Insights on grid digitalization

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Enabling the future ecosystem

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Digital City

Electrification of Everything

Digital Customer



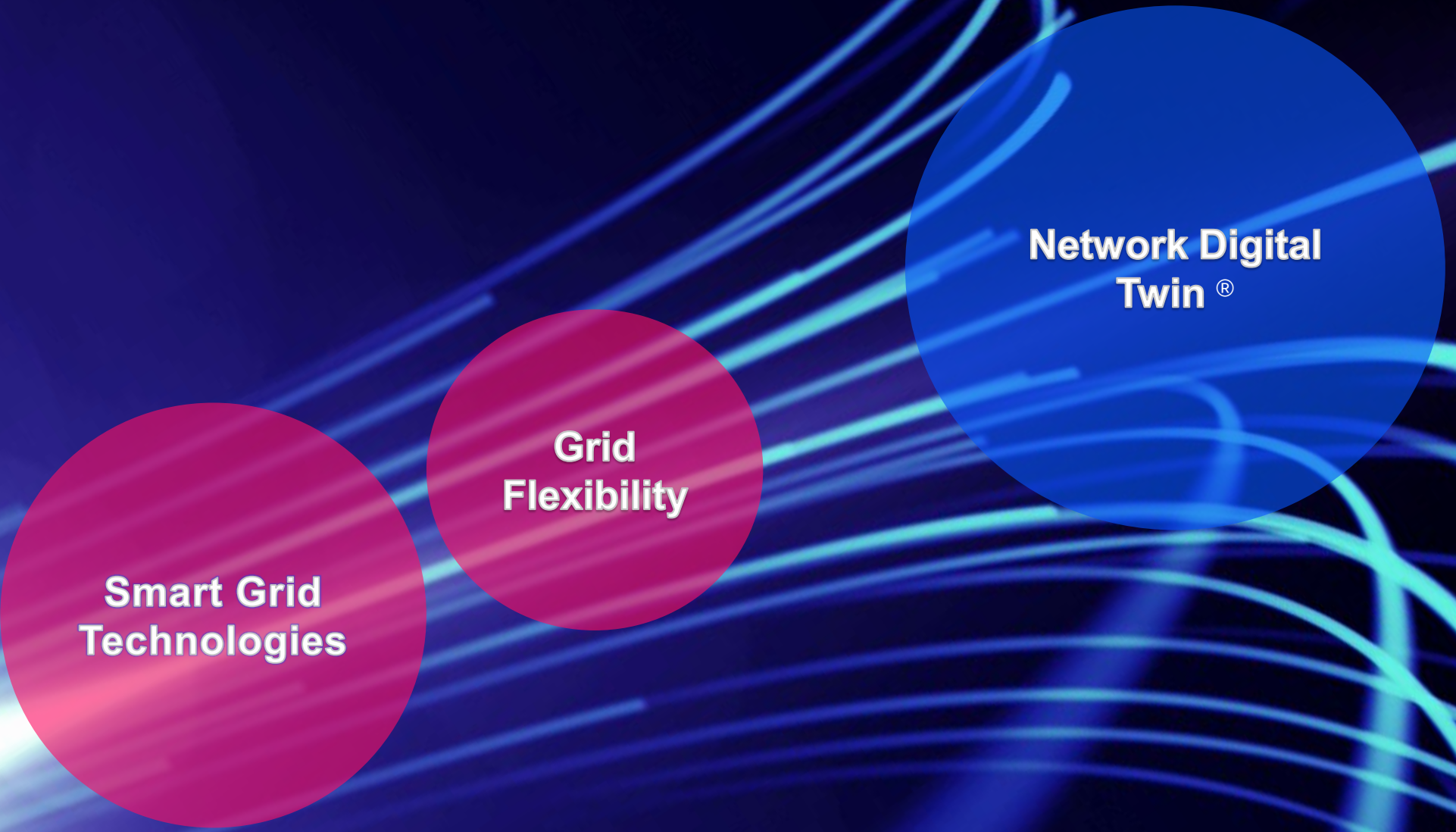
Digital Grid

Decentralized Generation



Digital Worker

Data-driven DSO technologies



Smart Grid Technologies

3rd generation of Smart Meter Technology
Meter as LV grid sensor

Smart MV/LV Grids
MV Real-time Self-healing
LV automation
IoT Sensors
Cybersecurity

Sustainable Microgrids

Workforce Management Solution and Drones

- 45 million smart meters in operation
- Real-time self-healing in less than 1 sec in Italy
- Microgrids in areas of DSO concession in South America
- Workforce Management and Drones

The Network Digital Twin ®



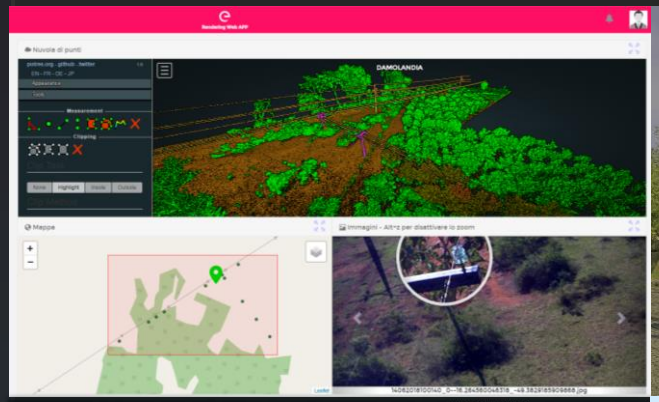
The Network Digital Twin®



Foundation layer

From 2D systems to 6D modeling of infrastructure, network, assets, surroundings

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- **Aerial and underground network digitization and modeling**
- **6D model of network assets and surroundings**
- **Virtual inspections, network planning, optimized operation and maintence**

The Network Digital Twin®



Dynamic device and sensor data

Dynamic data from smart network devices
IoT and sensors
End-to-end digital work flows











- MV/LV transformer monitoring in Spain
- IoT sensors in secondary substations in Italy, Spain and Brazil
- Integration of real-time data from smart meters and smart grid devices

The Network Digital Twin®



Artificial Intelligence

Automated network modeling
Predictive maintenance
Anomaly detection
Simulation
Generative design



- **Automatic point cloud classification.**
- **Image recognition**
- **Real-time Safety**
- **Automatic anomaly detection**
- **Predictive Maintenance**

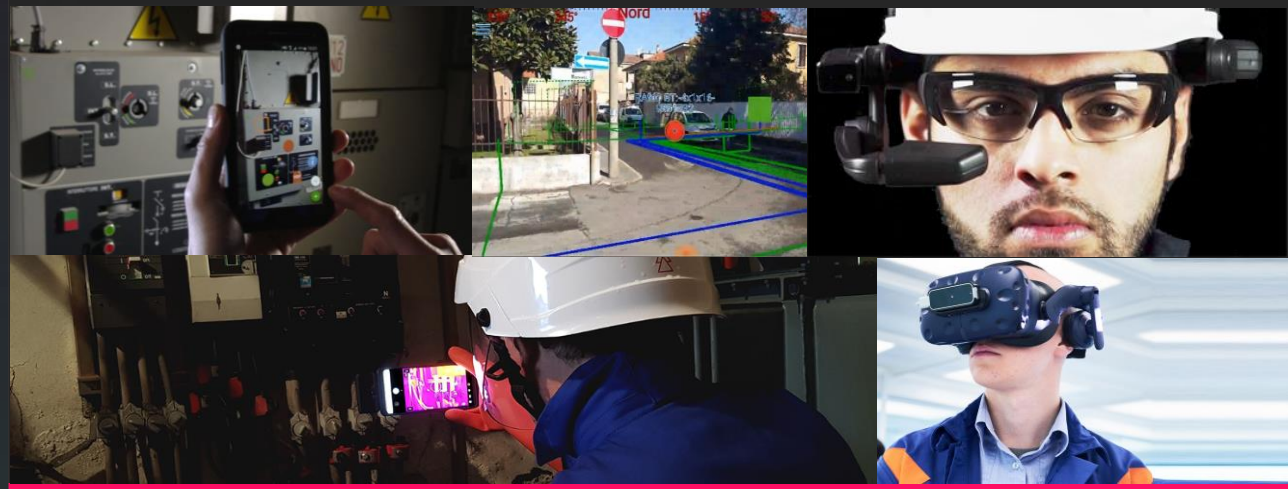
The Network Digital Twin®



Human interface

Remote assistance
Augmented and mixed reality
Wearables
Control room of the future
Novel Human Interaction and transformational organization

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- **Workforce Management 4.0 with AR**
- **VR for training**
- **Site Access Control**
- **Virtual support on field and remote assistance**

The Network Digital Twin ®

A global platform



Human interface

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Augmented and mixed reality
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Control room of the future
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Artificial Intelligence

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Foundation layer

From 2D systems to 6D modeling of infrastructure, network, assets, surroundings

Open data ecosystem

Creating shared value from data for local communities and stakeholders



Local Institutions

Utility companies

Big Data

API Economy

Customers

Tech Companies

Analytics based resource planning

AI-based Advanced Forecasting

Start Ups and Universities

New Business

Thank you

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