Doubletree Systems Inc.

SUBSTATION NETWORK SENTINEL (SNS)

For digital substation solutions, network & cyber security is new challenge when everything in substation is going to integrate together via a digital means with remote access.

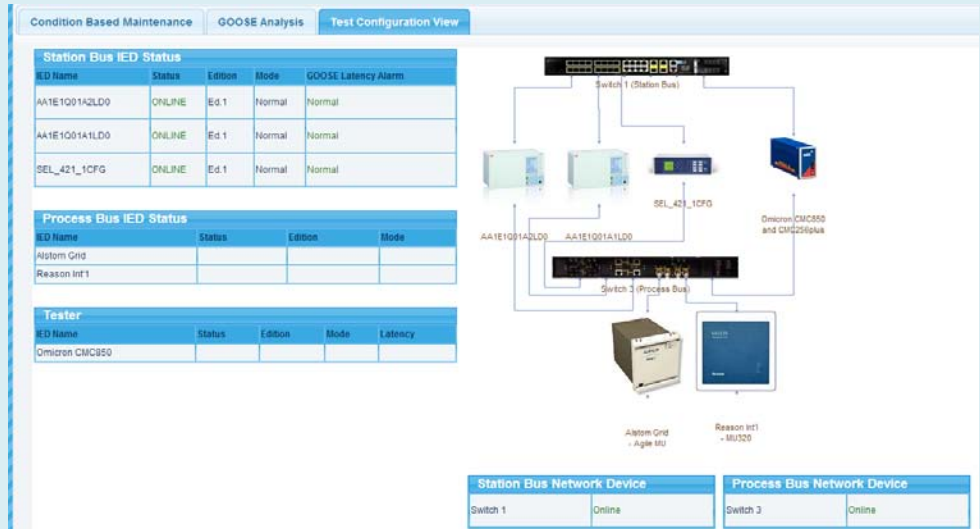| Digital Substation	<->	Networking
IEC 61850	<->	Protocol
IEC 62351-7	<->	Security
NERC CIP	<->	Compliance

The Substation Network Sentinel provides a tool for substation network planning/analysis, testing, and monitoring/report based on control protocol IEC 61850 and security protocol IEC 62351, compliant with CIP policies ,SNMP management capabilities.

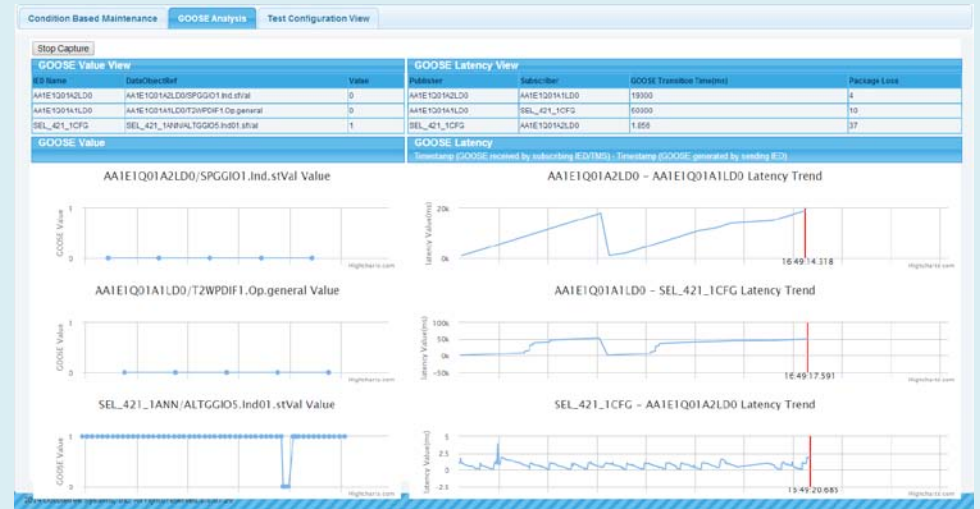## Substation Network Sentinel 's Main features:

1. **Substation Network Planning/Analysis/Implementation**

   a. Automated Network Modeling from IEC 61850 CID/ICD/SCD configuration files with network extension
   b. Network Topology and Bandwidth analysis
   c. Protocol Network Package Inspection
   d. Network Latency Statistics
   e. Time Sync. Analysis
   f. Network Device configuration and validation

2. **Substation Network Testing**

   a. Network Topology Discovery and Device Configuration Verification
   b. Network latency testing & statistics
   c. Network performance degradation testing
   d. IED Status Analysis

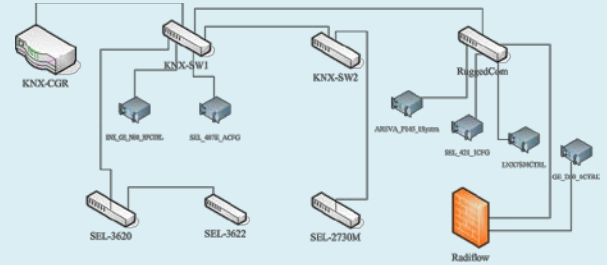3. **Substation Network Monitoring**

   a. IED Asset Status Monitoring: Switch/Router/IED resource, CPU usage, IEC clock
   b. Network: Congestions/degradation, Latency, Collisions
   c. Protocol Error Monitoring
   d. Time sync. status
   e. Network topology change detection

4. Logging/reporting

   a. Report all Substation security in IEC 61351-7 MIBs
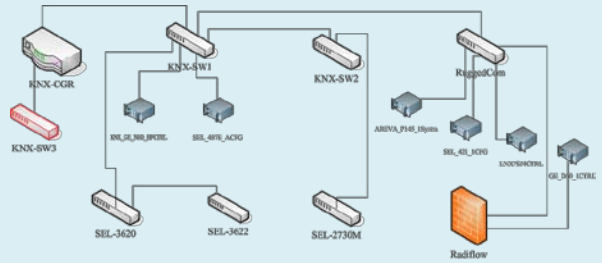   b. Local logging : Network status & security events

5. Visualization

   a. Web Based
   b. Network "Online" display: Network Topology and Security Status Visualization from MS Visio
   c. IED SCL Configuration plus network configuration
   d. IED Configuration(SCL) Tree View
   e. GOOSE Value Trend Value

6. Cyber Security Watchdog

   a. Convert the other MIBS to single IEC 61351-7 MIBs
   b. Report to the master network management system

7. Full substation NERC CIP V5 Compliance

   a. Network Configuration Change Management – CIP 010-5
   b. Security Configuration Monitoring – CIP 050 and CIP 060
   c. Network & IED Device Access Monitoring – CIP 040 and CIP 070

Substation Network Sentinel 's Options:

Option	No. of networks	R&D Module	Testing Module	Monitoring module	IEC 62351-7 reporting	IEC 62351-7 Gateway	Visualization IEC 61850 IEC 62351	Annual Service
Laptop	1	Available	Available	Available	Available	Available	Available	Available
Harden Box-F	Max 6	Available	Available	Available	Available	Available	Available	Available
Harden Box-G	Max 6	No	No	No	Yes	Yes	Yes	Available

Note: Both Harden Box is IEC 61850-3 and IEEE-1613 certified

Contact us:

   Email: SNS@dsius.com   January, 2015