



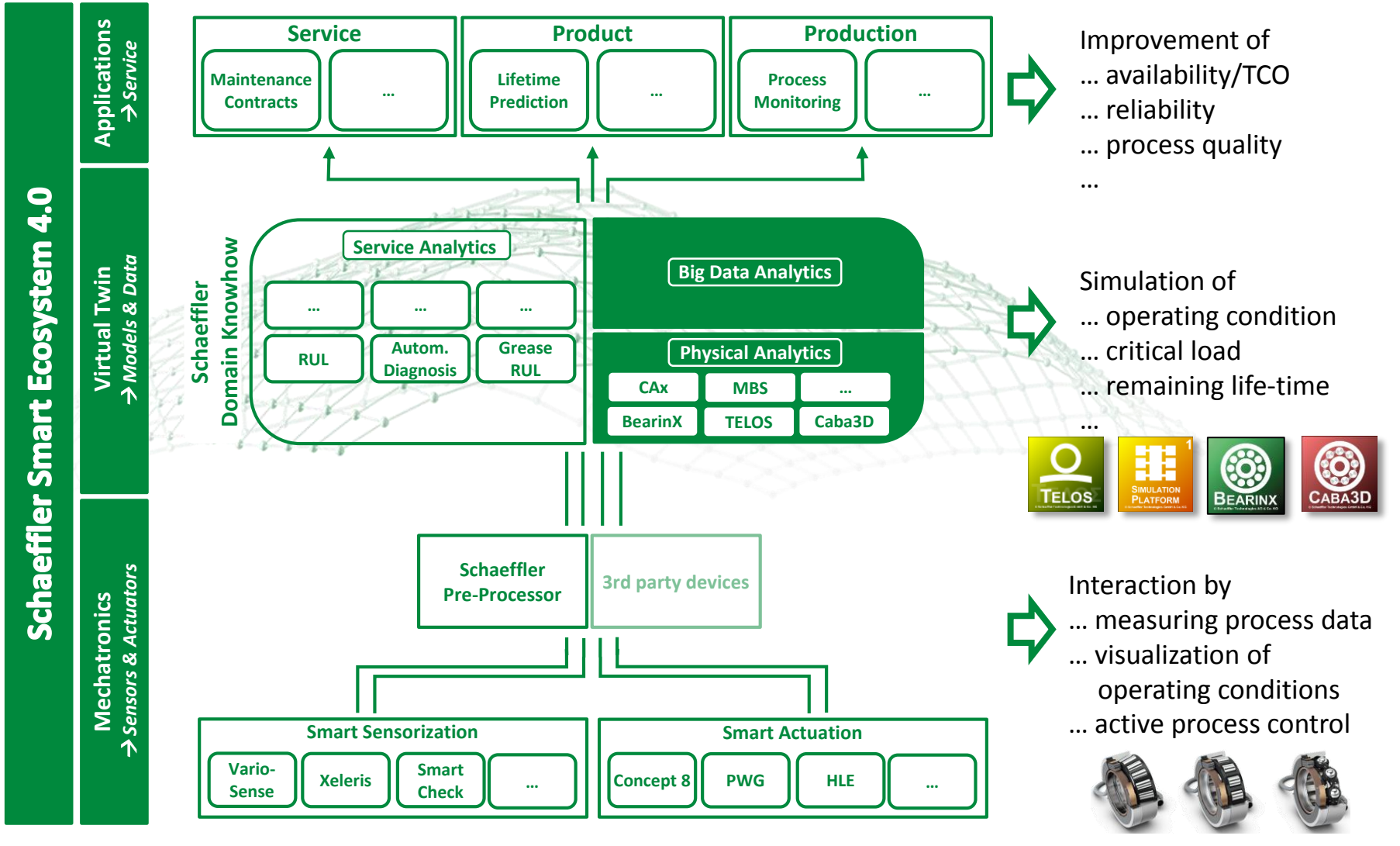
Digitalization @ Schaeffler

The Machine Tool 4.0

Sebastian Mergler

- 1 Digitalization@Schaeffler
- 2 The Machine Tool 4.0
- 3 Product ideas & added value

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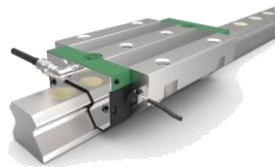


Lubricant sensor/actuators

Needed based lubrication

Force sensor

Calculation service
Process monitoring



Vibration sensor

Needed based lubrication



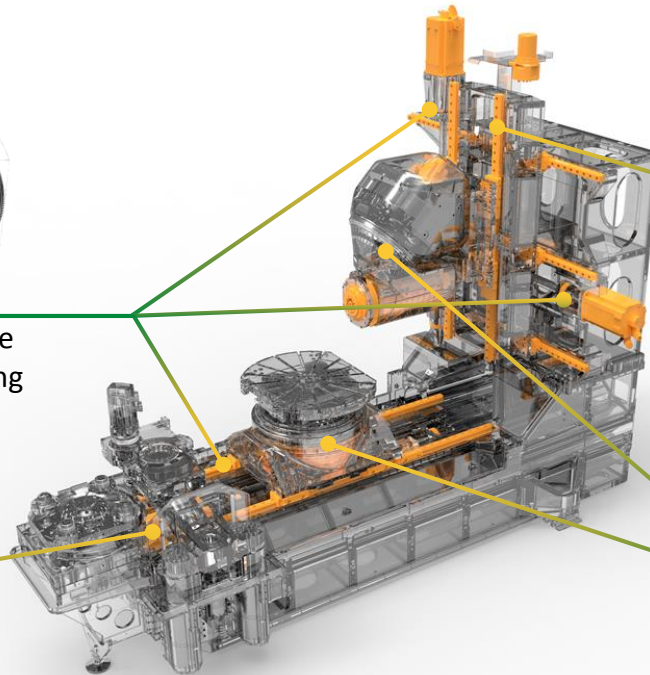
Pressure sensors

Load model
Displacement model



Vibration sensors

Condition monitoring
Crash detection



More than 60 additional sensors are integrated into the Machine Tool 4.0



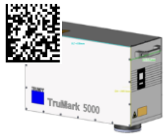
Field experience in a series production



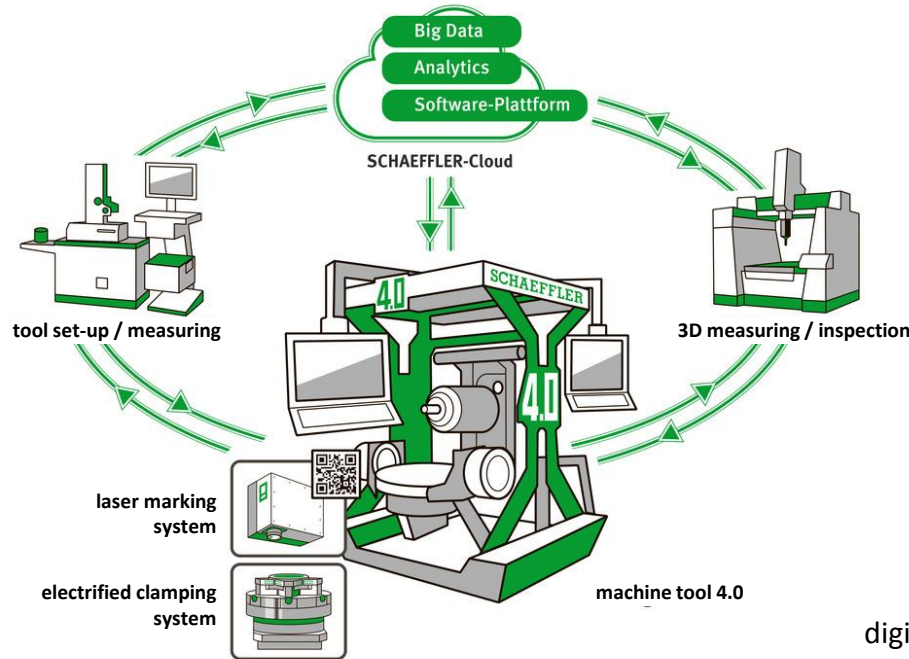
The Machine Tool 4.0 as a part of a digitalized production cell



tool set-up / measuring
digitalization of tools
tool management



laser marking system
individualization of every part
enabler for analytics



3D measuring / inspection
digitalization of dimensions
enabler for analytics



machine tool 4.0
digitalization of machining process
enabler for analytics

Digital connection of all physical cell objects and sensors enables big data and analytics

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Overall Equipment Effectiveness

OEE=



x



Productivity

x

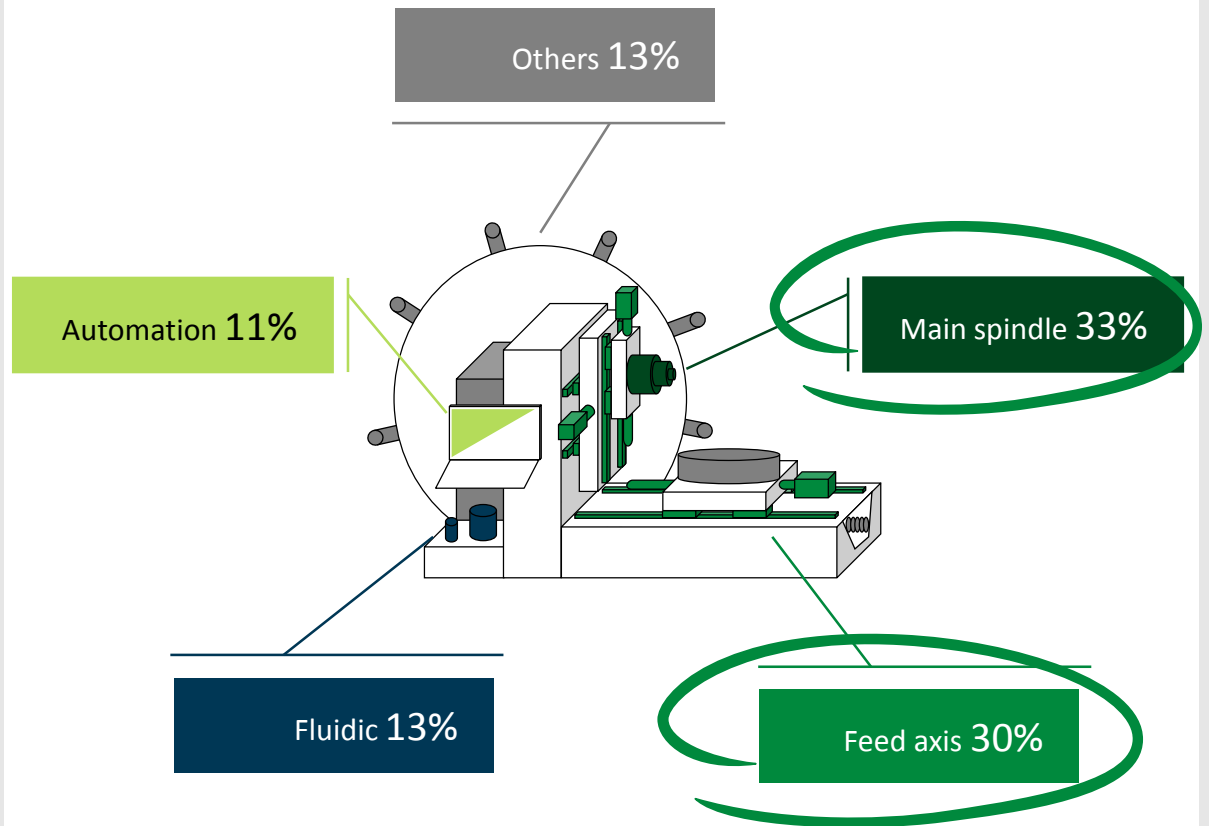


Quality

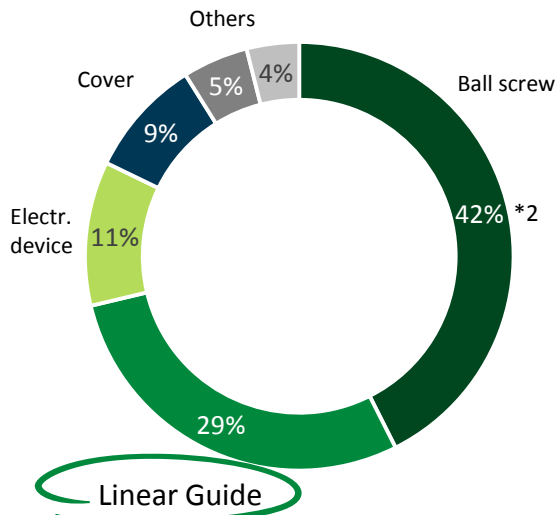
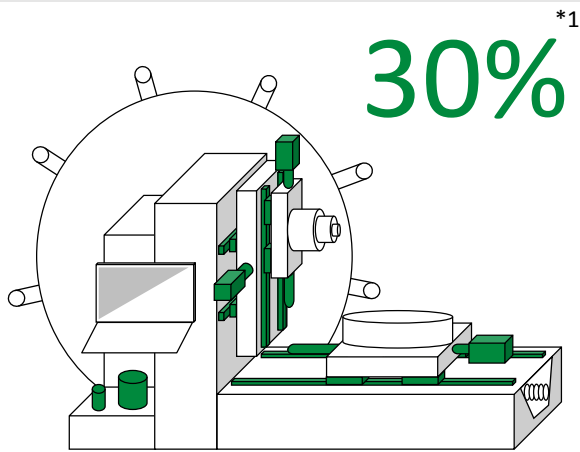
Availability losses: unplanned downtimes



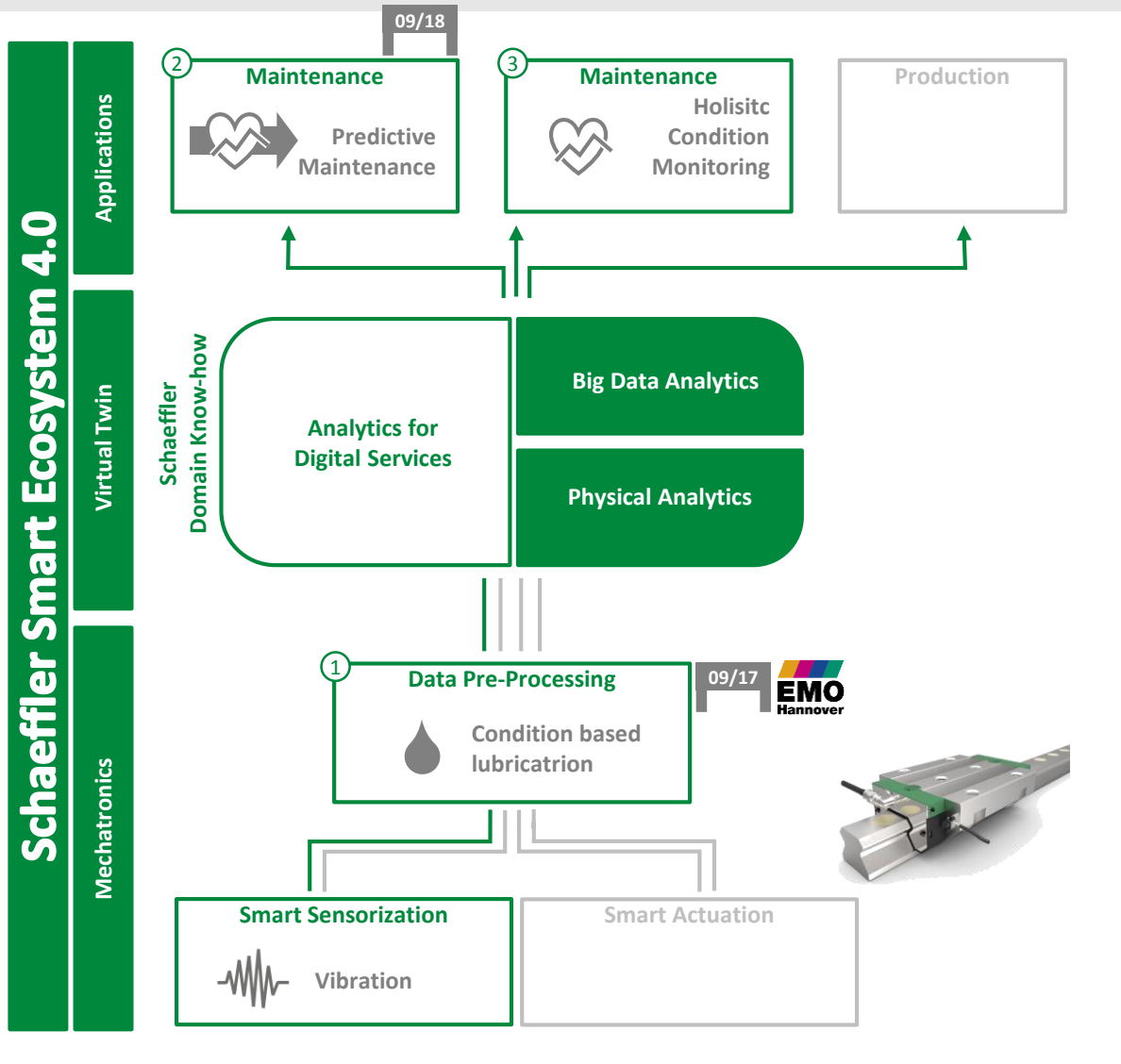
Availability

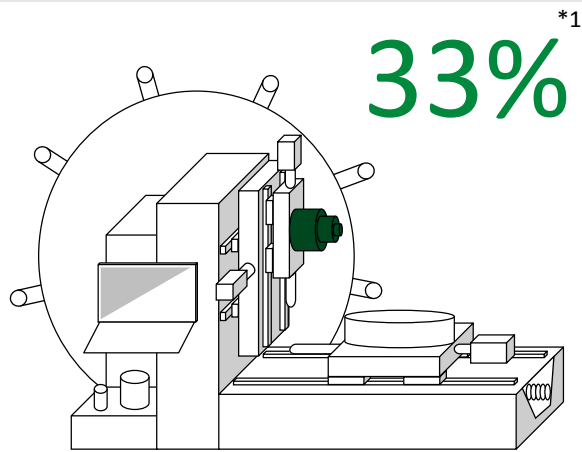


Quelle: IFW Hannover, WZL Aachen, GMN Paul Müller Industrie GmbH & Co.KG



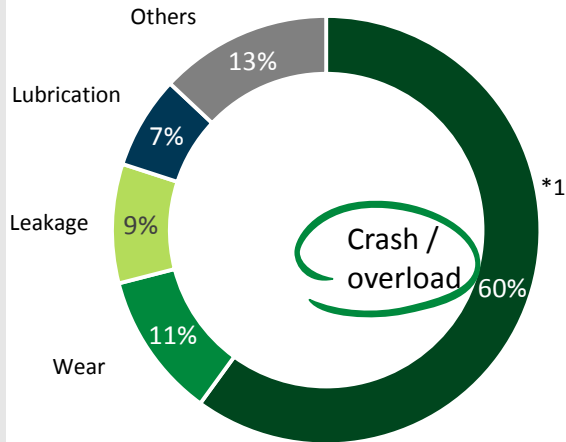
*1: Source: IFW Hannover, WZL Aachen, GMN Paul Müller Industrie GmbH & Co.KG
 *2: Source: ZUPRO & Schaeffler claims





33%

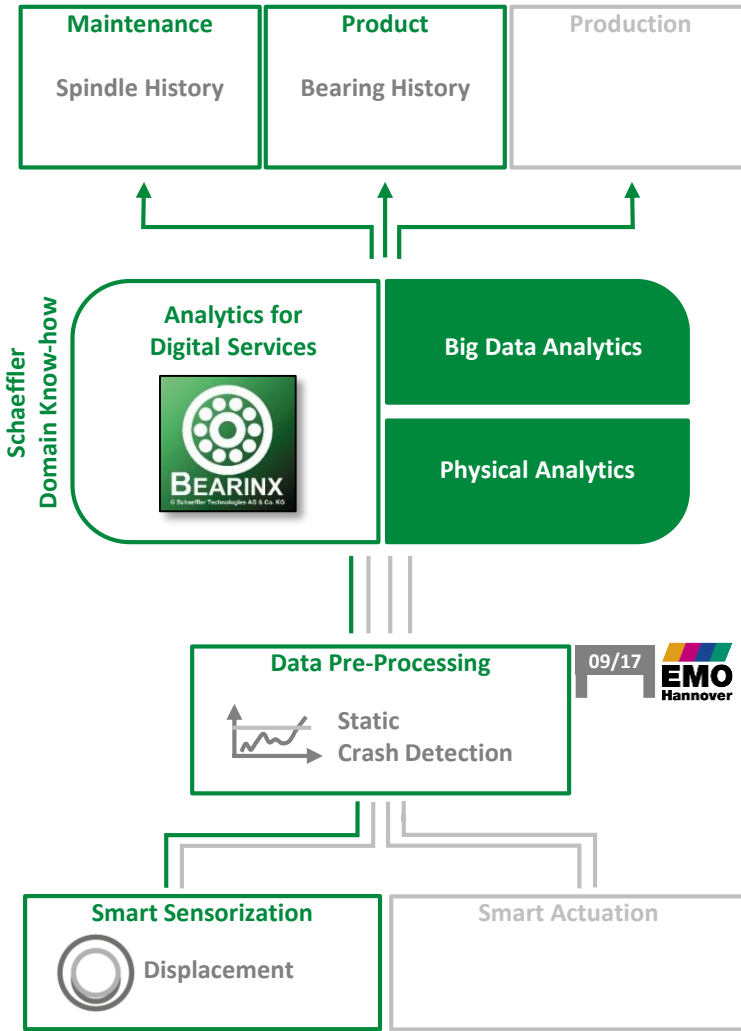
*1



*1

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Schaeffler Smart Ecosystem 4.0



Thank you.

Machine Tool 4.0
MDA-Forum

Hannover Messe Industrie
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Schaeffler Technologies AG & Co. KG

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