



# Smart Grid Cyber Security in the Trenches

Efrain Gonzalez  
Southern California Edison

SCE - Helping You Make Smarter Energy Cho... +

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## Edison SmartConnect™

Helping You Make Smarter Energy Choices

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**3,466,000+**  
Smart meters now installed.

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SCE.com Log In

User Name:

Password:

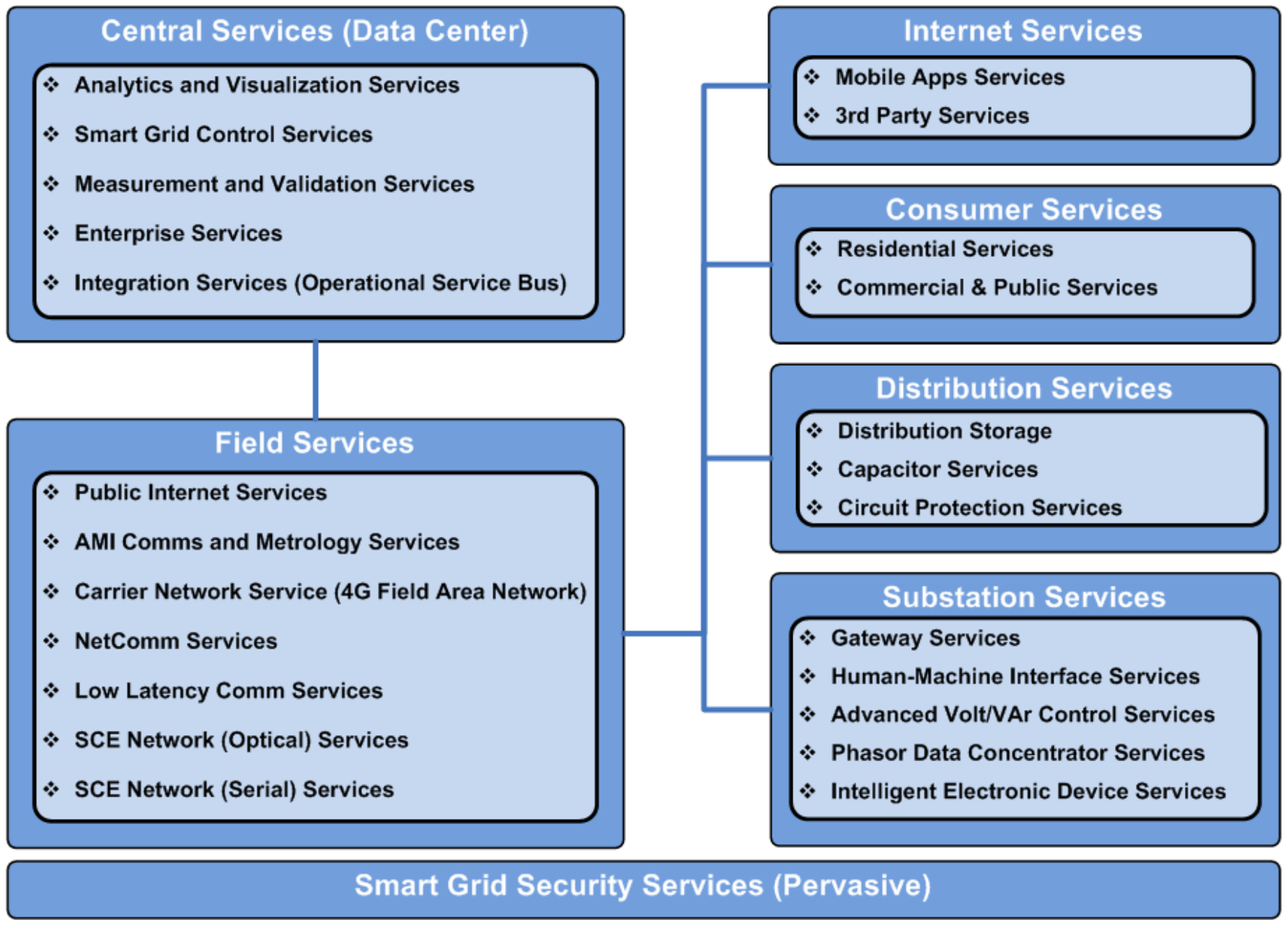
Remember Me **LOG IN**

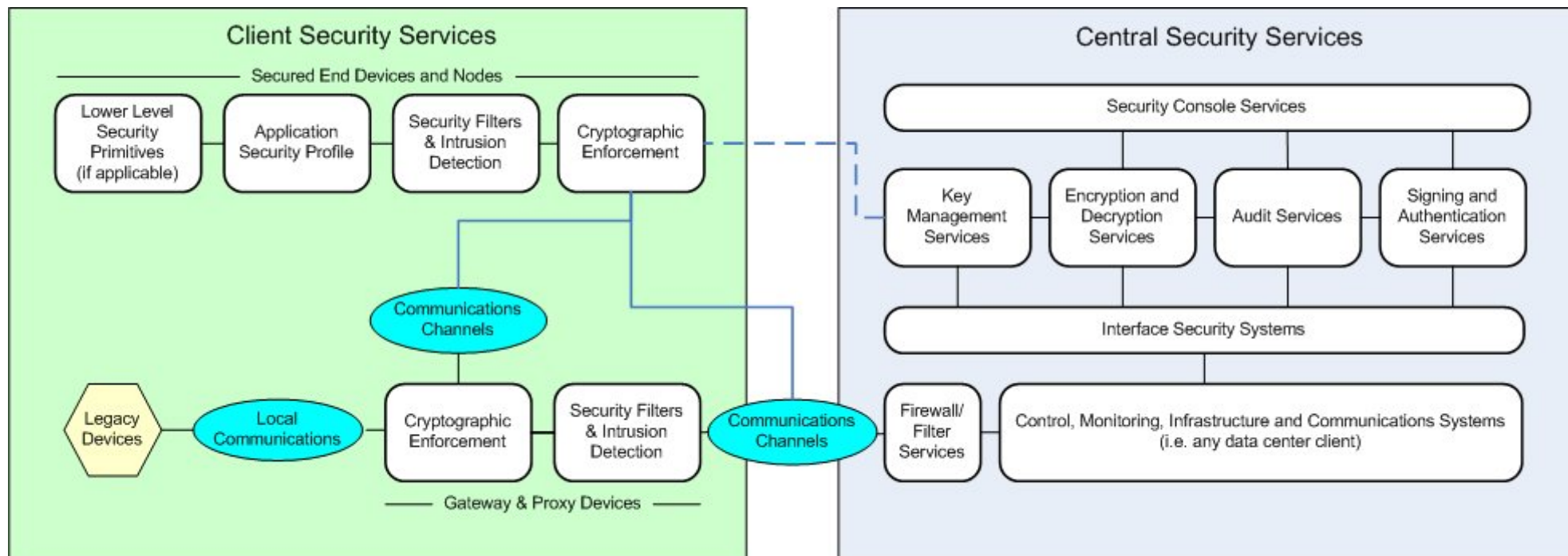
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- Nothing but the best security will do
- Security must be built in; not bolted on
- No security silos
- No lock-in
- Don't give up







- **Client Security Services**

- Policy Enforcement
- Attestation
- Cryptography
- Auditing
- Device Hardening

- **Central Security Services**

- PKI
- Policy Management
- Key Management
- Trust Management
- Audit Management

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Overview Actions DDS Pub

Sub Stations

SCE Management

- IMA
- GKDC
- Central

SCE

- DMS
- ALCS

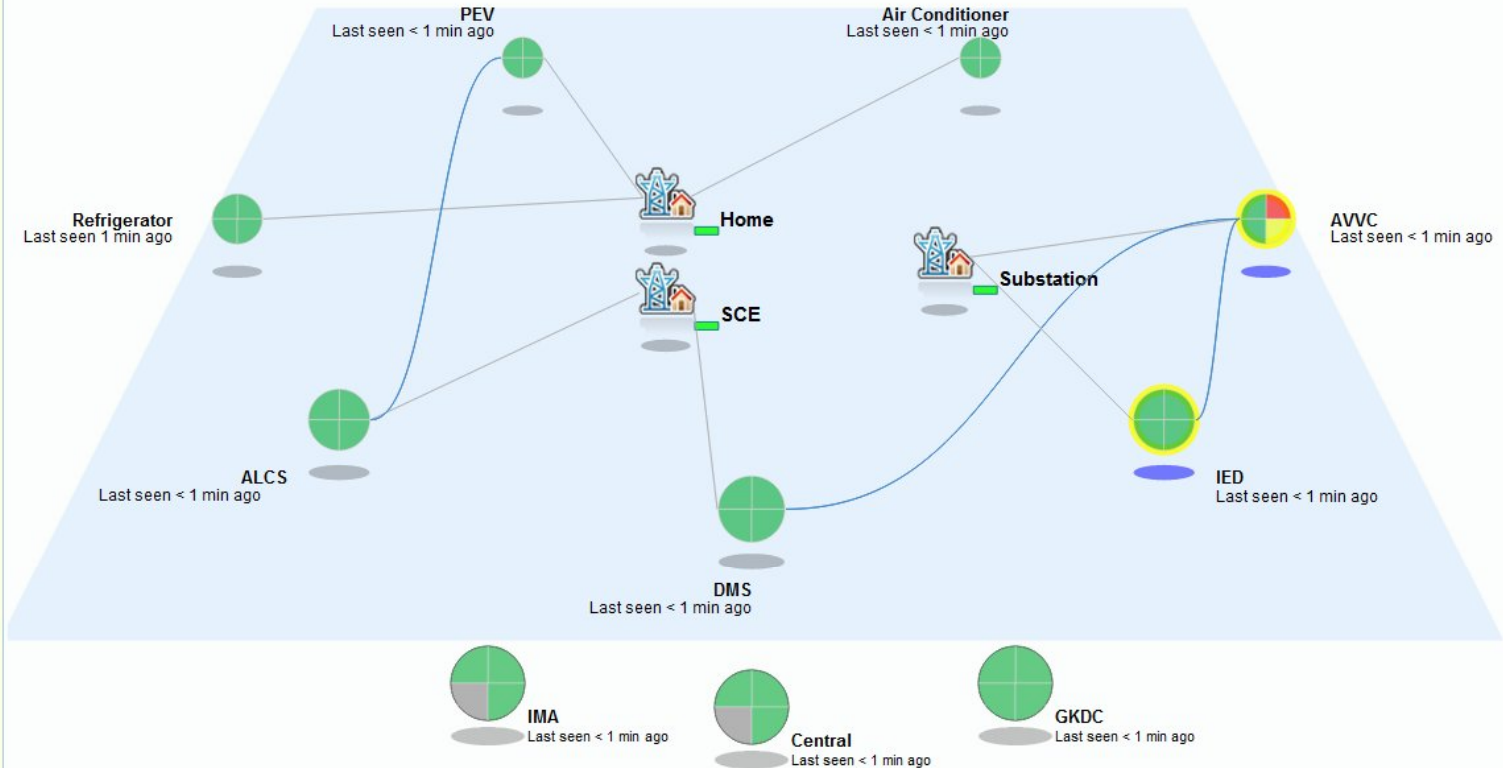
Home

- Refrigerator
- PEV
- Air Conditioner

Substation

- AVVC
- IED

Network View Device Status SA Status Group Status Message Inspector Services Clear Database



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Filter

Quick Search:

substation:

group:

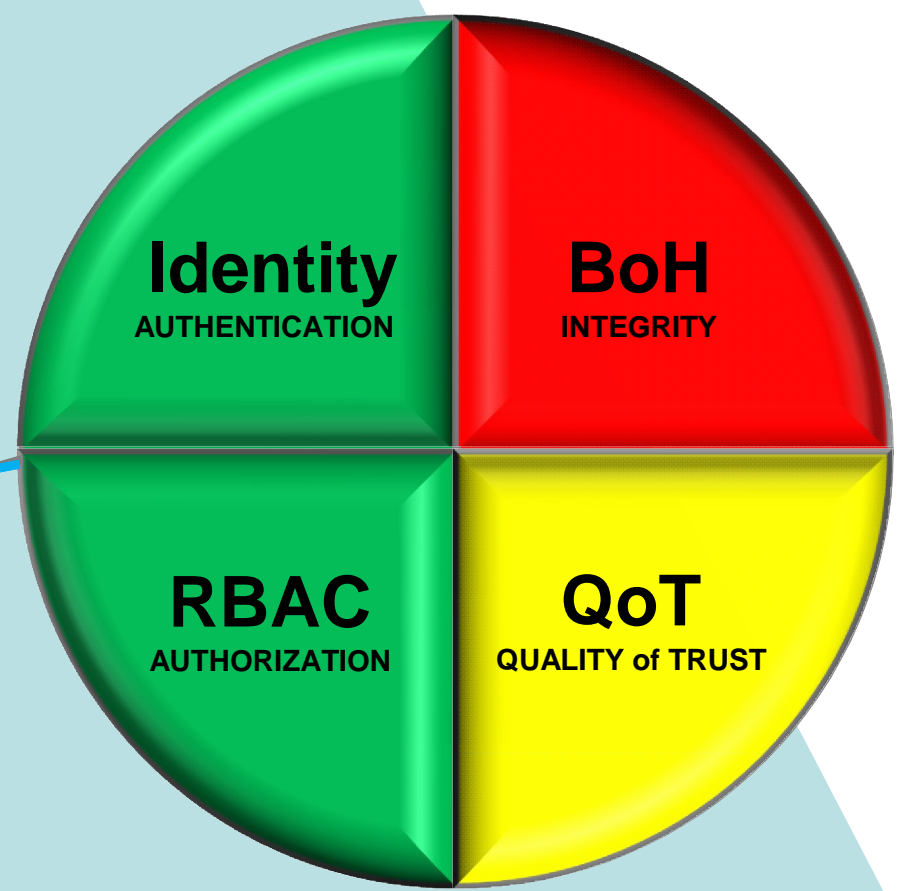
descriptor:

Apply Clear

Alerts Logs DDS Connected to ws://192.168.103.101:6767/ws

Alert ID	Alert Type	About Device..	Severity Level	Alert Parameters	Source GUID	Source Component	Generated at
Delete 212	SA_CREATED	IED	NOTIFICATION	outgoing	AVVC	IED	20 mins ago
Delete 214	SA_CREATED	AVVC	NOTIFICATION	outgoing	IED	AVVC	20 mins ago
Delete 208	SA_CREATED	AVVC	NOTIFICATION	incoming	IED	AVVC	20 mins ago
Delete 204	QOT_CHANGED	ALCS	NOTIFICATION	Unknown	IED	QOT	53 mins ago
Delete 200	BOH_ISSUED	IMA	NOTIFICATION	healthy	ALCS	IMA	53 mins ago
Delete 192	OOT_CHANGED	IED	NOTIFICATION	Unknown	ALCS	OOT	1 hr ago

Search:  Showing 1 to 11 of 103 alerts First Previous 1 2 3 Next Last



## AVVC

Last seen < 1 min ago

### Status:

- Trusted
- Questionable
- Untrusted
- Unknown

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- 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