

CGE WG

Customer Grid-Edge Working Group

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Home, Building & Utility Systems

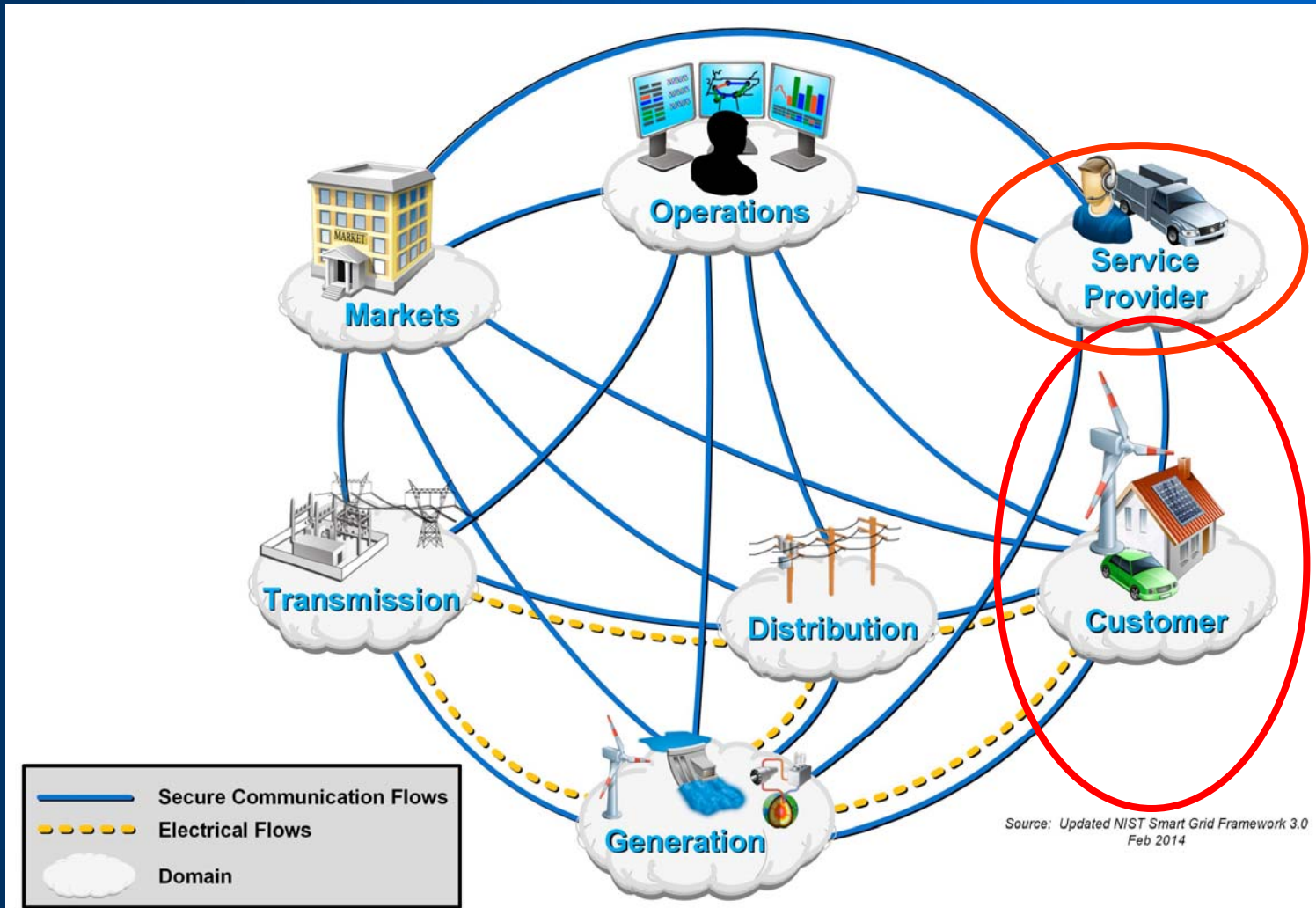
Chair, CGE WG — SGIP Founding Member

Convener, ISO/IEC *Home Electronic System*

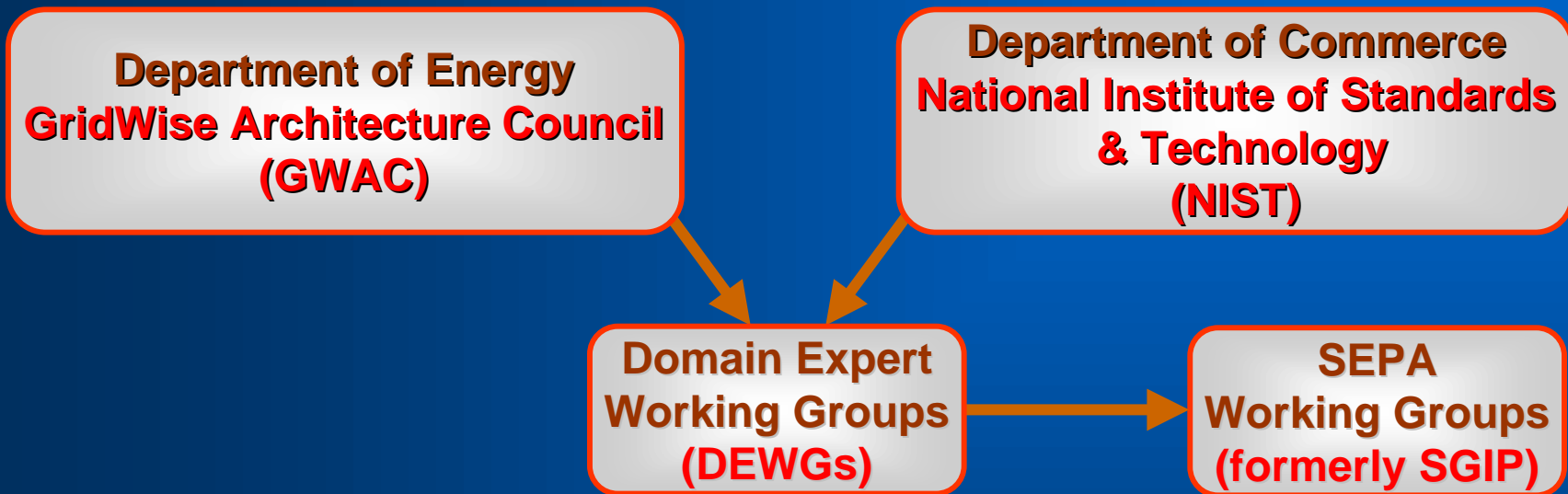
Chair, CTA R7.8 Energy Management

GridWise[®] Architecture Council, ME

NIST Smart Grid Domains



Customer Grid-Edge WG



- **Customer Grid-Edge participants (residential & commercial)**
 - Utilities and DER developers
 - Equipment suppliers
 - Trade associations
- **Customer Grid-Edge activities**
 - Develop white papers; write blogs to engage industry
 - Propose national & international energy standards

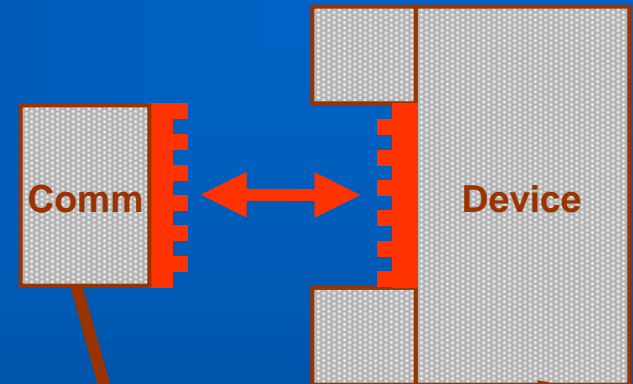
CGE Residential Papers

- **Papers published since 2010**
 - *Home-to-Grid Requirements*
 - *Roadmap for Interoperable Networks, Systems, Devices*
 - *Privacy of Consumer Information*
 - *Electromagnetic Compatibility (EMC) for H2G Devices*
 - *Free Market Choice for Appliance Physical Layer Comm.*
 - *Appliance Socket Interface*
 - *Modular Communications Interface for Demand Response*
 - *Installation Guide for Smart Grid Appliances*
 - *Broadcast-based H2G Communication Solutions*
 - *Barriers to Responsive Appliances at Scale*
 - *Local Grid Definitions*
 - *Smart Grid System Stability with Broadcast Communications*

CGE Residential Activities

- **Papers completed — candidates for blogs**
 - *Consumer Metrics for Smart Grid Programs*
 - *Economic Value of Integrating Consumption Preferences in Electric System Planning*
 - *Smart Grid System Security with Broadcast Communications*
- **Projects under development**
 - **Home Nanogrids Meet Smart Grids**
 - *Alonetic Appliances for Load Following*
 - **Transactive Energy and Consumer Products**
 - **Develop ISO/IEC requirements for:**
 - **Enhancing gateway cybersecurity, privacy, & safety**
 - **Combining residential solar and storage**

Modular Comm. Interface Standard



ISO/IEC 10192-3
ANSI/CTA-2045
MCI Standard



CGE Standards Recommendations

- Standards for *Home & Building Systems*

- Gateway **cybersecurity** for data, privacy, safety
- Customer **solar + storage** for energy management

- International standards:



- Voluntary standards to **promote world trade**
- *Home Electronic System (HES)* family of standards for **IoT**
 - Communication protocols
 - Device interfaces / gateway
 - Network management
 - Applications
- 1 vote / country ⇒ **diplomacy & negotiation**
- US experts and votes recommended by:

