**IN THE UNITED STATES DISTRICT COURT**
**FOR THE DISTRICT OF DELAWARE**

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| OASIS TOOLING, INC., a Delaware Corporation,<br><br>Plaintiff,<br>v.<br><br>SIEMENS INDUSTRY SOFTWARE, INC., a Delaware Corporation,<br><br>Defendant. | ) | C.A. No. _____<br><br>**DEMAND FOR JURY TRIAL** |

## COMPLAINT FOR PATENT INFRINGEMENT

Plaintiff Oasis Tooling, Inc. ("Oasis") files this Complaint for Patent Infringement and Demand for Jury Trial against Siemens Industry Software, Inc. ("Siemens") and alleges as follows:

1. Oasis is seeking to protect its valuable intellectual property from ongoing willful infringement by Siemens. Oasis, a semiconductor company, developed and patented novel technology generally directed to methods and devices for the independent evaluation of cell integrity, changes, and verification of origin in chip design for production workflow (the "Oasis Inventions").

## THE PARTIES

2. Oasis is a Delaware corporation with its principal place of business at 151 4th Street, Ketchum, Idaho.

3. Thomas Grebinski, a semiconductor pioneer, who continues to actively innovate in this important field, founded Oasis in 2004. Oasis obtained a portfolio of patents covering the Oasis Inventions.

4. Siemens is a Delaware corporation. Siemens may be served through its agent for service of process, The Corporation Trust Company, at Corporate Trust Center 1209, Orange St., Wilmington, Delaware, 19801.

5. Mentor Graphics Corporation ("Mentor Graphics") developed the Accused Products (defined below). Siemens acquired Mentor Graphics in 2017, and Mentor Graphics is now a division within Siemens responsible for the Accused Products.

## JURISDICTION AND VENUE

6. This action for patent infringement arises under the patent laws of the United States, 35 U.S.C. § 101 *et seq*. This court has original jurisdiction over this controversy pursuant to 28 U.S.C. §§ 1331 and 1338.

7. Venue is proper in this Court pursuant to 28 U.S.C. §§ 1391(b) and (c) and 1400(b).

8. The Court has personal jurisdiction over Siemens because it is incorporated within this District and because Siemens has committed acts of direct and indirect infringement in this District, including through selling and offering for sale infringing products and services in this District and because Oasis' claims arise out of and relate to Siemens' acts of infringement in this District, and because the exercise of jurisdiction by this Court over Siemens in this action would be reasonable.

## OASIS' INNOVATIONS AND ASSERTED PATENTS

9. Oasis' founder and CEO, Thomas Grebinski, started and led the SEMI working group that developed the Open Artwork System Interchange Standard (OASIS®) in June 2001 (through SEMI's Data Path Task Force). OASIS® is a language used by computers to represent electronic patterns for integrated circuits during the design and manufacture stages. OASIS® replaced GDSII as the dominant standard, and is now widely used in the

semiconductor industry, including by foundries, fabless semiconductor companies, integrated device manufacturers, IP suppliers, and electronic design automation (EDA) vendors.

10. Oasis develops integrated circuit-design flow optimization software for the semiconductor and fabrication industry, including relating to the OASIS® language. Oasis delivered the industry's first commercial reference implementation for OASIS®.

11. Oasis' offerings have grown to include a number of industry firsts, including (1) software products in standard compliance, (2) OASIS® reference implementations, (3) OASIS®/GDSII design layout equivalence checking, (4) OASIS® Reader/Writer Source Code, (5) OASIS®/GDSII Stress Test Cases, (6) on-premises design workflow auditing utilities, and (7) cloud-based ecosystem workflow view and management applications.

12. The United States Patent and Trademark Office ("USPTO") awarded to Oasis patents covering the Oasis Inventions for improving semiconductor chip design and manufacturing processes using specific techniques.

13. On March 23, 2010, the USPTO issued U.S. Patent No. 7,685,545 (the "'545 Patent"), entitled "Methods and Devices for Independent Evaluation of Cell Integrity, Changes and Origin in Chip Design for Production Workflow." The '545 Patent lists Thomas Grebinski and David Chapman as its inventors, and states that it was assigned to Oasis. Attached hereto as Exhibit 1 is a true and correct copy of the '545 Patent.

14. On September 11, 2012, the USPTO issued U.S. Patent No. 8,266,571 (the "'571 Patent"), entitled "Methods and Devices for Independent Evaluation of Cell Integrity, Changes and Origin in Chip Design for Production Workflow." The '571 Patent lists Thomas Grebinski and David Chapman as its inventors, and states that it was assigned to Oasis. Attached hereto as Exhibit 2 is a true and correct copy of the '571 Patent.

15. The '545 and '571 Patents (together, the "Asserted Patents") are generally directed to specific techniques for the granular analysis of design and manufacturing data used to prepare chip designs for manufacturing and to identify similarities and differences among parts of design data files using a variety of components, including a parser, normalizer logic, syntax tree, canonical forming modules, digester, and reporter, amongst others.

16. The Asserted Patents disclose and specifically claim inventive concepts that represent significant improvements over conventional systems. Specifically, each of the Asserted Patents describe various techniques, including the ability to parse data into syntax trees and normalize the trees into canonical forms, which are used to generate a specific digest per a selected partition, amongst other functionality (the "Oasis Tools").

17. The Oasis Tools were not available in the art because conventional tools did not have ways to identify cells that were functionally the same but described differently in design files, or to ascertain those differences using the components set forth in the claims of the Asserted Patents.

18. The Asserted Patents disclose more than just a simple combination of generic components to perform conventional activities. The claimed inventions improve the functionality and capabilities of computers used in the process of designing, verifying, and fabricating semiconductor chips. The claimed inventions do so by enabling the detection of cells that are functionally the same, even if they are differently described in design files, variously using new components in an unconventional manner, including, for example, design units that include header and/or cell data which correspond to parts of a physical circuit design and parsing syntax of and normalizing design data into canonical forms.

19. The Asserted Patents include specific, non-conventional steps and concepts which are rooted in computer technology that make the claimed inventions concrete and non-abstract. For example, certain claims of the Asserted Patents variously recite: (1) parsing syntax of and normalizing design data within cells into canonical forms that reduce sensitivity of data analysis to non-functional variations in the design data within a cell; (2) partitioning functionally significant design data from non-significant data within the canonical forms; (3) calculating and storing digests of the cells including at least the functionally significant design data; and (4) then comparing the digests of the cells in two design files.

20. None of the aforesaid steps was known, let alone conventional, in the art at the time of the inventions because then-conventional chip-level design and manufacturing data management systems could not determine or summarize what changed within a given collection of cell and block data found within a file.

21. In addition, the claims are rooted in computer technology as they are specifically directed toward computer chip design and manufacturing and provide the capability to evaluate cell equivalence at the cell level and determine the changes to an individual cell, which was not available in the art. Thus, the claims of the Asserted Patents recite specific steps to accomplish the desired result and go beyond simply claiming a result.

22. Accordingly, the inventions of the Asserted Patents allow for a new kind of system that was not previously possible, enabling a new level of granular analysis of design data used to prepare chip designs for manufacturing with new types of digests, including canonical cell digests and canonical design unit digests.

## SIEMENS' PRIOR KNOWLEDGE OF OASIS' PATENTS

23. Sandeep Koranne was one of a small number of employees of Oasis during the 2004 to 2007 timeframe. During his time at Oasis, Mr. Koranne became very familiar with Oasis' inventions that were the subject of the Asserted Patents.

24. Mr. Koranne quit Oasis in mid-December 2007 because he objected to continued investment in developing the technologies of the Asserted Patents. At that time, Mr. Koranne did not inform Oasis where he was going to work after quitting Oasis.

25. Oasis is informed and believes that Mr. Koranne joined Mentor Graphics as a Principal Engineer after leaving Oasis. Oasis was unaware until more recently that Mr. Koranne was working at Mentor Graphics. Exhibit 3 (Koranne LinkedIn profile).

26. Mr. Koranne knew that Oasis was pursuing patents to cover its inventions. For example, during a conversation in June 2008, Mr. Grebinski informed Mr. Koranne that Oasis had filed a patent application to cover the inventions that are the subject of the Asserted Patents.

27. In September 2013, Mr. Grebinski emailed Joseph Sawicki, then Mentor Graphics' Vice President and General Manager, to provide a presentation-based white paper summarizing some of the inventions in the Asserted Patents, and offering for Oasis to partner with Mentor Graphics. Exhibit 4 (Sawicki LinkedIn Profile).

28. Oasis and Mentor Graphics engaged in discussions regarding Oasis' patented technology. At Mentor Graphics' request, on November 14, 2013, Oasis provided to Mentor Graphics an evaluation copy of Oasis' Equivalence Checker software.

29. On November 23, 2013, Steffen Schulze, then Mentor Graphics' Senior Director of Product Management for Calibre, confirmed his receipt of the evaluation copy of

Oasis' software and that he had "passed it on to the team" for evaluation. Exhibit 5 (Schulze LinkedIn Profile). The manual for the Equivalence Checker software, which Oasis provided to Mentor Graphics, states that the software uses patented technology and includes a patent marking statement.

30. Siemens acquired Mentor Graphics in 2017, and Mentor Graphics is now a division within Siemens responsible for the Accused Products (defined below).

31. Siemens is aware of the Asserted Patents and aware that its Accused Products infringe the Asserted Patents through at least its officers (1) Mr. Sawicki, Executive Vice President of the Mentor division of Siemens; (2) Mr. Schulze, Vice President of Product Management Calibre Semiconductor Solutions at the Mentor division of Siemens; and (3) Mr. Koranne, Chief Scientist of the Mentor division of Siemens and a Technical Fellow for Siemens. Exhibit 4 (Sawicki LinkedIn Profile); Exhibit 5 (Schulze LinkedIn Profile); Exhibit 3 (Koranne LinkedIn Profile).

32. On information and belief, Messrs. Koranne, Sawicki, and Schulze are all directly involved in managing and ongoing development of the Accused Products.

## SIEMENS' INFRINGING CALIBRE DESIGN SOLUTIONS SUITE

33. Siemens makes, uses, sells, offers for sale, and/or imports into the United States and this District products and services that infringe the Asserted Patents (the "Accused Products"), including the Calibre Design Solutions suite, which is the flagship product of the Mentor Division of Siemens. *See* Exhibit 6 (describing Calibre Design Solutions suite).

34. Unbeknownst to Oasis at the time, when one of its key employees, Mr. Koranne, left to become Chief Scientist at Mentor Graphics (now a Siemens business), the

former employee incorporated Oasis Inventions into Mentor Graphics' Calibre Design Solutions suite.

35. The Accused Products include a variety of infringing modules and features, which are summarized below. These infringing modules and features perform different functions at different stages in the design and manufacturing flow (referred to as "nodes" in the overall process), and include Calibre's Physical Verification Platform with Calibre Pattern Matching (with or without Auto-Waiver), Calibre RealTime Platform with Pattern Matching (with or without Auto-Waiver), and Calibre DBdiff.

36. Calibre's Physical Verification Platform functionality enables participants in the semiconductor chip and device design and manufacturing process to efficiently address physical verification requirements for chip designs. *See* Exhibit 7 (describing Calibre Physical Verification Platform). Users of the Accused Products include foundries (companies that manufacture semiconductor chips and devices), IDMs (Integrated Device Manufacturers who both design and manufacture ICs), IP suppliers (companies that design and sell IC components of a full chip design), and fabless companies (companies that design and sell hardware and semiconductor chips, but do not manufacture semiconductor wafers).

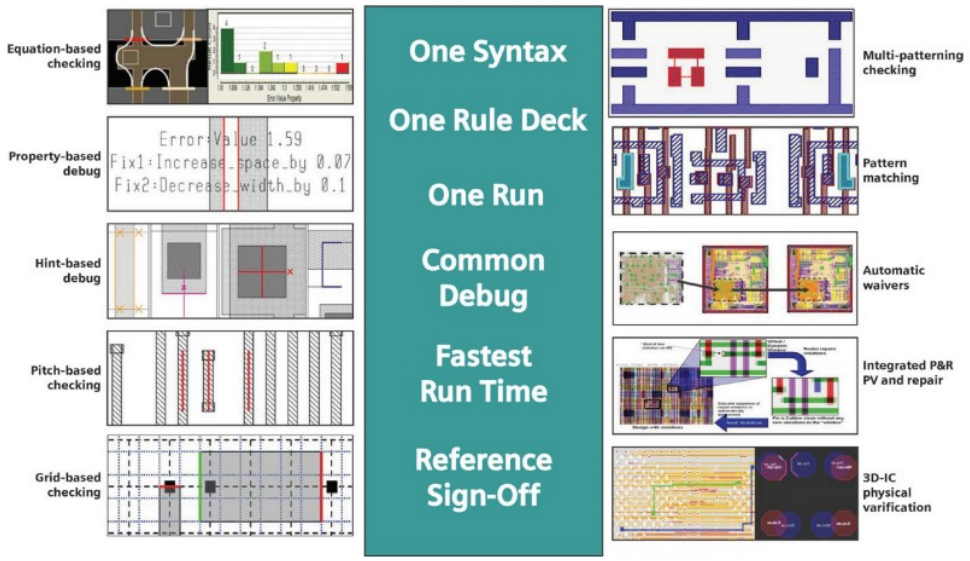



Exhibit 8 at 1 (illustrating Calibre physical verification functionalities).

37. For example, Calibre includes infringing functionality for layout vs. schematic comparisons ("LVS"). LVS refers to verifying that an integrated circuit layout corresponds to the original schematic or circuit diagram of the design), device recognition, reliability verification, and parasitic extraction (calculation of parasitic effects in a design, which are unwanted capacitors formed when two conductive elements in a circuit are close to each other and at different voltage levels). Calibre's nmLVS module provides device and connectivity comparison between chip layouts and schematics. Through its use of infringing functionality, Calibre nmLVS is able to interactively verify and make corrections in an existing design framework while reducing iteration runtime and error debugging.

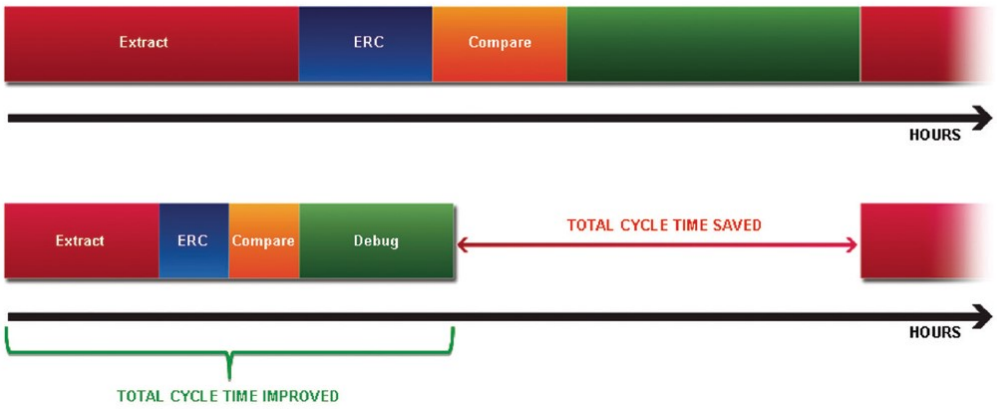



Exhibit 9 at 1 (Siemens' document showing improvement in cycle time from use of Calibre nmLVS tool).

38. As another example of infringing functionality, Calibre's PERC reliability platform performs a wide range of reliability verification tasks using both standard rules from the foundry and custom rules created by a design team. Exhibit 10 at 2 (describing Calibre PERC functionality).

39. Calibre's Physical Verification Platform also includes infringing functionality for Design Rule Checking ("DRC"), Electrical Rule Checking ("ERC"), Design for Manufacturing ("DFM"), and Critical Failure Analysis ("CFA").

40. DRC is the application of a set of geometric rules by a chip fabricator to ensure that a chip design will have a reasonably high yield. Among other things, DRC often involves checking that cells comply with minimum separation rules so that normal manufacturing variation will not result in an excessive number of defective chips. Each chip fabricator can have its own design rules based on its specific equipment and manufacturing processes. Due to the desire to miniaturize chip designs to the maximum extent possible, chip designers often seek to use cells in their chip designs which fail DRC but are known to still be operable, which is known as a design rule waiver.

41. Calibre's infringing Auto-Waivers functionality provides automated recognition and removal of waived design, litho-friendly, and critical-failure rule and manufacturing violations in external IP, eliminating redundant error debugging while ensuring that all waived errors are properly identified during full-chip verification.

42. The waivers are created as separate cells for each rule check that contains a waived violation for an IP block, or instantiated back into the original IP block.

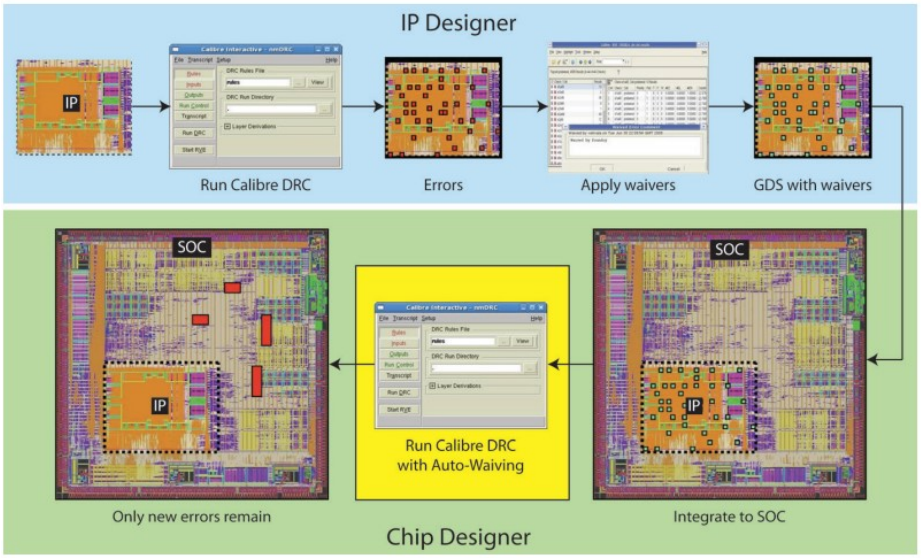



Exhibit 11 at 1 (illustrating Calibre's Auto-Waivers functionality).

43. Calibre's infringing DBdiff tool allows the identification of cells with the same or different functional contents, even when the cells are named or expressed differently. Exhibit 12 (describing use of DBdiff). Calibre's DBdiff tool can be used in a variety of applications, including versioned file-to-file equivalence checking, versioned database-to-base equivalence checking, versioned third-party IP layout database equivalence checking, and Fast-XOR comparisons.

44. Calibre's infringing Pattern Matching functionality is used to enable signoff DRC checking and pattern matching within a variety of design creation environments. Exhibit 8 at 3 (describing Calibre's DRC functionality).

45. Calibre's infringing Pattern Matching functionality can help identify complex problematic design and manufacturing configurations during verification. It enables a variety of complex physical verifications across technology nodes and processes.

46. Calibre's infringing Pattern Matching functionality supports advanced verification flows at the major foundries from flagging known yield detractors, to identifying IP modifications, and enhancing simulation-based flows. Exhibit 13 (describing Calibre Physical Verification pattern-matching functionality).

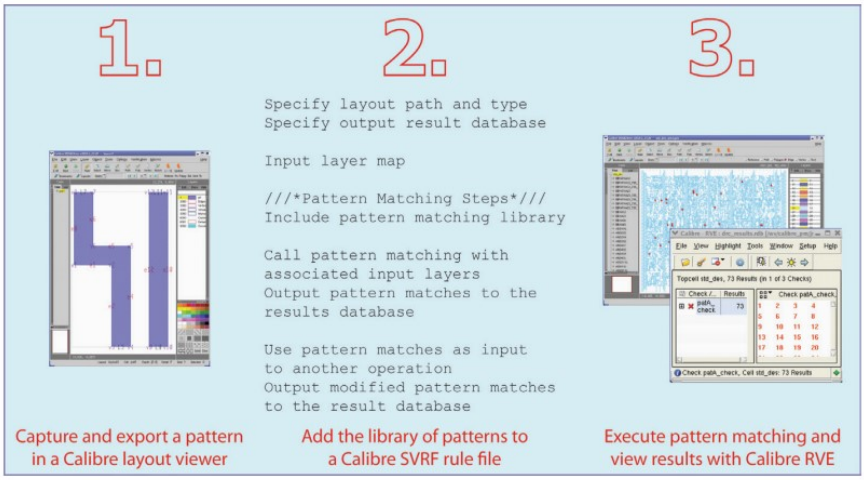



Exhibit 14 at 2 (describing Calibre's Pattern Matching functionality).

47. For the reasons set forth above, Oasis is informed and believes that various Siemens officers responsible for the Accused Products knew of Oasis' Asserted Patents and that the Accused Products infringed the Asserted Patents. Oasis is further informed and believes that Siemens has done nothing to curtail its infringement of the Asserted Patents. Thus, Siemens has acted with blatant and egregious disregard for Oasis's patent rights with an

objectively high likelihood of infringement, and Siemens' infringement of Asserted Patents is willful and egregious, warranting enhancement of damages. Siemens' continued infringement after its receipt of this Complaint is further evidence that its infringement is willful.

**COUNT I**
**(Direct Infringement of the '571 Patent)**

48. Oasis repeats, realleges, and incorporates by reference, as if fully set forth herein, the allegations of the preceding paragraphs, as set forth above.

49. Siemens has infringed and continues to infringe at least Claims 1 and 16 of the '571 Patent in violation of 35 U.S.C. § 271(a) by, among other things, making, using, importing, selling, and/or offering for sale in the United States the Accused Products.

50. Siemens' infringement is based upon literal infringement, infringement under the doctrine of equivalents, or both.

51. Siemens' acts of making, using, importing, selling, and/or offering for sale infringing products and services have been without the permission, consent, authorization, or license of Oasis.

52. The Accused Products are software and perform a computer-implemented method of, and are program code stored on non-transitory computer readable storage media for, evaluating similarities and differences between design data for circuits using the techniques set forth in the Asserted Patents. Exhibit 15 at 7.

53. Calibre provides physical verification, including layout vs. schematic physical verification, to evaluate the similarities or differences between design data for circuits. Exhibit 9 at 1 (stating that the Calibre nmLVS, part of nmPlatform, performs a vital function to provide device and connectivity comparison between the IC layout and the schematic); *see also* Exhibit 16 at 5 (describing Calibre's LVS functionality).

54. For example, Calibre's Pattern Matching functionality, integrated with Calibre's nmDRC product, includes "[c]omplete Calibre rule files and extensive coverage of Calibre processes for DRC [] available at all major semiconductor foundries." Exhibit 14 at 3; Exhibit 8 at 3. Calibre's DBdiff tool identifies when cells are functionally the same or different, even when the cells are named or expressed differently. Exhibit 12 (describing DBdiff functionality).

55. Furthermore, Calibre's multi-user waiver capabilities enable teams to complete reliability verification efficiently using two versions of design layout files stored in the memory. The representation of design data in the design layout files conforms to industrial hierarchical standards, such as OASIS®. The Accused Products perform "the waiving process using pattern-matching criteria specified by the foundry for each waived rule." Exhibit 17 at 2. As shown below, Calibre's IP check and Pattern Matching functions search for similarities to identify the design-rule violations.

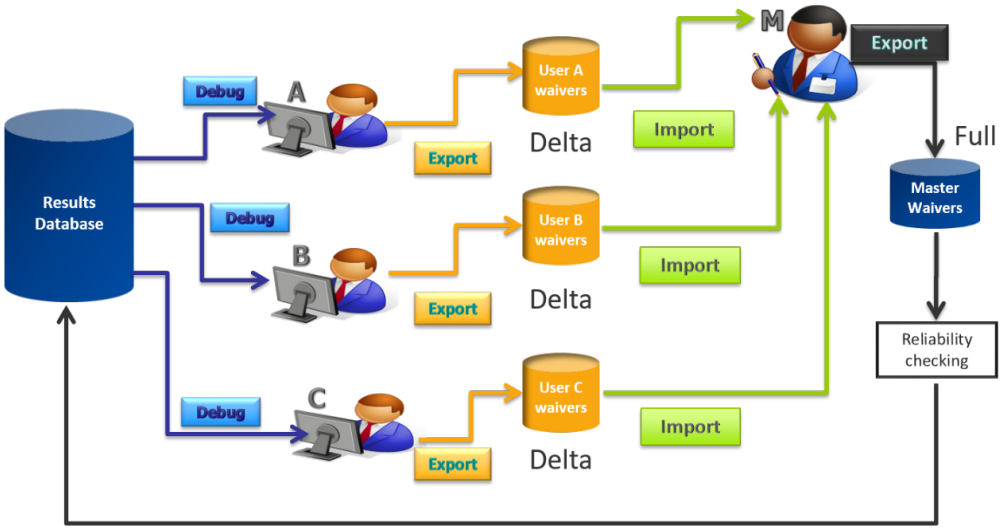
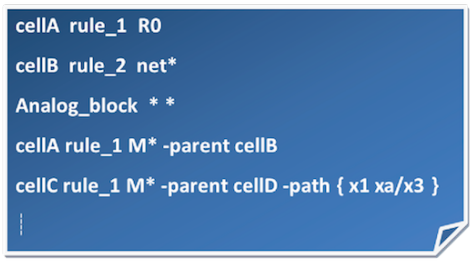
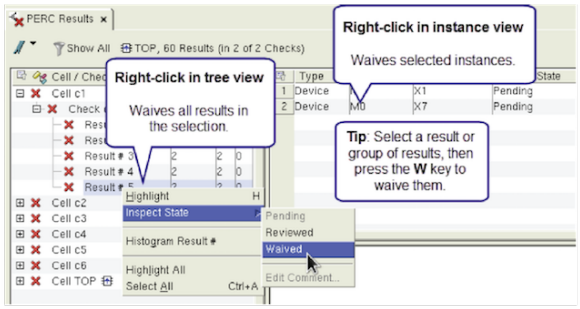



Exhibit 18 at 3 (illustrating process flow of using Accused Products to compare design files against a database of approved waivers to generate a report of remaining violations). Exhibit 19 at 5 (describing waiver process).

56. In order to permit comparisons between the design data in multiple files, the Accused Products parse the design layout files into the syntax trees, representing design data in data formats with header and cell definitions. To interpret the syntax trees to produce canonical forms (thereby reducing the sensitivity of the data analysis to non-functional variations in the design data), comments, spaces, or other non-functional variations in the design data file are removed, and a checksum is generated, as shown below. The checksum is a unique identifier for each cell.

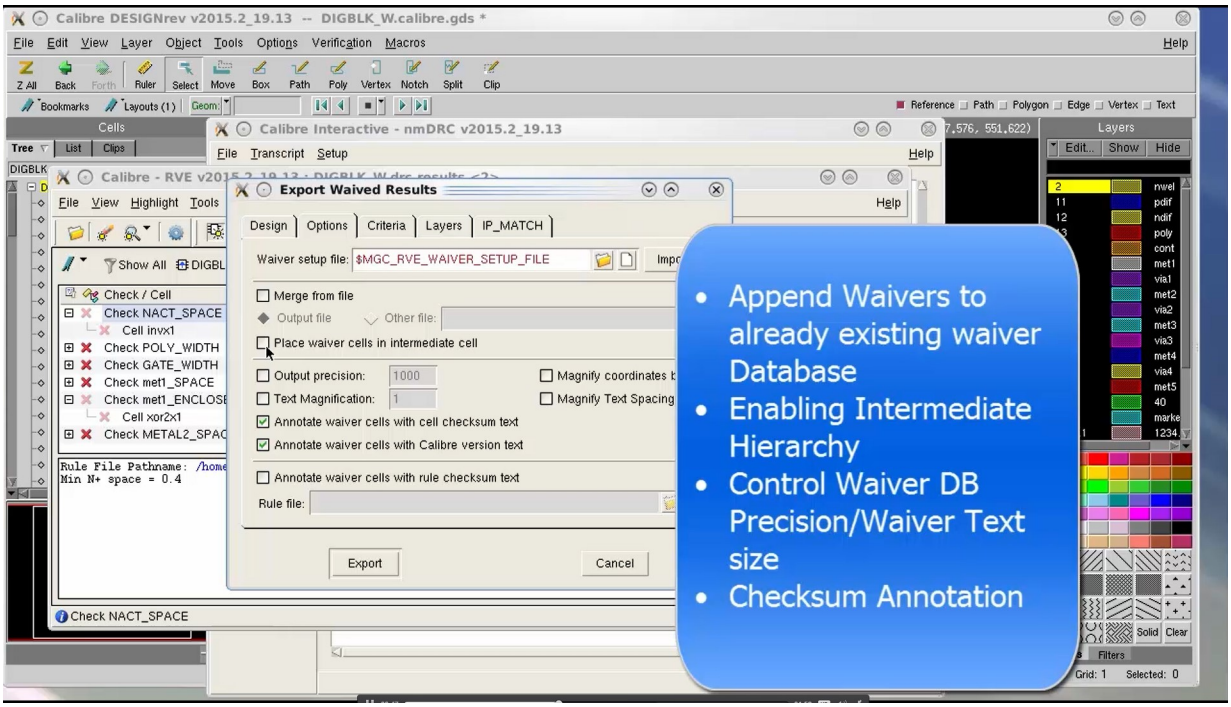



Text-based (manual) waivers file




Automated error results waiving
(Calibre PERC reliability platform with Calibre RVE results viewer)

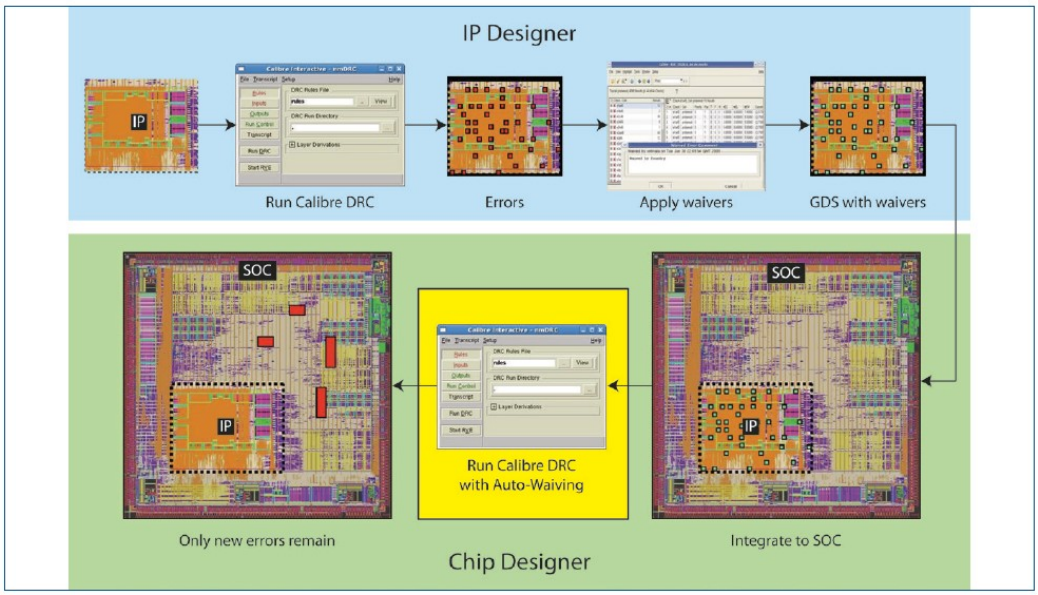
Multi-user waiver flow, Exhibit 18 at 1.



*See* "How to Edit RVE Export Form Option to Generate Waiver Database" (video) at 00:34

57. Calibre reads all open data formats, including OASIS® and GDSII. Exhibit 8 at 3 (stating that this direct database access eliminates the need for conversion to intermediate access to design data). Such capabilities enable the Accused Products to produce the canonical forms.

58. Once the design data has been parsed and normalized, it is assigned a digested checksum (as shown above), and then used to compare the cells in the first and second files, which the Accused Products then summarize in a report. For example, cells flagged for design-rule violations can be compared to a library of approved waived designs, to identify applicable design waivers. *See* "How to Edit RVE Export Form Option to Generate Waiver Database" (video), at 00:34. After all design-rule violations are waived, the Accused Products will generate signoff results, as shown below, which include a report of the results of the comparison of the DRC errors to the database of waived designs.




*Calibre automated waiver management ensures IP quality while eliminating redundant error debugging and waiver negotiations during IP integration.*

*See* Exhibit 17 at 1(showing report of non-waived errors).

59. Siemens' direct infringement of the '571 Patent has injured and continues to injure Oasis in an amount to be proven at trial, but not less than a reasonable royalty. Siemens' actions are willful, blatant, and in egregious disregard for Oasis' patent rights. Siemens' infringement has caused and is continuing to cause damage and irreparable injury to Oasis, and Oasis will continue to suffer damage and irreparable injury unless and until that infringement is enjoined by this Court.

60. Siemens acted recklessly, willfully, wantonly, and deliberately engaged in acts of infringement of the '571 Patent, justifying an award to Oasis of increased damages under 35 U.S.C. § 284, and attorney's fees and costs incurred under 35 U.S.C. § 285.

**COUNT II**
**(Indirect Infringement of the '571 Patent)**

61. Oasis repeats, realleges, and incorporates by reference, as if fully set forth herein, the allegations of the preceding paragraphs.

62. As discussed above, Siemens knew about Oasis' patented technology, including the '571 Patent, by no later than November 14, 2013, and further knows about the '571 Patent from its receipt of this Complaint.

63. In addition to directly infringing the '571 Patent, as discussed above with respect to Count I, Siemens knew or was willfully blind to the fact that it was inducing infringement of at least Claims 1 and 16 of the '571 Patent under 35 U.S.C. § 271(b) by instructing, encouraging, directing, and requiring third parties to directly infringe by, in the United States, performing the method of Claim 1 and using the computer-readable medium of Claim 16 by using and installing the Accused Products.

64. Siemens is also liable for contributory infringement of at least Claim 16 of the '571 Patent under 35 U.S.C. § 271(c) by knowing or being willfully blind to the fact that it was

contributing to infringement by offering to sell and selling in the United States the Accused Products. The Accused Products are software that infringe at least Claim 16 when installed on a computer and are not a staple article or commodity of commerce suitable for substantial noninfringing use. Specifically, the Accused Products always include the parser, normalizer logic, partitioning module, canonical forming module, digester, comparer, and reporter elements recited in Claim 16 and, therefore, necessarily infringe when they are placed on computer-readable storage media.

65. Siemens knowingly and actively encouraged, aided and abetted, and contributed to the direct infringement of the '571 Patent by instructing and encouraging its customers, developers, and partners to use and install the Accused Products, including through direct communications in trainings, reference materials, user guides, promotional materials, support contracts, sales calls, release notes, webinars, guidelines, videos, manuals, and white papers, all intended to enable and encourage the infringing use and installation of the Accused Products.

66. For example, Siemens operates an online site called "Communities" with discussions and articles covering the use of the Accused Products. Exhibit 20 (https://community.sw.siemens.com/s/global-search/calibre). Through Communities, Siemens provides detailed instructions on installing, configuring, and using the Accused Products with tutorials and articles regarding the Accused Products' design verification and optimization features. Siemens also published numerous white papers that explain how to use the Accused Products in an infringing manner. *See, e.g.*, Exhibit 21 (https://resources.sw.siemens.com/en-US/white-paper-achieving-optimal-performance-during-physical-verification). Additionally, Siemens provides product blog posts that cover the Accused Products' infringing features and instruct consumers on how to configure and use the Accused Products in an infringing manner.

Exhibit 22 (https://blogs.sw.siemens.com/calibre/). Moreover, Siemens supports customers to configure and use the Accused Products in the infringing manner through a dedicated support center. Exhibit 23 (https://www.plm.automation.siemens.com/global/en/support/).

67. Siemens also offers consulting services to customers to help them install and use the Accused Products in an infringing manner. Exhibit 24 (https://eda.sw.siemens.com/en-US/ic/consulting-services/).

68. Siemens' indirect infringement of the '571 Patent has injured and continues to injure Oasis in an amount to be proven at trial, but not less than a reasonable royalty. Siemens' actions are willful, blatant, and in egregious disregard for Oasis' patent rights. Siemens' indirect infringement has caused and is continuing to cause damage and irreparable injury to Oasis, and Oasis will continue to suffer damage and irreparable injury unless and until that infringement is enjoined by this Court.

69. Siemens acted recklessly, willfully, wantonly, and deliberately engaged in acts of indirect infringement of the '571 Patent, justifying an award to Oasis of increased damages under 35 U.S.C. § 284, and attorney's fees and costs incurred under 35 U.S.C. § 285.

## COUNT III
## (Direct Infringement of the '545 Patent)

70. Oasis repeats, realleges, and incorporates by reference, as if fully set forth herein, the allegations of the preceding paragraphs, as set forth above.

71. Siemens has infringed and continues to infringe at least Claim 1 of the '545 Patent in violation of 35 U.S.C. § 271(a) by, among other things, making, using, importing, selling, and/or offering for sale in the United States the Accused Products.

72. Siemens' infringement is based upon literal infringement, infringement under the doctrine of equivalents, or both.

73. Siemens' acts of making, using, importing, selling, and/or offering for sale infringing products and services have been without the permission, consent, authorization, or license of Oasis.

74. The Accused Products perform the method of Claim 1 and, as set forth above, evaluate similarities and differences between design data for circuits using the specific techniques set forth in the Asserted Patents. Exhibit 15 at 7 (Siemens-SW-The-true-costs-of-process-node-migration-WP-82034-C2.pdf).

75. For example, Calibre's infringing Pattern Matching functionality, integrated with Calibre's nmDRC product, includes "[c]omplete Calibre rule files and extensive coverage of Calibre processes for DRC [] available at all major semiconductor foundries." Exhibit 14 at 3; Exhibit 8 at 3. Calibre's infringing DBdiff tool identifies when cells are functionally the same or different, even when the cells are named or expressed differently. Exhibit 12 (describing DBdiff tool). And Calibre's infringing Auto-Waivers tool provides fast, accurate, automated recognition removal, and tracking of waived design-rule violations during DRC. *See* Calibre Auto-Waivers.


Exhibit 25 (describing Auto-Waivers tool).

76. As shown below, the Accused Products check for similarities in design files against library files to identify design-rule violations.

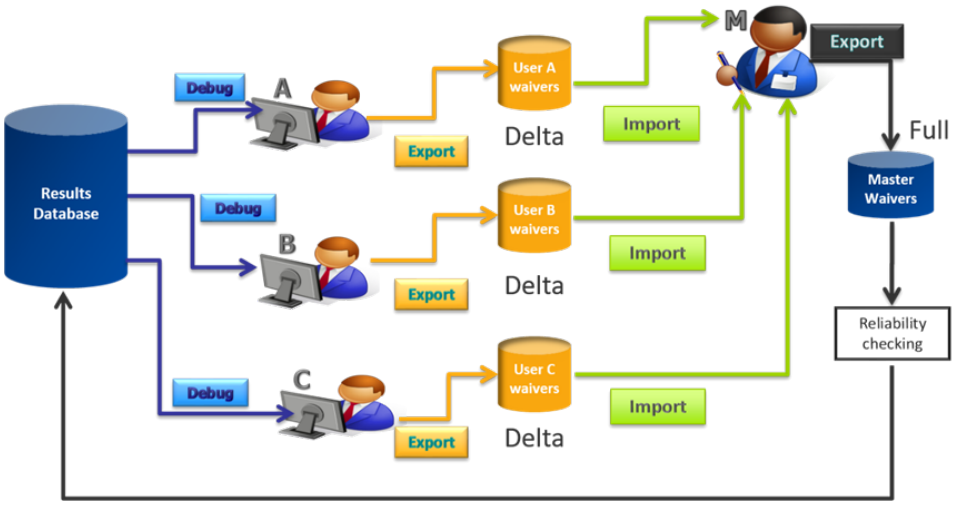
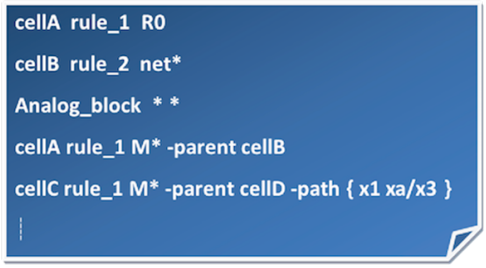
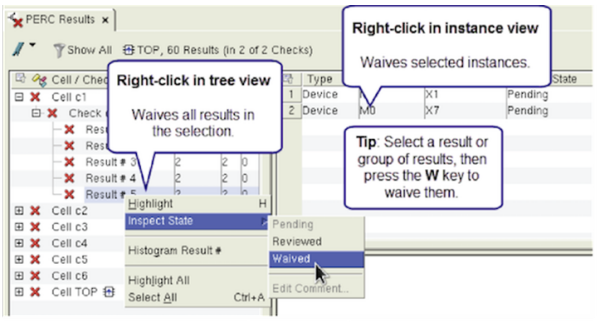



Exhibit 18 at 3 (illustrating process flow of using Accused Products to compare design files against a database of approved waivers to generate a report of remaining violations); Exhibit 19 at 5.

77. In order to permit comparisons between the design data in multiple files, the Accused Products parse the design layout files into canonical forms, thereby reducing the sensitivity of the data analysis to non-functional various in the design data. The Accused Products then generate a digest of the cell designs represented as unique checksum values for each functionally equivalent cell.

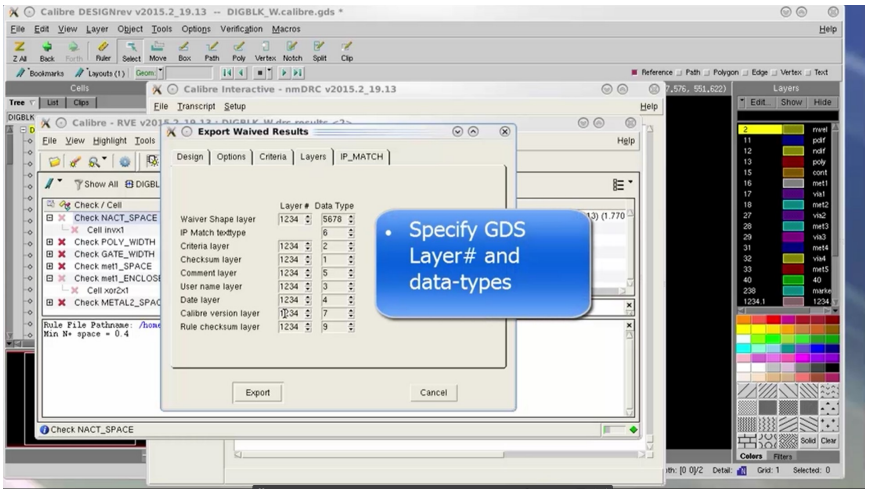



Text-based (manual) waivers file




Automated error results waiving
(Calibre PERC reliability platform with Calibre RVE results viewer)

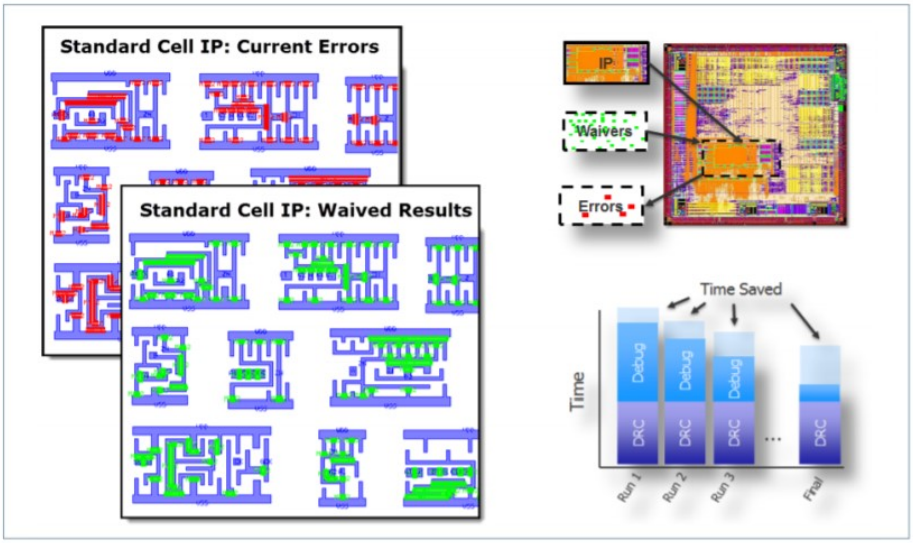
Multi-user waiver flow, Exhibit 18 at 1.




*See* "How to Edit RVE Export Form Option to Generate Waiver Database" (video) at 1:45 (showing assigned of checksum data to cells).

78. Calibre is able to parse all open data formats, including OASIS® and GDSII. Exhibit 8 at 3 (stating that this direct database access eliminates the need for conversion to intermediate access to design data). Such capabilities enable the Accused Products to produce the canonical forms from diverse data sources.

79. Once the design data has been parsed and normalized, it is assigned a digested checksum (as shown above), and then used to compare the cells in the first and second files, which the Accused Products then summarize in a report. For example, cells flagged for design-rule violations can be compared to a library of approved waived designs, to identify applicable design waivers. *See* "How to Edit RVE Export Form Option to Generate Waiver Database" (video) at 00:34. After all design-rule violations are waived, the Accused Products will generate signoff results, as shown below, which include a report of the results of the comparison of the DRC errors to the database of waived designs.




Creating an IP waivers database to deliver with physical IP libraries and blocks simplifies chip designers' debug process and saves time during design iterations.

Exhibit 26 at 2 (showing comparison of design errors against waiver database).

80. Siemens' direct infringement of the '545 Patent has injured and continues to injure Oasis in an amount to be proven at trial, but not less than a reasonable royalty. Siemens' actions are willful, blatant, and in egregious disregard for Oasis' patent rights. Siemens' infringement has caused and is continuing to cause damage and irreparable injury to Oasis, and Oasis will continue to suffer damage and irreparable injury unless and until that infringement is enjoined by this Court.

81. Siemens acted recklessly, willfully, wantonly, and deliberately engaged in acts of infringement of the '545 Patent, justifying an award to Oasis of increased damages under 35 U.S.C. § 284, and attorney's fees and costs incurred under 35 U.S.C. § 285.

## COUNT IV
## (Indirect Infringement of the '545 Patent)

82. Oasis repeats, realleges, and incorporates by reference, as if fully set forth herein, the allegations of the preceding paragraphs.

83. As discussed above, Siemens knew about Oasis' patented technology, including the '545 Patent, by no later than November 14, 2013, and further knows about the '545 Patent from its receipt of this Complaint.

84. In addition to directly infringing the '545 Patent, as discussed above with respect to Count III, Siemens knew or was willfully blind to the fact that it was inducing infringement of at least Claim 1 of the '545 Patent under 35 U.S.C. § 271(b) by instructing, encouraging, directing, and requiring third parties in the United States to perform the method of Claim 1 by using and installing the Accused Products.

85. Siemens is also liable for contributory infringement of at least Claim 14 of the '545 Patent under 35 U.S.C. § 271(c) by knowing or being willfully blind to the fact that it was contributing to infringement by offering to sell and selling in the United States the Accused Products. The Accused Products are software that infringe at least Claim 14 when installed on a computer and are not a staple article or commodity of commerce suitable for substantial noninfringing use. Specifically, the Accused Products always include the parser, normalizer logic, digester module, comparer module, and reporter module elements recited in Claim 14 and, therefore, necessarily infringe when they are installed on a compatible computer containing a processor and memory.

86. Siemens knowingly and actively encouraged, aided and abetted, and contributed to the direct infringement of the '545 Patent by instructing and encouraging its customers, developers, and partners to use and install the Accused Products, including through direct communications in trainings, reference materials, user guides, promotional materials, support contracts, sales calls, release notes, webinars, guidelines, videos, manuals, and white papers, all intended to enable and encourage the infringing use and installation of the Accused Products.

87. For example, Siemens operates an online site called "Communities" with discussions and articles covering the use of the Accused Products. Exhibit 20 (https://community.sw.siemens.com/s/global-search/calibre). Through Communities, Siemens provides detailed instructions on installing, configuring, and using the Accused Products with tutorials and articles regarding the Accused Products' design verification and optimization features. Additionally, as described above, Siemens provides product blog posts and consulting services that further encourage customers to install and use the Accused Products in an infringing manner.

88. Siemens' indirect infringement of the '545 Patent has injured and continues to injure Oasis in an amount to be proven at trial, but not less than a reasonable royalty. Siemens' actions are willful, blatant, and in egregious disregard for Oasis' patent rights. Siemens' indirect infringement has caused and is continuing to cause damage and irreparable injury to Oasis, and Oasis will continue to suffer damage and irreparable injury unless and until that infringement is enjoined by this Court.

89. Siemens acted recklessly, willfully, wantonly, and deliberately engaged in acts of indirect infringement of the '545 Patent, justifying an award to Oasis of increased damages under 35 U.S.C. § 284, and attorney's fees and costs incurred under 35 U.S.C. § 285.

## PRAYER FOR RELIEF

WHEREFORE, Oasis prays for judgment and relief as follows:

A. An entry of judgment holding that Siemens has infringed and is infringing the '571 Patent and the '545 Patent; and has induced infringement and is inducing infringement of the '571 Patent and the '545 Patent; and/or has contributorily infringed and continues to contribute to infringement of the '571 Patent and the '545 Patent;

B. A preliminary and permanent injunction against Siemens and its officers, employees, agents, servants, attorneys, instrumentalities, and/or those in privity with them, from infringing, inducing, or contributing to the infringement of the '571 Patent and the '545 Patent and for all further and proper injunctive relief pursuant to 35 U.S.C. § 283;

C. An award to Oasis of such damages as it shall prove at trial against Siemens that is adequate to fully compensate Oasis for Siemens' infringement of the '571 Patent and the '545 Patent — said damages to be no less than a reasonable royalty;

D. A determination that Siemens' infringement has been willful, wanton, and deliberate, and that the damages against it be trebled on this basis or for any other basis in accordance with the law;

E. An award to Oasis of increased damages under 35 U.S.C. § 284, including because Siemens willfully infringed the '571 Patent and the '545 Patent;

F. A finding that this case is "exceptional" and an award to Oasis of its costs and reasonable attorneys' fees, as provided by 35 U.S.C. § 285;

G. An accounting of all infringing sales and revenues, together with post-judgment interest and prejudgment interest from the date of first infringement of the '571 Patent and the '545 Patent; and

H. Such further and other relief as the Court may deem proper and just.

**DEMAND FOR JURY TRIAL**

Oasis demands a jury trial on all issues so triable.

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Dated: February 1, 2022
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