

R-GOOSE Gateway

Extend IEC 61850 GOOSE Across Wide-Area IP Networks

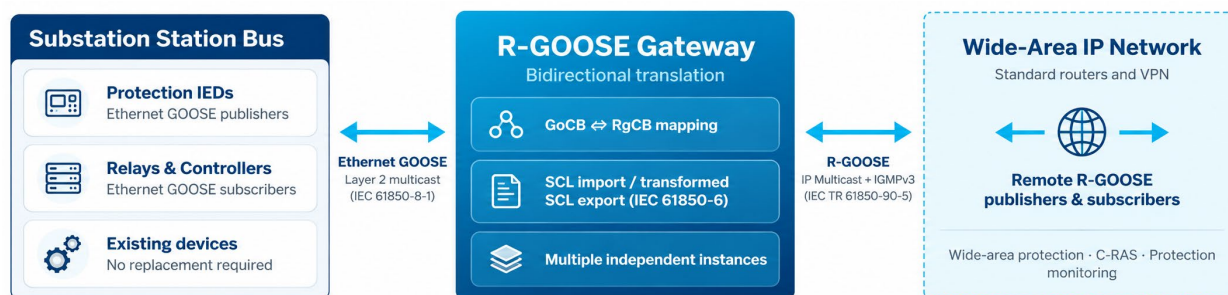
IEC 61850 GOOSE was built for the substation LAN. It runs as Layer 2 Ethernet multicast on the station bus, and it stops at the router. Wide-area protection, Centralized Remedial Action Systems (C-RAS), and multi-substation coordination need that same fast, event-driven signaling between sites.

R-GOOSE Gateway closes that gap. It translates in both directions between Ethernet GOOSE and **Routable GOOSE (R-GOOSE)** over wide-area IP Multicast, as defined in the IP Multicast profile of IEC 61850-8-1 Ed2.1. Your existing IEDs keep publishing and subscribing to GOOSE exactly as they do today.

Built for **transmission protection engineers**, **utilities implementing wide-area protection schemes**, and **system integrators** connecting substations across geographic distances.

Why It Matters

- **No IED replacement.** Existing Ethernet GOOSE devices participate in wide-area schemes through the gateway, which protects your installed protection investment.
- **Protection-grade speed.** Verified 1 ms end-to-end latency for 5,000 GOOSE messages through a single gateway instance, on office-grade equipment.
- **Uses the WAN you already have.** R-GOOSE runs over IP Multicast and IGMPv3 using readily available router and VPN technology. No dedicated private network required.
- **Configured from SCL, not by hand.** Import standard IEC 61850-6 SCL files and the gateway generates the GOOSE-to-R-GOOSE mappings automatically.



R-GOOSE Gateway translates between station-bus GOOSE and wide-area R-GOOSE in both directions.

Applications

- **Wide-area protection** schemes spanning multiple substations
- **Centralized Remedial Action Systems (C-RAS)**
- **Protection monitoring** across geographically distributed substations
- **Multi-substation coordination** without replacing station-bus IEDs

Two Directions, One Gateway

Ethernet GOOSE → R-GOOSE	R-GOOSE → Ethernet GOOSE	SCL-Driven Engineering
<ul style="list-style-type: none">• Subscribes to Ethernet multicast GOOSE from station-bus publishers• Republishes as R-GOOSE over IP Multicast to wide-area subscribers• Sends local protection signals to remote substations and C-RAS	<ul style="list-style-type: none">• Subscribes to R-GOOSE publishers on the wide-area network• Republishes as Ethernet multicast GOOSE on the station bus• Delivers remote signals to existing Ethernet GOOSE subscribers	<ul style="list-style-type: none">• Imports standardized SCL files per IEC 61850-6• Generates R-GOOSE-to-GOOSE and GOOSE-to-R-GOOSE mappings during import• Produces a transformed SCL file for subscribers (converts RgCB to/from GoCB)

Built for Operational Reliability

- **Independent, segmented instances.** Run multiple gateway instances on one platform, each independent, with interconnections assigned to separate network adapters.
- **Configuration stability.** Role-based access separates configuration privileges from operational control.
- **Standard hardware.** Runs on standard computing platforms. No proprietary appliance.

Specifications

Item	Specification
Standards	IEC 61850-8-1 Ed2.1, IP Multicast profile
Configuration	SCL import per IEC 61850-6; transformed SCL export for subscribers (RgCB ↔ GoCB)
Network	IP Multicast with IGMPv3; standard routers and VPN
Performance	1 ms end-to-end latency for 5,000 GOOSE messages, single gateway instance, office-grade equipment
Deployment	Multiple independent instances per platform; interconnections segmented by network adapter
Access control	Role-based; configuration separated from operational control
Platform	Standard computing platforms : Any currently supported Windows OS

Related SISCO Products

GOOSE Blaster for GOOSE and R-GOOSE simulation

GOOSE Monitor for live publish/subscribe visibility

C-RAS for centralized wide-area protection and remedial action

Next Step

Request a technical walkthrough scoped to your wide-area protection architecture.

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