UNITED STATES OF AMERICA
BEFORE THE FEDERAL TRADE COMMISSION

COMMISSIONERS: **Andrew N. Ferguson, Chairman**
Melissa Holyoak
Mark R. Meador

In the Matter of	)	
Synopsys, Inc.,	)	
a corporation;	)	**Docket No. C-**
and	)	
ANSYS, Inc.,	)	
a corporation.	)	

COMPLAINT

Pursuant to the provisions of the Federal Trade Commission Act ("FTC Act"), and by virtue of the authority vested in it by the FTC Act, the Federal Trade Commission ("Commission"), having reason to believe that Respondents Synopsys, Inc. ("Synopsys") and ANSYS, Inc. ("Ansys") have executed a definitive agreement in violation of Section 5 of the FTC Act, as amended, 15 U.S.C. § 45, which if consummated would violate Section 7 of the Clayton Act, as amended, 15 U.S.C. § 18, and Section 5 of the FTC Act, and it appearing to the Commission that a proceeding in respect thereof would be in the public interest, hereby issues its Complaint, stating its charges as follows:

I. RESPONDENTS

1. Respondent Synopsys, Inc. is a corporation organized, existing, and doing business under and by virtue of the laws of the State of Delaware with its executive offices and principal place of business located at 675 Almanor Avenue, Sunnyvale, California 94085. Synopsys is a leading developer and supplier of Electronic Design Automation ("EDA") software principally used to design semiconductors, including integrated circuits and systems-on-chips.

2. Respondent ANSYS, Inc. is a corporation organized, existing, and doing business under and by virtue of the laws of the State of Delaware with its executive offices and principal place of business located at 2600 ANSYS Drive, Canonsburg, Pennsylvania 15317. Ansys is a leading provider of Simulation & Analysis ("S&A") software tools, which

model physical effects for an array of products, including semiconductors.

II. JURISDICTION

3. Each Respondent is, and at all times relevant herein, has been engaged in commerce, as "commerce" is defined in Section 1 of the Clayton Act as amended, 15 U.S.C. § 12, and engages in business that is in or affects commerce, as "commerce" is defined in Section 4 of the FTC Act, as amended, 15 U.S.C. § 44.

III. THE PROPOSED ACQUISITION

4. Pursuant to an Agreement and Plan of Merger dated January 15, 2024, Respondent Synopsys proposes to acquire all of the outstanding and issued voting securities of Respondent Ansys in a transaction valued at approximately $35 billion (the "Acquisition"). The Acquisition is subject to Section 7 of the Clayton Act, as amended, 15 U.S.C. § 18.

IV. THE RELEVANT MARKETS

5. The relevant lines of commerce in which to analyze the effects of the Acquisition are certain software products used for EDA and S&A in the design of devices and integrated circuits, or chips. Specifically, relevant product markets exist for the following products:

   a. optical software tools;

   b. photonic software tools for designing and simulating photonic devices; and

   c. Register Transfer Level ("RTL") power consumption analysis tools.

6. Optical software tools are S&A software products that enable engineers to design and simulate optical devices. Optical devices generate, reflect, or refract light. Optical devices include LED screens, mirrors, and lenses.

7. Photonic software tools are S&A software products that enable engineers to design and simulate photonic devices. Photonic devices are those devices that use photons as a signal to transmit information for applications, including fiber optic cables, LiDAR technology, and solar panels.

8. RTL power consumption analysis tools are EDA software products used to measure and optimize the power consumption of digital chips at an early stage of the chip design flow known as Register Transfer Level design. Chip designers value the ability to obtain early analysis of their design's power consumption through RTL power consumption analysis. Other EDA tools cannot perform RTL power consumption analysis.

9. The relevant geographic area in which to assess the competitive effects of the Acquisition in each of the product markets described in Paragraphs 5–8 is global. The major suppliers

of optical software tools, photonic software tools for designing and simulating photonic devices, and RTL power consumption analysis tools license those tools in substantially the same form to customers worldwide.

V. THE STRUCTURE OF THE MARKETS

10. The global market for optical software tools is a duopoly shared by two suppliers, Synopsys and Ansys. By Respondents' own estimate, their combined optical software tools—Synopsys' Code V, LightTools, LucidShape, and ImSym, and Ansys' Zemax and SPEOS—comprised approximately 100% of the market in 2023. As of 2023, smaller competitors in optical software tools no longer held a notable market share.

11. The global market for photonic software tools for designing and simulating photonic devices is highly concentrated. In 2023, Ansys' Lumerical held the largest market share, followed by Synopsys' RSoft, for a combined share over 60% held by Respondents. According to Respondents, the remaining market share was divided across nearly a dozen smaller software tool suppliers.

12. The global market for RTL power consumption analysis tools is highly concentrated. Of the four EDA tool suppliers with meaningful market share in RTL power consumption analysis tools, Ansys' PowerArtist and Synopsys' PrimePower-RTL are the two largest by far. Respondents' combined RTL power consumption analysis tools market share in 2023 was over 70%.

VI. THE EFFECTS OF THE ACQUISITION

13. The effects of the Acquisition, if consummated, may be to substantially lessen competition or to tend to create a monopoly in violation of Section 7 of the Clayton Act, as amended, 15 U.S.C. § 18, and Section 5 of the FTC Act, as amended, 15 U.S.C. § 45, by eliminating actual, direct, and substantial competition between the Respondents in each relevant market; thereby increasing the likelihood that the merged firm would unilaterally exercise market power in the relevant markets and consumers would be forced to pay higher prices as well as accept reduced service and innovation.

14. The parties' documents show that Synopsys and Ansys are the only two competitors in optical software tools, and the Acquisition would leave the combined company as the sole remaining participant in the market. This would give Synopsys the ability to determine input prices for producers of screens, lenses, and mirrors, including automotive, smartphone, camera, and television manufacturers.

15. Some optical software customers license copies of both Synopsys' Code V and Ansys' Zemax and some customer license tools from a single supplier. In both cases, Respondents' customers agree that they could not substitute tools from other suppliers. Customers with a history of using either Synopsys' or Ansys optical software tools cannot easily or quickly switch to an alternative.

16. Synopsys and Ansys are head-to-head competitors in photonic software tools used for designing and simulating photonic devices, each viewing the other as its closest competitor despite the presence of others in the industry. Synopsys' RSoft competes directly with Ansys' Lumerical suite of tools. Respondents closely monitor one another, solicit feedback from customers regarding how their tools compares to the other's tools, and innovate in response to the other to retain and gain customers.

17. Synopsys and Ansys each consider the other its closest competitor for RTL power consumption analysis tools, and market participants recognize them as such. Ansys has internally described PrimePower-RTL as the "main threat for [its] RTL Power business." In 2024, Synopsys developed a new version of PrimePower-RTL specifically for "PowerArtist displacement." In several recent competitive opportunities with major customers, PowerArtist and PrimePower-RTL were the only or primary products considered. This head-to-head competition benefits customers for RTL power consumption analysis tools and would be lost if the Acquisition is consummated.

18. Further, Synopsys and Ansys have each innovated their products in direct response to competition from the other. For example, Synopsys developed PrimePower-RTL 2.0 to improve capacity and "close the gap" with PowerArtist. Ansys developed its Timing Awareness Physical Awareness ("TAPA") feature to improve speed and accuracy of PowerArtist's analysis. One Ansys executive described TAPA as "a necessity, born out of the need to defend against [Synopsys]." Ansys even benchmarked against PrimePower-RTL to price its TAPA feature. This competition on product innovations benefits customers for RTL power consumption analysis tools and would be lost if the Acquisition is consummated.

VII. ENTRY CONDITIONS

19. Entry into the relevant markets described in Paragraphs 5–8 would not be timely, likely, or sufficient to deter or counteract the anticompetitive effects of the Acquisition. Barriers to entry in optical software tools and photonic software tools for designing and simulating photonic devices are high, as customers have developed their models and intellectual property around use of their chosen tools. Moreover, development of EDA software tools, including RTL power consumption analysis tools, is capital-intensive, requiring significant time, technical expertise, and investment in research and development. In all three relevant markets, customers face high switching costs and tend to keep the same tools in their design flows for long periods.

VIII. VIOLATIONS CHARGED

20. The Acquisition described in Paragraph 4 constitutes a violation of Section 5 of the FTC Act, as amended, 15 U.S.C. § 45.

21. The Acquisition described in Paragraph 4, if consummated, would constitute a violation of Section 7 of the Clayton Act, as amended, 15 U.S.C. § 18, and Section 5 of the FTC Act, as amended, 15 U.S.C. § 45.

WHEREFORE, THE PREMISES CONSIDERED, the Federal Trade Commission on this _____ day of _____, 2025 issues its Complaint against said Respondents.

By the Commission.

April J. Tabor
Secretary

SEAL: