

Missouri Smart Grid Status Update: Substation Automation

Siemens Energy, Inc.

Jeff Walz

ADMS Product Line Manager
Energy and Automation Division
Minneapolis, Minnesota, USA

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Siemens Global Sectors and Divisions

Industry

Divisions

- Drive Technologies
- Industry Automation
- Building Technologies
- Mobility
- Lighting (OSRAM)
- Industry Solutions



Energy

Divisions

- Fossil Power Generation
- Renewable Energy
- Oil & Gas
- Energy Service
- Power Transmission
- Power Distribution



Healthcare

Divisions

- Imaging & IT
- Workflow & Solutions
- Diagnostics



Business volume: 36 billion €

Employees: More than 73,000

Competencies bundled in new “Infrastructure & Cities” Sector

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Mobility

- High-speed trains and light rail
- Traffic management and networking
- Postal and airport logistics



Smart Grid and Smart Consumption

- Modern energy management systems
- Automated power distribution systems
- Virtual power plants and micro-grids

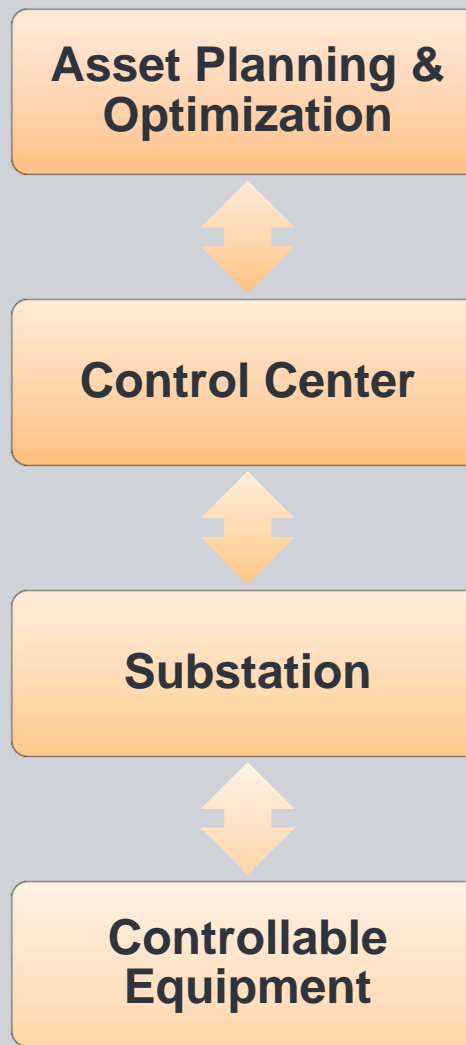


Building Technologies

- Energy-efficient building automation
- Fire protection and security systems

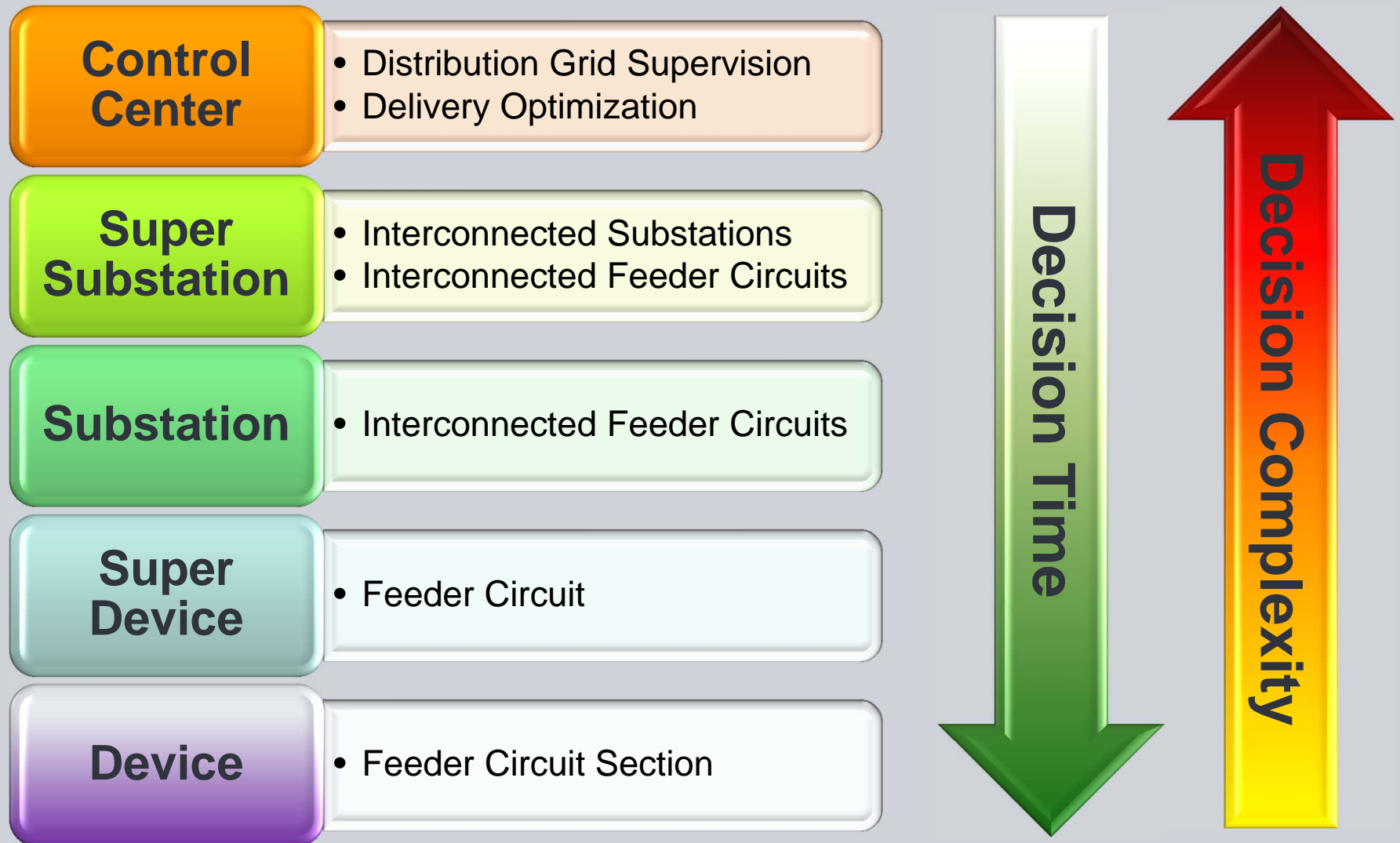
Vertically Integrated Solution

**Hierarchical
Control and
Optimization**



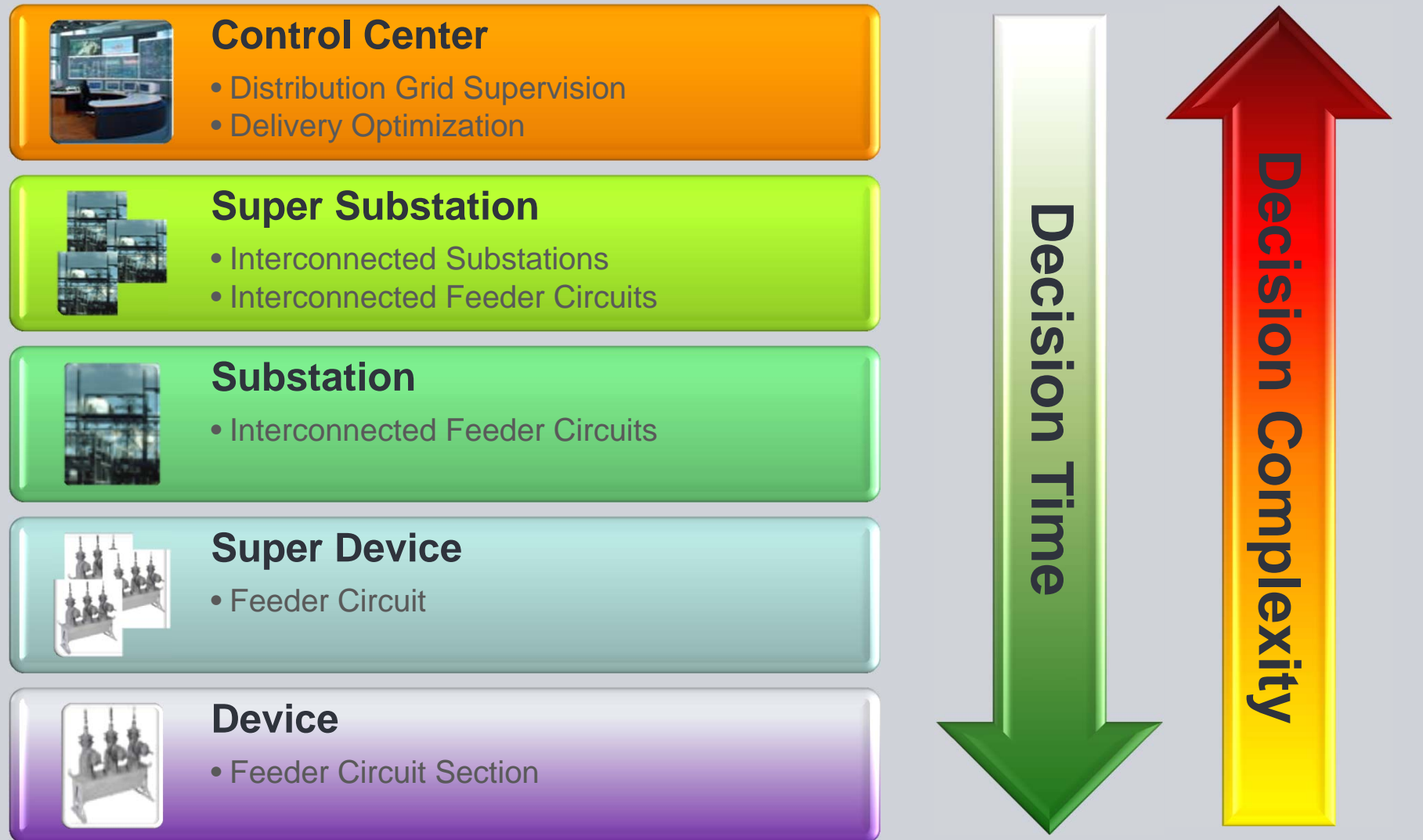
Clear Movement to Coordinated Decentralized Distribution Automation Decision/Control Hierarchy

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Clear Movement to Coordinated Decentralized Distribution Automation Decision/Control Hierarchy

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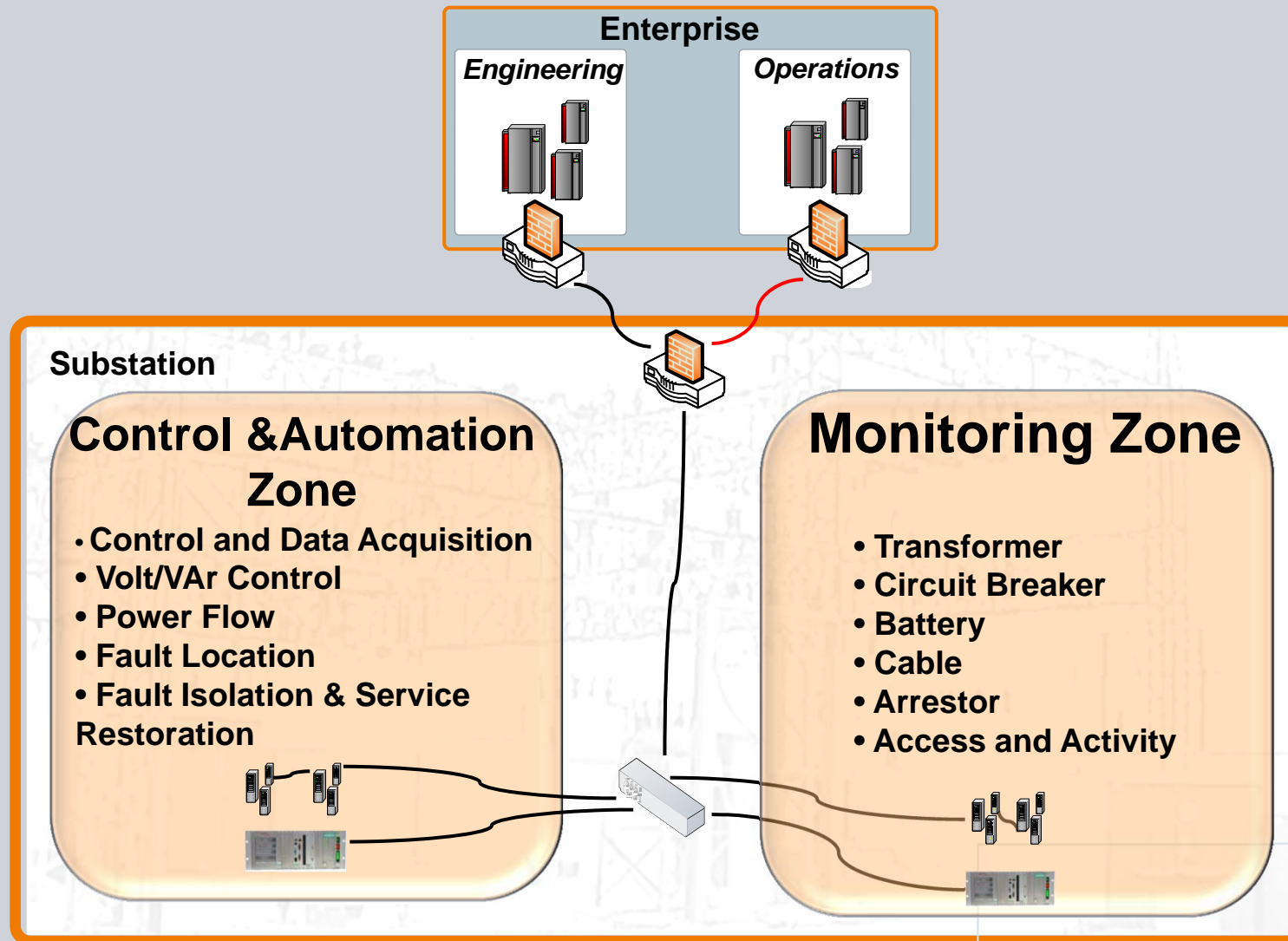


KCP&L ARRA DOE Smart Grid “Green Impact Zone”

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Substation Modernization



Benefits to Consumers

Direct

- **Increased reliability**
- **Decreased outage durations**
- **Improved power quality**

Indirect

- **Verify technologies essential to support deployment of renewable energy sources**
- **Facilitate expanding penetration of distributed energy resources**
- **Reduce dependence on fossil-fuel based generation**

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