



xfab

Investor Day 2025

Ready for what's next



xfab

Sensing the real world

Luigi Di Capua, Vice President Product Marketing

Playing to our strengths

X-FAB's three strategic technology pillars



Powering the future

More efficiency for e-power generation, conversion, distribution, and storage



Sensing the real world

Smart sensors everywhere: automotive, medical, industrial automation, and consumer



The next level of integration

Continuous minimization of form factor, smart integration, and lower cost

Smart sensing everywhere

We have developed a comprehensive technology portfolio for sensing applications.

Megatrends

- › Electrification of everything
- › Digital healthcare
- › Smart cities, buildings, & manufacturing
- › Sustainable energy



Key market drivers

- › ADAS
- › Automation
- › Machine vision
- › Edge AI
- › Robotics
- › Biometrics



X-FAB's sensing technologies

Established

- › CMOS
- › CMOS+MEMS

Emerging

- › Photonics

Sensing the real world is our core business

Revenue for sensing solutions accounted for half of X-FAB's production revenues in 2024

X-FAB's sensing technologies

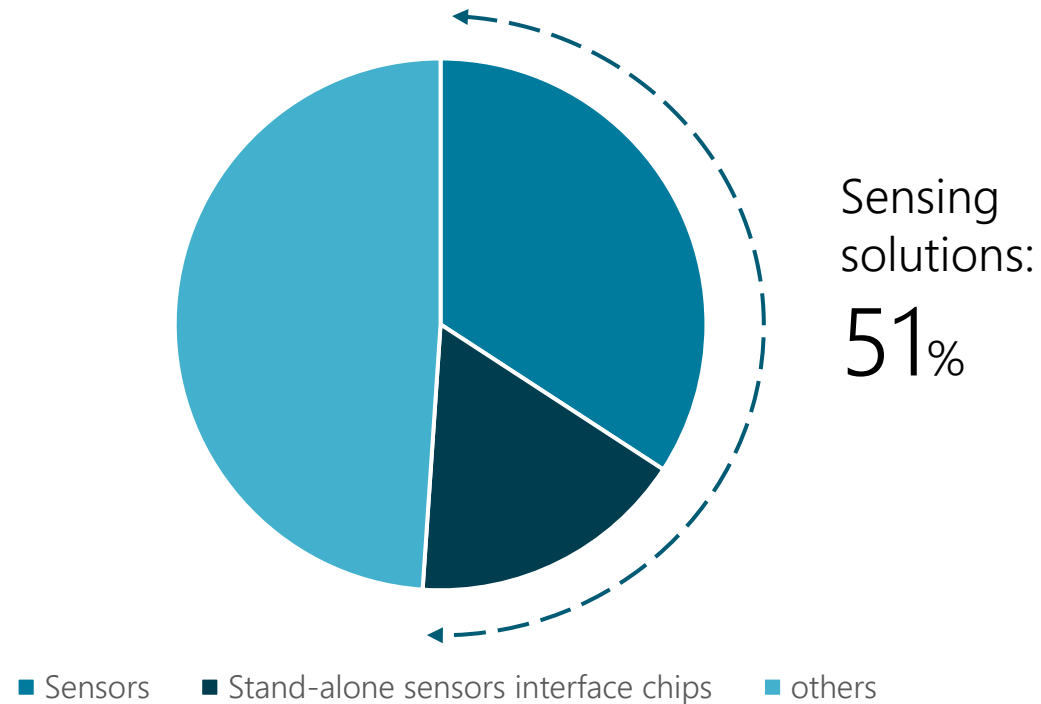
Established

- > CMOS
- > CMOS+MEMS

Emerging

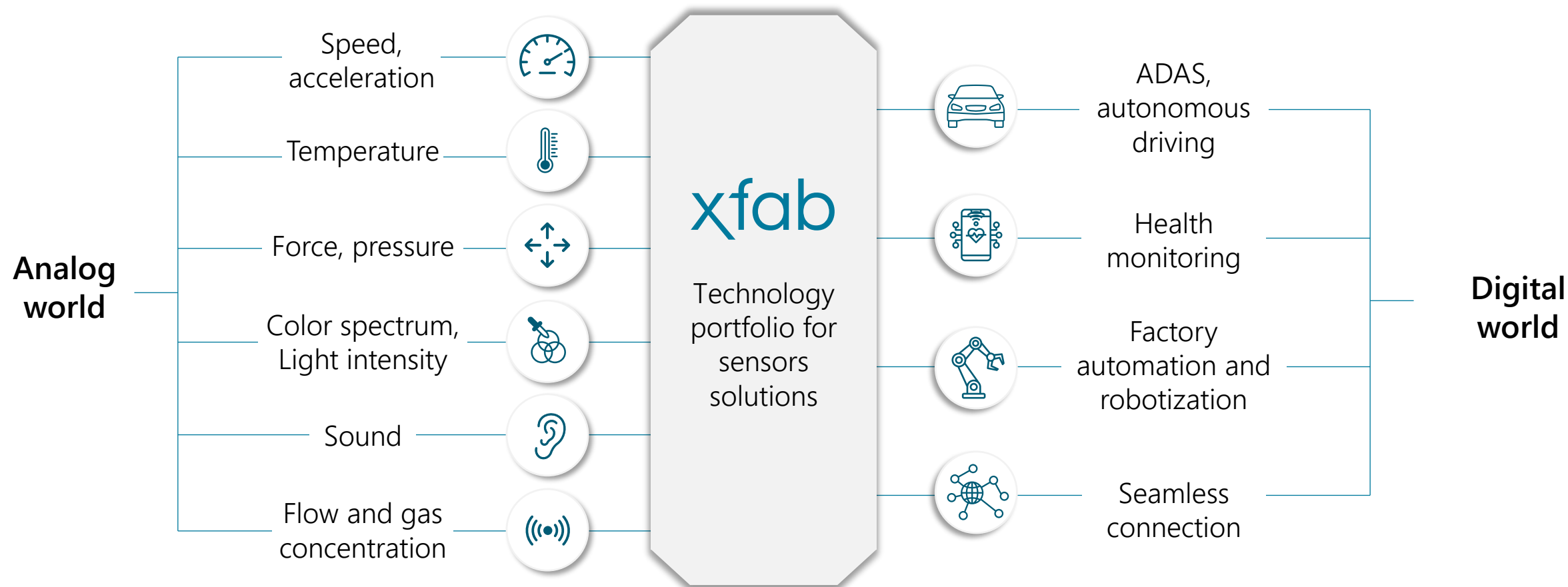
- > Photonics

Share of production revenues in 2024

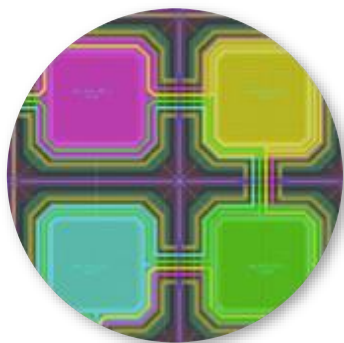


Sensing the real world

Sensors are the bridge between the analog and digital world



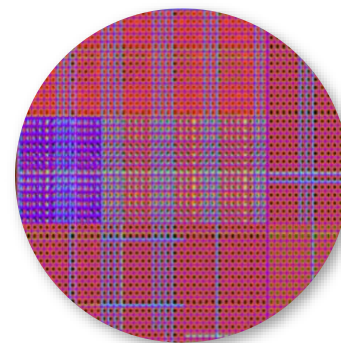
CMOS sensor technologies & solutions



Advanced Photodiodes & Optical Filter

Providing broad photodiode portfolio with performance across UV, visible, and NIR light

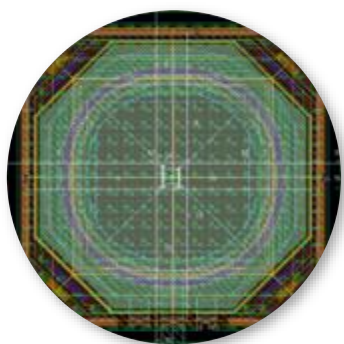
- > Ambient light sensors
- > Position sensors
- > Health monitoring sensors



CMOS Image Sensors

Providing medical and industrial solutions for high-performance optical sensors at scale

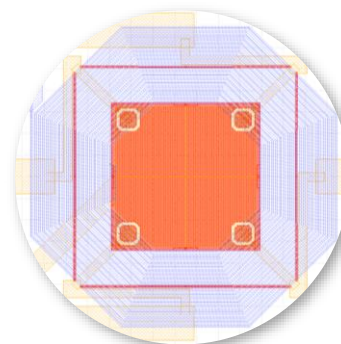
- > Medical imaging
- > UV sensing
- > Industrial inspection



Single Photon Avalanche Diodes (SPAD)

Providing most comprehensive in-house SPAD technology for 3D sensing

- > Direct time-of-flight
- > Fluorescence lifetime imaging
- > Quantum cryptography



Magnetic/Hall Sensors

Offering hall sensor IPs with extensive analog and HV options, high digital cell density, compact ESD protection, and robustness

- > Current sensors
- > Position sensors
- > Rotation sensors

CMOS sensor technologies & solutions



Advanced Photodiodes & Optical Filter

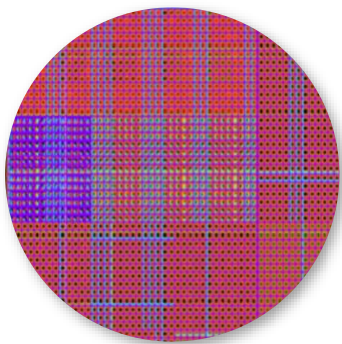
Providing broad photodiode portfolio with performance across UV, visible, and NIR light

- > Ambient light sensors
- > Position sensors
- > Health monitoring sensors



Ambient light sensors

CMOS sensor technologies & solutions



CMOS Image Sensors

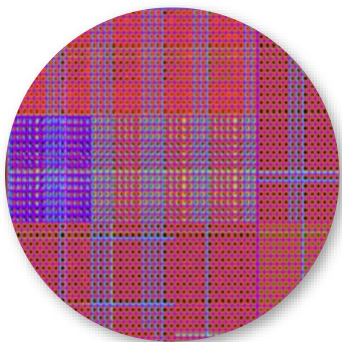
Providing medical and industrial solutions for high-performance optical sensors at scale

- > Medical imaging
- > UV sensing
- > Industrial inspection



Dental X-ray imaging

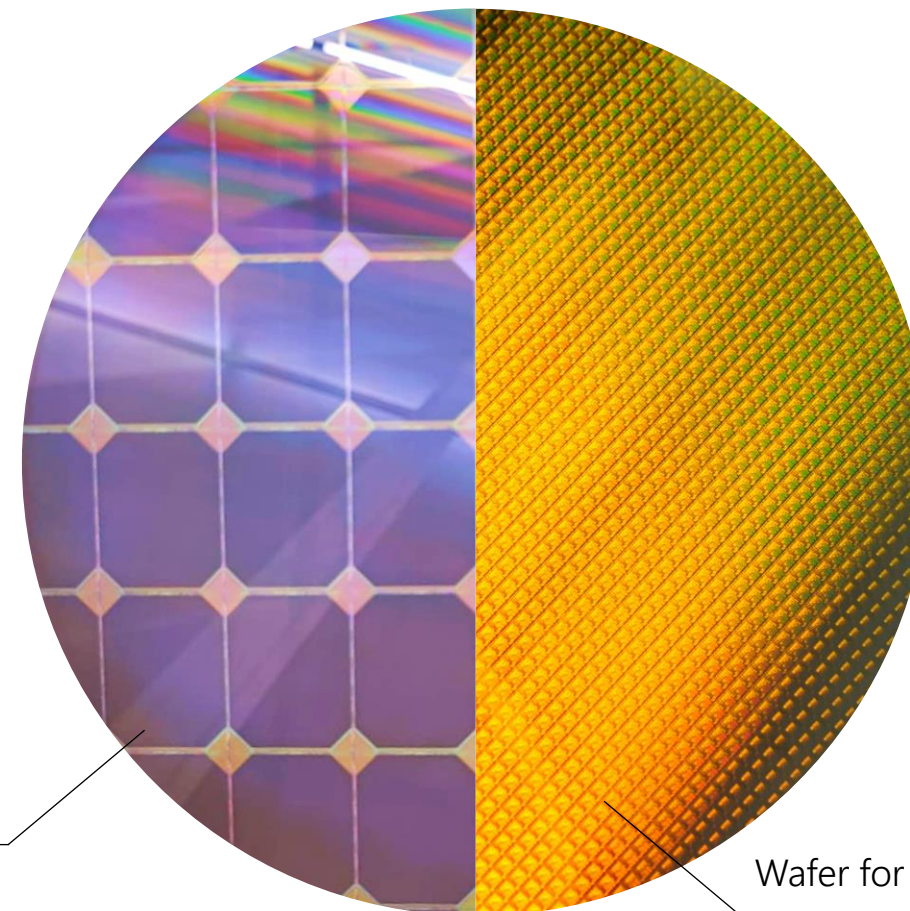
CMOS sensor technologies & solutions



CMOS Image Sensors

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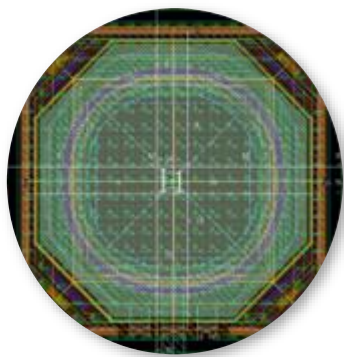
- > Medical imaging
- > UV sensing
- > Industrial inspection



Wafer for dental X-ray

Wafer for automotive

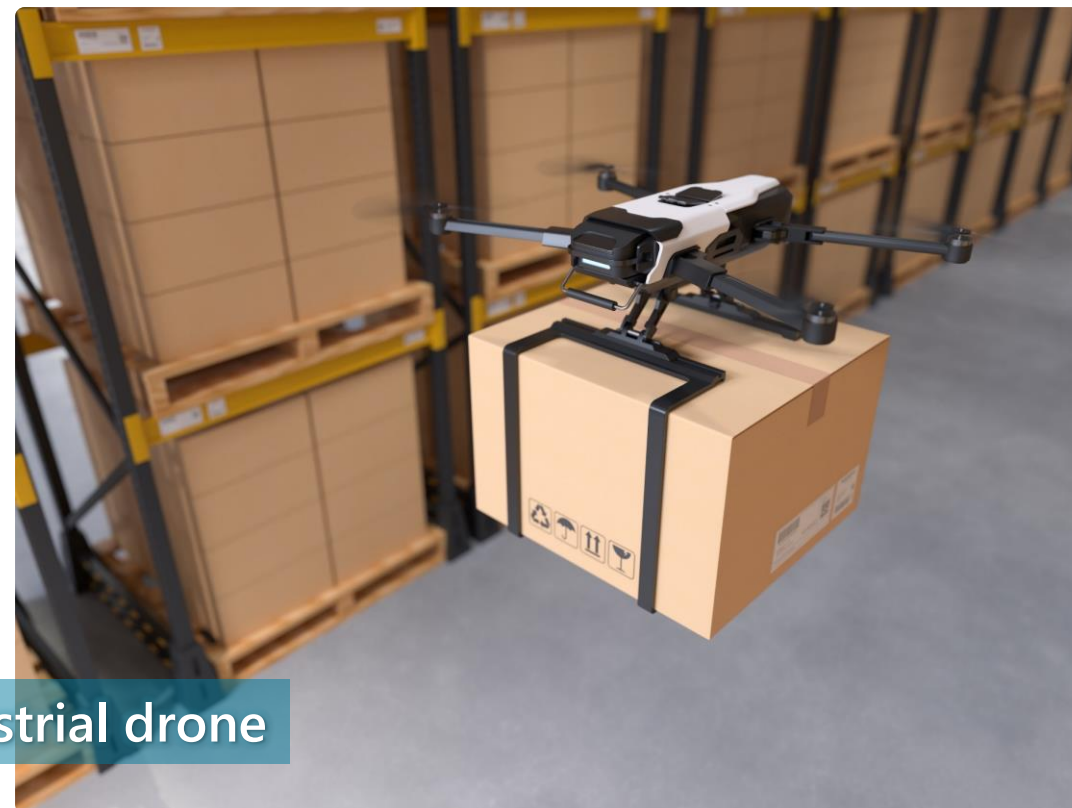
CMOS sensor technologies & solutions



Single Photon Avalanche Diodes (SPAD)

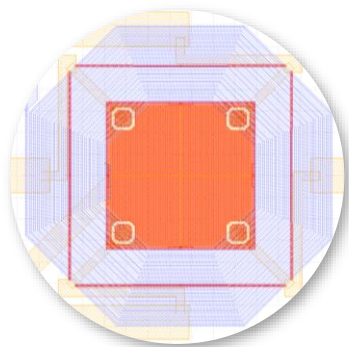
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Industrial drone

CMOS sensor technologies & solutions



Magnetic/Hall Sensors

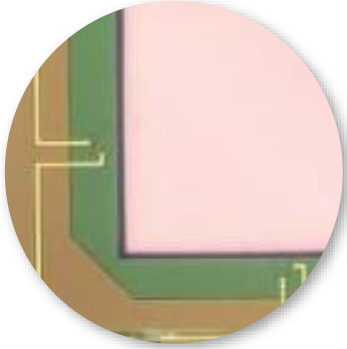
Offering hall sensor IPs with extensive analog and HV options, high digital cell density, compact ESD protection, and robustness

- > Current sensors
- > Position sensors
- > Rotation sensors



Steer-by-wire

MEMS sensor technologies & solutions



Pressure sensors

Providing piezo-resistive pressure sensor with absolute and relative pressure sensors as discrete or CMOS integrated

- > Tire-pressure monitoring system (TPMS)
- > Battery thermal management systems for gas and liquid monitoring
- > Emission control



Inertial sensors

Providing robust acceleration sensors and gyroscopes.

- > Next generation TPMS
- > Airbag systems
- > Active suspension control



Gas and flow sensors

Foundry for various gas and flow sensor-based technologies, ranging from metal oxide sensors, and thermal conductivity

- > Mass flow sensors
- > CO₂, H₂ sensors
- > Air intake sensors for various gases



Temperature sensors

Providing thermopile-based temperature sensors for single point detection, and thermal imaging using a sensor array configuration.

- > Contactless thermometer
- > Sleep and fertility tracking in smart watches
- > Far infrared thermal sensors

MEMS enabled solutions

Pressure sensors



Inertial sensors



Gas sensors



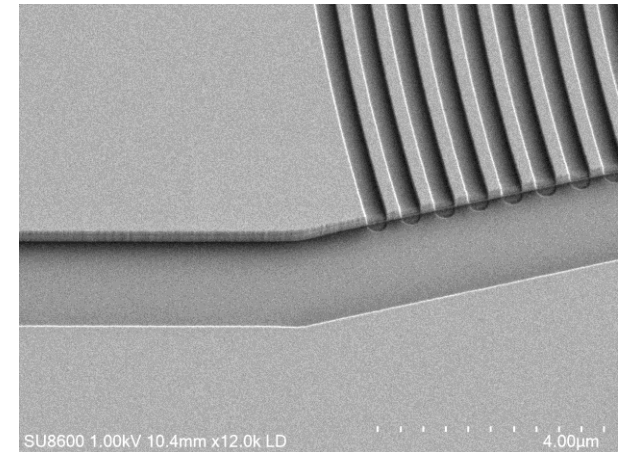
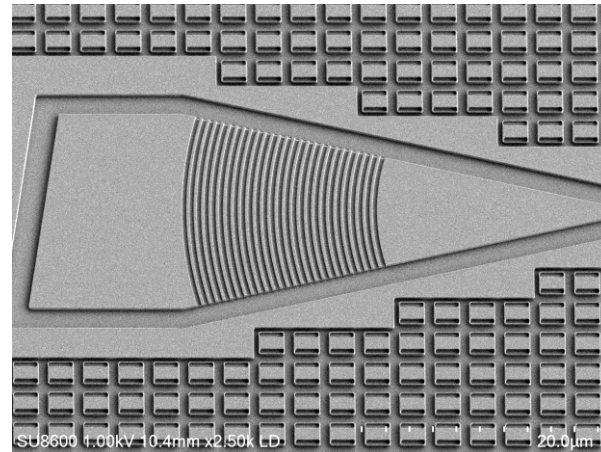
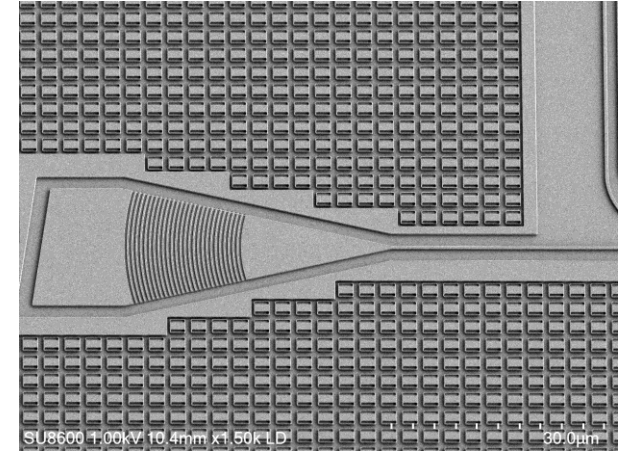
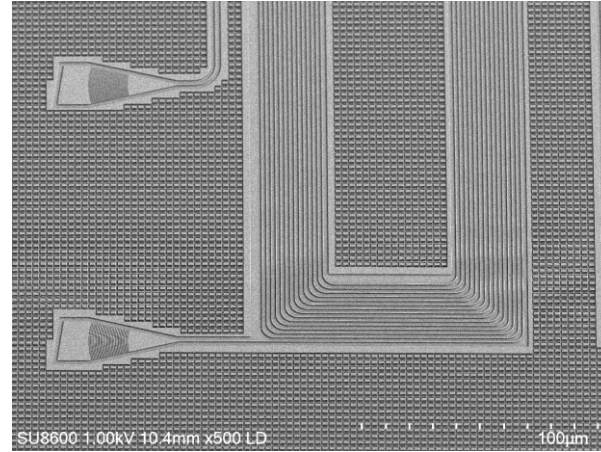
Temperature sensors



Silicon Photonics

New emerging technology for sensing

- > We aim to become the European Foundry of choice for Silicon Photonics
- > We are enabling photonics manufacturing solutions
- > 3 technologies under development
- > Plan to start mass production in 2028



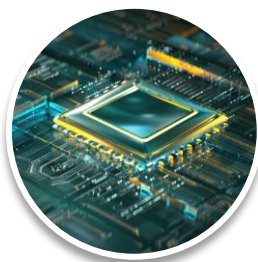
Silicon Photonics: real work is ongoing

4% of our total prototyping revenue and 60 prototypes in 2024



Datacom, AI, telecom

Optical transceivers
Coherent optical transceivers
Optical switches
Optical interconnects
5G / 6G RF in base stations



Quantum

Quantum computing
Quantum communications
QKD
Quantum cryptography



Automotive

LIDAR
UWB photonics
Enhanced radar
Collision warning
Lane assistant
Parking assistant
ADAS
Optical interconnects



Agrifood and food quality

Remote sensing
Hyperspectral sensing
Toxin sensing
Raman spectroscopy



Industrial sensing

LIDAR
Robotics
Inertial sensors
Safety & surveillance
Fiber interrogator
Gas & particle sensing



Health care, wellness

DNA / protein sequencing
Diagnostics
Glucose monitoring
Drug dose control
SEPSIS monitoring
Lab-on-chip



AR/VR

Sensing
3D-imaging

Today's innovations and tomorrow's possibilities

Medical ultrasound

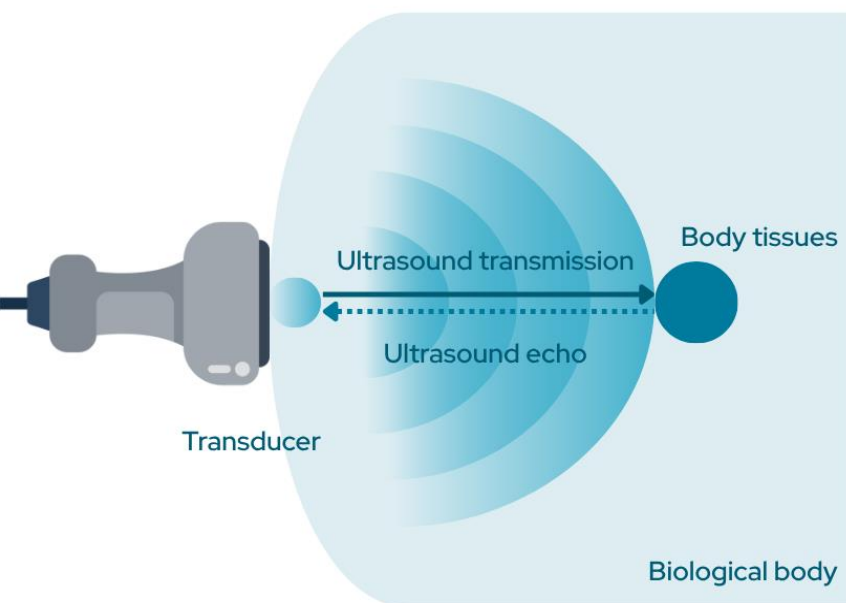


Embodied AI robots



BCD-on-SOI for medical ultrasound

Our BCD-on-SOI solutions are well suited for ultrasonic probe heads used for real-time medical imaging



BCD-on-SOI for medical ultrasound

- > For generation of the ultrasound: high voltage switching up to 200 V
- > Receiving the echo from body tissues: sensing of 1 μ V -100 mV with excellent noise isolation
- > 180nm BCD-on-SOI, for single-chip transmit & receive
- > 110nm BCD-on SOI, for next-generation small form factor products

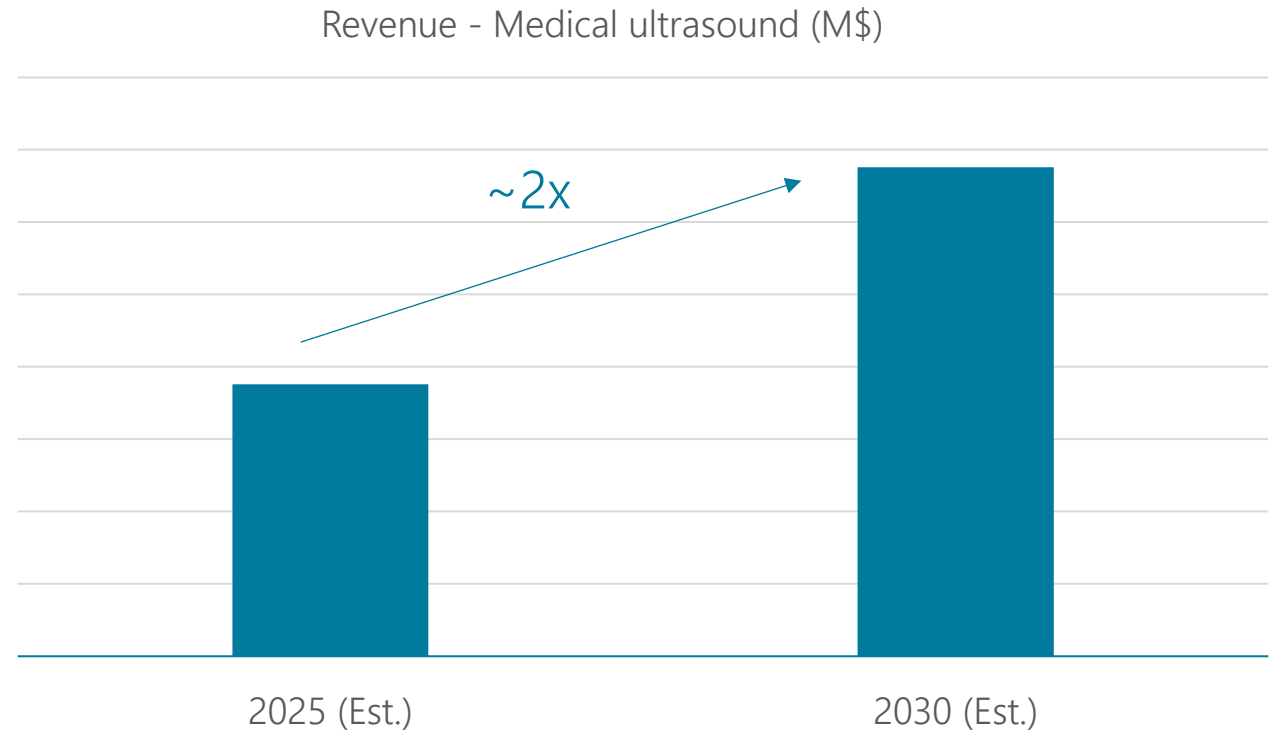
Main applications

- > Gynecology
- > Cardiology
- > Vascular
- > Cancer
- > Obstetrics and pregnancy
- > Musculoskeletal
- > Abdominal
- > Urology

Medical ultrasound: A successful business story

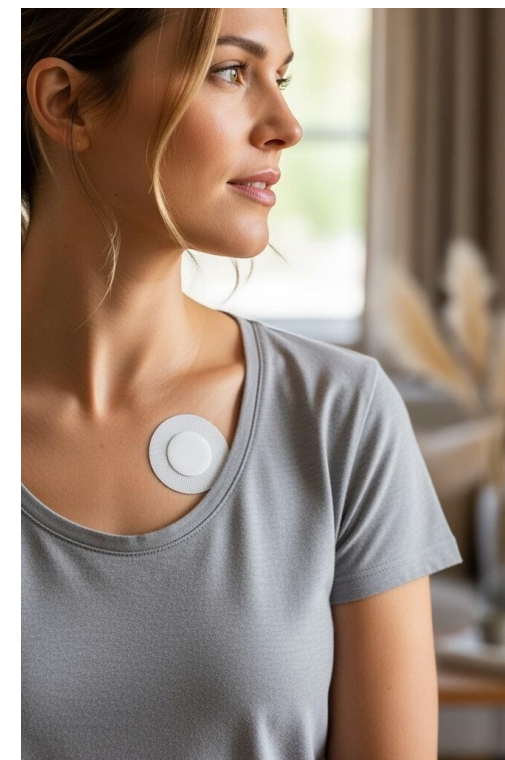
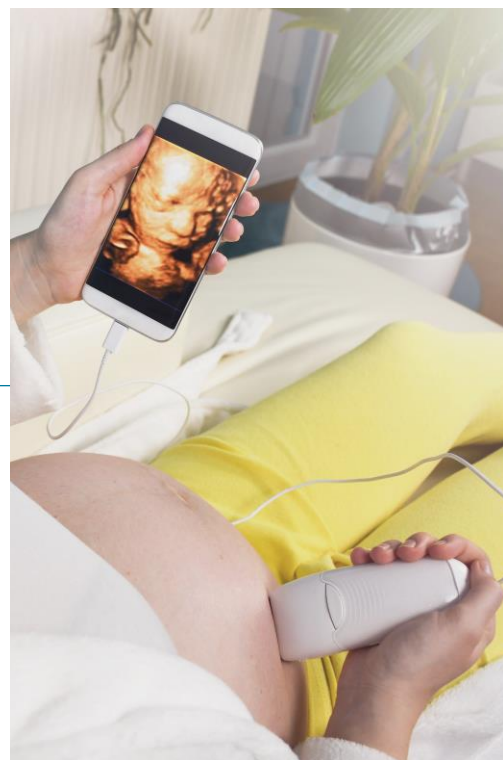
About 25% of X-FAB's medical revenue in 2025 (Est.)

- > First 180nm BCD-on-SOI prototypes in 2012
- > First 110nm BCD-on-SOI prototypes in 2025
- > Customer base consists of medical OEMs and their major suppliers



And a sustainable business

Our 110nm BCD-on-SOI is enabling the next generation of medical ultrasound products



AI will shape the future of robotics

- Embodied AI

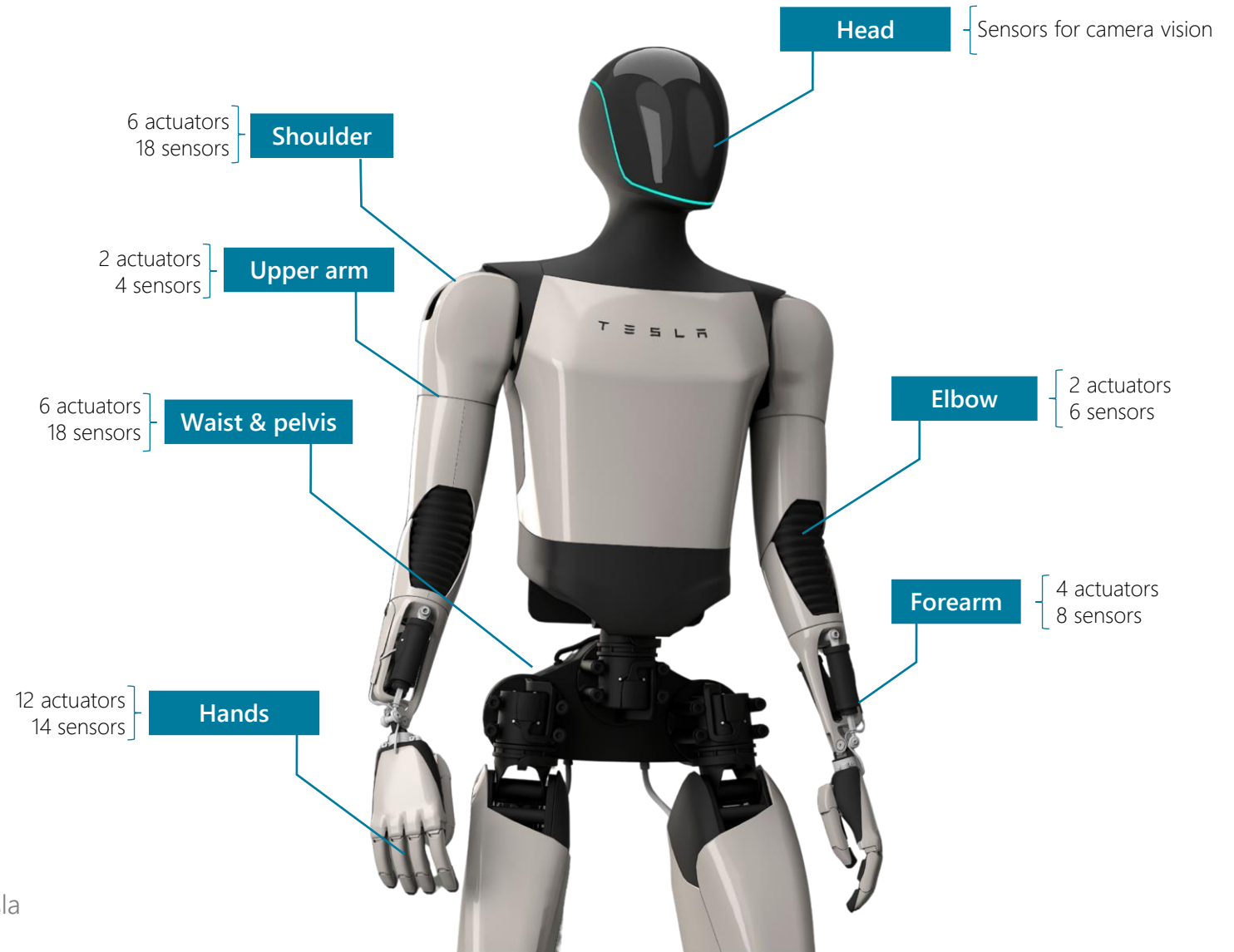
Artificial intelligence systems that have a physical presence and interact directly with the real world through sensors and actuators



AI robots – a high growth opportunity for X-FAB

Tesla Optimus Robot, Gen2

~ 100 sensors ~ 40 actuators



Key takeaways

- Sensing the real world is our core business
- We continue to drive innovation in sensing technologies
- We are at the cutting edge of enabling the development of emerging trends





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Thank you.



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