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100% availability – through digitalized lifecycle services in the rail industry

Service Leaders Summit 2019 – May 16th, 2019

Johannes Emmelheinz | CEO Siemens Mobility Customer Services

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As our customers' trusted partner, we set the benchmark in terms of availability in the rail industry with our global service network

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Worldwide network of
>60
service sites

>30 projects with delivered availability

>99%

Present in
>40
countries with **88**
ongoing service projects

Proven
Performance

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The evolution of maintenance processes
New possibilities enhanced by digitalization

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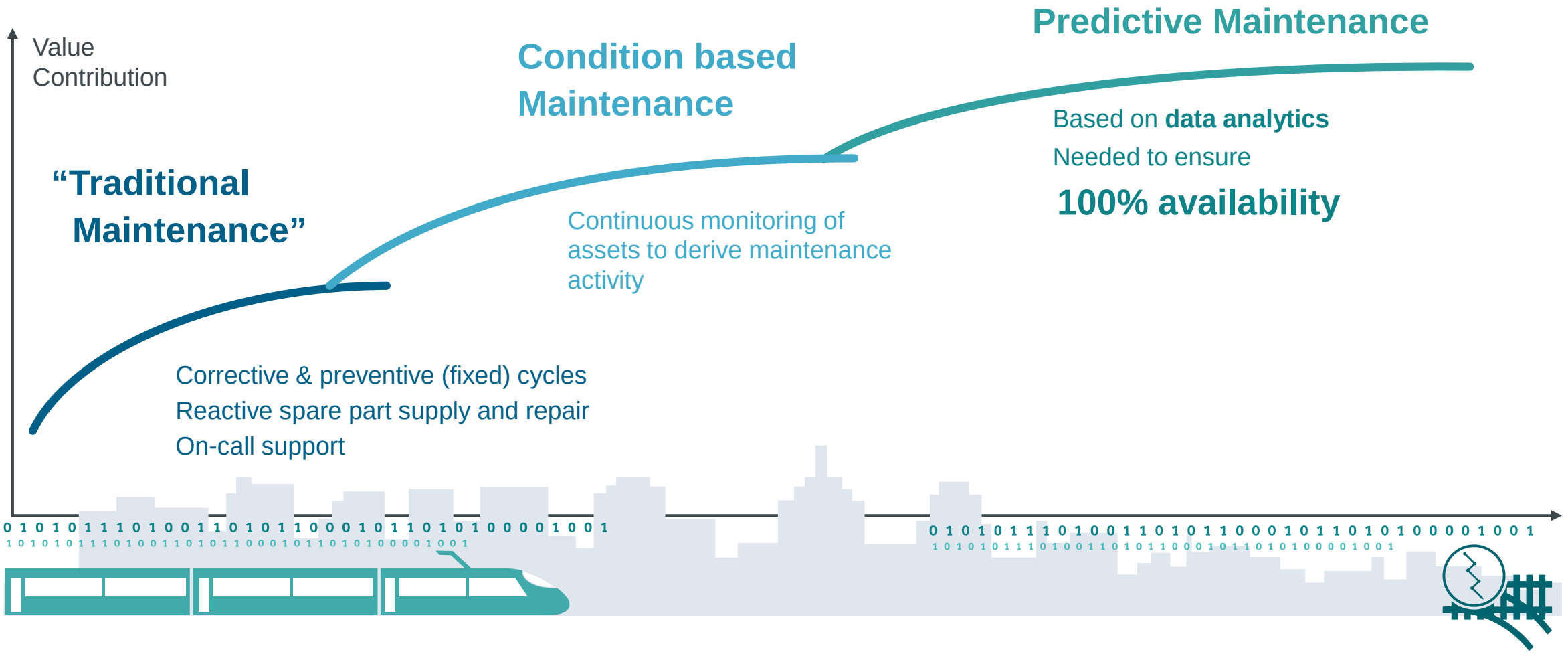

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The basis of our services business lays in 5 pillars with our people as the basis and foundation

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100% System Availability

Innovations

We set **benchmarks** and are recognized as **innovation leader**, e.g. by leveraging the latest IT-technology and new manufacturing methods.

Portfolio

We offer **cost-competitive** services and **create value** for our customers with adapted solutions based on the modularity of our service offerings.

Processes

We **improve our processes continuously** and **increase efficiency** by applying **best practices** across the entire business unit.

Serviceability

We constantly feed customer service requirements into the system design and leverage **lifecycle cost reductions** and **enhanced reliability** as competitive advantages.

Network

We **share our knowledge,** implement competence hubs and **leverage our regional setup** to ensure highest **customer proximity.**

We are there – The People of Siemens Mobility Services

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Data is available – the challenge is to turn it into value-add

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The data available

A fleet of 100 regional trains delivers every year:

- > 50 million diagnostic messages
- Up to 100 billion network data points
- 5 to 200 billion time series data points

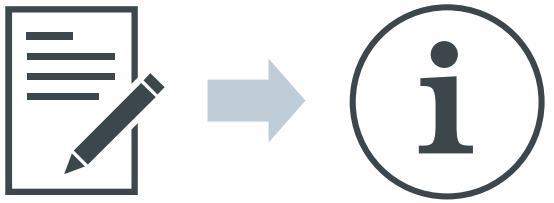
Additional data

- Work orders/spare-parts data
- Operations Control System data
- Advanced Vehicle Inspection data
- Geographical data
- Weather data
- ...

The challenge

Turn **data**

Into **information**



And drive appropriate **actions**

Ensure 100% availability

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The differentiating factor is the combination of data analytics and deep rail know how to guarantee highest availability

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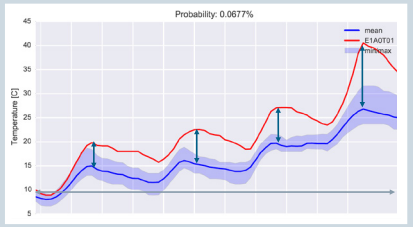
1 | Data collection

MindConnect Rail

2 | Advanced data analytics

Detection
and prediction of failures



Best in class data analytics and machine learning expertise

Data Services

3 | Validated action proposal

Analysis
by experts

Cross-project
experience

Deep domain, customer and engineering know how

Rail Support Center

4 | Action implementation

Action performed
by field-service experts

Optimization
of Spare-Parts usage

Customer

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Railigent® covers the entire digital value chain for 100% system availability

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Ecosystem
Open ecosystem integrating best-in-class rail applications

Smart security
Sustainable IT security for rail systems

Data analysis and rail expertise
Artificial intelligence combined with unique domain know-how

Maintenance and operations
Optimized service for 100% availability

Rolling stock and rail infrastructure
Trains and infrastructure securely connected across systems

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Railigent® has evolved into an open ecosystem with 15 partners – Many more wanting to join

Over 40 further partner candidates applied to be integrated

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Essential for meaningful digitalization is continuous process optimization

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Process optimization for a reduction of overall costs with Easy Spares Next Generation®

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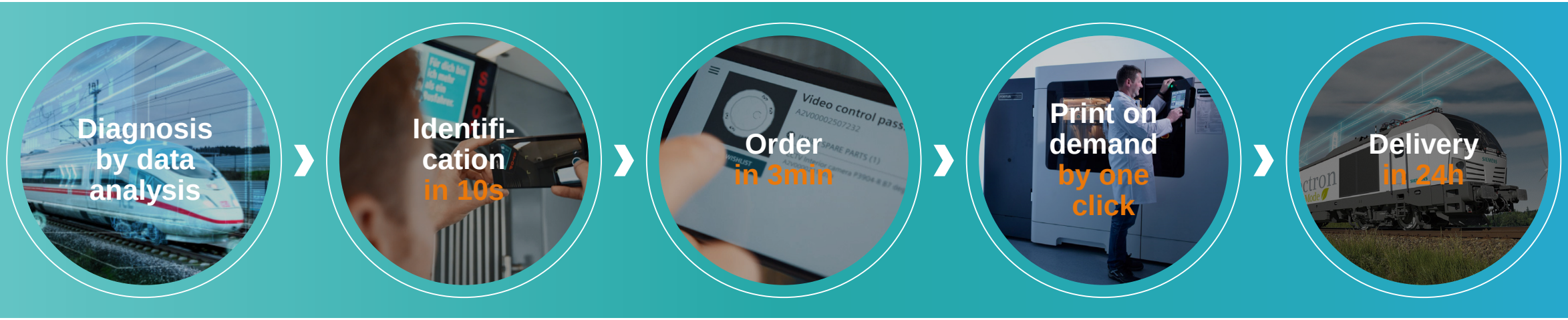
Seamless digital chain in material supply…

Vision is now reality!



… enabled by combining our service products

Easy Spares IDea®

Only take a photo for identification

Easy Spares®

All meaningful parts on stock

Easy Spares® Marketplace

powered by Rail Mall
Integration of complete sub-supplier catalogues in our marketplace

Easy Sparovation Part®

Optimized spare parts for a longer lifecycle

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Easy Spares IDea® –
Automatic, fast and reliable spare part identification

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Winner of Siemens
Innovation Award 2016

Identification **in 10s**

Key Facts

- Quick identification by simply taking a photo
- 90% recognition rate
- Photo matching with CAD data
- Systems: Avenio, Neoval, ICx, Mireo

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Easy Spares® Marketplace – powered by Rail Mall
First marketplace in rail industry

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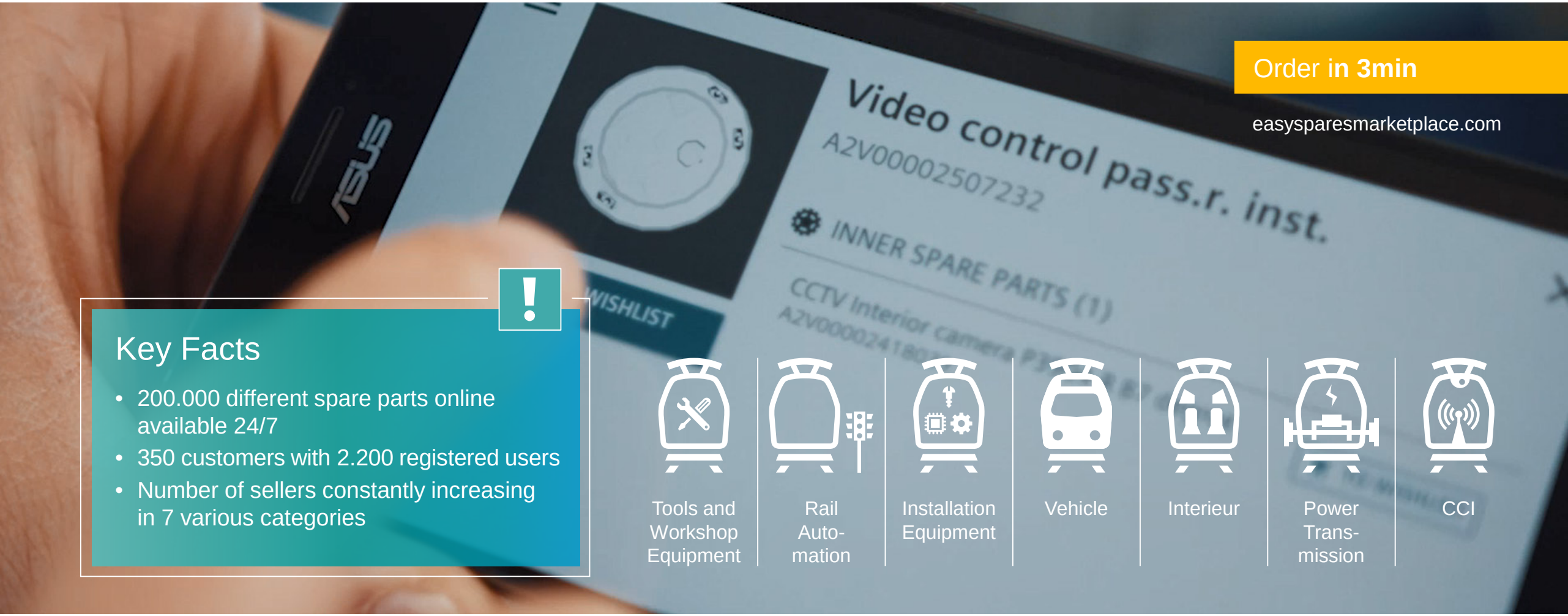

Order in **3min**

easysparesmarketplace.com

Key Facts

- 200.000 different spare parts online available 24/7
- 350 customers with 2.200 registered users
- Number of sellers constantly increasing in 7 various categories

Tools and Workshop Equipment | Rail Auto-mation | Installation Equipment | Vehicle | Interieur | Power Trans-mission | CCI

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Additive Manufacturing expertise combined with engineering & domain know-how for optimized spare parts for a longer lifecycle

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Key Facts

- 100 different customers order repeatedly
- > 7.000 printed parts since 2014
- > 800 parts available for print on demand in virtual stock
- 3D parts in series production enable design improvements for new vehicles
- Certification by TÜV Süd

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Today we guarantee asset availability – tomorrow we expand to operations optimization!

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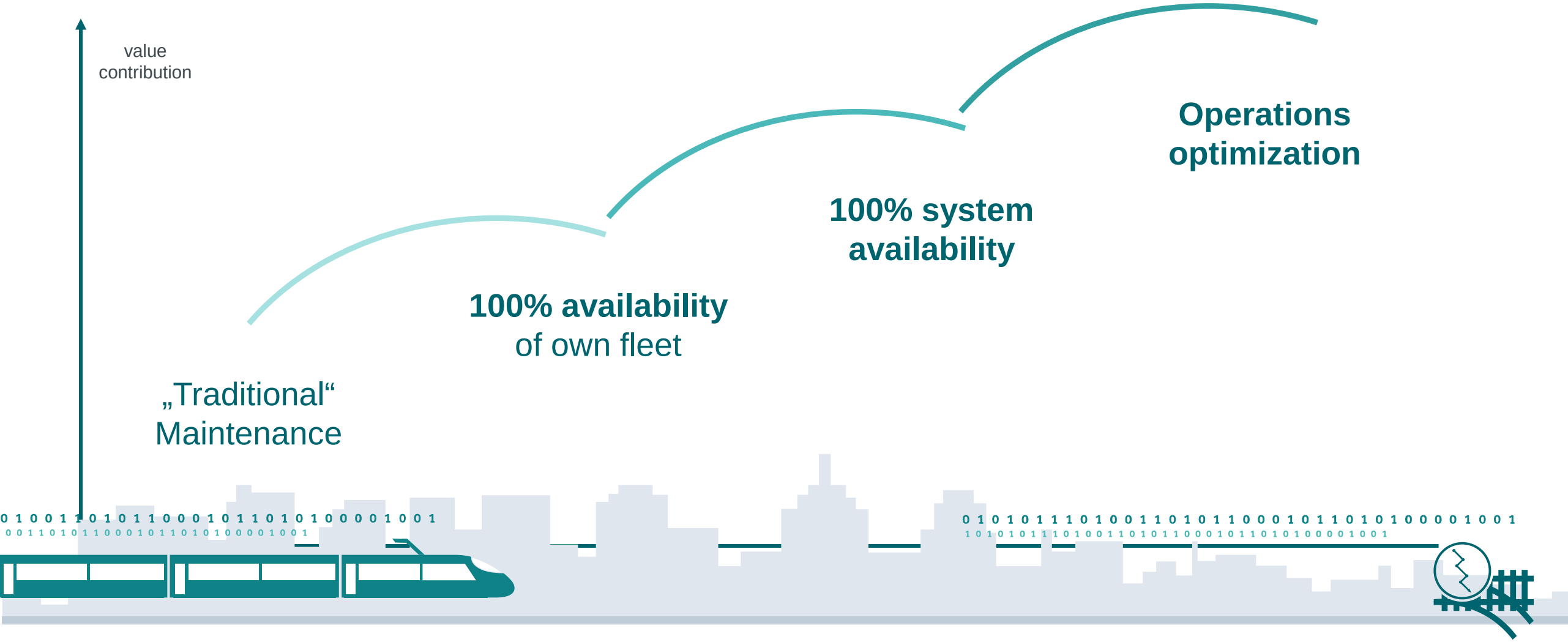

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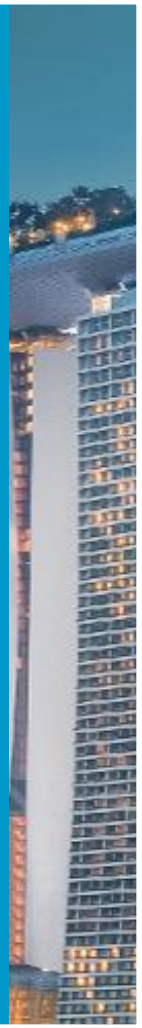
Asset Mgt. Platform Rail Singapore

To increase availability and optimize lifecycle costs for metros



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Thank you very much!

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