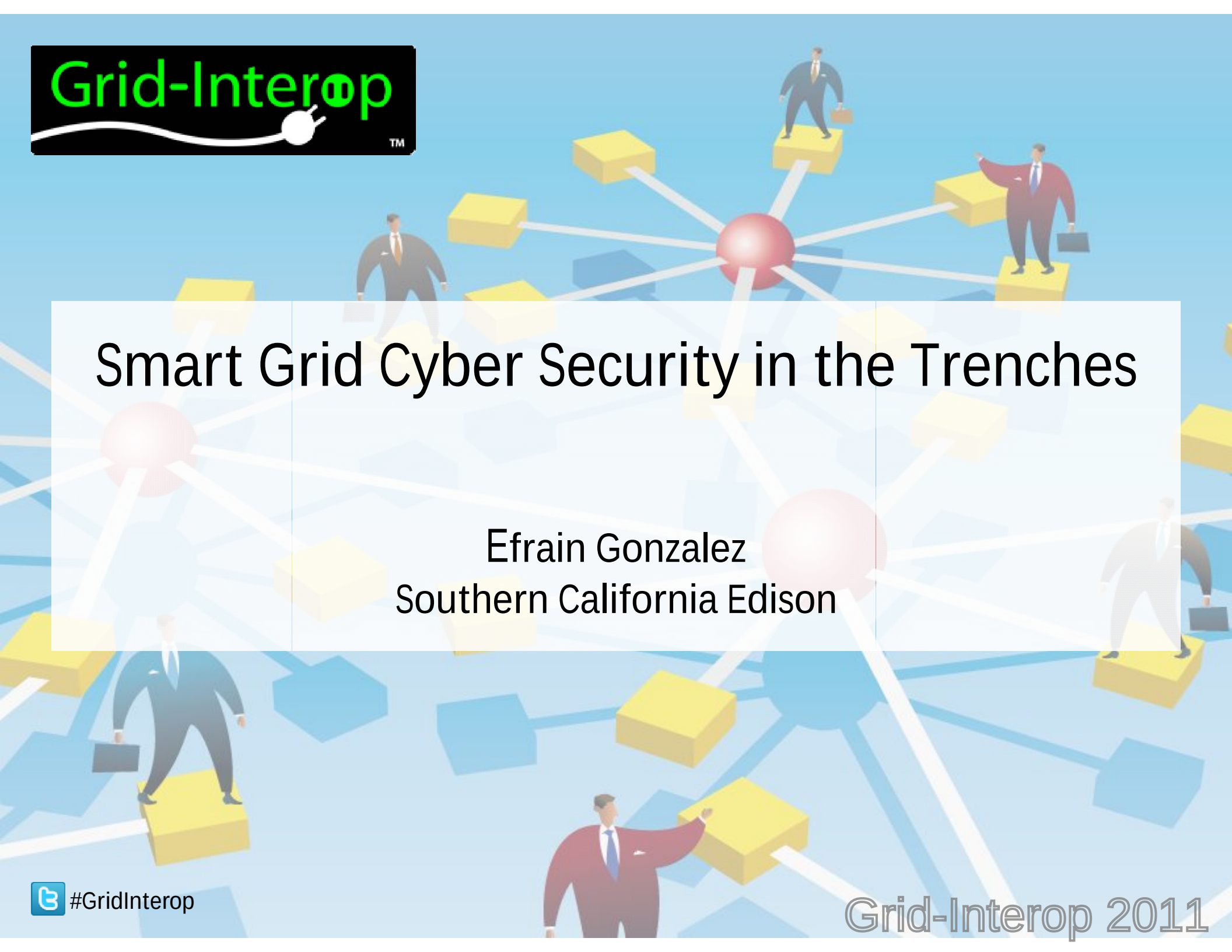
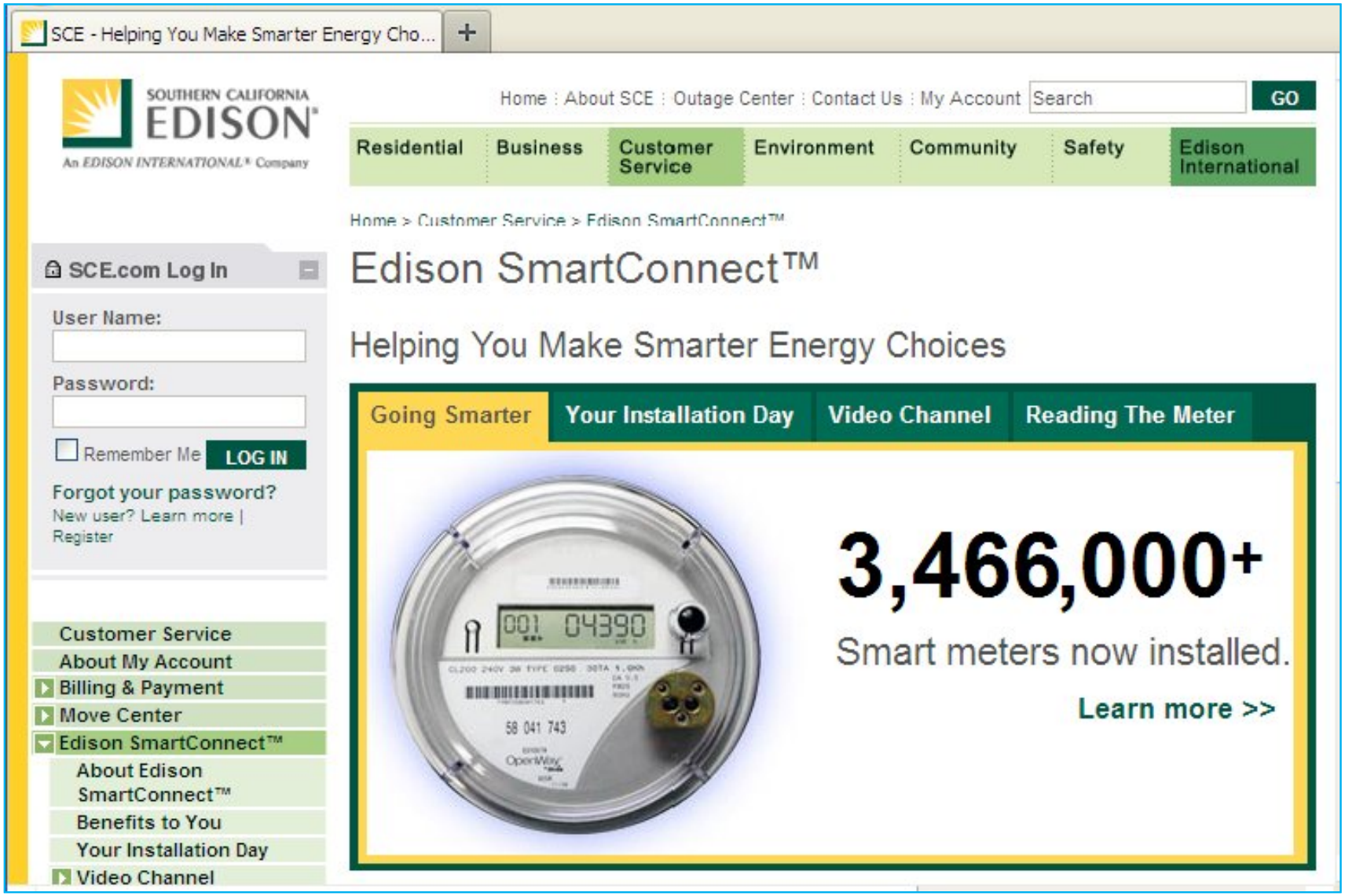


Smart Grid Cyber Security in the Trenches

Efrain Gonzalez
Southern California Edison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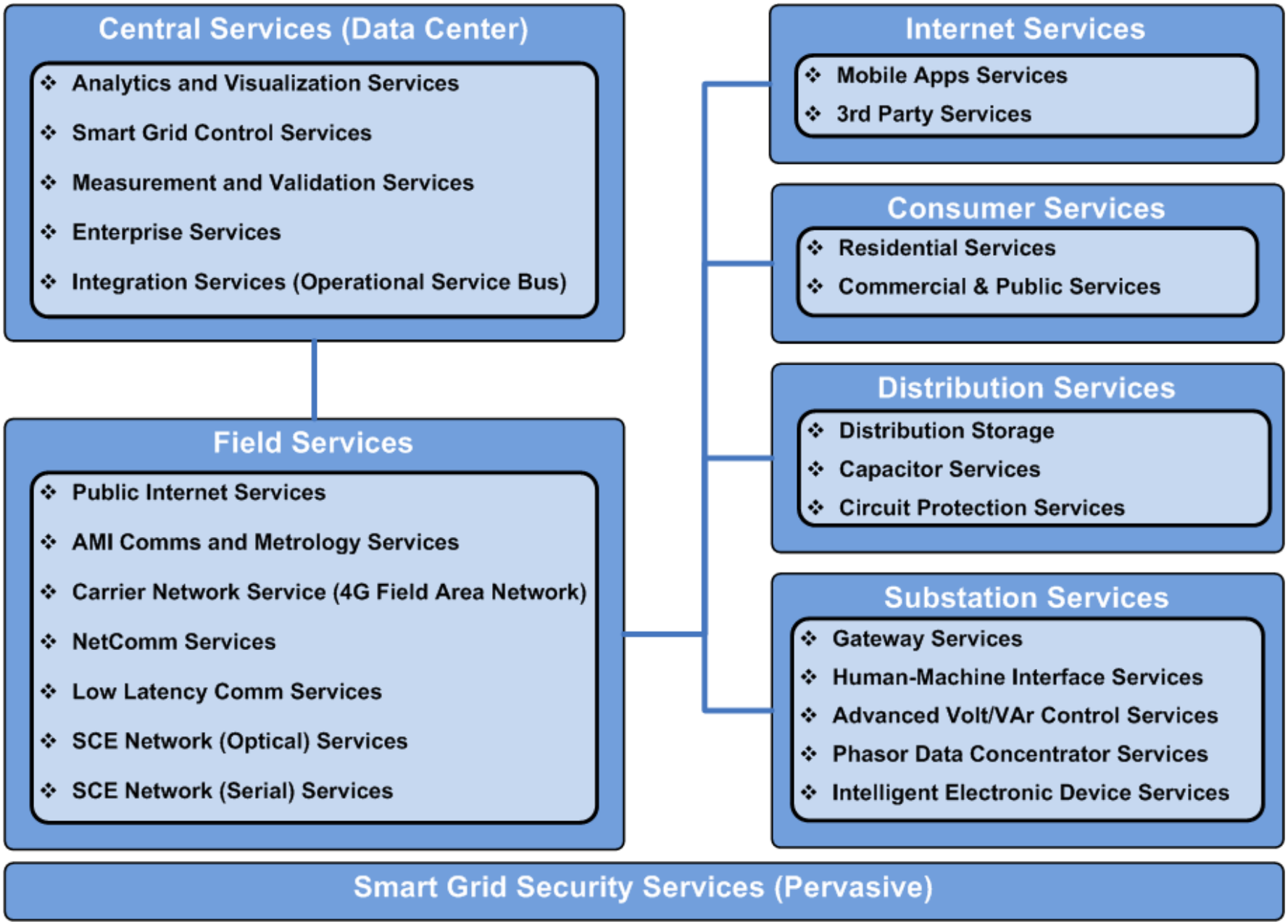
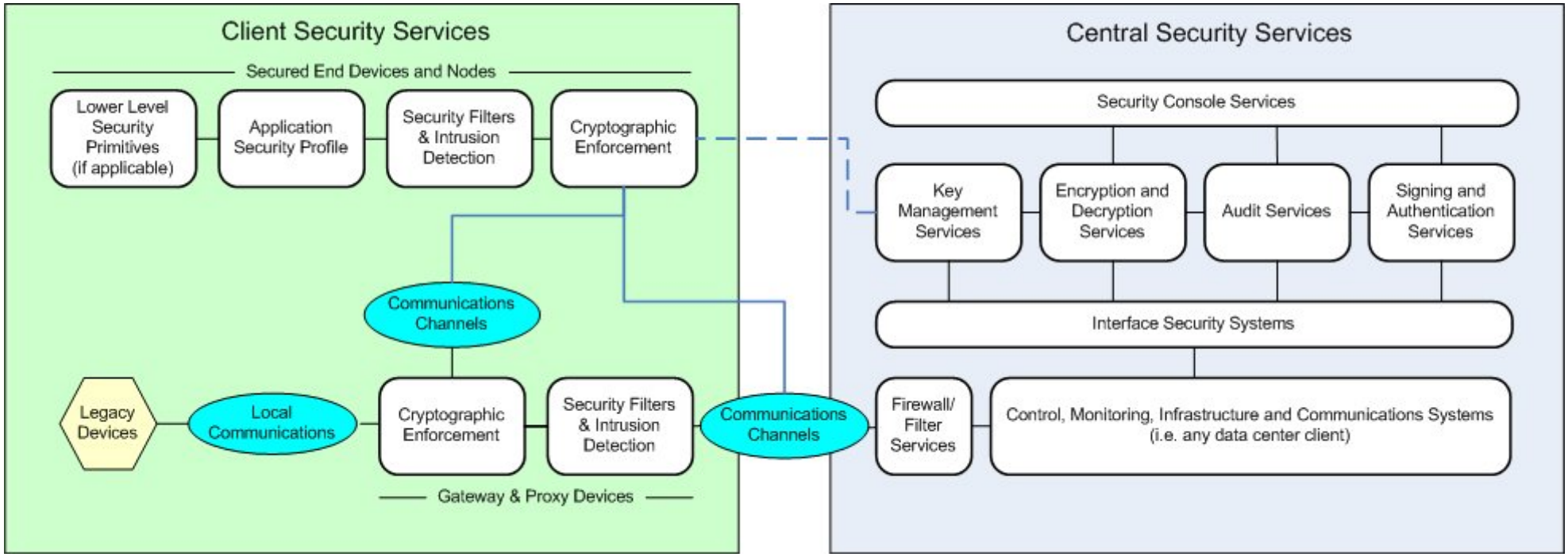
Security Lessons Learned

- Nothing but the best security will do
- Security must be built in; not bolted on
- No security silos
- No lock-in
- Don’t give up

SCE's Smart Grid Architecture

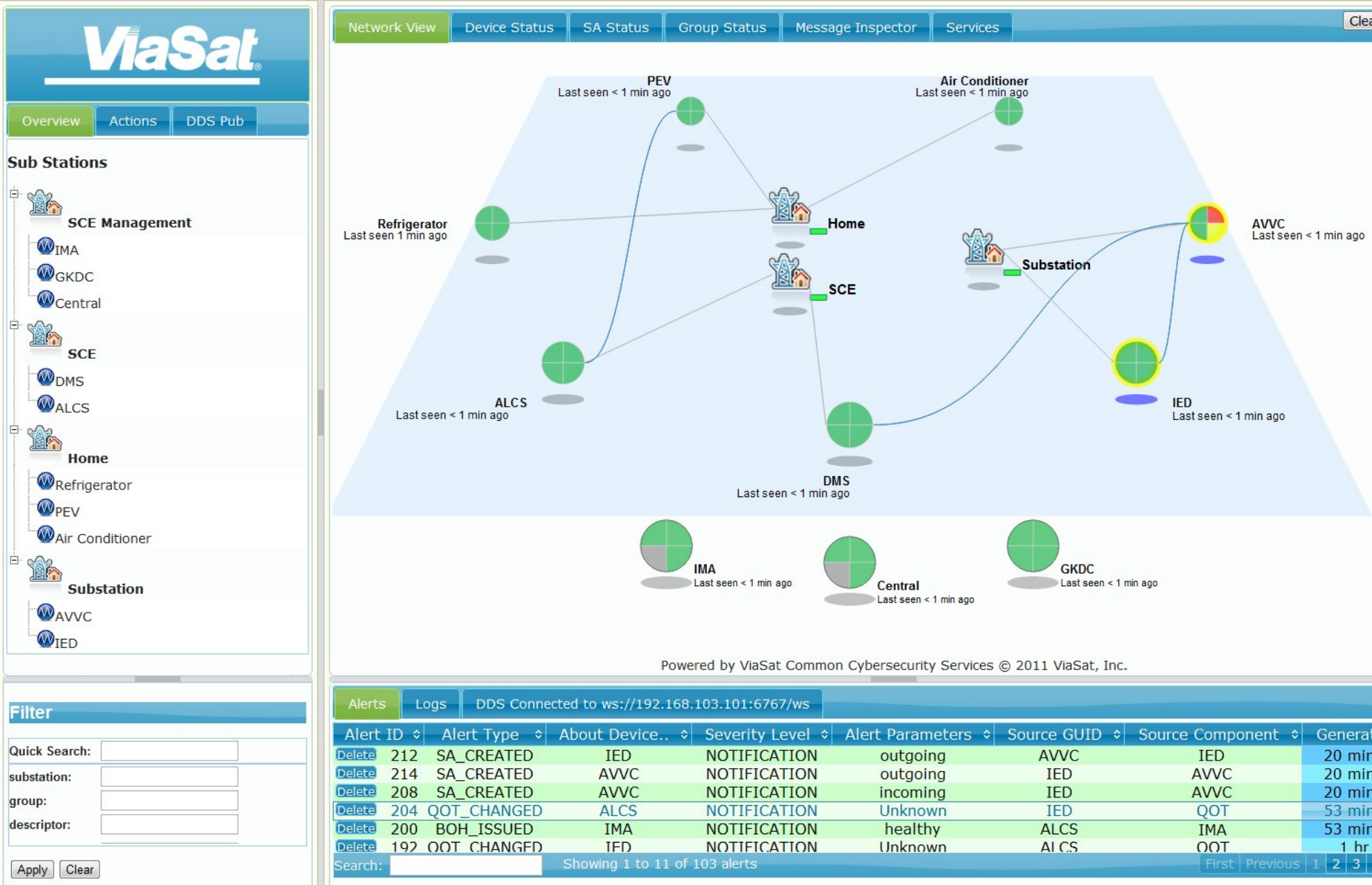


Common Cybersecurity Services



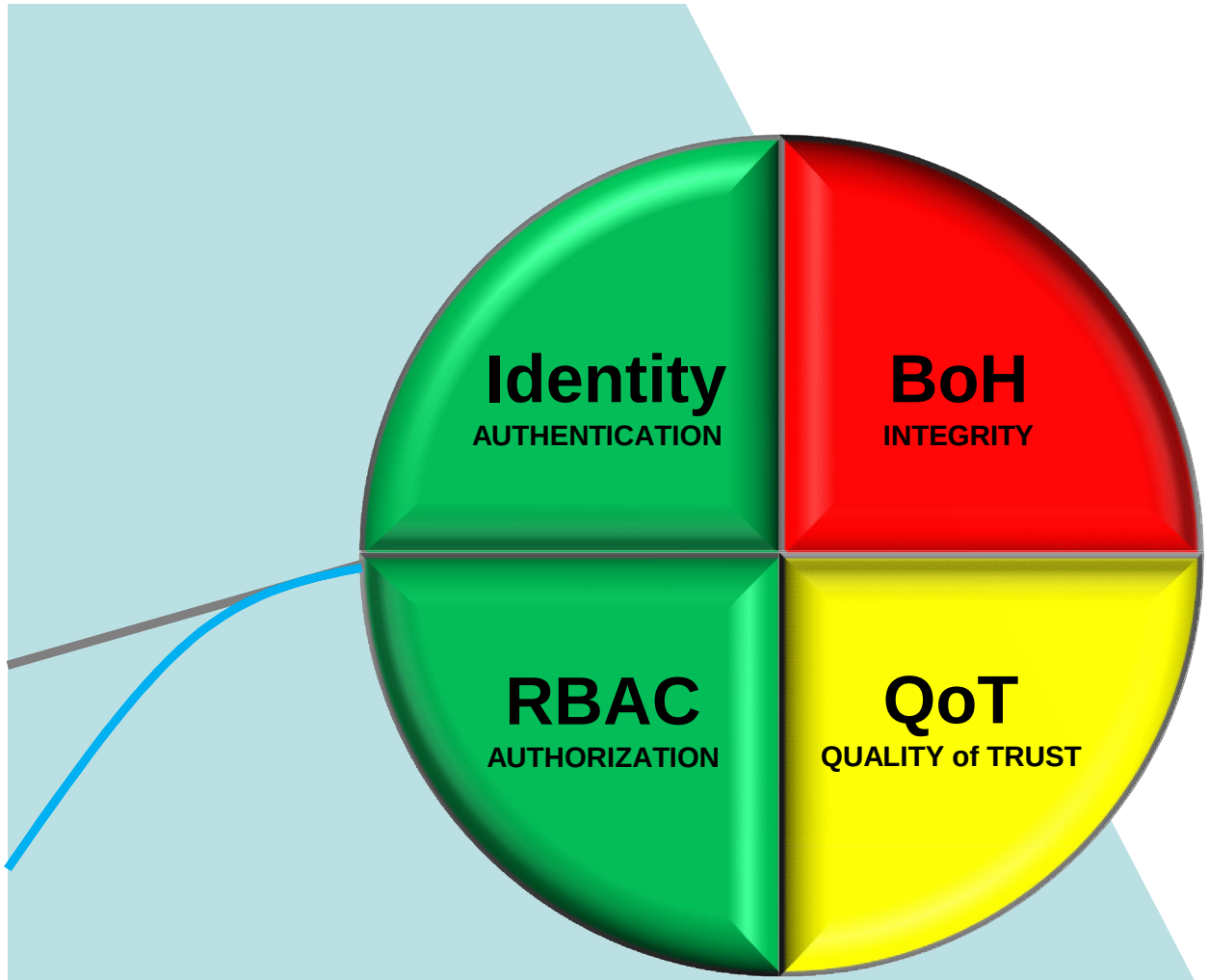
- Client Security Services
  - Policy Enforcement
  - Attestation
  - Cryptography
  - Auditing
  - Device Hardening
- Central Security Services
  - PKI
  - Policy Management
  - Key Management
  - Trust Management
  - Audit Management

CCS Central Security GUI



ViaSat Common Cybersecurity Services Central Security GUI (CSG) © 2011 ViaSat, Inc.

CCS Device Status



AVVC

Last seen < 1 min ago

Status:

- Trusted
- Questionable
- Untrusted
- Unknown

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Next Steps

- Develop a detailed build-to specification for CCS based on open standards
- Make CCS specification broadly available to vendors, utilities, and other stakeholders
- Use CCS specification to motivate vendors and Standards Development Organizations
- Develop certification process