5G.NRW
Competence Center

Industrial 5G applications

5G CMM – Breakout Session

08.10.2019 Hannover

At RWTH Aachen Campus renowned industry and research partners jointly drive co-creation in a modern and collaborative eco-system for innovation

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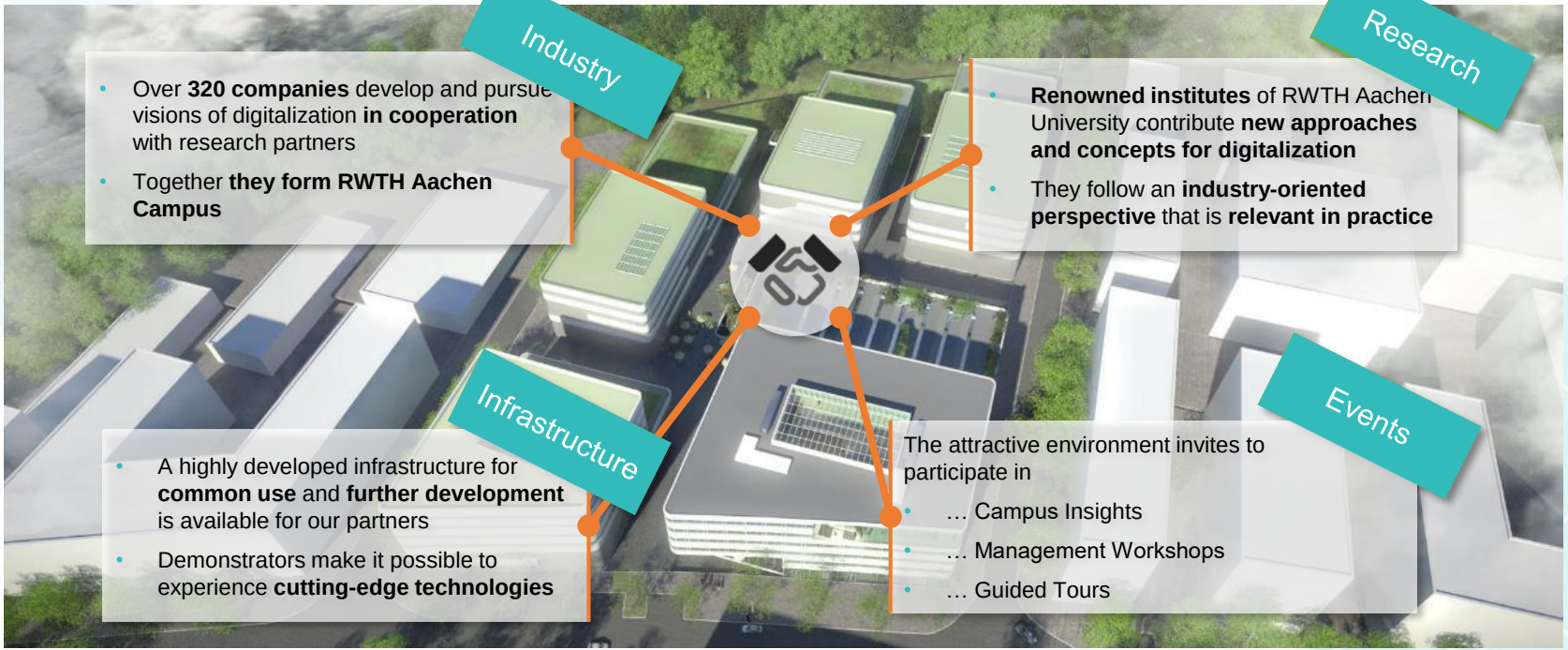

Cluster Leading Institute FIR e. V. at RWTH Aachen University

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Motto	Research – Innovation – Realisation.
Mission	Research of practice-relevant challenges and transfer of innovative solutions for the digital integration of the economy.

> 80
Industry consulting projects / year

> 25
Industry research projects / year

> 20
Publicly funded research projects / year

founded
1953

> 70
Employees

Qualification of
> 110
managers in eight RWTH certificate courses / year

88 %
loyal customers
(Net Promoter Score)

Managing Director
Prof. Dr. Volker Stich

Director
Prof. Dr. Günther Schuh

BERGISCHE UNIVERSITÄT WUPPERTAL

fir an der RWTH Aachen

tu technische universität dortmund

UNIVERSITÄT DUISBURG ESSEN
Offen im Denken

gefördert durch
Ministerium für Wirtschaft, Innovation, Digitalisierung und Energie des Landes Nordrhein-Westfalen

At the center of the cluster, the Demonstration Factory Aachen combines real production with innovative system solutions.

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Demonstration Factory Aachen (DFA)

- **Objective:** Generation, analysis and presentation of data from the real production plant for setting up and testing an industry 4.0 infrastructure
- **Task:** Production of saleable products using solutions and concepts from the innovation labs.

Approaches and solutions of the industry 4.0 are validated and demonstrated in the factory.

In the demonstration factory, 5G application cases are presented along the entire value chain of a manufacturing company.

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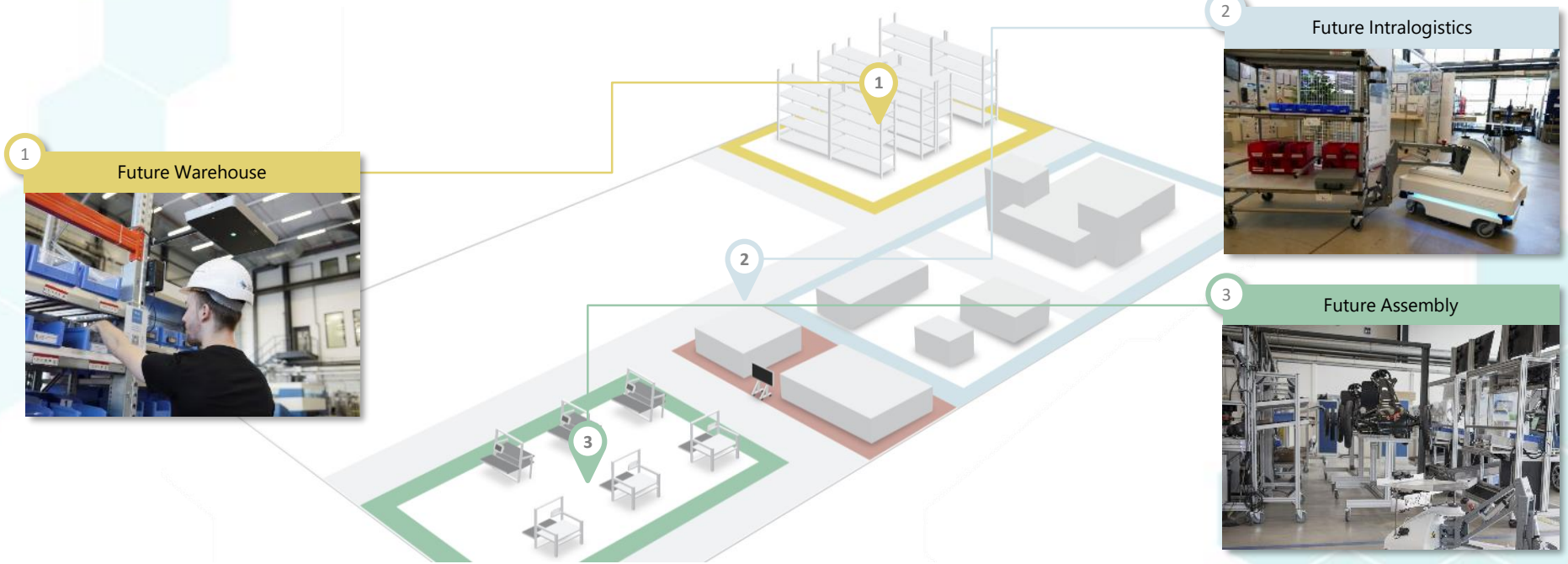

In addition to data acquisition and tracking in real time, the Future Warehouse enables simple retrofitting of technology upgrades.

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Current challenges

- The current condition in the warehouse is **unknown**.
- The extremely high number of components **cannot be measured** with today's technology.
- Stocktaking is **tedious** and **time-consuming**

Solutions with 5G

- Simple **retrofitting** of technology upgrades
- Location and condition of all components can be **tracked and retrieved** in **real time**
- Automatically **optimized** stocking
- Current **withdrawal** status and **consumption** status is known

The 5G Intralogistic is characterized by autonomous driving systems, which are controllable and reliable in real time due to low latencies and network slicing

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Current challenges

- Use of driverless transport systems
- Today's technologies are not reliable enough for guaranteed real-time control
- Condition of the product is unknown
- Possible damage to the product goes unnoticed

Solutions with 5G

- High number of driverless transport systems possible
- Real-time control through low latencies
- Reliability through Network Slicing
- Condition of the product known at any time and notification in case of problems

The 5G Assembly enables full wireless networking of assembly lines, allowing continuous and short-cycle optimization of the assembly process

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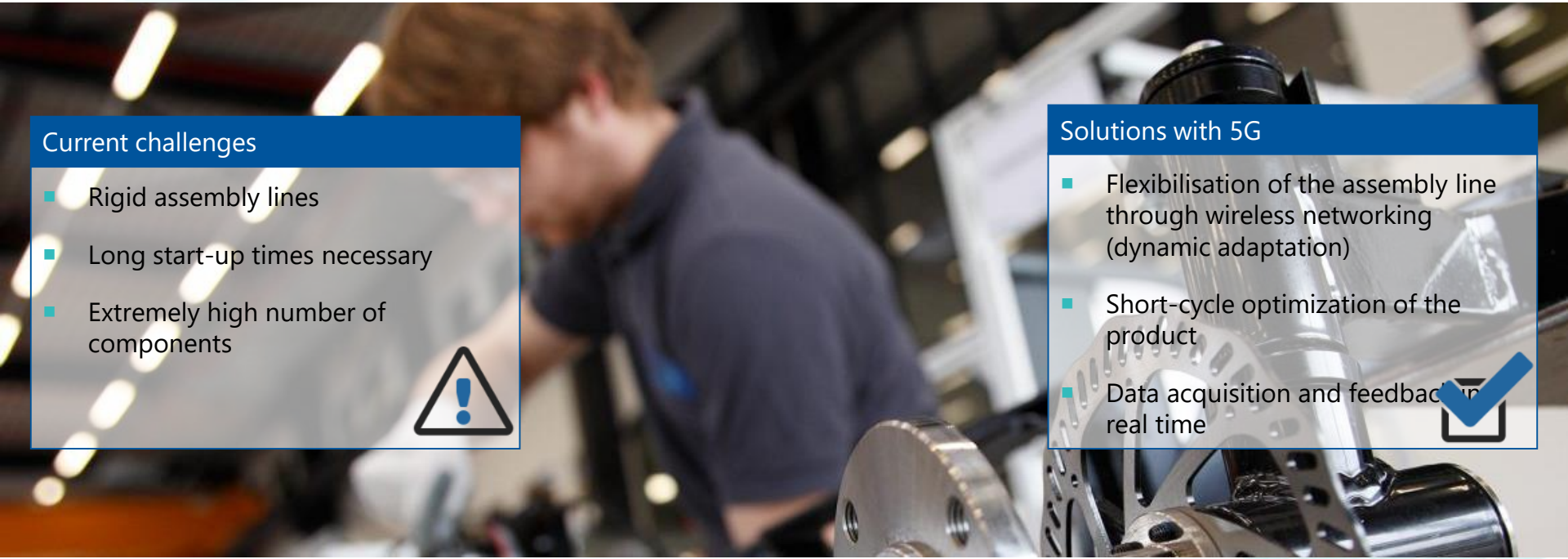

Current challenges

- Rigid assembly lines
- Long start-up times necessary
- Extremely high number of components

Solutions with 5G

- Flexibilisation of the assembly line through wireless networking (dynamic adaptation)
- Short-cycle optimization of the product
- Data acquisition and feedback in real time

Competent consulting and support from the initial question to the implementation of 5G applications

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5G Innovation Day
5G Factory Tour & Workshop

5G Potential Analysis
Onsite Visit

5G Roadmap
Action Guide & Network

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Thank you for your attention

We are looking forward to your questions!

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