

# Introducing Intel Foundry Services

## Unleashing Intel's Innovation to Meet Growing Demand for Foundry Capacity

March 23, 2021 — Intel today announced plans to build a world-class foundry business and become a major provider of U.S.- and European-based capacity to serve customers globally. To deliver this vision, the company established **Intel Foundry Services (IFS)** – a fully vertical, standalone foundry business.



### What is IFS?

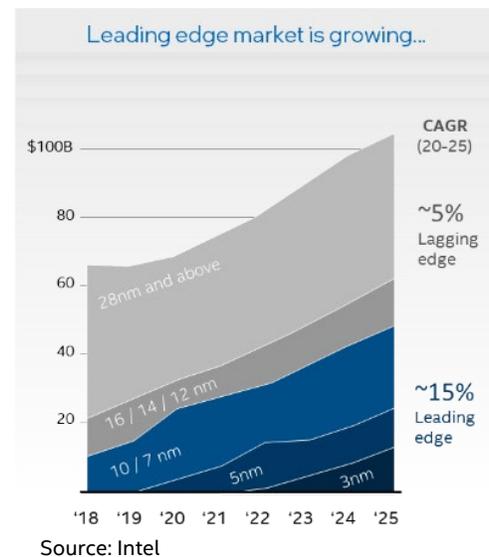
IFS will be completely dedicated to the success of its customers with full P&L responsibilities. This independent organization will leverage the strength of Intel's capabilities to offer three key pillars underpinning a world-class foundry:

Committed Capacity	Advanced Technology	Design Enablement
<p>Intel's first large-scale foundry operation will be located at its Ocotillo campus in Arizona, where the company plans to start construction of two fabs in 2021. With an investment of approximately \$20 billion, these fabs will support expanding requirements for Intel products and provide committed capacity for IFS customers.</p>	<p>IFS is ready to engage with customers today on existing foundry offerings for low-power and high-performance applications – with plans to expand to include its most advanced technologies for cutting-edge performance. IFS customers will also have early access to leading-edge packaging technologies, including advanced 2D and 3D capabilities.</p>	<p>IFS is driving collaboration to advance design and IP capabilities, including tremendous investments in developing industry standard PDK models, simplified design rules, expanded EDA partnerships and competitive foundational IP offerings – complete with standard interfaces – as well as third-party IP availability.</p>

## Why is now the right time?

The digitization of every industry is accelerating the global demand for semiconductors at a torrid pace. A convergence of trends makes now the right time for Intel to rise to the occasion and meet this growing demand:

- Foundry represents a nearly \$100 billion addressable market by 2025, with most of the projected growth coming from leading-edge computing.
- A key challenge is access to manufacturing capacity. Today, the majority of leading-edge foundry capacity is concentrated in Asia.
- The industry needs more geographically balanced manufacturing capacity. Intel's advanced manufacturing scale, including operations in the U.S. and Europe, is critical to deliver a secure and sustainable supply of semiconductors for the U.S. and the world.



## How will IFS succeed?

Intel has significant learnings from prior engagements with foundry customers. IFS will combine the knowledge gained from these experiences with the unique capabilities of Intel to differentiate itself from other foundries on several fronts:

**Service:** IFS has been set up as a standalone business completely dedicated to ensuring foundry customers' products receive the utmost focus in terms of service, technology enablement and capacity commitments.

**Solutions:** IFS will offer an unmatched combination of leading-edge packaging and process technology, a world-class IP portfolio including x86 cores, and silicon design support to help customers seamlessly turn silicon into solutions using industry-standard design platforms.



Intel's Ocotillo campus in Chandler, Arizona

**Scale:** The leading-edge foundry business model is all about scale, which is one reason why Intel is uniquely positioned to succeed in this space. Intel is already investing in leading-edge fab nodes for its internal computing products. Expanding foundry offerings is a natural extension to enable a better return on R&D investments and to increase the scale needed to get high utilization and efficiency from the fabs.

## Who will lead IFS?

Intel Foundry Services is led by Dr. Randhir Thakur, a semiconductor industry veteran and IEEE Fellow who has served in a number of executive industry roles.



*"Randhir is a semiconductor industry veteran, having served in executive leadership roles spanning global manufacturing and supply chains, research and development, and managing profitable businesses. He is devoted to exceptional customer service and is the right leader to grow our foundry business."*

**Pat Gelsinger, CEO, Intel**



*"I am excited to be of service and drive Pat's vision for the foundry business. Intel's leading-edge process and packaging technology, broad portfolio of IP, combined with our commitments to the U.S. and European market positions us for a new era of foundry services. Working closely with customers, ecosystem partners, governments and our Intel colleagues, we will deploy the strength of Intel to drive the next level of semiconductor innovation."*

**Dr. Randhir Thakur, president, Intel Foundry Services**

## Supporting quotes

IFS has already received strong support from key industry players and ecosystem partners – adding to the momentum behind this critical initiative for Intel, its customers and the entire electronics industry.

*"We are encouraged by Intel's plan to expand its manufacturing capacity and capability to serve more customers and entering the foundry market in a significant way."*

**Peter DeSantis, SVP, Amazon Web Services**

*"Semiconductor technology is foundational for our business and the electronics industry at large. Cisco has invested significantly in semiconductor and optical technology as it is critical to Cisco offerings and to developing the internet for the future. Intel has been a technology partner to Cisco for decades, and we applaud their move to become a world-class foundry."*

**Chuck Robbins, chairman and CEO, Cisco**

*"5G will accelerate digital transformation and also increase the need for silicon to power more advanced networks. Ericsson is delighted to see more foundry investment in the United States and Europe. Intel's commitment brings more opportunities and greater access to leading-edge technology for Ericsson and the entire telecom industry."*

**Fredrik Jejdling, executive vice president  
and head of Business Area Networks, Ericsson**

*"In the last year, we have seen the pandemic accelerate years of digital transformation in only a few months, as work, school, grocery shopping and medical appointments all moved online. Meeting the needs of our customers across all of Google's services requires significant resources, especially compute power. Intel's new foundry is a welcome step in increasing manufacturing scale and will help the entire technology industry bring innovative products to users faster."*

**Sundar Pichai, CEO, Google and Alphabet**

*"IBM and Intel's plans to collaborate on critical, leading-edge research to advance logic and packaging technology development is an important milestone. By bringing together two of the best semiconductor research organizations, we will greatly accelerate innovations in the semiconductor industry and push the frontiers of technology for the benefit of clients and the world."*

**Arvind Krishna, chairman and CEO, IBM**

*"We are in a new era of computing which requires technology that adapts as customer workloads change and is secure against increasingly sophisticated attacks. As chips become more specialized and cloud architectures become more optimized for new workloads, we will need to collaborate to co-design the next generation of systems from the hardware to the systems and to the software, and that's why we're so energized by Intel's vision for IDM 2.0."*

**Satya Nadella, CEO, Microsoft**

*"As 5G connects everything to the cloud and accelerates digital transformation, demand for silicon manufacturing will only increase. As the leading driver of advanced semiconductor technology in mobile platforms, Qualcomm is excited to see more foundry investment in the United States consistent with the U.S. government's strategic priorities. The IDM 2.0 flexible model will provide an important option for the industry, and we look forward to partnering with Intel in the future."*

**Cristiano Amon, president & CEO-elect, Qualcomm Inc.**

*"As President Biden has said, the U.S. is the birthplace of [semiconductor] technology, but over the years we have underinvested in production and hurt our innovative edge, while other countries have learned from our example and increased their investments in the industry. An investment of this scale will help to preserve U.S. technology innovation and leadership, strengthen U.S. economic and national security, and protect and grow American jobs. Working together, we can maintain America's place as a technology and innovation leader."*

**U.S. Secretary of Commerce Gina Raimondo**

*"As the Semiconductor Industry Association (SIA) works to advance U.S. leadership in semiconductor research, design and manufacturing, new investments by industry are a significant step forward and a clear indication key players in our industry believe policymakers are serious about making the United States a more competitive location for chip production."*

**John Neuffer, president and CEO, Semiconductor Industry Association**

*"Applied Materials and Intel share a rich history of successful collaboration, bringing materials engineering innovations to chip manufacturing. As Intel enters the foundry business, we are excited to grow our partnership and work together to accelerate future generations of semiconductor device technology."*

**Gary Dickerson, president, Applied Materials**

*"For decades, ASML and Intel have partnered to bring the most advanced lithography technologies to Intel's global fab network. We are ready to support Intel with cutting-edge EUV tools as they grow their investments to execute all their future business plans. Together, we will drive the next generation of lithography innovation to deliver a new era of Moore's Law."*

**Peter Wennink, CEO and president, ASML**

*"Cadence and Intel have forged a deep partnership to enable the design ecosystem to use Intel's leading-edge process technologies. With Intel's announcement today, we are excited to take our collaboration to the next level by optimizing our state-of-the-art design tools and IP for Intel's new foundry expansion in the United States and Europe."*

**Lip-Bu Tan, CEO, Cadence Design Systems**

*"As the world-leading R&D center, imec unites all key players from the global semiconductor industry. We are honored to have collaborated with Intel closely since 2003 to significantly advance semiconductor and integrated systems technology. We are excited to see Intel invest in its foundry business to accelerate leading-edge technologies into production. Together, we are driving future generations of silicon and 3D systems-level packaging technologies to serve Intel's foundry customers."*

**Luc Van den hove, president and CEO, imec**

*"Lam Research and Intel have successfully collaborated for many years on advances in etch and deposition technologies. From atomic scale engineering to cost-effective high-volume production, together we develop solutions to the most-challenging dimensional and materials control problems in semiconductor manufacturing. As Intel focuses on growth in the foundry market, we remain committed to their success."*

**Tim Archer, president and CEO, Lam Research**

*“We are excited to see Intel’s new foundry services business in the U.S. and Europe deliver more choice to the semiconductor industry. Combining SiFive’s industry-leading portfolio of configurable high-performance and embedded RISC-V processor cores with Intel Foundry’s advanced process technology will unlock the next wave of leading-edge technology for the world.”*

**Patrick Little, CEO, SiFive**

*“With over 30 years of history with Intel, of which 15 years as Intel’s primary EDA and IP partner, the joint Synopsys-Intel collaboration has driven the state of the art of modern chip design and verification. As the world leader in EDA, IP and services working with all commercial foundries on over 90% of the advanced chips in the world, Synopsys is committed to be a key partner with Intel to enable an advanced on-shore U.S. commercial foundry through the Intel Foundry launch.”*

**Aart J. de Geus, co-founder, chairman and co-CEO of Synopsys Inc.**

*Tokyo Electron and Intel have worked closely for decades to advance semiconductor technology. We are thrilled to provide Intel with leading-edge semiconductor process equipment as they invest in leading-edge foundry. Together we will drive a new generation of processes and materials that advance semiconductor device scaling.*

**Toshiki Kawai, president and CEO, Tokyo Electron**

*“The Department of Defense (DoD) microelectronics roadmap objectives are to expand domestic semiconductor manufacturing while defining, quantifying and strengthening security. The DOD roadmap also recognizes that partnerships with our leading U.S. commercial semiconductor industry is critical to meeting the objectives, while prioritizing and recognizing that the DOD must have access to state-of-the-art capabilities. We applaud the steps Intel is taking to ensure the U.S. sustains the microelectronics manufacturing capability necessary for national and economic security.”*

**Nicole Petta, principle director for Microelectronics,  
Office of the Undersecretary of Defense for Research and Engineering**

## **About Intel**

Intel (Nasdaq: INTC) is an industry leader, creating world-changing technology that enables global progress and enriches lives. Inspired by Moore’s Law, we continuously work to advance the design and manufacturing of semiconductors to help address our customers’ greatest challenges. By embedding intelligence in the cloud, network, edge and every kind of computing device, we unleash the potential of data to transform business and society for the better. To learn more about Intel’s innovations, go to [newsroom.intel.com](https://newsroom.intel.com) and [intel.com](https://intel.com).

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