Leveraging our Leading Technology with Industry 4.0

Detlef Steck, President Industrial X-ray Systems, November 22, 2017
We make the invisible visible

Our x-ray and *computed tomography* solutions allow our *industrial customers* to optimize their *production processes*, to create *innovative offers* and ensure the *quality and safety* of their products in an *efficient* way.
Diversified in terms of industries and applications

Electronics

Automotive

Aerospace

Science & New Materials

Sources:
GTMA
Apple
Tesla
Yxlon
Electronics
Automotive
Aerospace

Picture sources: GE Aviation
Science & New Materials

e.g. Additive manufacturing of medical implants
Global reach: representatives in > 50 countries

More than 420 employees world-wide ensure we are close to our customers
Profitable business with dynamic growth

Sales 2016: 121 MCHF

Growth: 12% CAGR
Digitalization – a huge opportunity leveraging the three technologies of Comet Group

- Autonomous vehicles
- Internet of things
- Additive manufacturing
- Augmented reality
- Virtual reality
- Cloud computing
- Big data
- Artificial intelligence
Digitalization – a key driver of customer needs

- Low cost
- High speed
- 100% quality

Technologies:
- Autonomous vehicles
- Internet of things
- Additive manufacturing
- Augmented reality
- Virtual reality
- Cloud computing
- Big data
- Artificial intelligence
IXS well positioned to create additional customer value

Process control
Manufacturing yield
Connectivity

- Autonomous vehicles
- Internet of things
- Additive manufacturing
- Augmented reality
- Virtual reality
- Cloud computing
- Big data
- Artificial intelligence
Market volume expected to nearly double by 2021

Addressable market by
- Current products
- New Products
- New Applications

2016
- 655 Mio. EUR
- 83%
- 12%
- 5%

2021
- 1.270 Mio. EUR
- 56%
- 25%
- 19%
Strategy sharpened to seize these opportunities

We will

- enhance our **software knowledge**
- apply a **modular approach** to reduce complexity
- **partner** with end users, OEMs and system integrators
- **invest** in new technology, portfolio renewal, processes and developing our culture
- continue to **grow dynamically**, accepting lower profitability in the short term
Strategy with 7 workstreams to drive growth

A. Additional Growth
   - Metrology

B. Market Penetration
   - Complexity Management

C. Service 4.0
   - Operational Excellence

D. Business Development
   - Inline CT (X-ray 4.0)
   - Electronics 4.0

E. Operational Excellence
F. Great place to work
Metrology – from evaluating to measuring

- The invisible becomes measurable
- Multiple advantages over other methods
- Complex components like in additive manufacturing (bionic design)
- Highly precise reverse engineering
- Increases overall value of CT
Metrology – market reaction confirms growth potential

- Dedicated metrology systems launched at Control 2017
- Growing number of projects from 1.8% of total OI in 2016 to 8.7% in 2017
- Proven accuracy (4 µm, classified according to VDI/VDE 2630)
- Target markets; electronics, automotive, medtech, consumer goods, tool manufacturing, life science
- Partnership with Hexagon Manufacturing Intelligence: FF35 CT Metrology installed at Suzhou Demo Center, dedicated sales team established
- Interoperability with most relevant 3rd party metrology software solutions ensured
Inline CT – computed tomography moves from the lab to the production line

- Fast sensor
- 100% sensor
- Fully automated
- Real-time information
- Enables manufacturing process control
Inline CT – strong customer pull to produce quality rather than inspect quality

- Prototype under construction
- Evaluation of pilot projects with customers
- Building on our experience from inline solutions with ADR in tire and wheel
- Microvista SW acquisition accelerates market entry
Electronics 4.0 – enabling connectivity for Industry 4.0

- Communication between machines
- Independent from any software
- Bi-directional data exchange to control processes
Electronics 4.0 – first solutions successfully implemented

- Successful proof of concept with Smart Loop solution
- Participating in industry initiatives to define and implement standard protocols, e.g. Hermes, OML, V-One
- Hermes ready products Cougar EVO and Cheetah EVO launched at Productronica 2017
- Collaborating with leading equipment suppliers to create integrated solutions
- Pilot projects in test mode with leading EMS (Electronics Manufacturing Services) companies
Creating value in an Industry 4.0 environment

- Process optimization
- Data analysis
- Sensor
- Design verification
- CAD
Leveraging our Leading Technology with Industry 4.0

- Based on our leading technology we have a profitable business with a strong market position.
- Digitalization and its related trends create substantial growth opportunities.
- We have sharpened our strategy and invest in new products to strongly benefit from these trends.

IXS – the solution provider for the smart factory
Thank you for your attention.