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Conferência APREN

25 de Outubro 2017

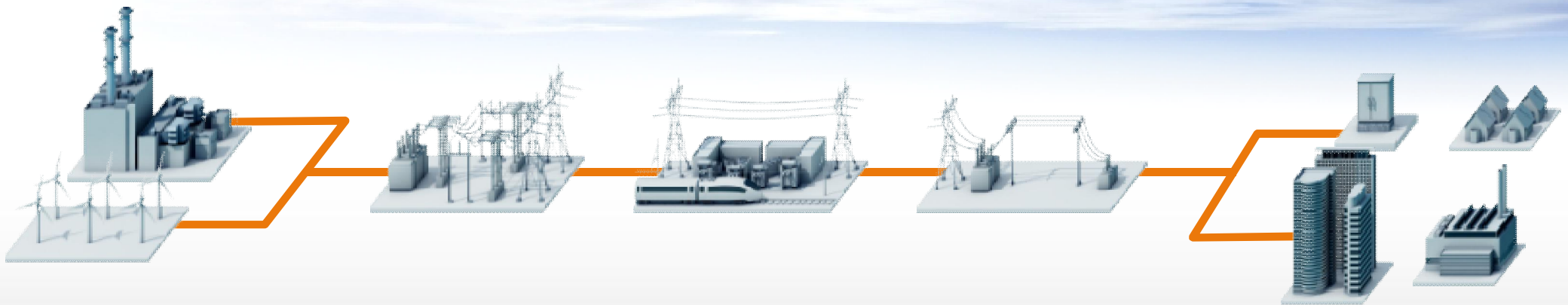
Descarbonização, Descentralização, Digitalização
Um novo mercado energético

Pedro Pires de Miranda

CEO Siemens Portugal

From centralized, unidirectional grid ...

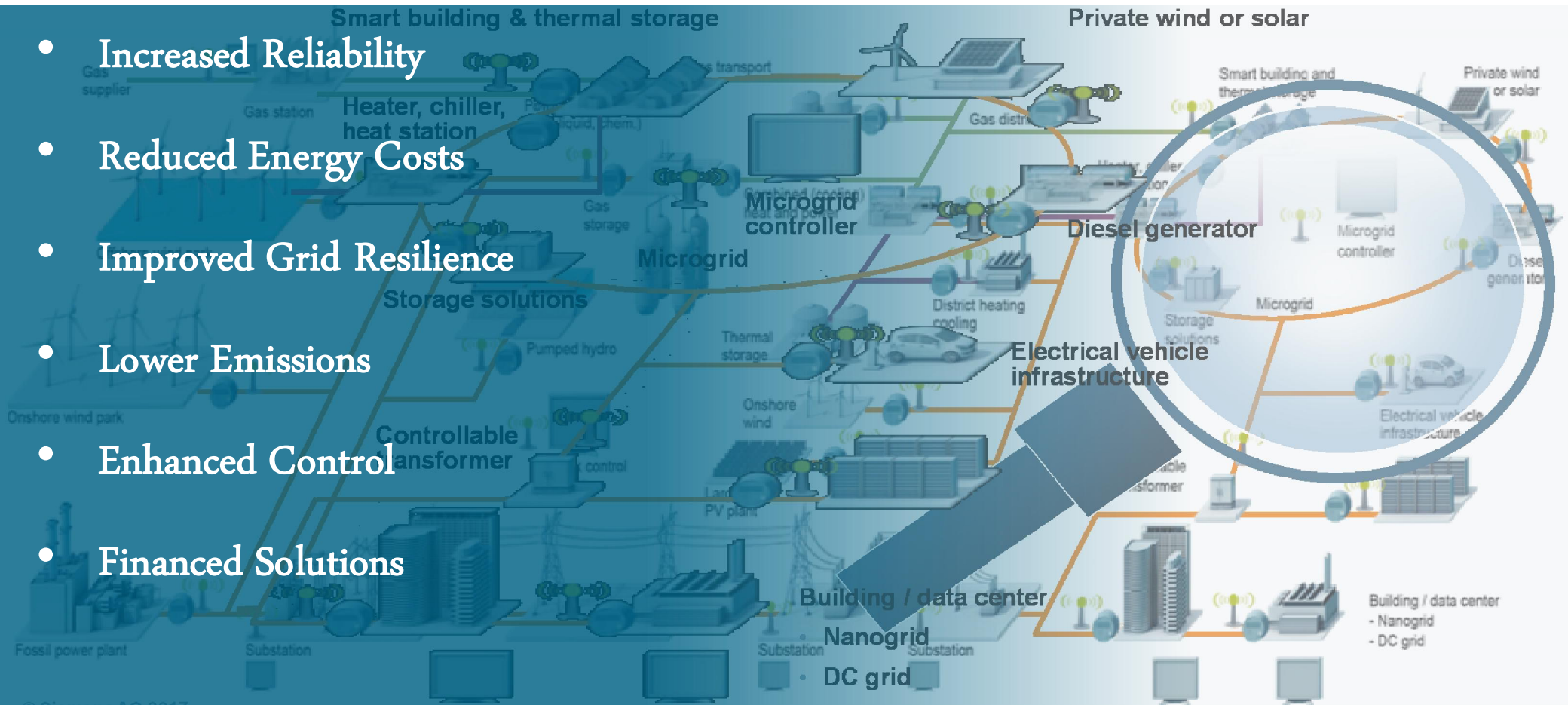
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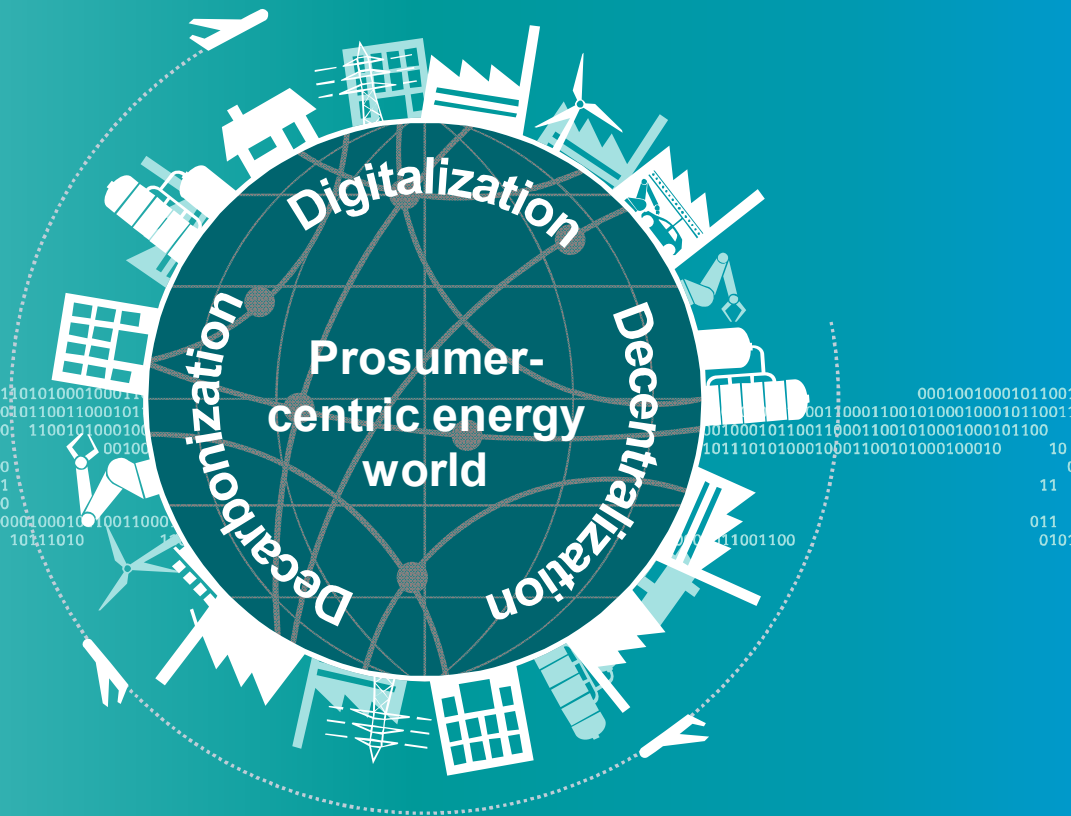
... to distributed energy and bidirectional energy balancing

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- Increased Reliability
- Reduced Energy Costs
- Improved Grid Resilience
- Lower Emissions
- Enhanced Control
- Financed Solutions



Major factors driving the revolution of energy systems...



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Decarbonization

“All electric world” - Fluctuating infeed – e-Mobility



Power production from renewables
Increases by over 300% between 2010 and 2030
Share of renewables goes up to 40% in 2030

Decentralization

Distributed generation – Microgrids – Energy autonomy



New installations distributed power generation
Increases by over 150% between 2010 and 2030
Share of distributed goes up to 67% in 2030

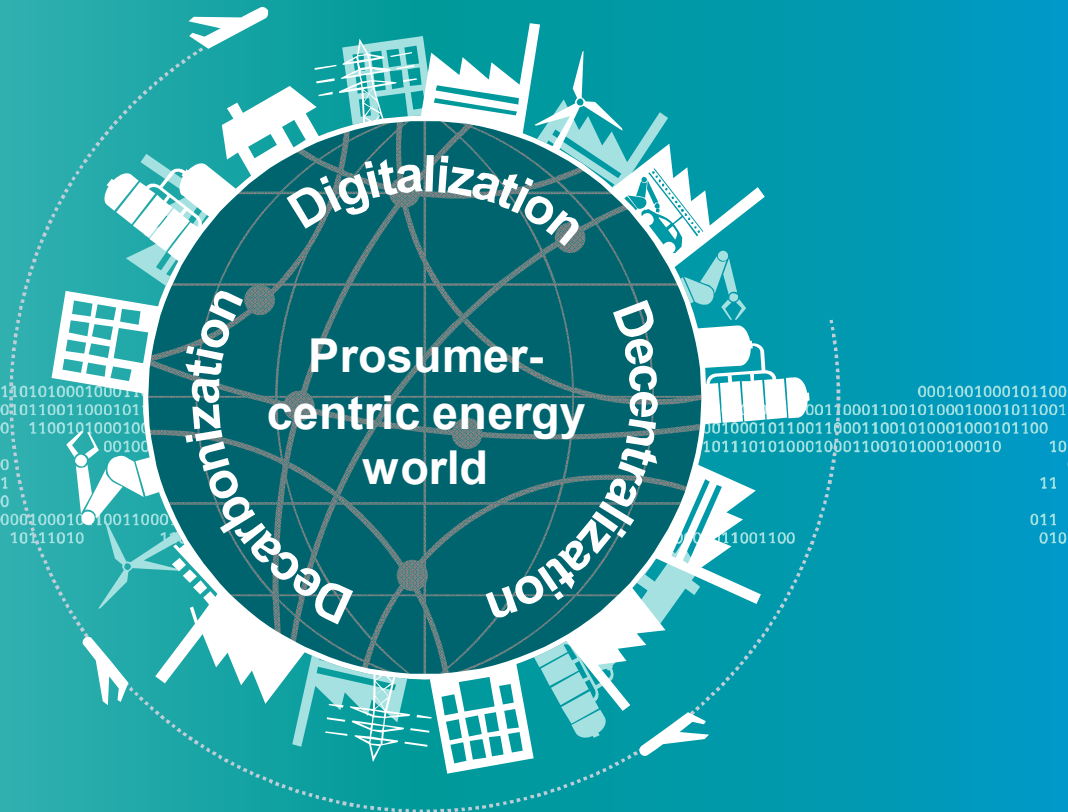
Digitalization

Connectivity - Grid edge - End-to-end



New installations global smart meters
Increases by 200% between 2015 and 2025
Reaches 100 million p.a. in 2025

...leading to power shift with emerging new market model and utility role



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New market model
Transactive energy on distributed markets

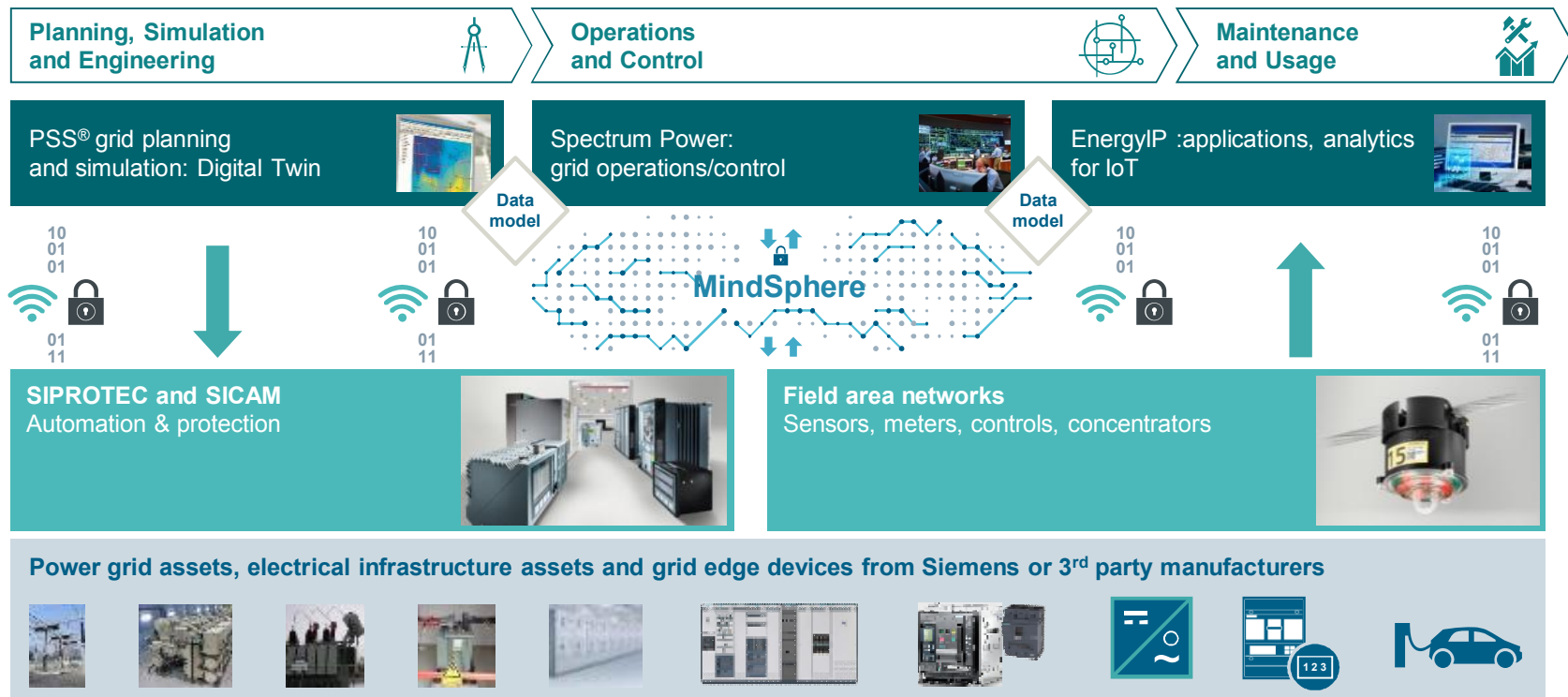
New utility role
Platform optimizer
Service provider
Resiliency supplier

... enabled by our open and standard-based end-to-end architecture from field level to applications and services



Customer Value - Manage complexity of decentralized world, productivity through automation and software, enable new business models and end customer solutions

D
Software
and Services



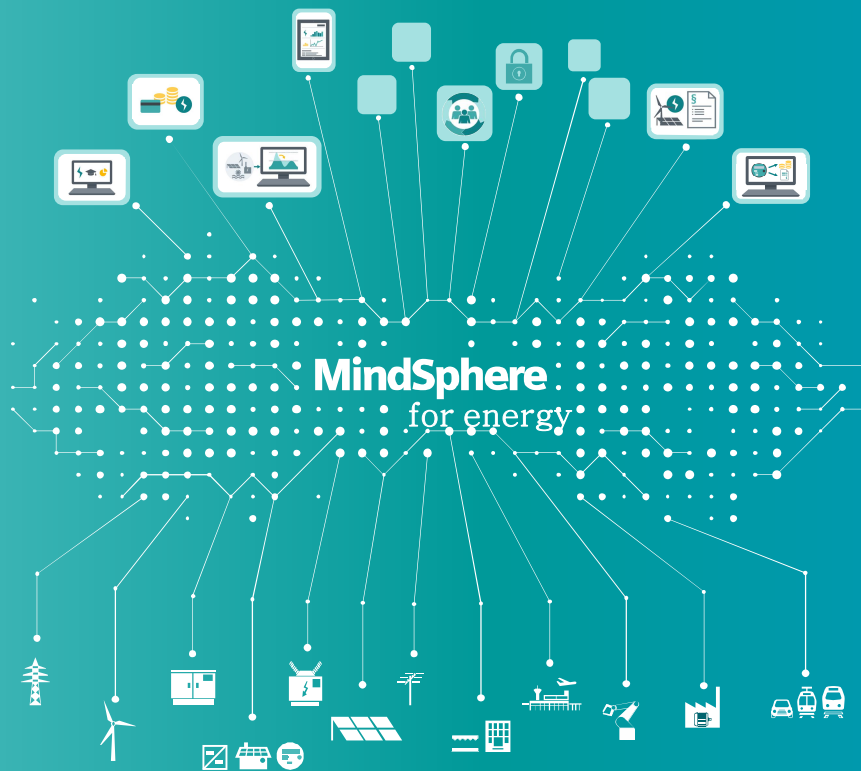
A

E



MindSphere enables everything

MindSphere for energy – The open, cloud-based IoT operating system



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MindApps

Powerful industry applications and digital services for asset transparency and analytical insights

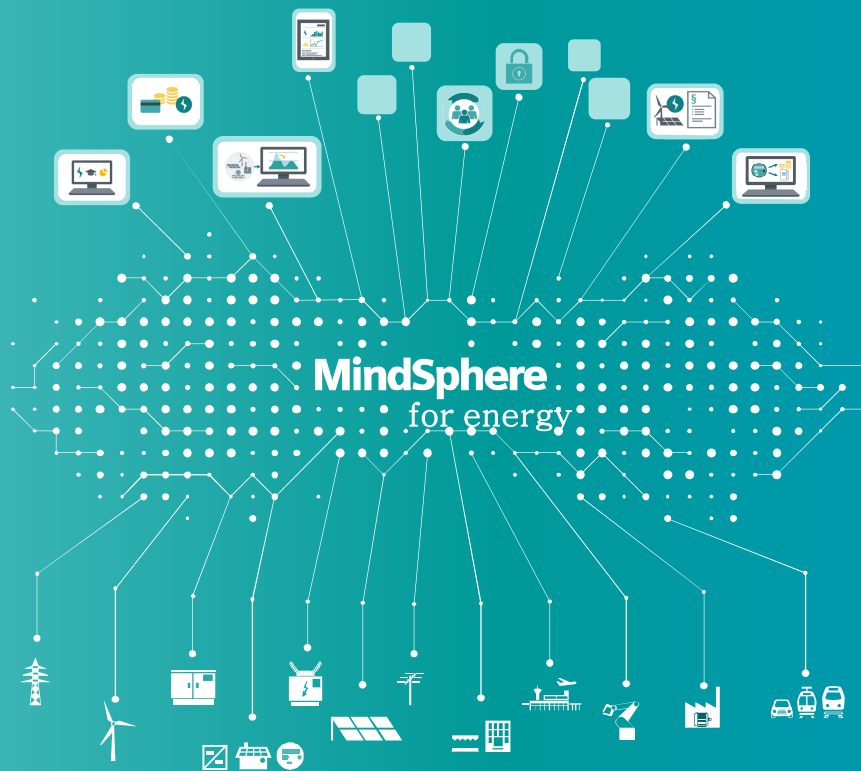
MindSphere

Open Platform as a Service (PaaS) for scalable, global IoT connectivity and application development

MindConnect

Secure plug and play connection of Siemens and third-party products and equipment

MindSphere for energy – The open, cloud-based IoT operating system



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DEEP

domain knowledge

Connectivity: Power grid assets, electrical infrastructure assets, grid edge devices

Driving business success: Powerful energy applications, digital energy services

BROAD

end-to-end solutions

Open cloud, API, partner network

OPEN

platform and ecosystem

Value chain optimization, cross industry, sector coupling, common data models, industry standards, connected e-mobility, city platforms



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Obrigado APREN