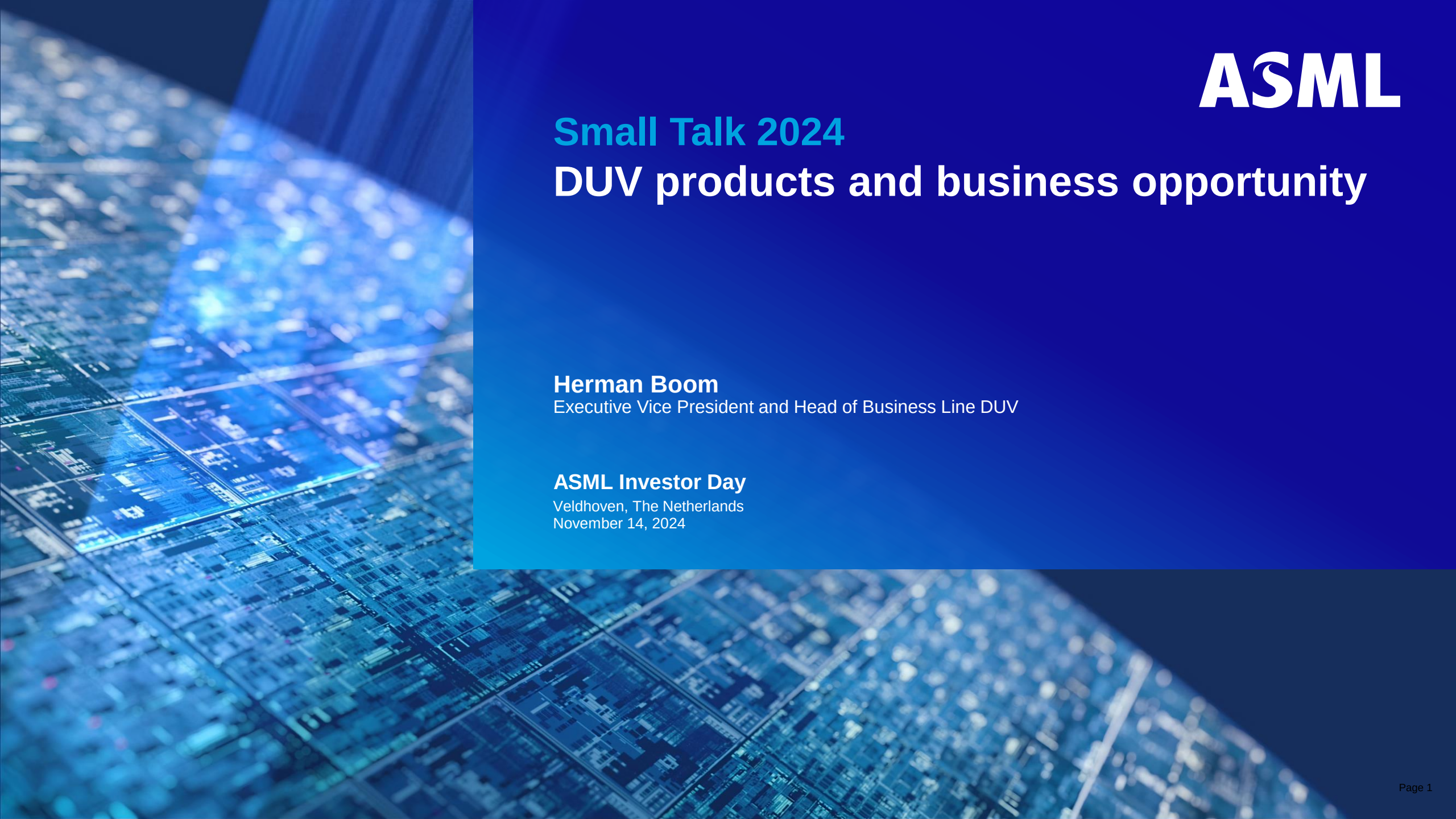
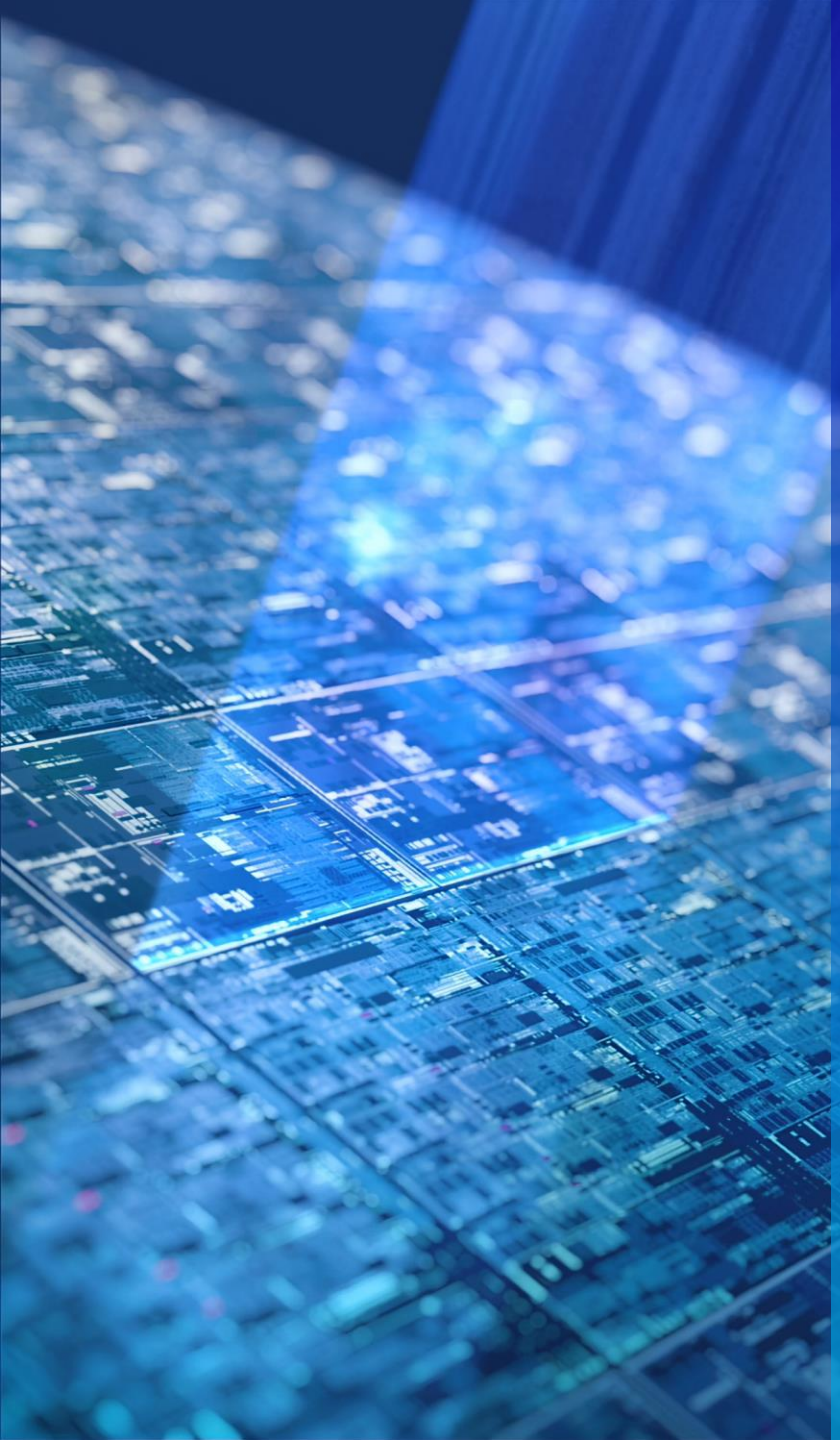


Small Talk 2024

DUV products and business opportunity

Herman Boom
Executive Vice President and Head of Business Line DUV

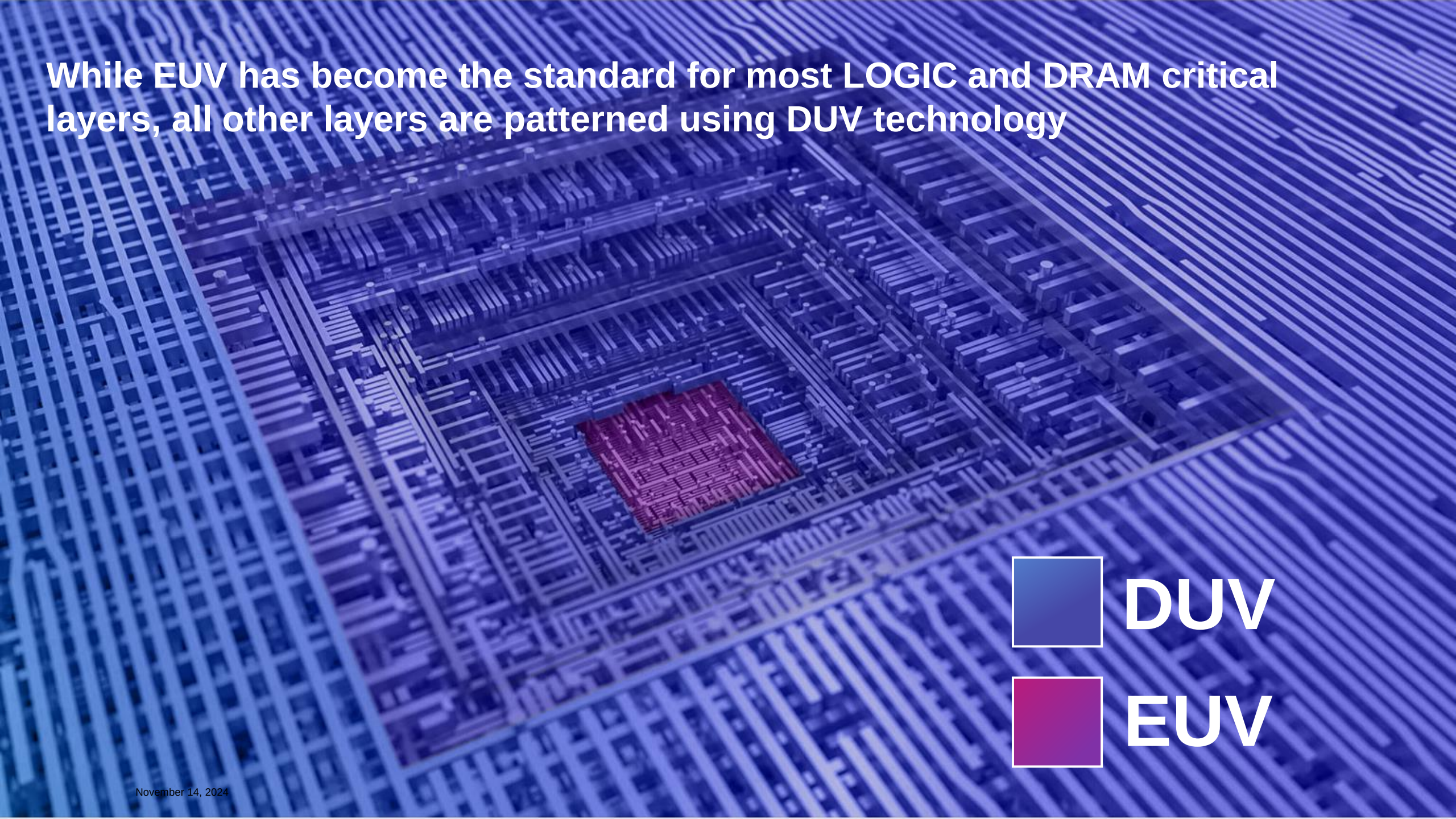
ASML Investor Day
Veldhoven, The Netherlands
November 14, 2024



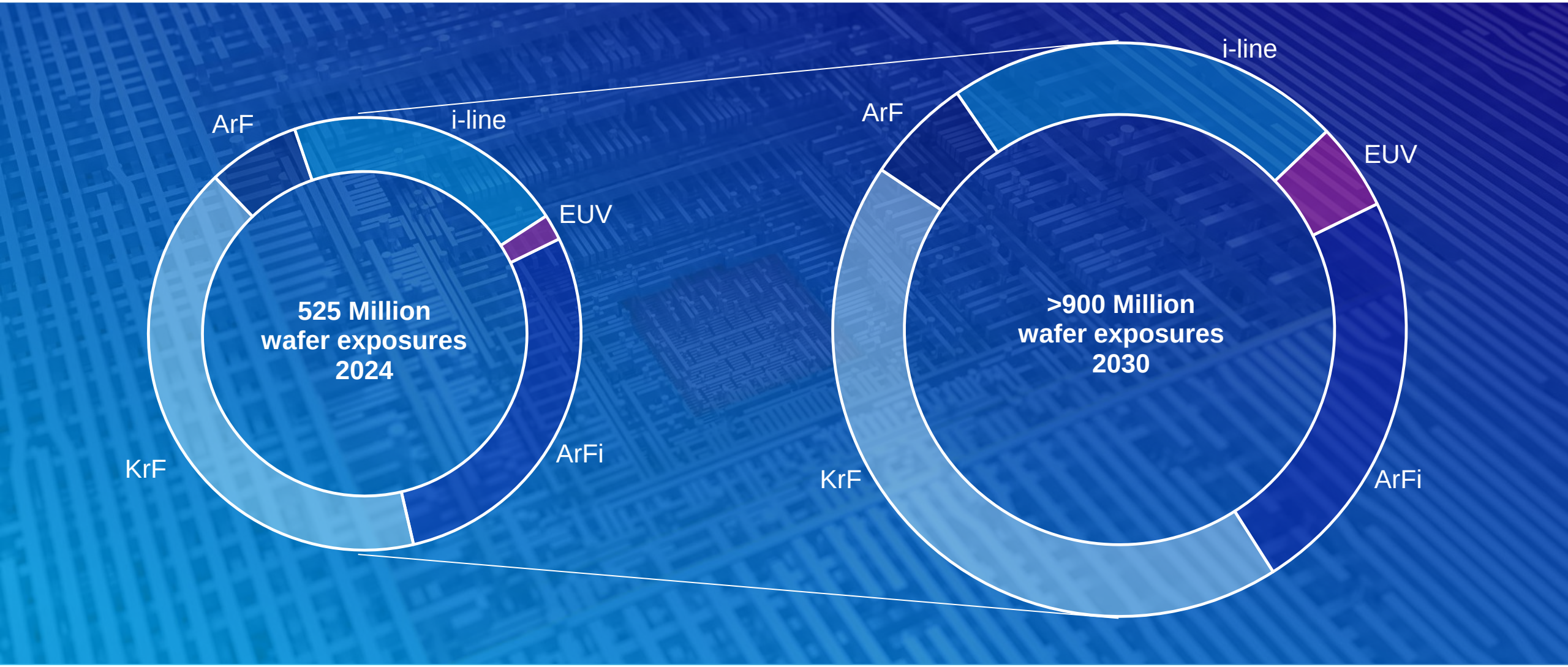
Summary

- DUV is and will remain a workhorse for the industry.
- We continue to support both our advanced and mainstream semiconductor customers with a portfolio of immersion systems that address the need for both overlay and higher productivity.
- Our XT and NXT dry DUV portfolio continues to provide full flexibility to our customers in performance and deliver best cost of technology by building on commonality and operational efficiency.
- We are extending our portfolio with an i-line wide-field scanner that provides the industry’s highest productivity and solutions for advanced packaging applications.
- We are optimizing our installed base of >6,000 systems by extending the product lifetime to >20 years and improving productivity with a diversified service and upgrades portfolio.

While EUV has become the standard for most LOGIC and DRAM critical layers, all other layers are patterned using DUV technology

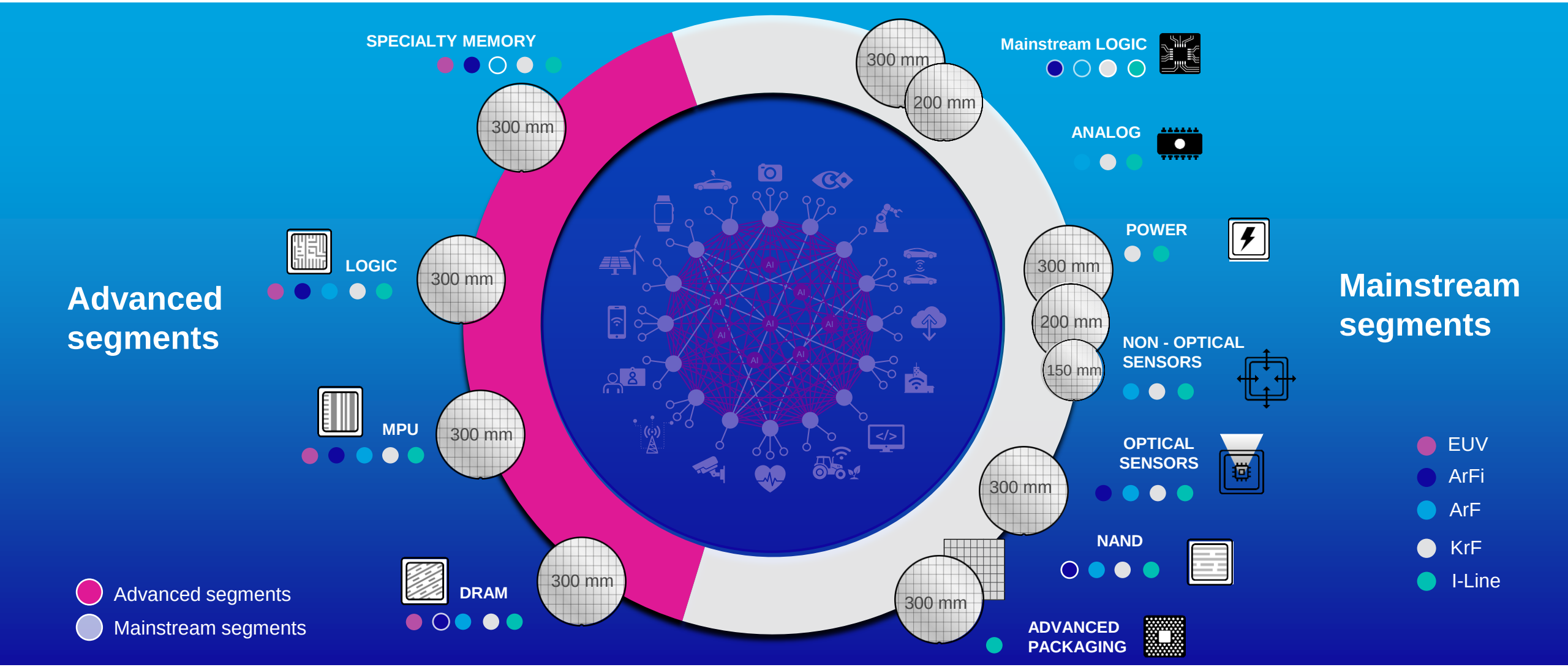


DUV is and will remain a workhorse of the industry

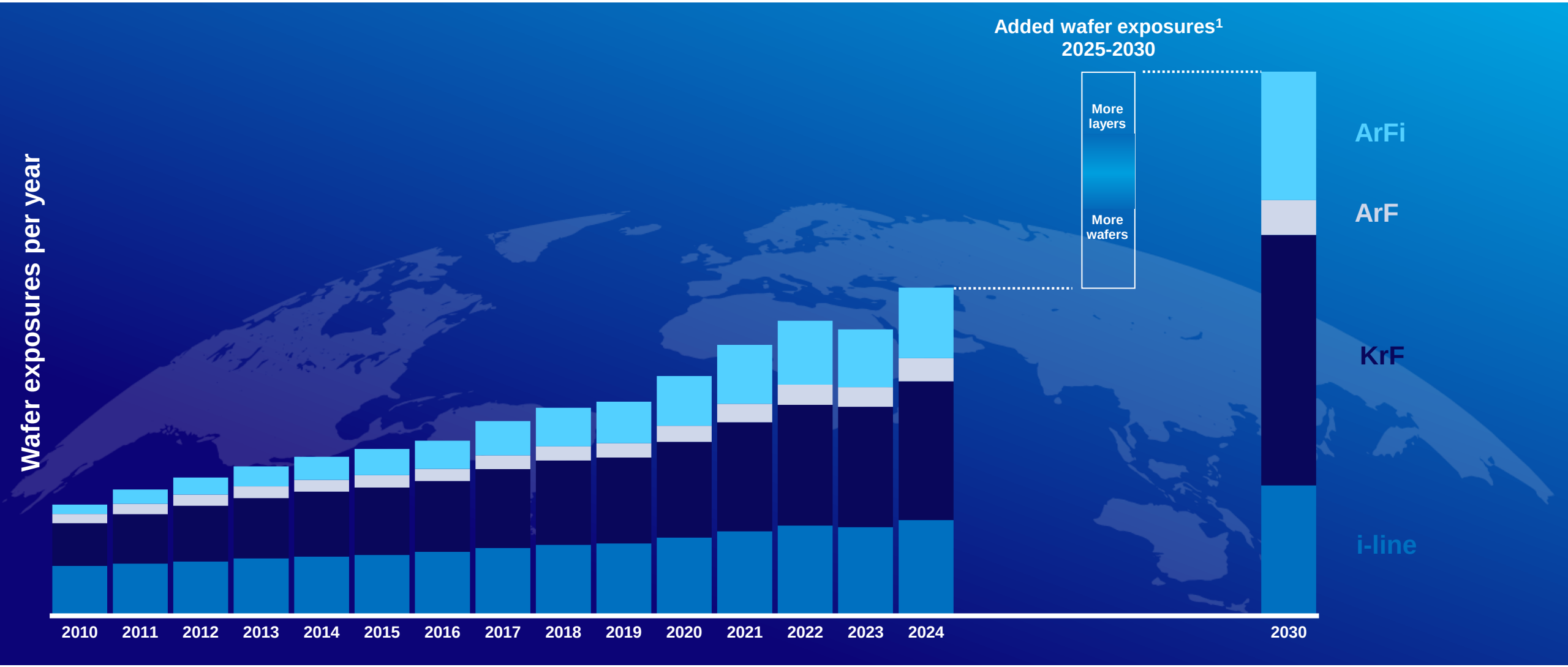


ASML Market research: expectations of total exposure area worldwide

DUV is present in all markets and supports many applications ranging from advanced to mainstream market segments



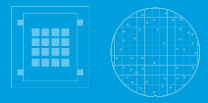
All DUV wavelength segments are expected to grow in wafer exposures per year due to the growth in volume of wafers and higher litho spend

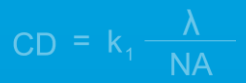


[1] based on an average layer stack

The DUV strategy and product portfolio address a comprehensive set of value and cost drivers in the holistic lithography triangle

ASML Holistic lithography value =





Patterning Yield ×

- Patterning process control
- Optical metrology
- E-beam metrology
- AI based control

Resolution ×

- i-line
- KrF
- ArF
- ArFi

Accuracy ×

- EUV / ArFi
- Overlay
- Local CDU
- EPE

Productivity

- System Throughput
- System performance upgrades
- Overall equipment efficiency

System cost /

- Commonality
- Configurability

Lifetime +

- >20 years system extendibility

Operational cost +

- Service cost
- Utilities cost

Environmental cost

- Power roadmap
- Re-use
- Materials

1 Ton CO_2 = 200 EUR

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ASML Holistic lithography value =

Patterning Yield ×

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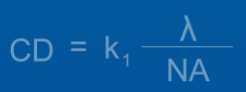

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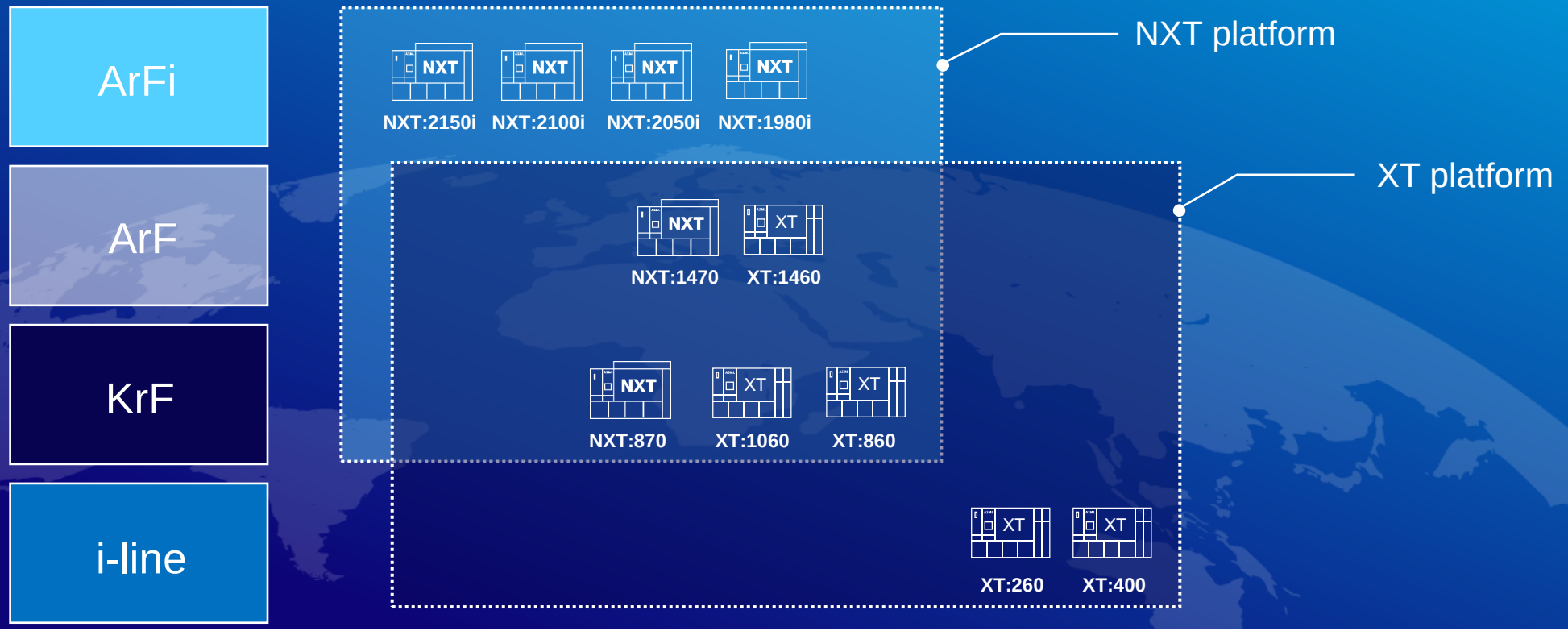
DUV portfolio in place to capture the growth opportunities across markets



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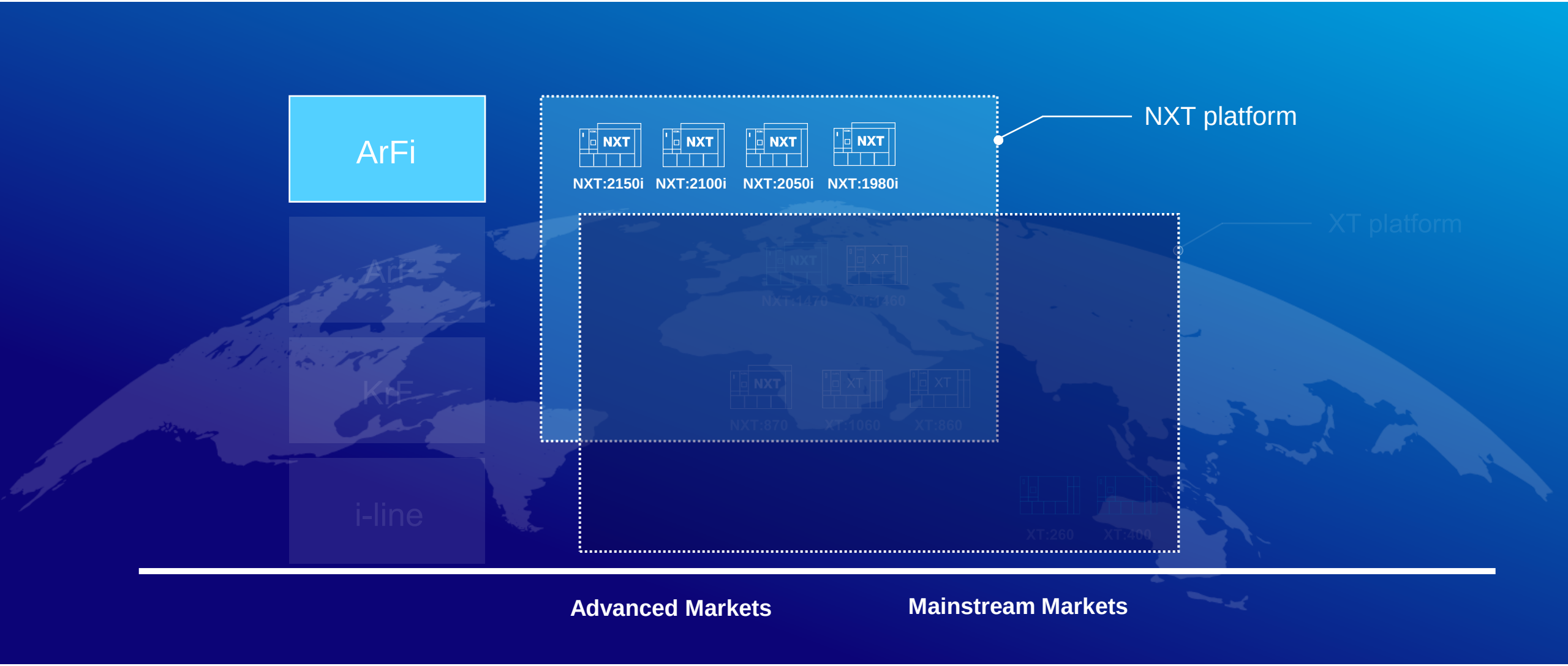
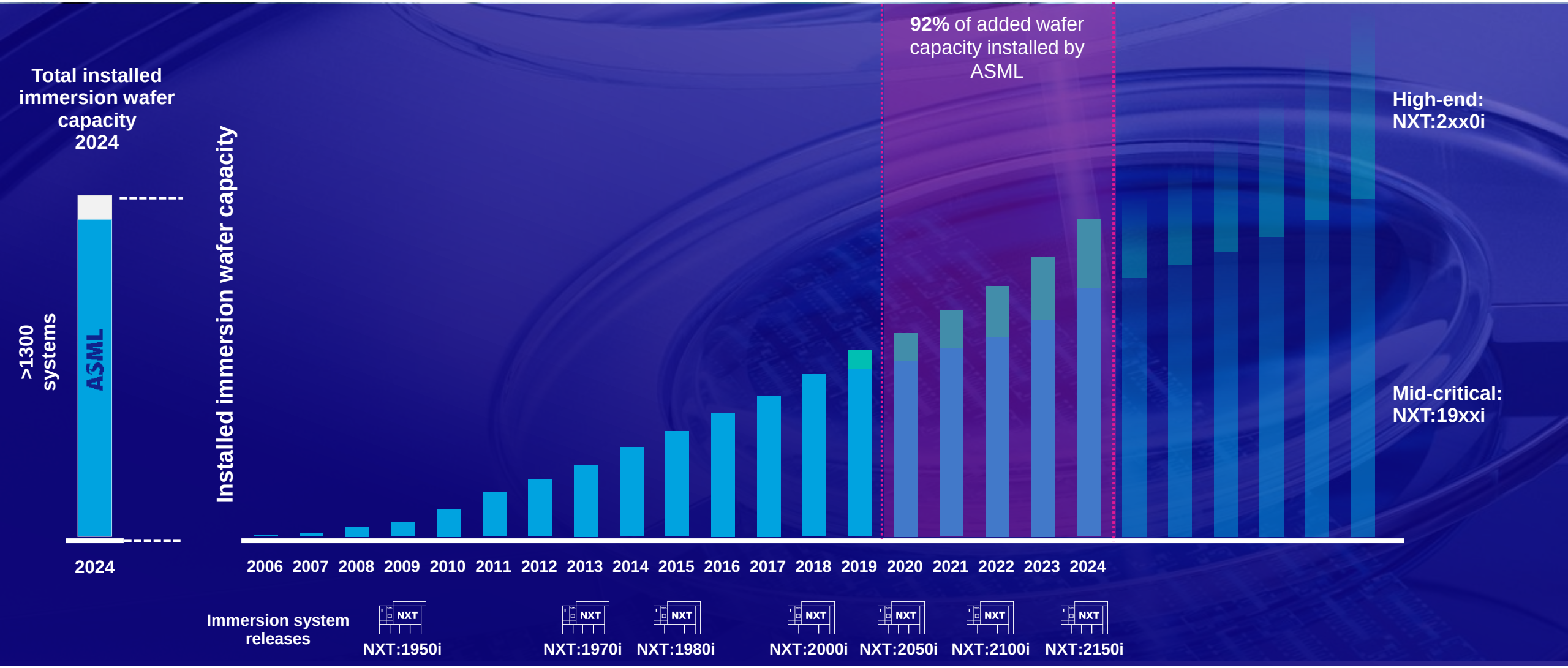
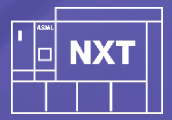


ASML's immersion portfolio has grown to be the backbone of the industry by providing mid-critical and high-end immersion scanners



… and we keep investing in immersion technology to enable customer roadmaps and reduce cost of ownership further

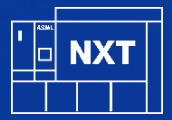
High-end Immersion



NXT:2xx0i

Improving overlay to enable overlay critical applications

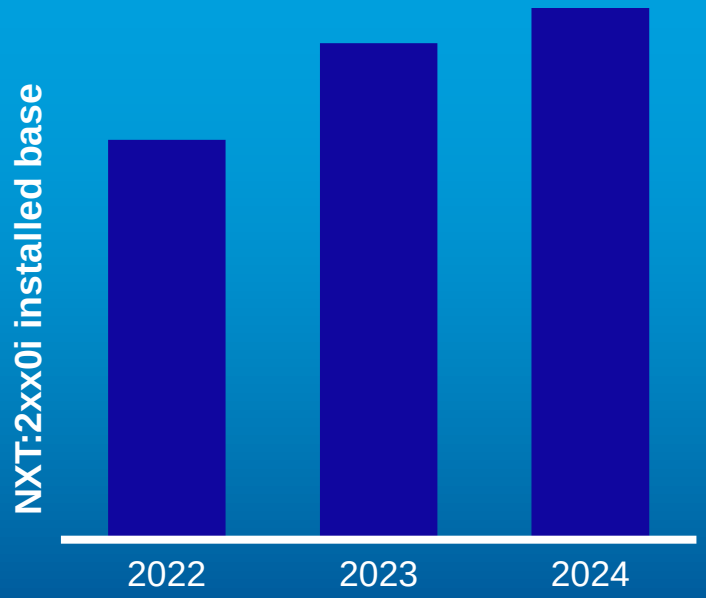
Mid Critical Immersion

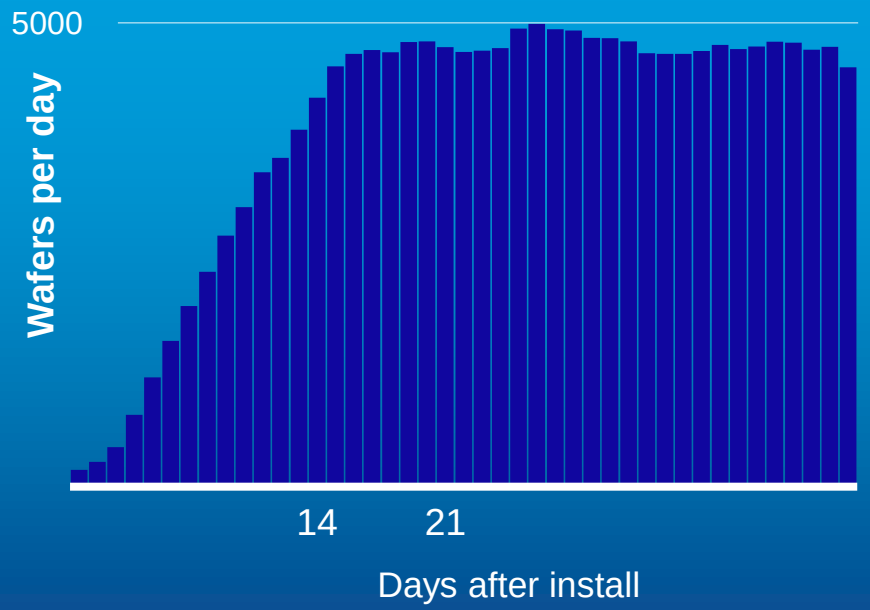


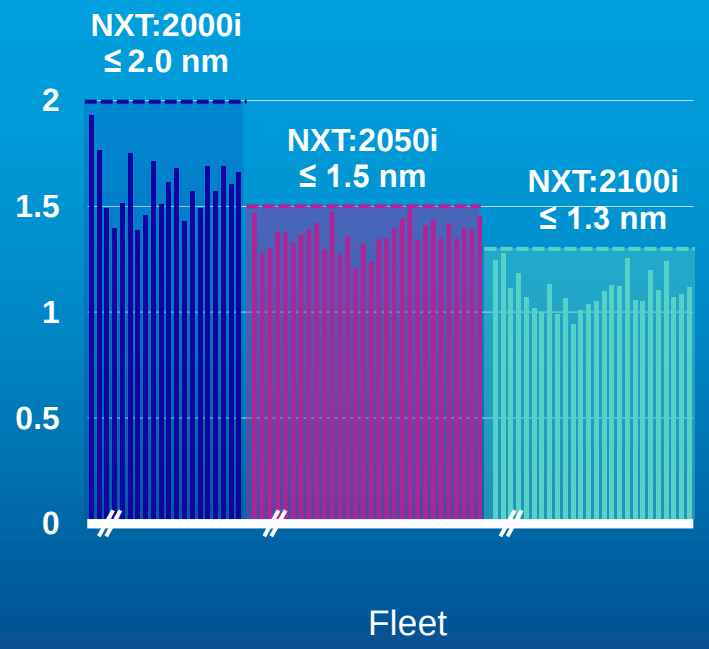
NXT:1980i

Improving productivity to reduce cost of ownership for our customers

Our high-end immersion systems are adopted by customers and ramping up fast and reliably







>>100 high-end immersion systems installed

Fast ramp to a stable production of 5000 wafers per day

Matched Machine Overlay improvements to <1.3nm

NXT:2150i supports tight overlay requirements incl NXT-NXE cross-matching

Provides 1.0 nm matched machine overlay and on product overlay improvement

New reticle heating control
Reducing impact of reticle heating on overlay

Conditioned reticle library
Faster conditioning and lower reticle-to-reticle temperature variation

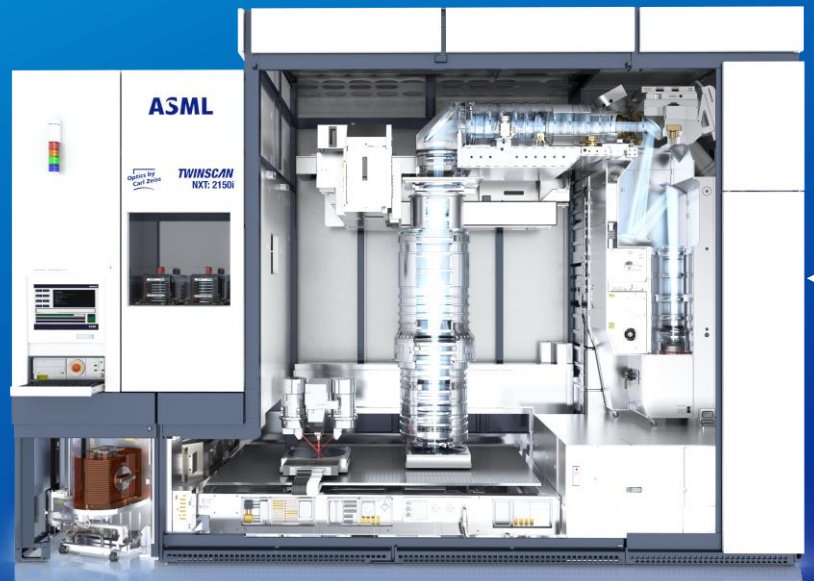
Scanner metrology software
Improved setup repro for overlay

Alignment 12 colors
65 marks, small marks, combined layout

Optical sensors
Improved camera & thermal conditioning

Optical correction elements
Improved lens and cross matching control

Wafer table
Improved overlay & lifetime improvements

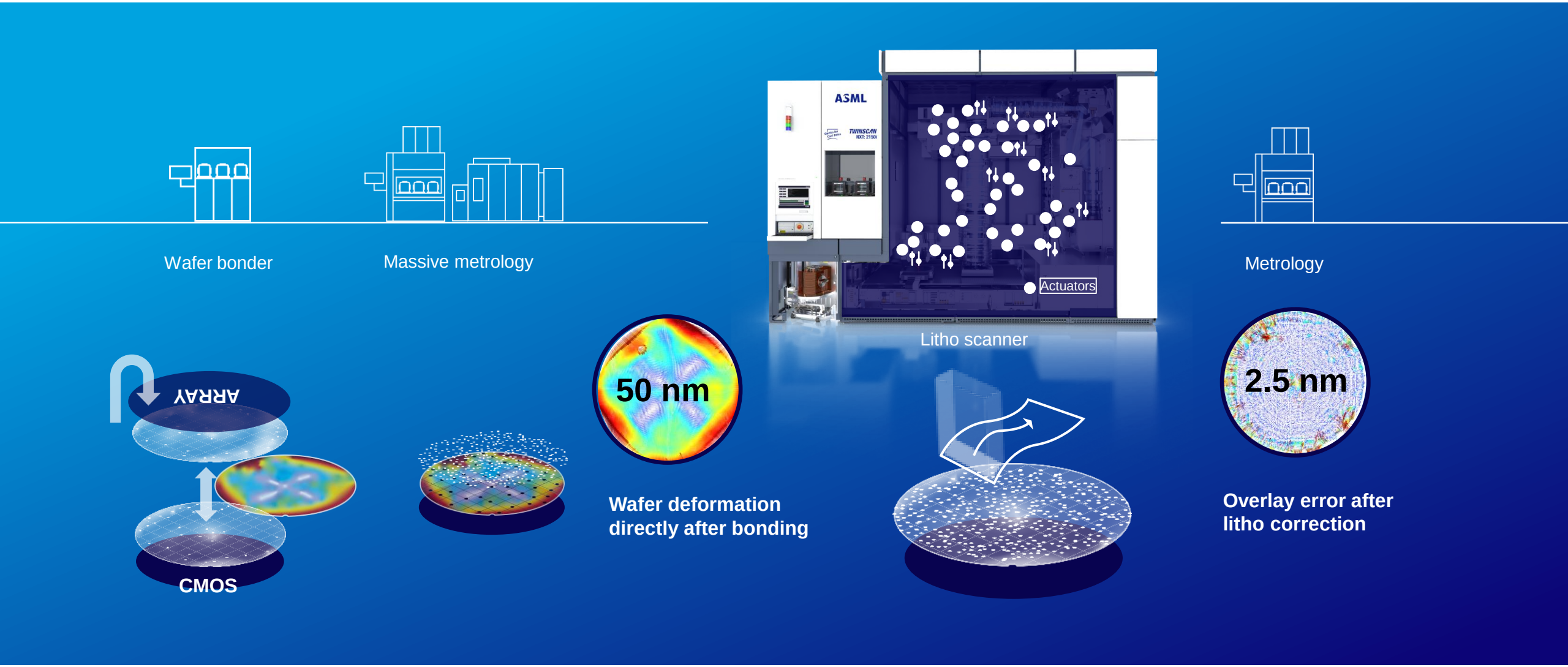


First shipment end 2024

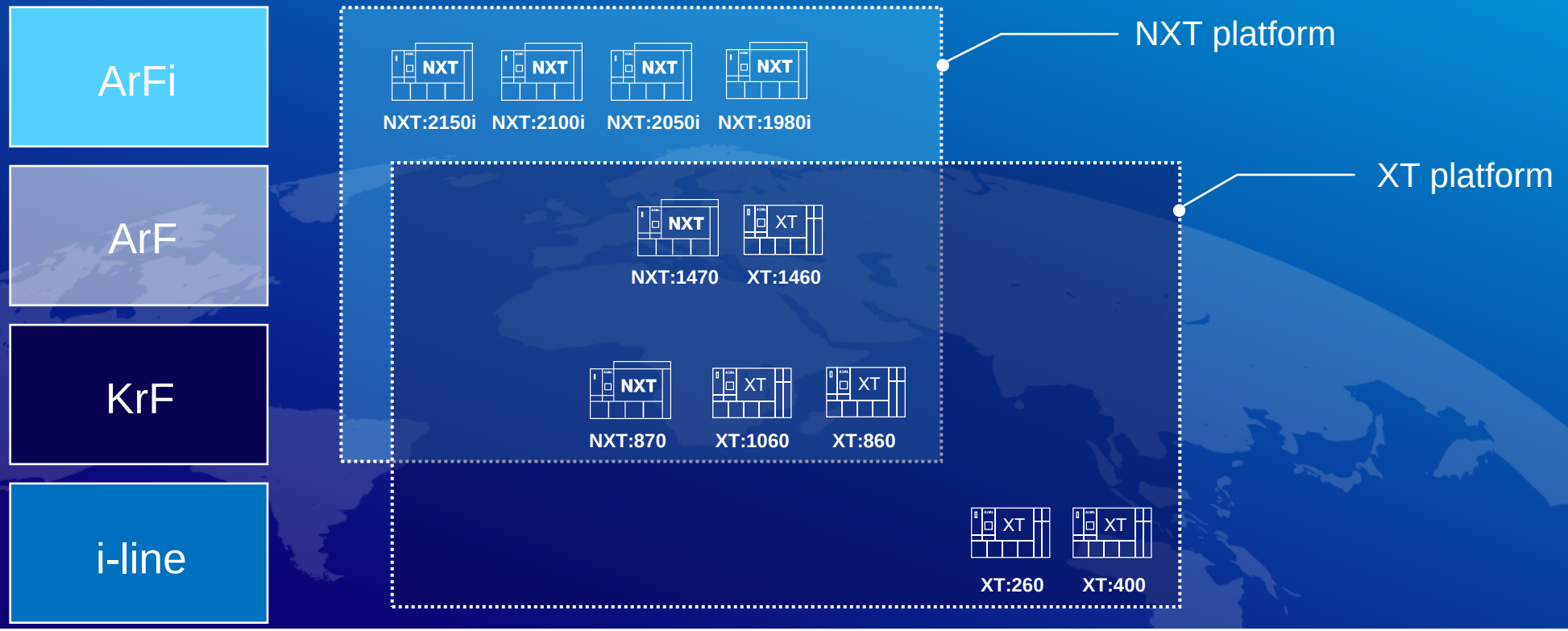
	NXT:2100i	NXT:2150i
Throughput	≥295 WpH	≥310 WpH
MMO[1]	≤1.3 nm	≤1.0 nm
EUV-DUV matching	1.7nm	1.5nm
On Product Overlay	≤1.7 nm (DRAM)	≤1.5 nm (DRAM)

[1] MMO: matched machine (or machine to machine) overlay

Improved correction capability enables the patterning image to be manipulated locally on the wafer to correct post wafer bonding overlay fingerprints



DUV portfolio in place to capture the growth opportunities across markets



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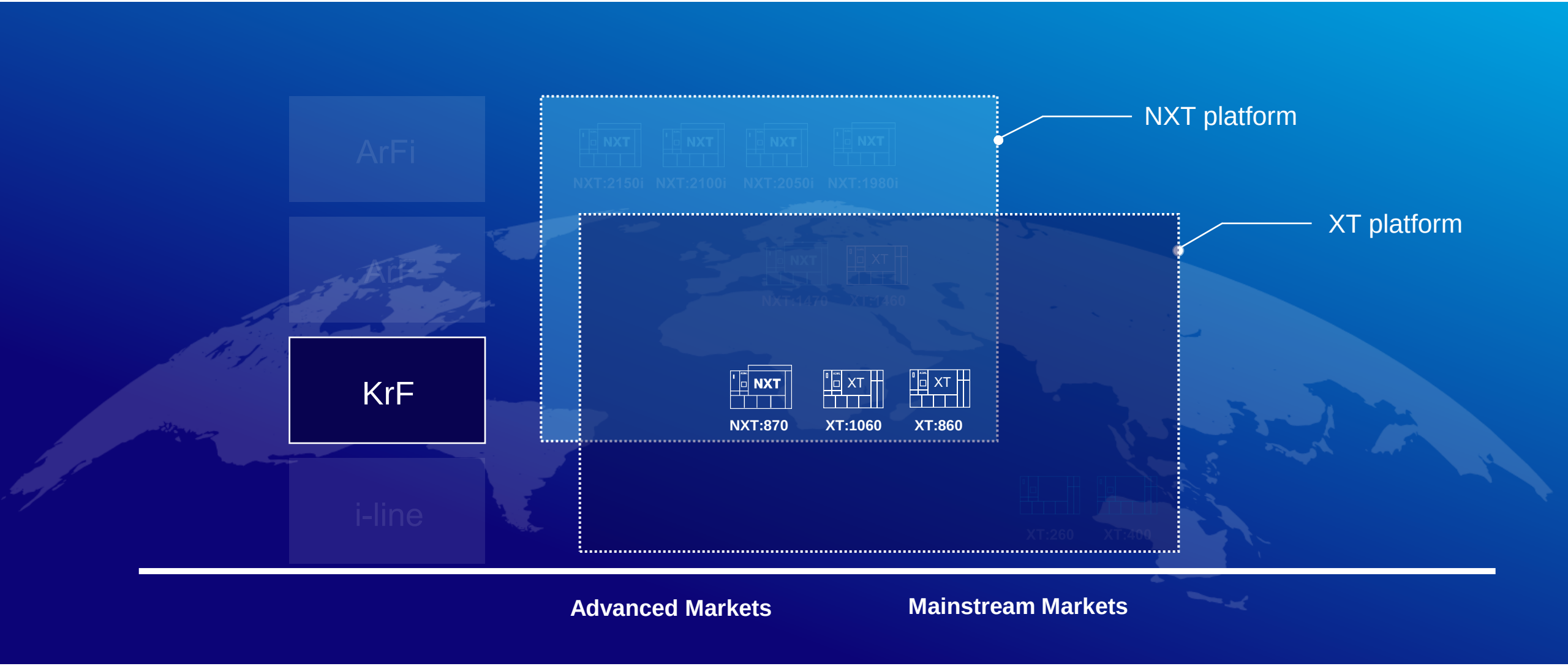
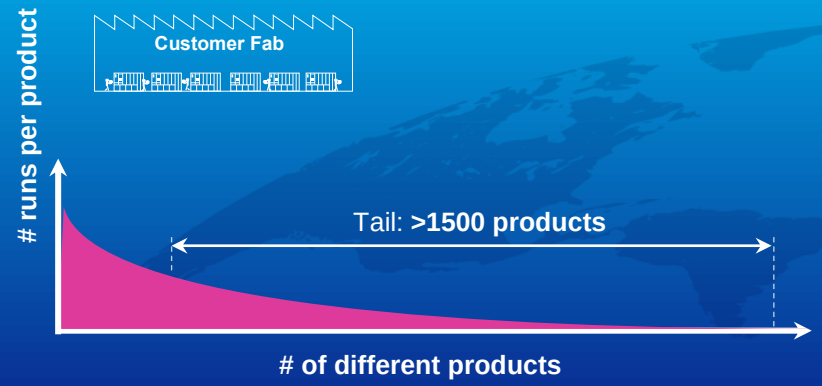


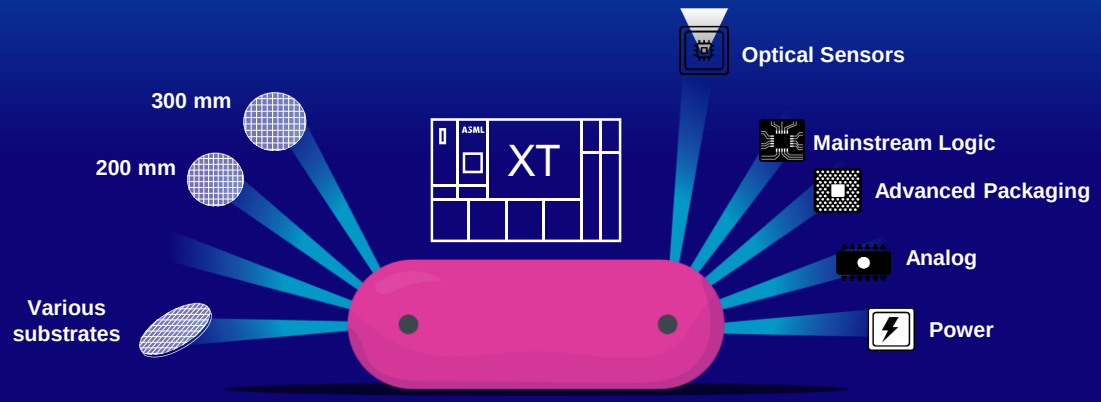
The NXT and XT platforms serve high-volume wafer fabs with different product mixes

Typical in Mainstream segments

High-product-mix fab

"A large number of products fill the fab"

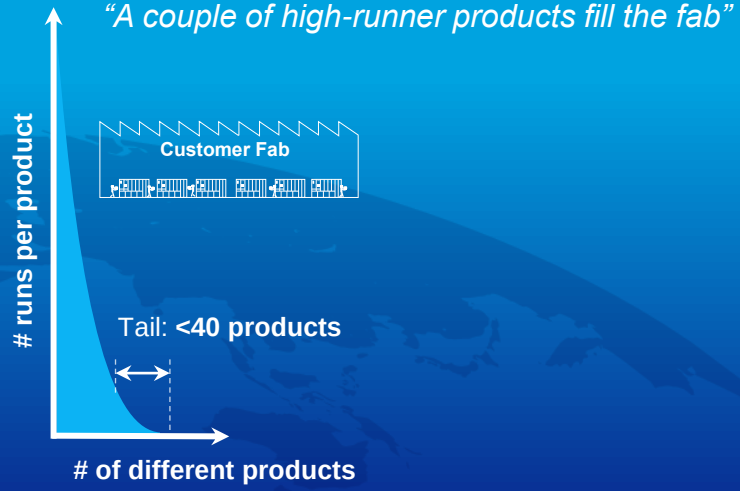


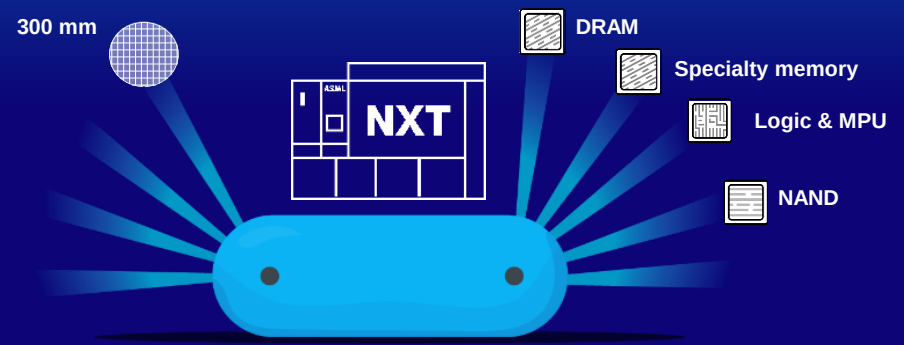


Typical in Advanced segments

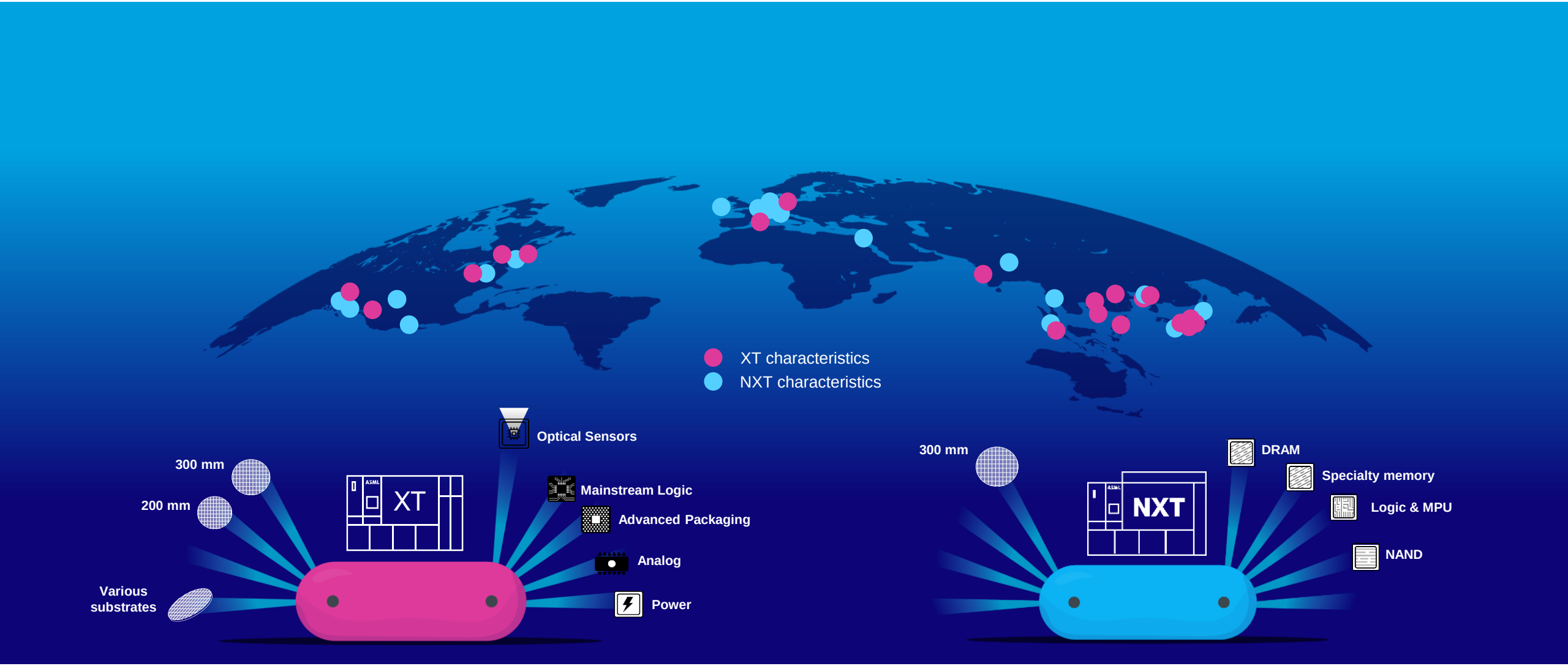
Low-product-mix fab

"A couple of high-runner products fill the fab"

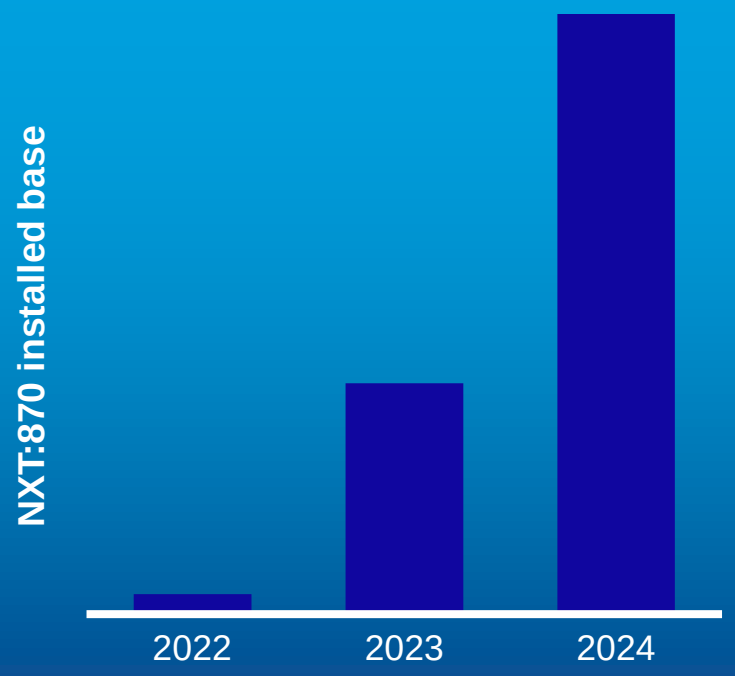




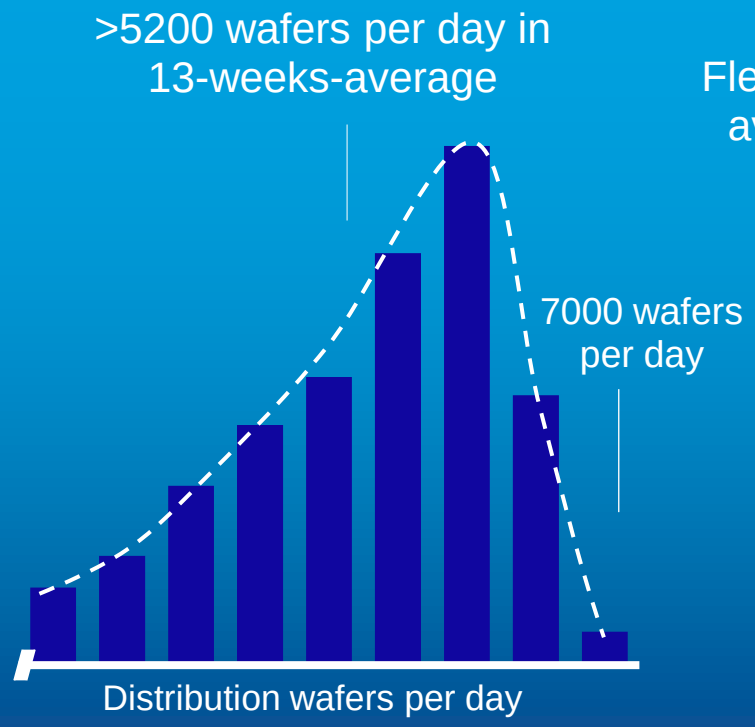
…and will continue to serve new wafer fabs across the world



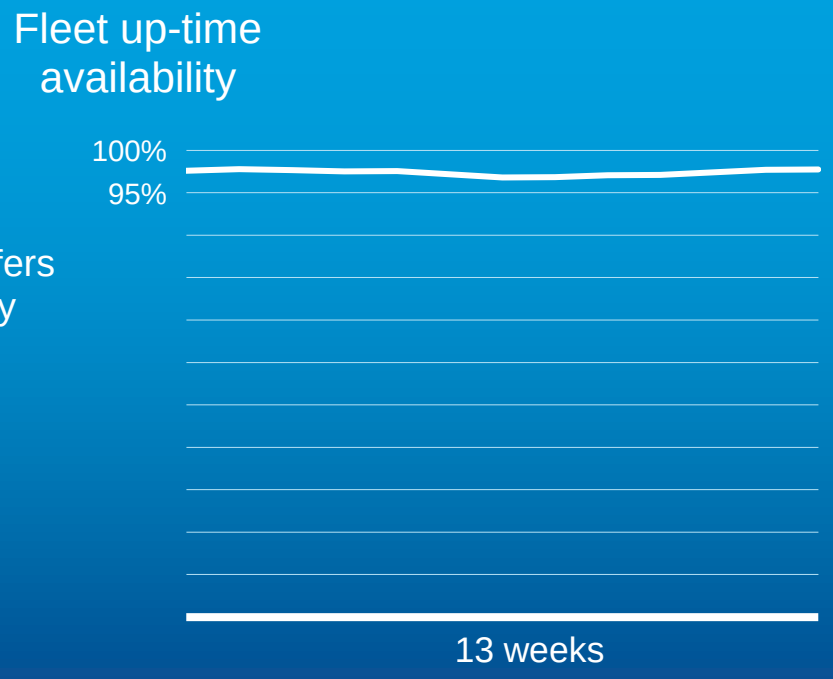
The NXT:870 KrF scanner has seen a solid and rapid adoption with proven productivity and reliability based on the NXT platform



NXT:870 system installed base growing rapidly



Stable fleet production of >5200 wafers per day



Fleet availability well above 95% at 13-weeks averaged

The NXT:870B KrF scanner will build on and extend the NXT platform to ≥400 WpH

Wafer Stage
Reduced settling time, improved dynamics and productivity

System Dynamics
Improved wafer stage and base frame damping

UV - Level Sensor
35 beams for productivity

Wafer Handler
Improved conditioning and higher productivity

Reticle stage
Faster scanning, shorter prep time
Improved clamps

Projection optics
Improved lens with reduced lens heating and additional lens manipulators

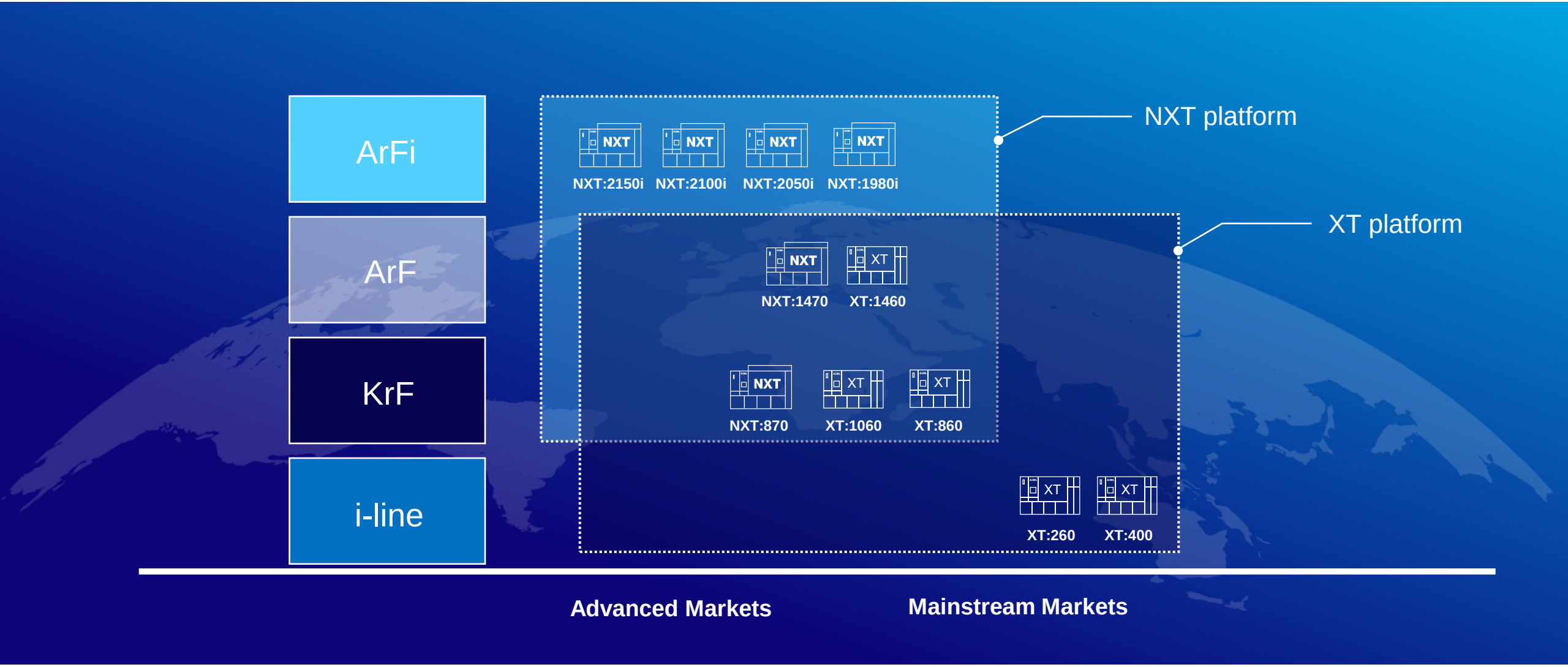
Reticle/Stage Align
Improved alignment for productivity and performance

First shipment end 2024

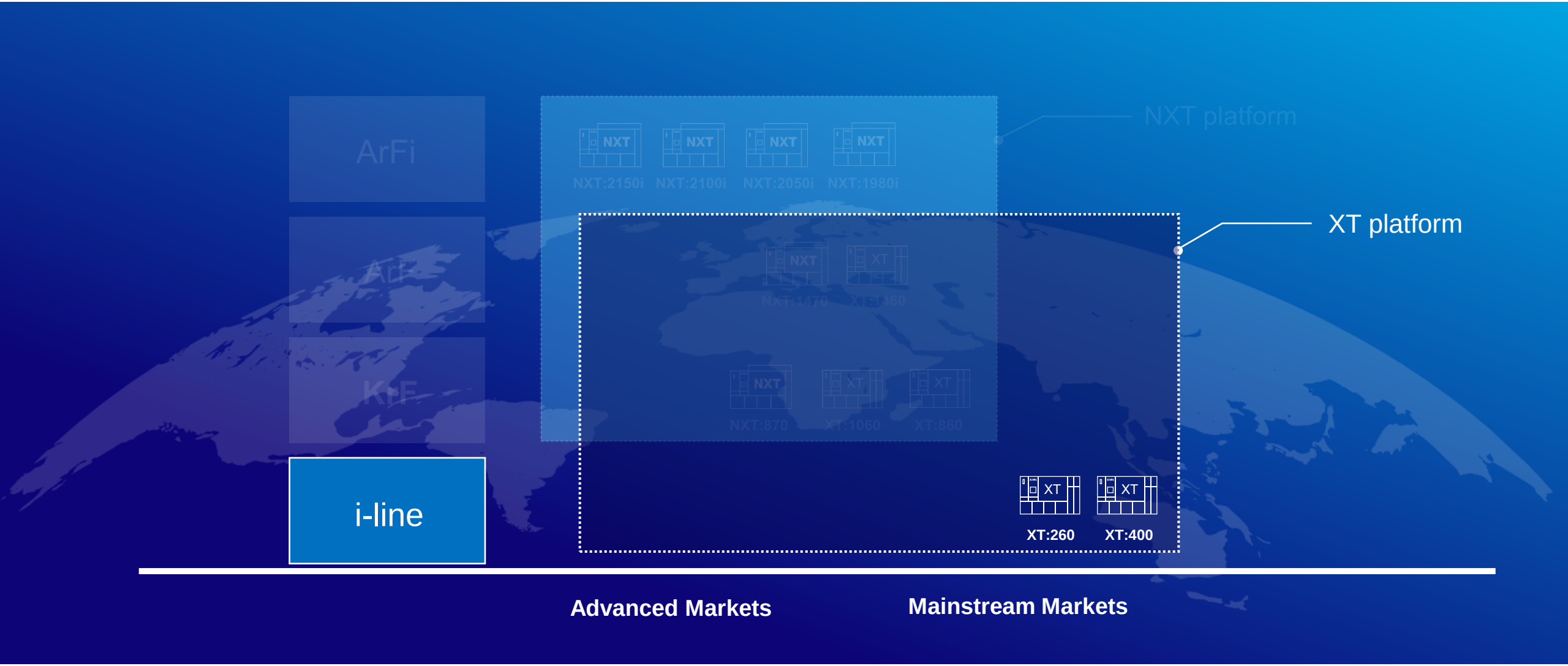
	XT:860N	NXT:870	NXT:870B
Throughput	≥260 WpH	≥330 WpH	≥400 WpH
MMO[1]	≤7.5 nm	≤6.0 nm	≤6.0 nm
On Product Overlay[2]	≤6.0 nm	≤5.0 nm	≤4.0 nm

[1] Matched Machine Overlay, [2] For specific use-cases

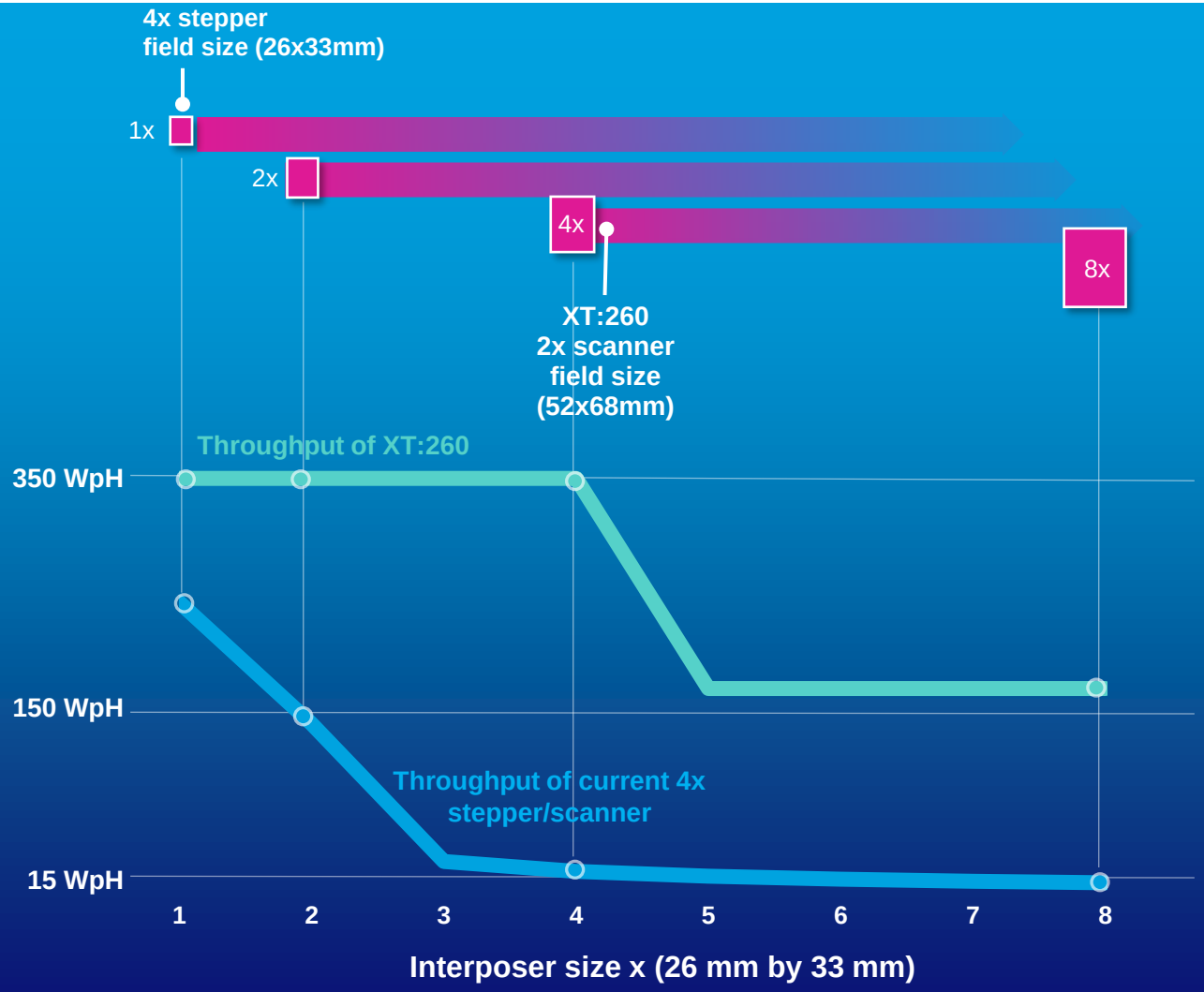
DUV portfolio in place to capture the growth opportunities across markets

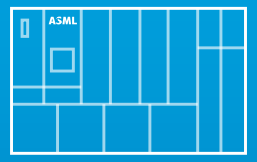


DUV portfolio in place to capture the growth opportunities across markets



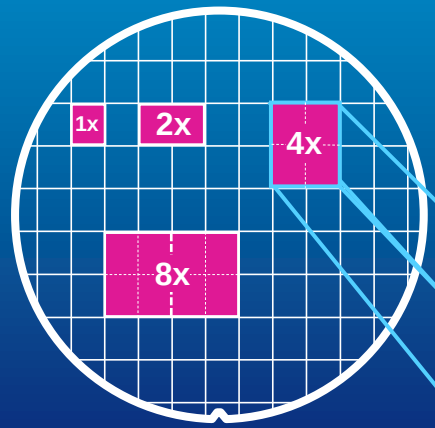
XT:260 delivers the highest productivity in the industry for advanced packaging applications which could benefit from a larger exposure field size

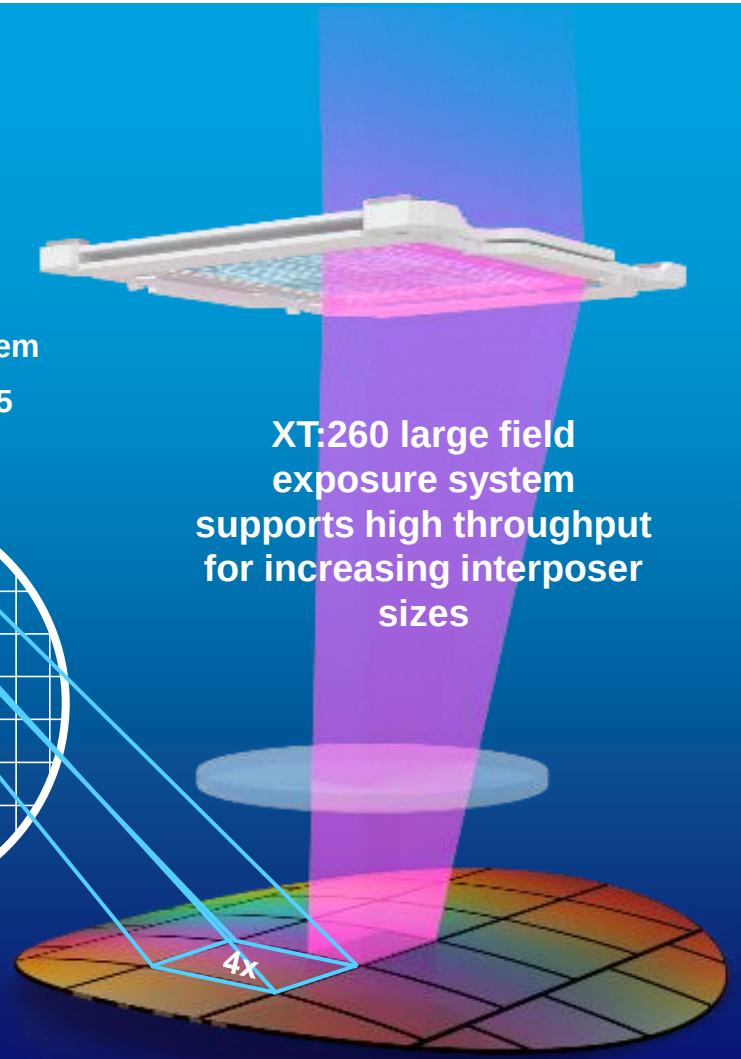




XT:260 large field system

First shipment H2-2025





XT:260 large field exposure system supports high throughput for increasing interposer sizes

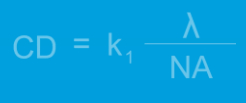
The DUV strategy and product portfolio address a comprehensive set of value and cost drivers in the holistic lithography triangle

ASML Holistic lithography value =

Patterning Yield

- Patterning process control
- Optical metrology
- E-beam metrology
- AI based control

×



Resolution

- **i-line**
- **KrF**
- **ArF**
- **ArFi**

×

Accuracy

- EUV / **ArFi**
- **Overlay**
- Local CDU
- **EPE**

×

Productivity

- **System Throughput**
- **System performance upgrades**
- **Overall equipment efficiency**

System cost

- **Commonality**
- **Configurability**

/

Lifetime

- **>20 years system extendibility**

+

Operational cost

- **Service cost**
- Utilities cost

+

Environmental cost

- **Power roadmap**
- **Re-use**
- Materials

1 Ton CO_2 = 200 EUR

Commonality in the NXT platform and between DUV and EUV gives shorter development lead time, more customer upgradability and lower operational cost

Common technology within a wavelength

Optical modules
Light source
Sensors

KrF
NXT:870

KrF
NXT:870B

Common technology across DUV wavelengths

Wafer stage
Reticle stage
Reticle handling
Options

KrF
NXT:870

ArF
NXT:1470

ArFi
NXT:2050i

Common technology across DUV and EUV platforms

Alignment sensor
Level sensor
Metrology
Wafer handling

DUV
NXT platform

EUV
NXE platform

Commonality is an important factor in driving efficiency across the value chain

Cost effective way to increase factory output and reduce installation time

Standard set up for building both XT and NXT systems

Pre- install before shipment system

Direct pre-shipment to customer

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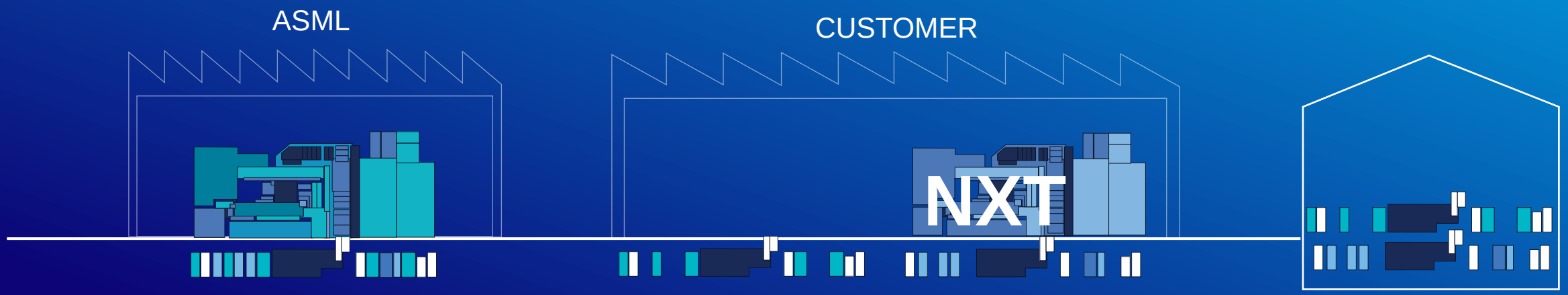

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Commonality is an important factor in driving efficiency across the value chain

Cost effective way to increase factory output and reduce installation time

Standard set up for building both XT and NXT systems

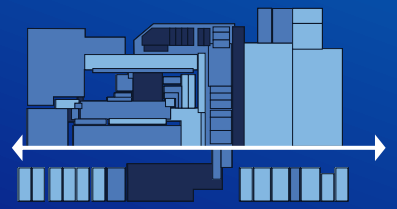
Pre- install before shipment system

Direct pre-shipment to customer

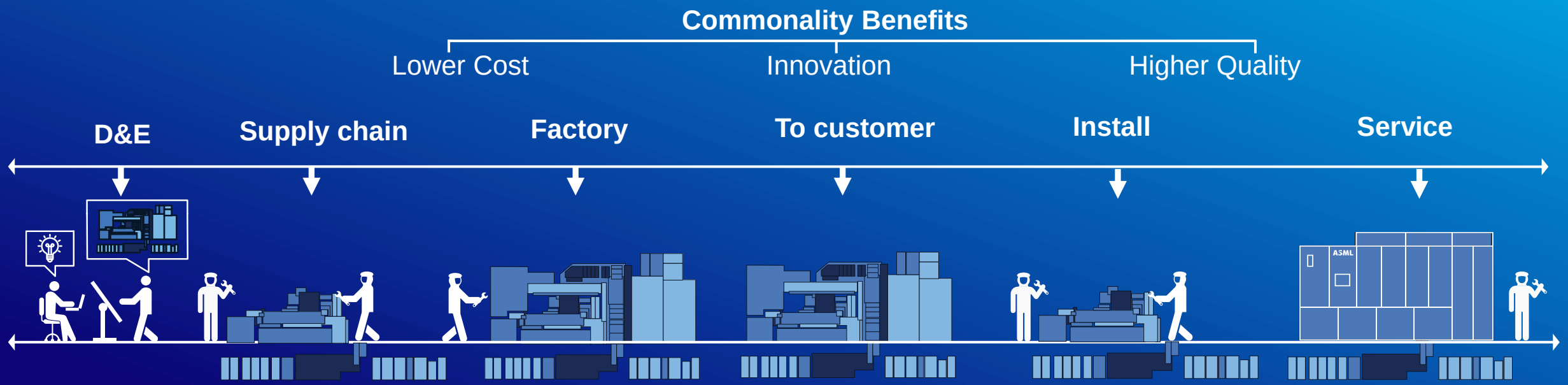
Commonality is an important factor in driving efficiency across the value chain

Commonality benefits

Customer

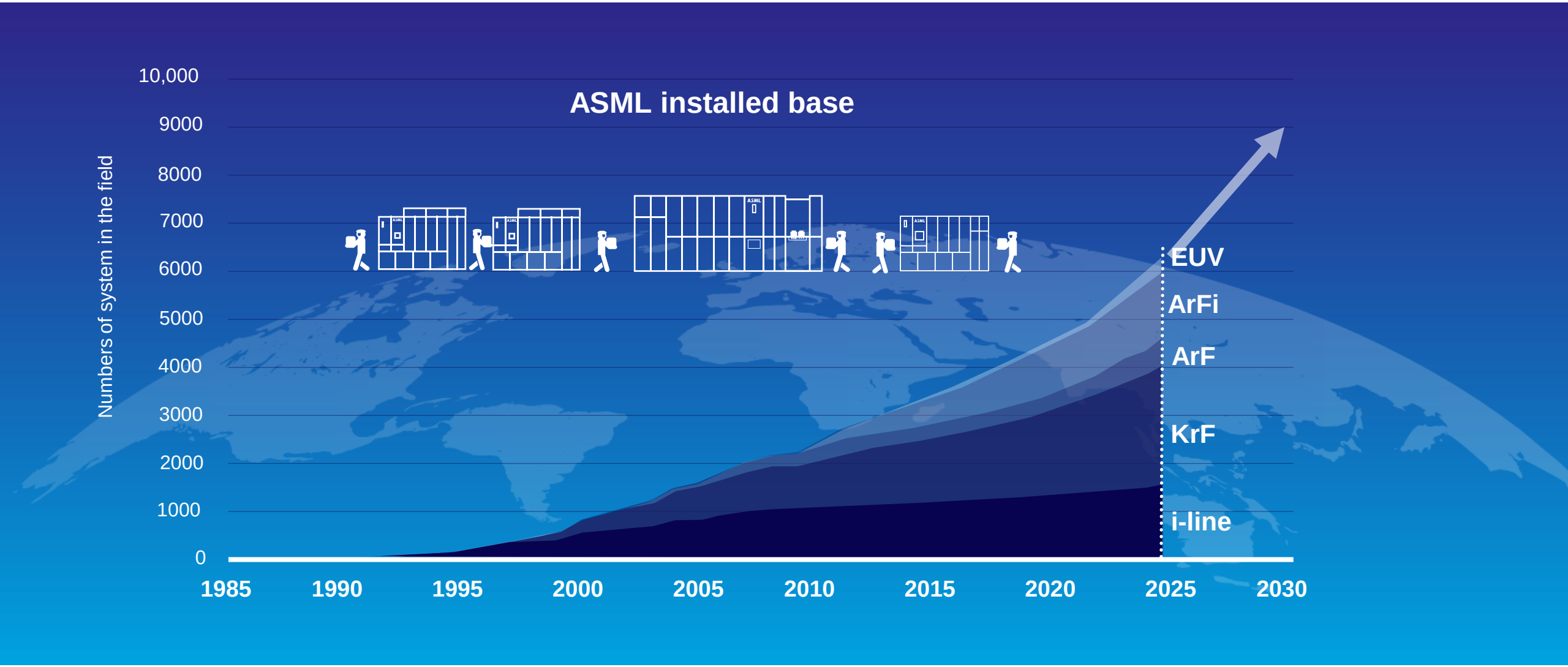


With commonality we reduce cost, development lead times, cycle times, have lower inventory, faster ramp-up, improve upgradability and re-use

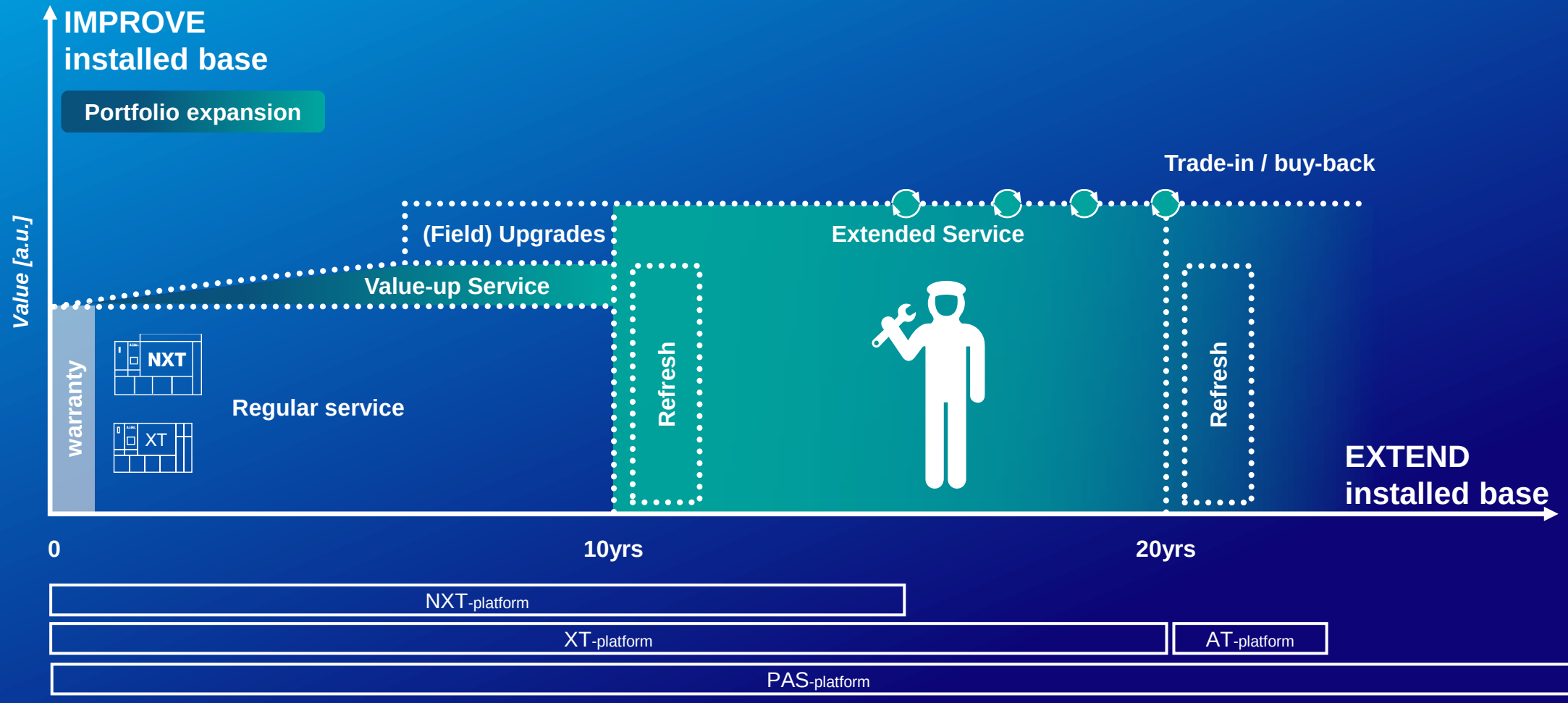


Along with product design, operational innovation is applied to reduce cost and the environmental footprint of our operations

ASML has shipped >6000 systems to its customers since we started our operations



Continued focus on the upgrade and service portfolio to maintain and improve the performance as well as the cost effectiveness of the installed base

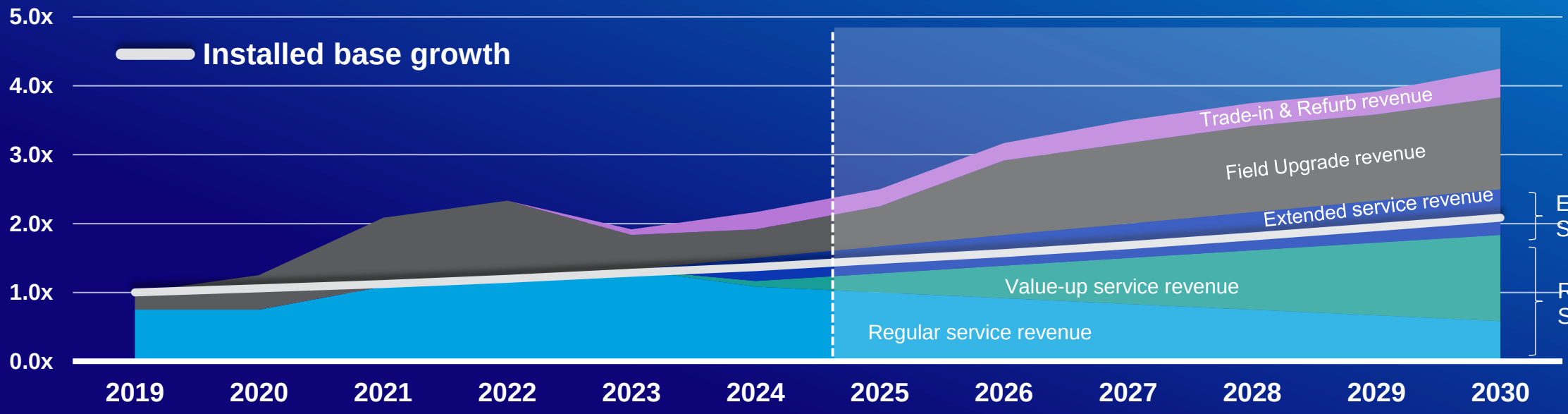


Our market opportunity of our growing installed based with an expanding service & upgrade portfolio

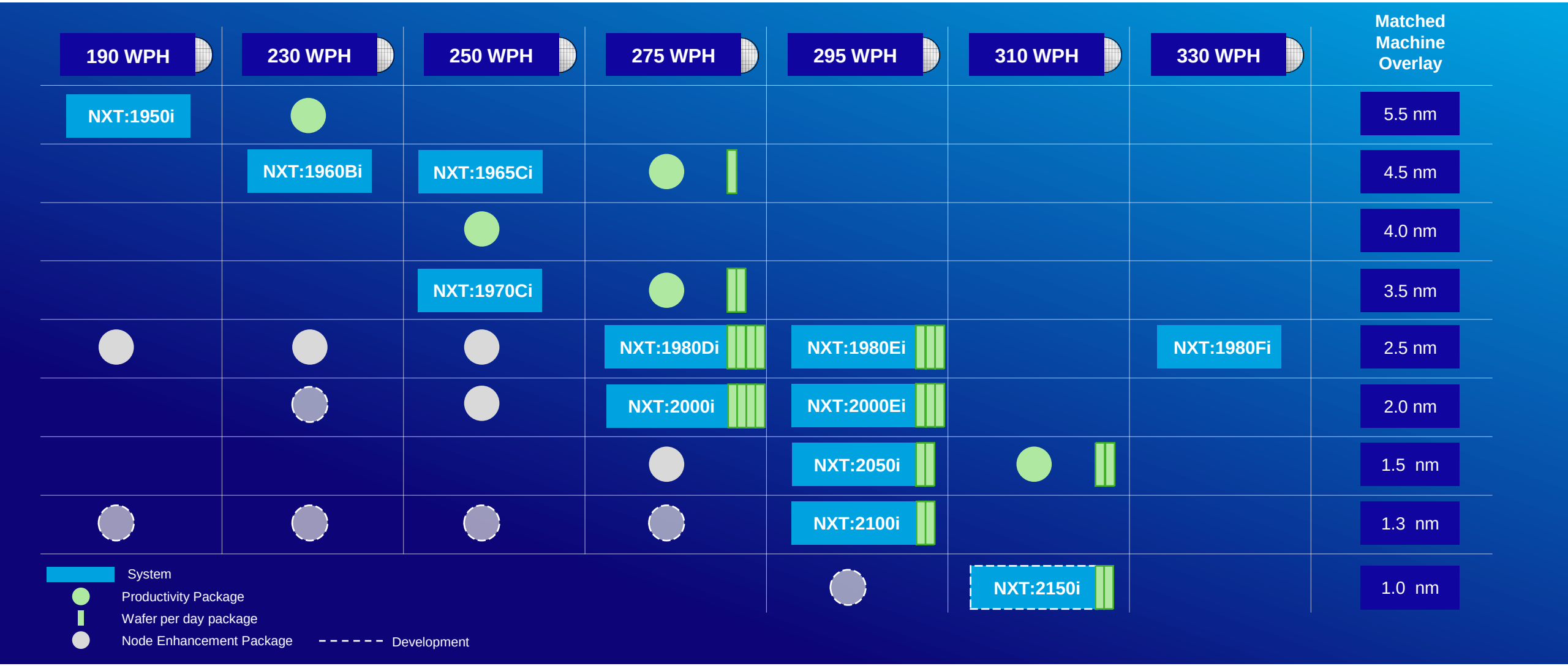


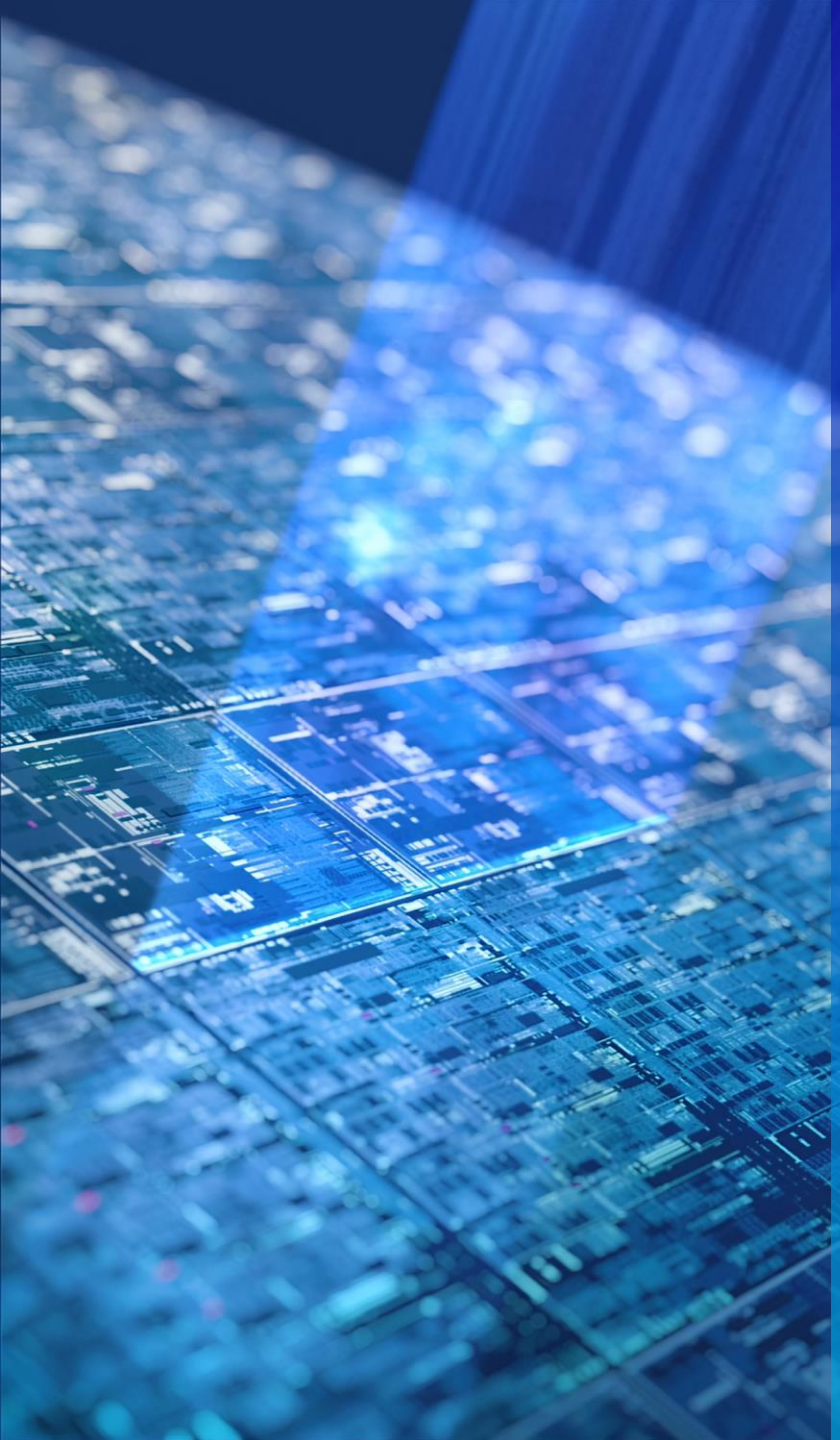


Regular service | Value-up service | Extended service | Field Upgrades | Trade-in & Refurb



Our NXT immersion (Field) upgrades enable improved on-product performance and higher wafer output





Summary

- DUV is and will remain a workhorse for the industry.
- We continue to support both our advanced and mainstream semiconductor customers with a portfolio of immersion systems that address the need for both overlay and higher productivity.
- Our XT and NXT dry DUV portfolio continues to provide full flexibility to our customers in performance and deliver best cost of technology by building on commonality and operational efficiency.
- We are extending our portfolio with an i-line wide-field scanner that provides the industry’s highest productivity and solutions for advanced packaging applications.
- We are optimizing our installed base of >6,000 systems by extending the product lifetime to >20 years and improving productivity with a diversified service and upgrades portfolio.

Forward Looking Statements

This document and related discussions contain statements that are forward-looking within the meaning of the U.S. Private Securities Litigation Reform Act of 1995, including statements with respect to our strategy, plans and expected trends, including trends in end markets and the technology industry and business environment trends, including the emergence of AI and its potential opportunities and expectations for the semiconductor industry, including computing power, advanced logic nodes and DRAM memory, statements with respect to Moore's law and expected transistor growth and aspirations by 2030, global market trends and technology, product and customer roadmaps, long term outlook and expected lithography and semiconductor industry growth and trends and expected growth in semiconductor sales and semiconductor market opportunity through to 2030 and beyond, expected growth in wafer demand and capacity and additional wafer capacity requirements, expected investments by our customers, including investments in our technology and in wafer capacity, plans to increase capacity, expected growth in lithography spend, growth opportunities including opportunities for growth in service and upgrades and opportunities for growth in Installed Base Management sales, expected growth and gross margins in the holistic lithography business and expected addressable market for Applications products, expectations and benefits of a growing installed base, ASML's and its supplier's capacity, expected production of systems, model scenarios and the updated model for 2030, including annual revenue and gross margin opportunity and development potential for 2030, outlook and expected, modelled or potential financial results, including revenue opportunity, gross margin, R&D costs, SG&A costs, capital expenditure, cash conversion cycle and annualized effective tax rate for 2030 and assumptions and drivers underlying such expected, modelled or potential amounts, and other assumptions underlying our business and financial models, expected trends, outlook and growth in semiconductor end markets and long term growth opportunities, demand and demand drivers, expected opportunities and growth drivers for and technological innovation of our products including DUV EUV, High NA, Hyper NA, Applications, and other products impacting productivity and costs, transistor dimensions, logic and DRAM shrink, foundry competition, statements with respect to dividends and share buybacks and our capital return policy, including expectation to return significant amounts of cash to shareholders through growing dividends and buybacks and statements with respect to energy generation and consumption trends and the drive toward energy efficiency, emissions reduction and greenhouse gas neutrality goals and target dates to achieve greenhouse gas neutrality, zero waste from operations and other ESG targets and ambitions and plans to maintain a leadership position in ESG, increasing technological sovereignty across the world and the expected impact on semiconductor sales, including specific goals of countries across the world, increasing competition in the foundry business, estimates for 2024 and other non-historical statements. You can generally identify these statements by the use of words like "may", "will", "could", "should", "project", "believe", "anticipate", "expect", "plan", "estimate", "forecast", "potential", "opportunity", "scenario", "guidance," "intend", "continue", "target", "future", "progress", "goal" and variations of these words or comparable words. These statements are not historical facts, but rather are based on current expectations, estimates, assumptions, models, opportunities and projections about our business and our future and potential financial results and readers should not place undue reliance on them. Forward-looking statements do not guarantee future performance and involve a number of substantial known and unknown risks and uncertainties. These risks and uncertainties include, without limitation, customer demand, semiconductor equipment industry capacity, worldwide demand for semiconductors and semiconductor manufacturing capacity, lithography tool utilization and semiconductor inventory levels, general trends and consumer confidence in the semiconductor industry and end markets, the impact of general economic conditions, including the impact of the current macroeconomic environment on the semiconductor industry, uncertainty around a market recovery including the timing thereof, the impact of inflation, interest rates, wars and geopolitical developments, the impact of pandemics, the performance of our systems, the success of technology advances and the pace of new product development and customer acceptance of and demand for new products, our production capacity and ability to adjust capacity to meet demand, supply chain capacity, timely availability of parts and components, raw materials, critical manufacturing equipment and qualified employees, our ability to produce systems to meet demand, the number and timing of systems ordered, shipped and recognized in revenue, risks relating to fluctuations in net bookings and our ability to convert bookings into sales, the risk of order cancellation or push outs and restrictions on shipments of ordered systems under export controls, risks relating to technology, product and customer roadmaps and Moore's law, risks relating to the trade environment, import/export and national security regulations and orders and their impact on us, including the impact of changes in export regulations and the impact of such regulations on our ability to obtain necessary licenses and to sell our systems and provide services to certain customers, exchange rate fluctuations, changes in tax rates, available liquidity and free cash flow and liquidity requirements, our ability to refinance our indebtedness, available cash and distributable reserves for, and other factors impacting, dividend payments and share repurchases, the number of shares that we repurchase under our share repurchase programs, our ability to enforce patents and protect intellectual property rights and the outcome of intellectual property disputes and litigation, our ability to meet ESG goals and execute our ESG strategy, other factors that may impact ASML's business or financial results including the risk that actual results may differ materially from the models, potential and opportunity we present for 2030 and other future periods, and other risks indicated in the risk factors included in ASML's Annual Report on Form 20-F for the year ended December 31, 2023 and other filings with and submissions to the US Securities and Exchange Commission. These forward-looking statements are made only as of the date of this document. We undertake no obligation to update any forward-looking statements after the date of this report or to conform such statements to actual results or revised expectations, except as required by law.

This document and related discussions contain statements relating to our approach to and interim progress on achieving certain energy efficiency and greenhouse gas emissions reduction targets, including our ambition to achieve greenhouse gas neutrality. References to "greenhouse gas neutral" means remaining emissions, after ASML's efforts to reach its GHG emission reduction targets, compensated by the same amount of metric tons of carbon credits that are verified against recognised quality standards.


THANK
YOU