



**COMET**GROUP

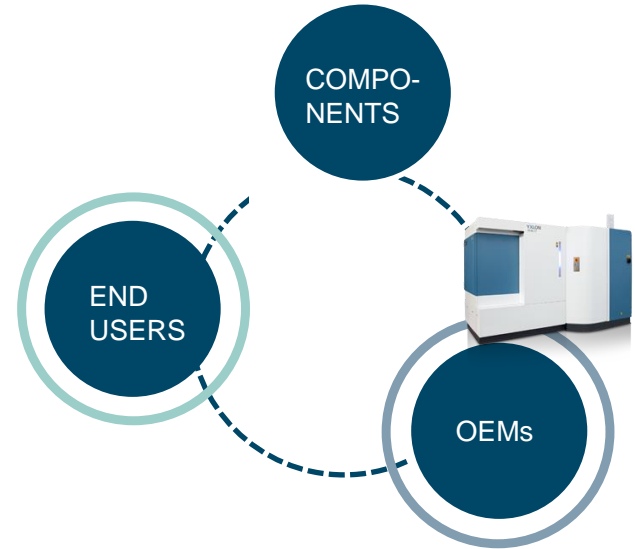
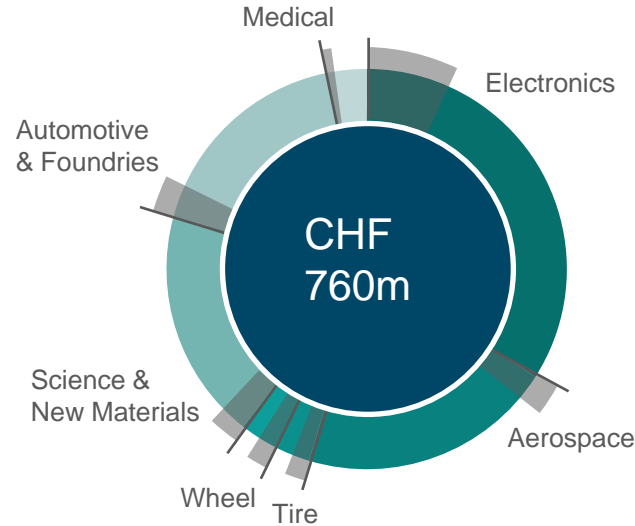
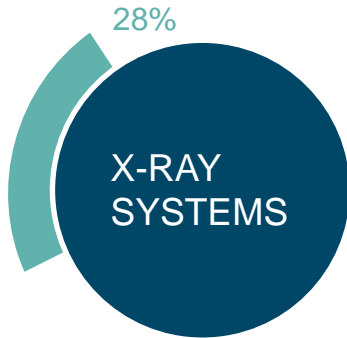
INVESTOR DAY 2018

# “Exciting business with attractive potential”

■ % Group sales *H1 2018*

■ Addressable market  
■ Current market share

■ IXS  
■ Customers





# THOMAS WENZEL

VICE PRESIDENT TECHNOLOGY, COMET GROUP

**X-RAY SOLUTIONS IN THE DIGITAL WORLD:  
EXPANDING PROSPECTS BY CHANGING  
THE PERCEPTION**



The future is driven by data and information

The future is driven by data and information

# Digitalization, Big Data and Data Science push for extension of competencies in software

**DATA IS THE NEW OIL**  
AND INTELLIGENT INFORMATION  
IS THE NEW CURRENCY



Extract



Refine



Monetize



**Hardware**

(Sensor)



**Software**

(Intelligent data)

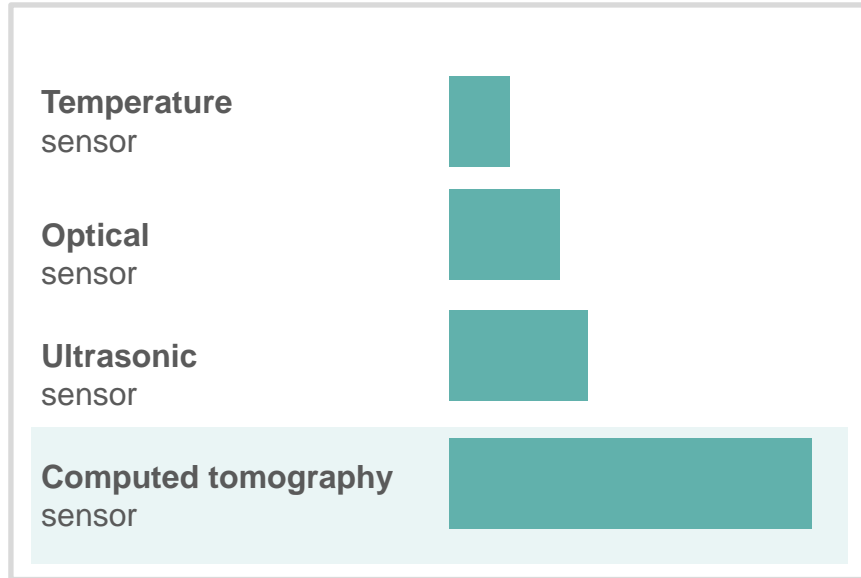
The future is driven by data and information

IXS has a strong asset: Information density of CT sensor is unrivalled

### Information density of different sensor types



Sensor

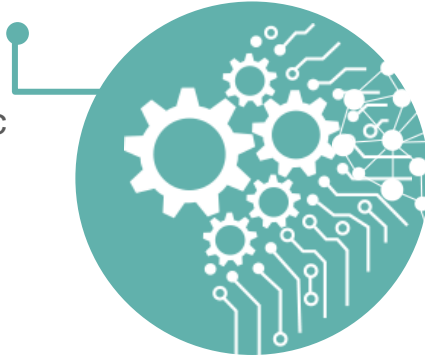


- High density of data combined with high reliability of extracted information is an enabling element for Big Data decision making using Machine Learning and AI
- CT delivers the largest number of high-quality features with outstanding significance

The future is driven by data and information

## Machine Learning challenges classic image processing approaches

Today solutions for defect recognition are based on classic image filtering algorithms



Machine & Deep Learning opens a door to different approaches and solutions for recognition and classification tasks

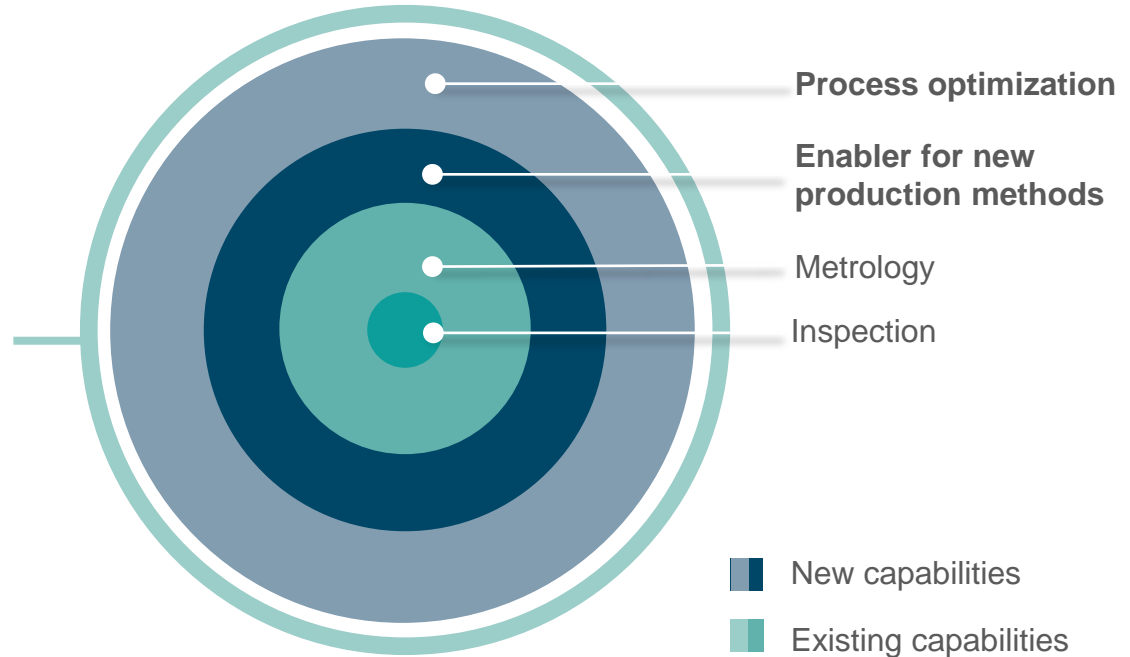


The way forward: The traditional way embraces the new way

X-ray solutions in the digital world: Expanding prospects by changing the perception

# Creating value from data analysis will allow IXS to expand its business in future

**IXS** | System Business

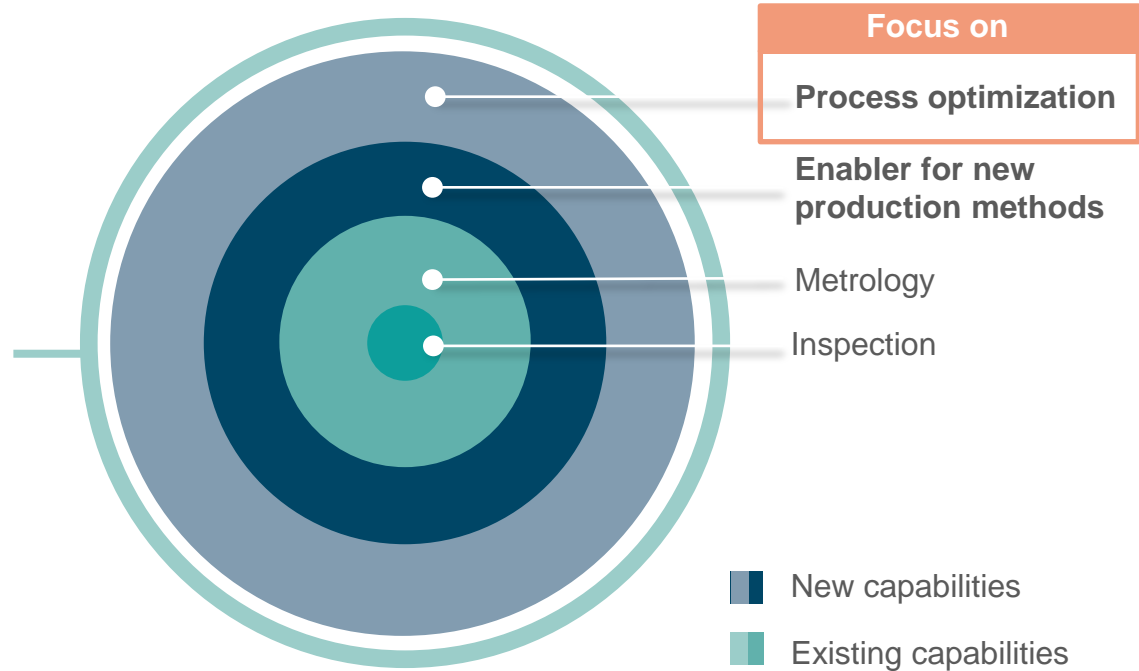




X-ray solutions in the digital world: Expanding prospects by changing the perception

# Creating value from data analysis will allow IXS to expand its business in future

IXS | System Business



## Process optimization and yield improvement – how can x-ray help?

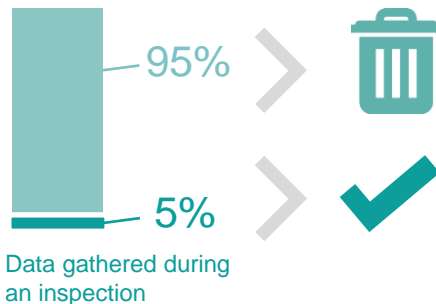
### Why are customers using x-ray in a production environment today?

To prevent faulty parts from hitting the street



### Current focus is on defects

Information about defects is less than **5%** of the total information contained in the acquired data



The remaining data contains thus far unused features and is **DELETED**

## Process optimization and yield improvement – how can x-ray help?

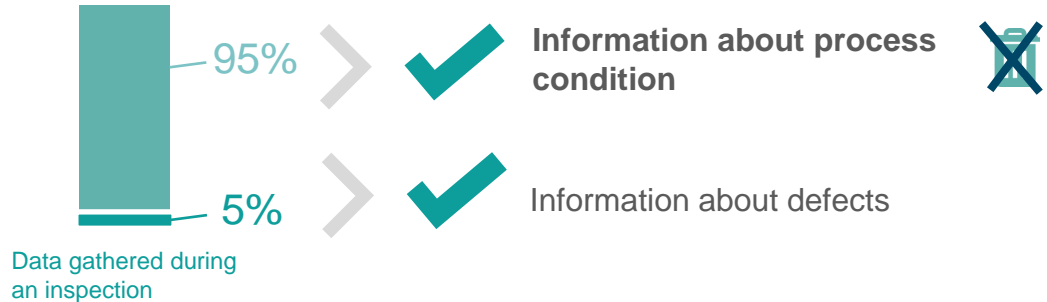
### Why should customers use x-ray in a production environment tomorrow?

To enable process optimization in addition to inspection of single parts



### Future focus on process optimization

Make use of the unused features generated by collected data to reveal the process condition



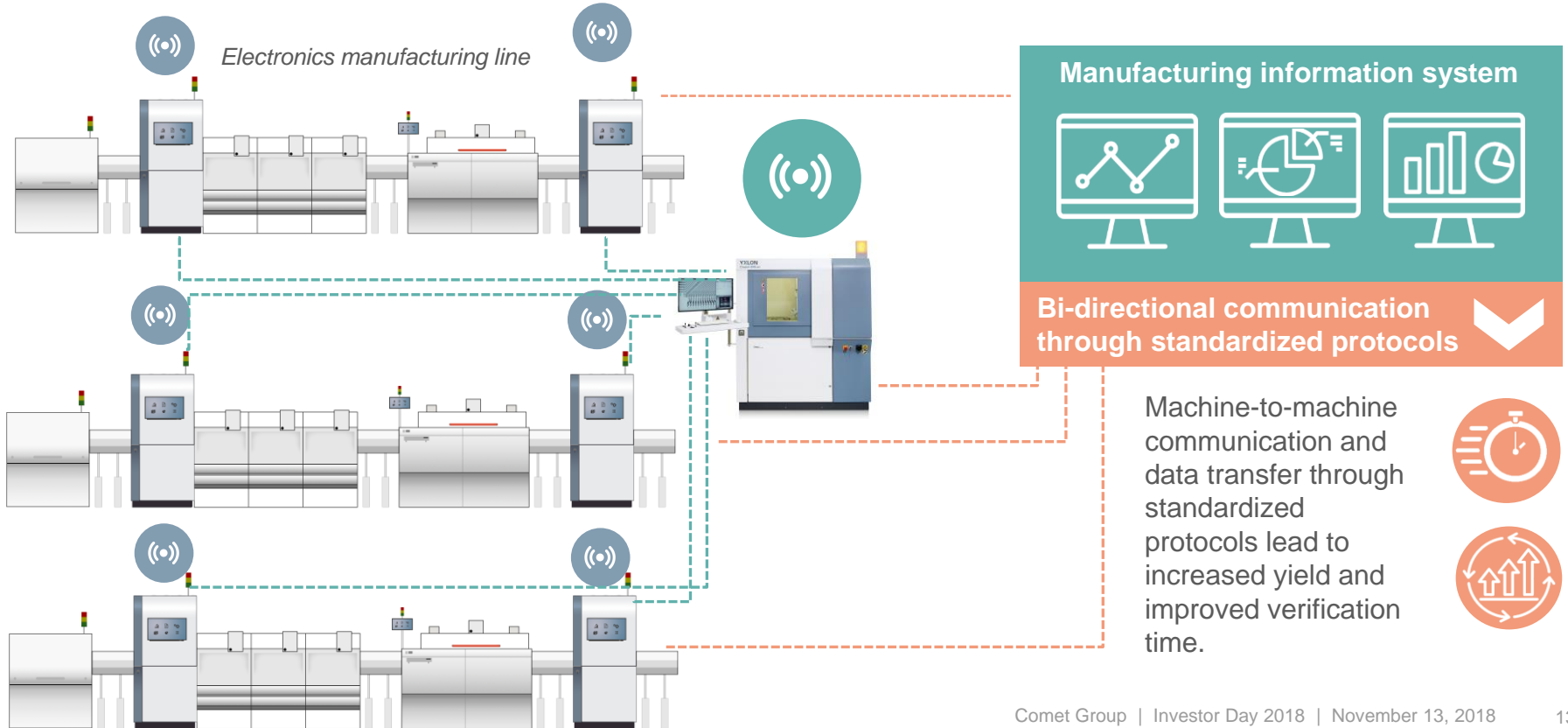
Optimizing customers' processes

## Focusing on information that drives the competitiveness of our customers



Optimizing customers' processes

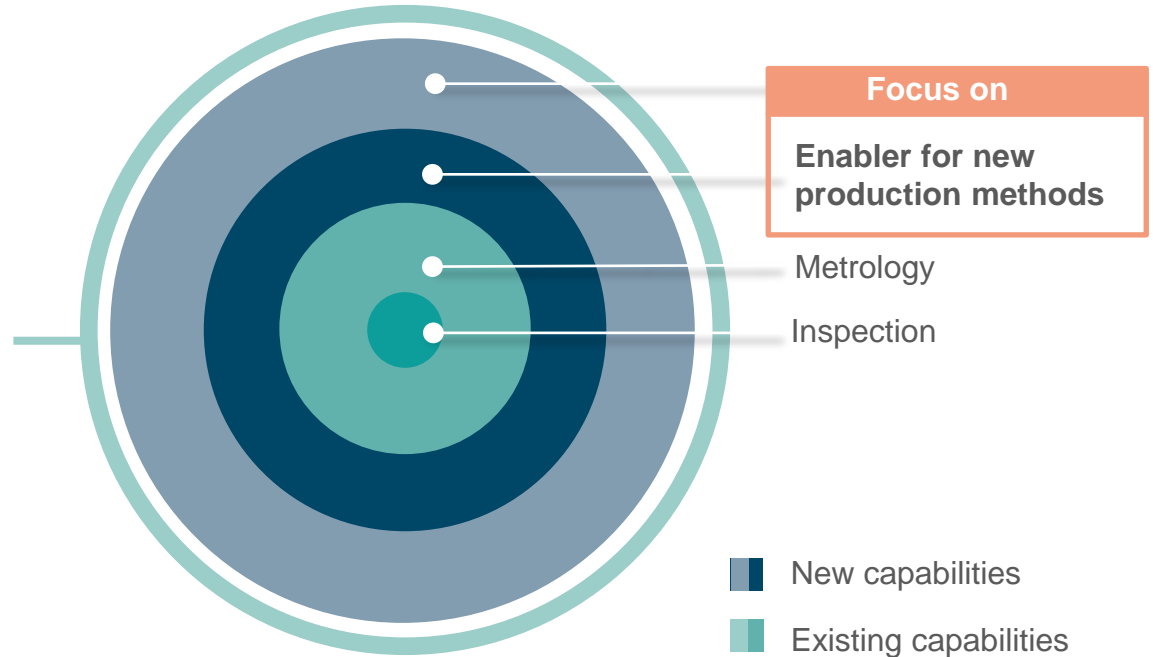
# Focusing on information transfer that drives the competitiveness of our customers



X-ray solutions in the digital world: Expanding prospects by changing the perception

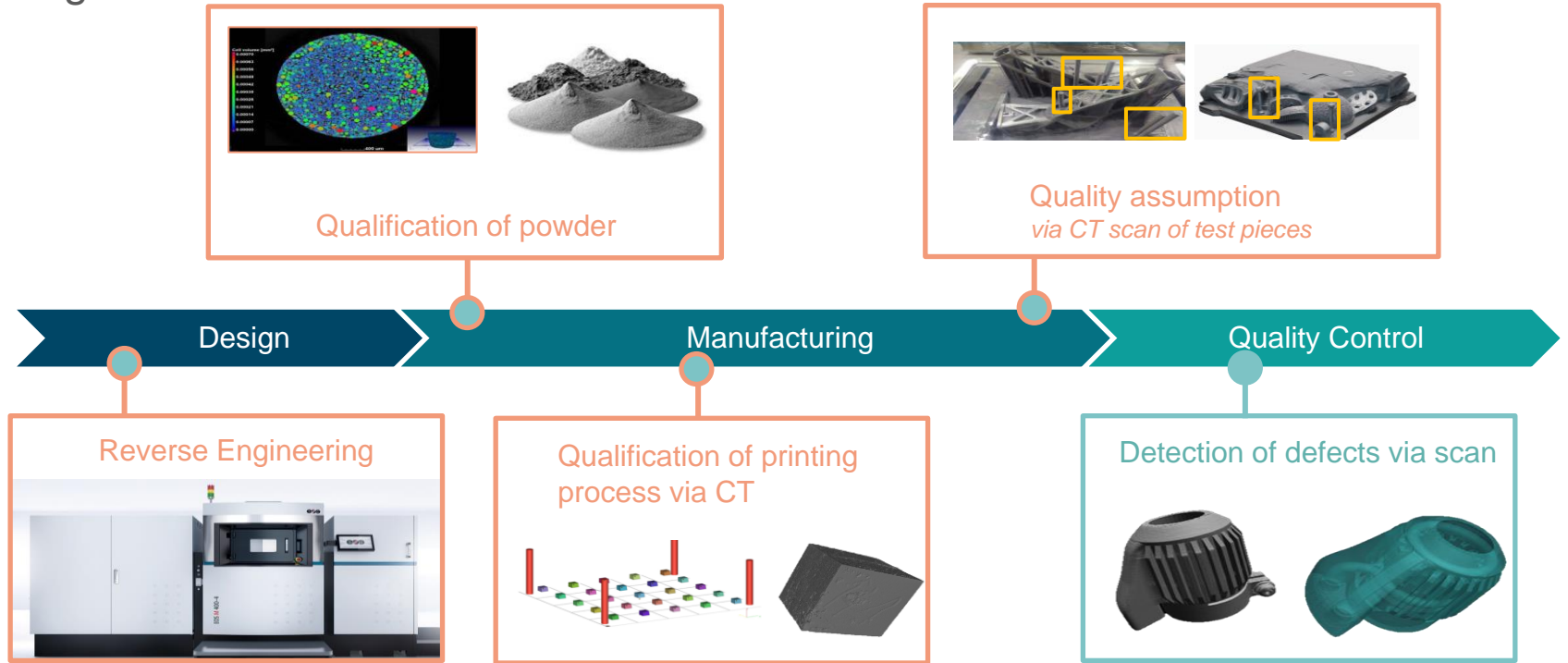
# Creating value from data analysis will allow IXS to expand its business in future

IXS | System Business

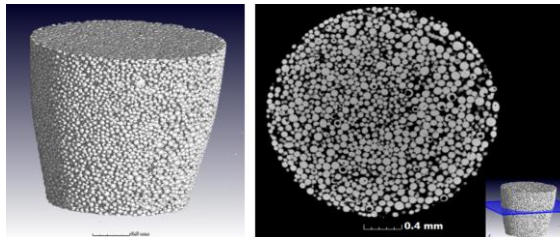
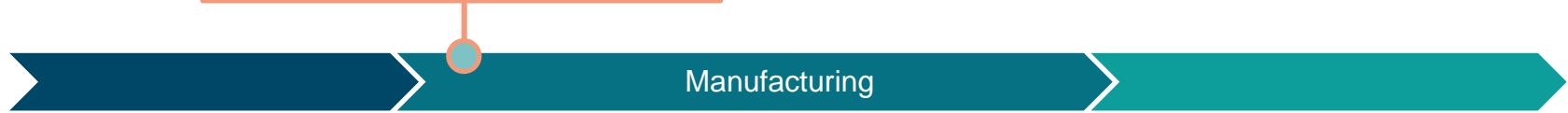


IXS: Enabler for new production methods

# Additive Manufacturing: Support along the process chain → CT enables 3D printing



## Focusing on information that drives the competitiveness of our customers



- Ti6Al4V powder
- Volume of 50,000 powder particles in 2mm x 2mm x 2mm
- Voxel resolution of CT scan: 2 $\mu$ m
- In homogeneous powder structure
- Powder with „porosities“
- Information on internal porosity (open or closed), particle morphology (volume, surface area, sphericity) and presence of impurities



Partnering to enable ourselves

## Partnering in technology and application: Essential to grow necessary competencies



# Key message

- 1 The best hardware combined with new technologies is the way forward
- 2 High density of information of IXS sensors can optimize customers' production
- 3 IXS enables new production methods
- 4 Expanding market thanks to close partnership with leading experts



Thank you for your interest