Industrial Edge

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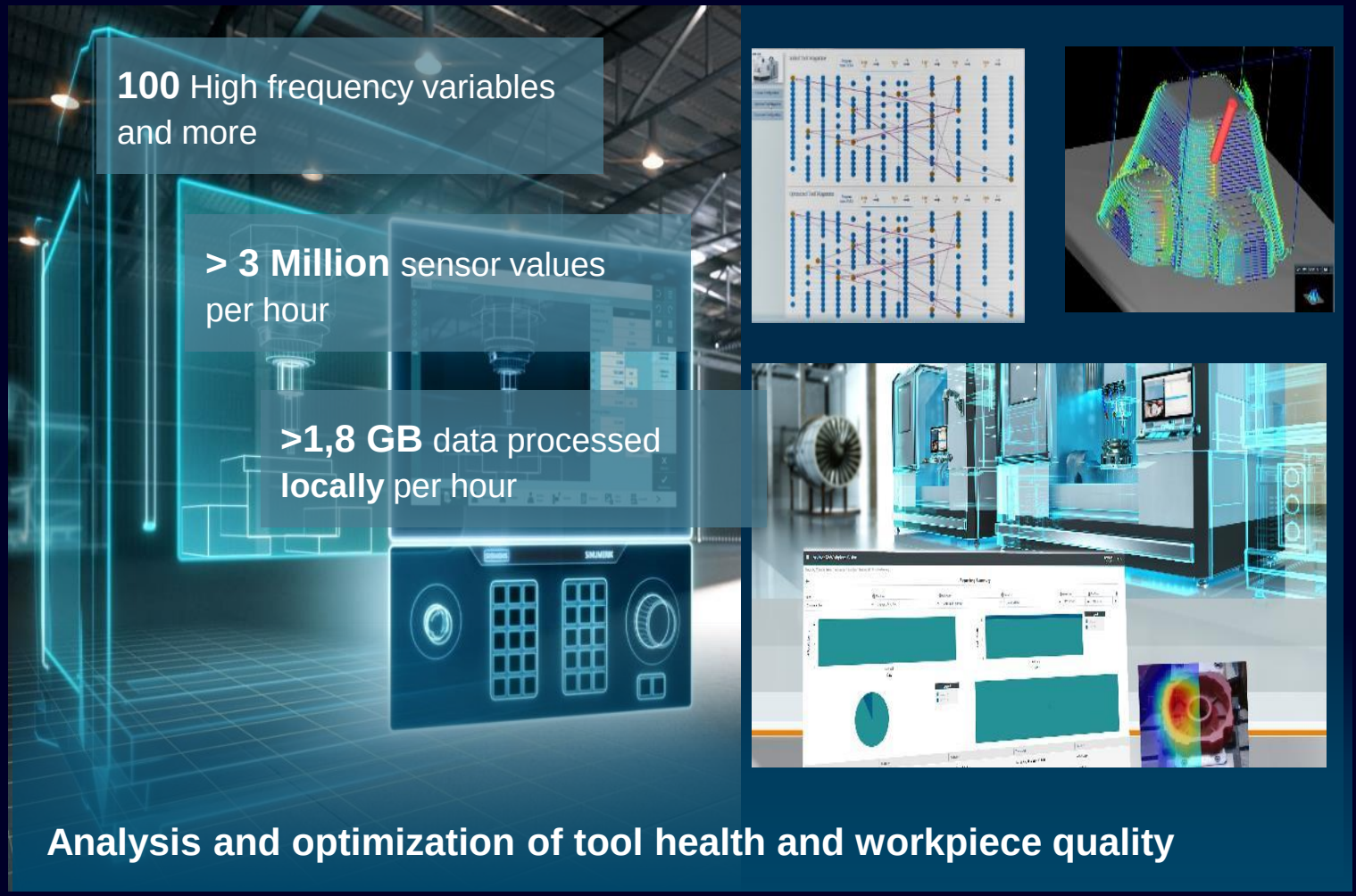
Powerful edge devices aggregate and process large amounts of data for increased efficiency and productivity.

Example: Machine Tool



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Industrial Edge: Bridging the Gap Between Field and Cloud Level

Centrally managed local compute power close to the data sources

Cloud

Management of edge and field devices, edge apps, app store

Machine learning, data consolidation, global analytics

MindSphere · amazon web services · Alibaba Cloud · Azure · IBM Cloud · Google Cloud

Edge

Local processing
of large amounts of data using complex algorithms

Extensible
functionality during entire lifetime of the system (apps)

Separation
of (critical and non-critical) apps via HW/SW isolation

Backend/cloud connectivity

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Flexible [real-time] data processing and storage for analytics, perception, anomaly detection, …

Field connectivity extensive options “brownfield connectivity”

Remotely managed
device configuration and updates via central services

Open interfaces
for partners and third-party app developers / providers

OT usability
ease-of-use for IT non-experts from the OT domain

Field

X-Ray

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Specifics of industrial-grade on-prem Edge for OT applications

- OT ready **stability, reliability, safety, security**
- Extensive connectivity options to physical processes and sensors (“**brownfield connectivity**”)
- **Real-time** support from network interface to operating system to middleware to container technology
- OT ready **device management** (e.g., SW update w/o process interruption) including on-premises management support; secure device authentication/ onboarding
- Option for **disconnected operation**; operation behind proxies, firewalls, network address translators; OT network integration
- **Plug-and-play user experience for OT** personnel; tools for easy portability and extension by non-experts
- Tooling for extensive, automated **testing of Apps**’ trustworthiness, security, functionality, stability
- Small footprint; **portable** to diverse, heterogeneous devices; virtualized use
- **Long-term maintenance** and support

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