or before 15th April, 2025. As and when the same is filed, the matter will be listed before the Taxing Officer for computation of costs.

Findings

276. In view of the foregoing discussions, the following issues are answered in favor of the Plaintiff, and against the Defendants:

a. Issue No. 8 in CS (COMM) 423/2016
b. Issue No. 7 in CS (COMM) 519/2018
c. Issues No. (vi), (vii), (ix), and (x) in CS (COMM) 499/2018.

277. The Defendants are held liable to pay damages to the Plaintiff, as discussed above.

DIRECTIONS

278. The suits CS (COMM) 423/2016, CS (COMM) 519/2018 and CS

[83] (2022) 1 SCC 165.

(COMM) 499/2018 are decreed in the above terms. Decree sheets be drawn up.

279. The Registry is directed to number the counter claims in CS (COMM) 519/2018 and CS (COMM) 499/2018.

280. For the foregoing reasons, CC(COMM) 113/2017 in CS(COMM) 423/2016, CC(COMM) (*to be numbered*) in CS(COMM) 499/2018, and CC(COMM) (*to be numbered*) in CS(COMM) 519/2018, are dismissed.

281. The Plaintiff is directed to pay the additional court fee on the differential amount awarded in their favour, within four weeks from today.

282. All pending applications are disposed of.

283. As the Suit Patent has been held to be valid by this Court, in accordance with Section 113 of the Patents Act, the Registry is directed to issue a certificate of validity of the claims of the Suit Patent.

284. Registry is directed to supply a copy of the present order to the Controller General of Patents, Designs, and Trademarks at llc-ipo@gov.in for compliance.

I.A. 9425/2019 in CS (COMM) 519/2018, I.A. 9427/2019 in CS (COMM) 423/2016, and I.A. 9386/2019 in CS (COMM) 499/2018 (*seeking appointment of independent scientific advisors)*

285. As noted in the order dated 16th July, 2019, these applications were deferred for adjudication at the time of final hearing. The Plaintiff however, did not press these applications after the final arguments commenced.

286. In view of the above, the instant applications are disposed of as not-pressed.

I.A. 20069/2022 in CS (COMM) 519/2018, I.A. 20043/2022 in CS (COMM) 423/2016, and I.A. 20061/2022 in CS (COMM) 499/2018 *(seeking declaration of assets from the Defendants in order to secure the*

Plaintiff's claim for damages)

287. Through the above-captioned applications, the Plaintiff sought a direction to the Defendants to file their audited statements detailing all movable and immovable assets. In addition, the Plaintiff also sought maintenance of sufficient funds or assets by the Defendants to cover the Plaintiff's claim for damages.

288. The instant applications are intended to ensure preservation of assets by the Defendants for the satisfaction of the eventual judgment. These applications were not pressed during the final hearing. Nonetheless, the information sought by the Plaintiff can be obtained during the execution proceedings, if any, as per the provisions of the Code.

289. In view of the above, the present applications are disposed of with liberty to the Plaintiff to seek these reliefs in appropriate proceedings, in accordance with law.

SANJEEV NARULA, J

FEBRUARY 20, 2025/*d.negi*

ANNEXURE A
CLAIM MAPPING CHART FOR SUIT PATENT WITH STANDARD DVD SPECIFICATIONS

Content **IN patent 218255**	**Explanation** 21/7/15 **DVD Specifications for Read-Only Disc** Part 1: Physical Specifications Ver. 1.01 Dec 1997
Claim 1:	
Method of converting information words (1) to a modulated signal (7),	8/16 modulation converts the 8-bit input bytes (so called Data symbols) to 16 channel bits Code words, see **3.3 Modulation method (8/16 modulation)**.
in which method a series of m-bit information words is converted to a series of n-bit code words (4) according to rules of conversion, and	The modulation from m=8 bits Data symbols to n=16 bits Code words is carried out by using the conversion table [Table 3.3-1] and [Table 3.3-2], see **3.3 Modulation method (8/16 modulation)**.
the series of code words are converted to the modulated signal, with m and n being integers and n exceeding m,	The modulated Code words shall be serially output with the MSB [most significant bit] at the start of each Code word and then NRZI converted before being recorded on the disc, see **3.3.1 Recording frame modulation,** and **1.5.8 NRZI conversion**.
the rules of conversion being such that the modulated signal satisfies a predetermined criterion, and	The run length (number of consecutive 0s) of the converted bitstream is limited to between 2 and 10 [RLL (2, 10)], see **3.3 Modulation method (8/16 modulation)**.
in which method one code word (4) is delivered for one received information word (1),	The Main conversion table and the Substitution conversion table specify a 16 channel bits Code word for each Data symbol (0 to 255) with one of 4 States (1 to 4), see **3.3 Modulation method (8/16 modulation)**.
which code word is selected from one of a plurality of sets (V1, V2, V3, V4) of code words, which one set is associated with a coding state (S1, S2, S3, S4) established when the preceding code word was delivered,	For each Data symbol, the tables indicate the corresponding Code words, as well as the State for the next Data symbol, see **3.3 Modulation method (8/16 modulation)**. [Figure 3.3-1] shows schematically how the Code words and associated State specification are generated, see **3.3 Modulation method (8/16 modulation)** and **Figure 3.3-1**.
characterized in that the codes words (4) are spread over at least a group of a first type (G11, G12) and at least a group of a second type (G2), and in that	Code words ending with 1 or no trailing 0b establish that next State is State 1 and constitute group G11 of the first type. Code words ending with 6 or up to 9 trailing 0b establish that next State is State 4 and constitute

	group G12 of the first type. Code words ending with 2 or up to 5 trailing 0b establish that next State is State 2 or State 3 and constitute group G2 of the second type, see **3.3.3 Demodulation** and **Figure 3.3-2**.
the delivery of each of the code words belonging to a group of the first type (G11, G12) establishes a coding state (S1, S4) of a first type determined by said group of the first type and	Code words of group G11 of the first type (ending with 1 or no trailing 0b) establish that next State is State 1, i.e. the next State is completely determined by the fact that the Code word are belonging to group G11. Code words of group G12 of the first type (ending with 6 or up to 9 trailing 0b) establish that next State is State 4, i.e. the next State is completely determined by the fact that the Code word are belonging to group G12, see **Figure 3.3-2**.
the delivery of each of the code words belonging to a group of the second type (G2) establishes a coding state (S2, S3) of a second type determined by said group of the second type and by the received information word (1),	Code words of group G2 of the second type (ending with 2 or up to 5 trailing 0b) establish that next State is State 2 or State 3, i.e. the next State is not completely determined by the fact that the Code word are belonging to group G2. Each Code word of group G2 may represent two different Data symbols, i.e. two Data symbols are converted into one same Code word. Then one of these Data symbols always has a next State = State 2, and the other Data symbol always has a next State = State 3. Thus the next State is determined by the group G2 and by the Data symbol, see **3.3.3 Demodulation** and **Figure 3.3-2**.
while any set (V2, V3) of code words associated with a coding state (S2, S3) of the second type contains no code words in common with any other set (V2, V3) of code words associated with any other coding state (S2, S3) of the second type, and	Code words leaving State 2 shall have both bit X15 and bit X3 set to 0b, and Code words leaving State 3 bit X15 or bit X3 or both shall be set to 1b, see **3.3 Modulation method (8/16 modulation)**.
while at least one set (V1, V2, V3, V4) of code words comprises a code word of a group of the second type being associated with a plurality of information words,	Code word 0010000000100100 of the Main conversion table, column State 1 and column State 2, belongs to the group G2 as it has 2 trailing 0b. This Code word may represent the two different Data symbols 5 and 6, see **Table 3.3-1**.
each information word of said plurality establishing a different coding state of the	Data symbol 5 establishes next State = State 2, Data symbol 6 establishes next State = State 3,

second type, thereby allowing to distinguish the respective information word from said plurality by detecting the following code word.	see **Table 3.3-1**. All Code words at State 2 contain 0b at the b15 (MSB) and b3. All Code words at State 3 contain at least 1b at b15 (MSB) or b3. As a result, decoding can be made completely unique by observing the 16 channel bits of the present Code word, together with b15 and b3 of the next Code word or the Sync code in the case where the present Code word ends with 2 to 5 trailing 0bs, see **3.3.3 Demodulation**.
Claim 2:	
Method as claimed in Claim 1, wherein the sequence of information words is converted to the sequence of code words according to such rules of conversion that the corresponding modulated signal presents substantially no frequency components in a low-frequency area in the frequency spectrum and	DC component suppression control (DCC) minimizes the absolute value of the accumulated DSV (Digital Sum Value: summed up by letting bit value 1 be +1 and bit value 0 be –1) in the NRZI converted "modulated channel bit stream". The DCC algorithm serves to control choice of the … converted Code words in each of the following case [(a) to (c)] so that the absolute value of the DSV at the specified position will be minimized, see **3.3.2 DC component suppression Control (DCC)**.
in which each number of successive bit cells having a same signal value in the modulated signal is at least d+1 and at most k+1,	The run length (number of consecutive 0s) of the converted bitstream is limited to between d=2 and k=10 [RLL (2, 10)], see **3.3 Modulation method (8/16 modulation)**. The converted bitstream is modulated according to the NRZI conversion, see **3.3.1 Recording frame modulation,** and **1.5.8 NRZI conversion**. In the NRZI conversion a "1" indicates a change in the signal value of the corresponding bit cell, a subsequent "0" indicates no change in the signal value of the corresponding bit cell, see **1.5.8 NRZI conversion**. Thus d=2 up to k=10 consecutive 0s lead to d+1 up to k+1 consecutive bit cells with the same signal level.
the sets (V1, V2, V3, V4) of code words for each of at least a number of information words comprising at least a pair of code words,	For Data symbols 0 to 87 each of the 4 sets State 1 to State 4 has a pair of Code words. One Code word is in the Main conversion table, see **Table 3.3-1**, the other Code word in the Substitution conversion table, see **Table 3.3-2**.
low-frequency components in the modulated signal (7) being avoided when the information words are converted by selected code words from the pairs of code words.	The choice of the Code words from the Main conversion table or the Substitution conversion table for Data symbols between 0 and 87 is made to minimize the absolute value of the DSV, see

	3.3.2 DC component suppression Control (DCC), case (b).
Claim 3:	
Method as claimed in Claim 2, characterized in that a running digital sum value is established as a measure for current DC contents,	DC component suppression control (DCC) minimizes the absolute value of the accumulated DSV (Digital Sum Value: summed up by letting bit value 1 be +1 and bit value 0 be –1) in the NRZI converted "modulated channel bit stream". The DCC algorithm serves to control choice of the … converted Code words in each of the following case [(a) to (c)] so that the absolute value of the DSV at the specified position will be minimized, see **3.3.2 DC component suppression Control (DCC)**.
which value is determined over a preceding portion of the modulated signal (7) and	The DSV, which is the basis for the calculation, shall commence with the initial value of 0 at the start of the modulation and shall continue adding without resetting to 0 until the modulation is terminated, see **3.3.2 DC component suppression Control (DCC)**.
denotes for this portion the current value of a difference between the number of bit cells having a first value and the number of bit cells having a second value,	DSV (Digital Sum Value) is summed up by letting bit value 1 be +1 and bit value 0 be –1 in the NRZI converted "modulated channel bit stream", see **3.3.2 DC component suppression Control (DCC)**.
while the pairs comprising two code words have opposite effects on the digital sum value and	In the Main conversion table all Code words for Data symbols 0-87 result in a negative change of the DSV whereas in the Substitution conversion table all Code words for Data symbols 0-87 result in a positive change of the DSV, see **Table 3.3-1** and **Table 3.3-2**.
the code words are selected from the pairs in response to certain digital sum values so that the digital sum value continues to be limited.	The choice of the Code words from the Main conversion table or the Substitution conversion table for Data symbols between 0 and 87 is made to minimize the absolute value of the DSV. The choice shall be determined on the basis of the accumulated DSV at the LSB position of the Code word followed by the first Code word that enables DCC, see **3.3.2 DC component suppression Control (DCC)**.
Claim 4:	
Method as claimed in Claim 2 or 3, characterized in that the information words are converted to a sequence of code words which establish a bit string having bits of a first	8/16 modulation converts the 8-bit input bytes (so called Data symbols) to 16 channel bits Code words. , see **3.3 Modulation method (8/16 modulation)**.

logical value and bits of a second logical value,	The modulated Code words shall be serially output with the MSB [most significant bit] at the start of each Code word, see **3.3.1 Recording frame modulation**.
a number of successive bits having the first logical value and situated among bits having the second logical value being at least d and at most k, and	The run length (number of consecutive 0s) of the converted bitstream is limited to between d=2 and k=10 [RLL (2, 10)], see **3.3 Modulation method (8/16 modulation)**.
the bit string being converted to the modulated signal (7),	The converted bitstream is modulated according to the NRZI conversion, see **3.3.1 Recording frame modulation,** and **1.5.8 NRZI conversion**.
in which [modulated signal] transitions from bit cells having the first signal value to bit cells having the second signal value or vice versa correspond to the bits having the second logical value in the bit string.	In the NRZI modulated signal transitions from a bit cell with a high signal value to a bit cell with a low signal value, or vice versa, corresponds to a bit with value "1" in the bit stream of the Code words, see **1.5.8 NRZI conversion** and **Figure 1.5.8-1**.
Claim 5:	
Method as claimed in one of the preceding Claims, characterized in that the sets (V2, V3) of code words belonging to the code states (S2, S3) of the second type can be mutually distinguished on the basis of the logical values of bits at p predetermined bit positions in the code words, where p is an integer smaller than n.	All Code words at State 2 contain 0b at the b15 (MSB) and b3. All Code words at State 3 contain at least 1b at b15 (MSB) or b3, see **3.3.3 Demodulation**.
Claim 6:	
Method as claimed in Claim 5, characterized in that the synchronization (sync) words (100, 101) are inserted into the series of code words,	Each physical sector contains 26 Sync frames, each of which starts with a Sync code followed by 91 code words, see **3.2.9 Physical sector configuration**.
the sync words showing bit patterns that cannot occur in the bit string formed by the code words,	Each Sync code is selected from four Sync codes shown in [Table 3.2.9-1] respectively, **3.2.9 Physical sector configuration**. Each of the Sync codes has 13 consecutive 0s which do not occur in any of the Code words, see **Table 3.2.9-1, Table 3.3-1** and **Table 3.3-2**.
while the sync words are used having different bit patterns and	Each Sync code is selected from four Sync codes shown in [Table 3.2.9-1] respectively, **3.2.9 Physical sector configuration**.
the sync words used depends on the coding state,	The upper part of **Table 3.2.9-1** specifies the Sync codes for next State = State 1 and State 2, the lower part of Table 3.2.9-1 specifies the Sync

	codes for next State = State 3 and State 4.
in that a predetermined coding state is established for the conversion of the next information word after a sync word has been inserted,	Each of the Sync codes of **Table 3.2.9-1** establishes that next State is State 1.
while the sync words are mutually distinguishable on the basis of the logical values of bits at predetermined bit positions in a manner corresponding to the manner in which the sets of code words belonging to coding states of the second type are mutually distinguishable.	The Sync codes State 1 and State 2 have 0b at the position of the most significant bit [the left most bit] and position of the 13th but most significant bit [13th but most left bit], see **Table 3.2.9-1**.
Claim 7:	
Method as claimed in one of the preceding Claims, characterized in that d is equal to 2 and k is equal to 10 and in that	The run length (number of consecutive 0s) of the converted bitstream is limited to between d=2 and k=10 [RLL (2, 10)], see **3.3 Modulation method (8/16 modulation)**.
the ratio of n to m is 2:1.	8/16 modulation converts the m=8 bit input bytes (so called Data symbols) to n=16 channel bits Code words, see **3.3 Modulation method (8/16 modulation)**.
Claim 8:	
Method as claimed in Claim 7, characterized in that m is equal to 8 and n is equal to 16.	8/16 modulation converts the m=8 bit input bytes (so called Data symbols) to n=16 channel bits Code words, see **3.3 Modulation method (8/16 modulation)**.
Claim 9:	
Method as claimed in one of the preceding Claims 4, 5, 6, 7 or 8, characterized in that p is equal to 2.	All Code words at State 2 contain 0b at the b15 (MSB) and b3. All Code words at State 3 contain at least 1b at b15 (MSB) or b3. As a result, decoding can be made completely unique by observing the 16 channel bits of the present Code word, together with b15 and b3 of the next Code word or the Sync code in the case where the present Code word ends with 2 to 5 trailing 0bs, see **3.3.3 Demodulation**.
Claim 10:	
Method as claimed in Claim 6, 7, 8 or 9, characterized in that a first group (G11) of the first type of code words is formed by code words ending in *a* bits having the first logical value, where *a* is equal to 0 or 1,	The Code words X(t) which end with 1 or no trailing 0b establish next State = State 1 and constitute group G11, see **Figure 3.3-2, line 1**.
in that a second group (G12) of the first type of code words is formed by code words ending in *b* successive bits having the first logical value,	The Code words X(t) which end with 6 or up to 9 trailing 0b establish next State = State 4 and constitute group G12, see **Figure 3.3-2, line 4**.

where *b* is an integer greater than or equal to 6 and smaller than or equal to 9, the group (G2) of the second type being formed by code words ending in *c* bits having the first logical value, where *c* is an integer greater than or equal to 2 and smaller than or equal to 5, and the coding state (S1, S2, S3, S4) related sets (V1, V2, V3, V4) of code words from which the code words assigned to the information words are selected *[,]* are formed by code words beginning with a number of bits of the first logical value, which number of bits depends on the coding state related to the set, so that the number of successive bits having the first logical value in the bit string formed by two successive code words is at least equal to d and at most equal to k.	The Code words X(t) which end with 2 or up to 5 trailing 0b establish next State = State 2 or State 3 and constitute group G2, see **Figure 3.3-2, line 2 and 3.** The Code words X(t) ending with 1 or no trailing 0b [establishing next State = State 1 and constituting group G11] are followed by Code words X(t+1) starting with 2 or up to 9 leading 0bs, see **Figure 3.3-2, line 1**. Thus the total number of consecutive 0bs is always between d=2 and k=10. The Code words X(t) ending with 6 or up to 9 trailing 0b [establishing next State = State 4 and constituting group G12] are followed by Code words X(t+1) starting with 1 or no leading 0b, see **Figure 3.3-2, line 4**. Thus, also in this case the total number of consecutive 0bs is always between d=2 and k=10. The Code words X(t) ending with 2 or up to 5 trailing 0b [establishing next State = State 2 or State 3 and constituting group G2] are followed by Code words X(t+1) starting with none/1 (State 3/State 2) or up to 5 leading 0bs, see **Figure 3.3-2, line 1**. Thus, also in this case the total number of consecutive 0bs is always between d=2 and k=10.
Claim 11:	
Method as claimed in claim 9, wherein the p predetermined bit positions are the first and thirteenth bit position in the following code word.	b15 is the most significant bit hence the 1st bit position. Therefore b15 and b3 of the next Code word correspond to the 1st and 13th bit position of the next Code word.
Claim 12:	
Record carrier on which the modulated signal obtained by the method claimed in any one of the preceding claims is provided in a track.	The Digital Versatile Disc (DVD) carries a signal in the track (see **3.3** 8/16 Modulation) represented by a pattern of variations in height of a data layer, usually called pits and lands, having low reflectivity and high reflectivity, respectively