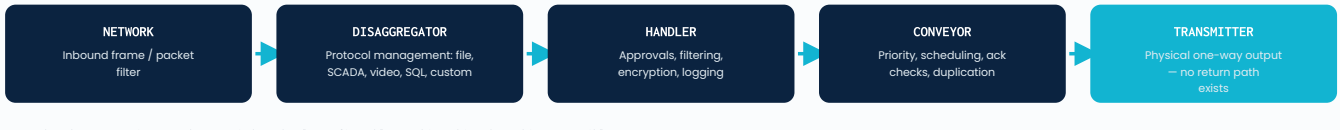
ONE-PAGE TECHNICAL OVERVIEW

ConnexONE Data Diode

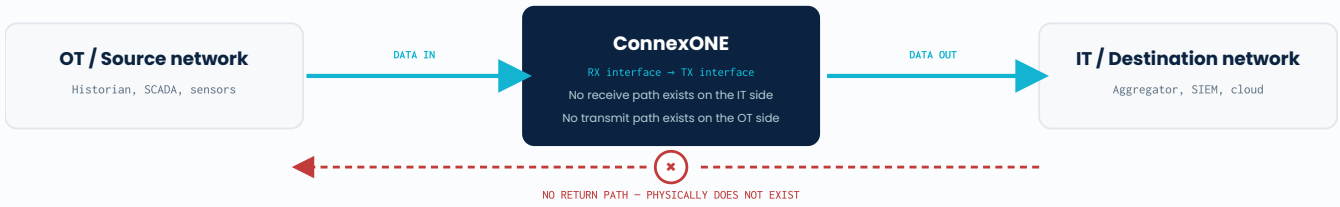
Hardware-enforced unidirectional data transfer with any-to-any protocol translation. No software configuration, credential, or exploit can open a return path — the reverse channel does not exist at the hardware level.

PACKET PIPELINE



Layered packet processing — each stage independently configurable, nothing skipped, nothing reversible

TRAFFIC FLOW & PHYSICAL ISOLATION



HARDWARE RANGE

Model	Throughput	Best for
NOVA 1G	Up to 1 Gbps, multi-gig OT ports, 10G uplinks	Standard plant / factory
ZENITH 10G	Up to 10 Gbps, high-density aggregation	Data centre / large site
COMET REMOTE	WAN — xDSL, LTE/5G, encrypted tunnel	Remote edge / substation

GUARANTEES

Hardware-enforced. One-way transfer at the physical layer; no software setting can reverse it.

Guaranteed delivery. Packet-level ack/retry on the transmit side only — no loss crossing the boundary.

Any-to-any translation. Source and destination protocols chosen independently; no middleware.

No inbound rule. Removes the bidirectional firewall rule auditors scrutinise — there is nothing to misconfigure.

DATA DIODE VS. FIREWALL

Dimension	Firewall	Data diode
Enforcement	Software rule set, stateful, bidirectional-capable	Hardware, physically unidirectional
Zero-day exposure	Rules and firmware are exploitable	No listening service exists on the return path
Operator error	One misconfigured rule can open a path	No rule can reopen a path that does not exist
Audit scope	Rule set needs continuous review	Nothing to review on the return path

TECHNICAL INTEGRATION NOTES

Whitelist the destination ports for telemetry streams on the receiving side.

Synchronise NTP on both sides so alert timestamps and log correlation stay accurate.

Align MTU between the source agent and the diode (typical safe value 1400 bytes) to avoid fragmenting large OPC-UA or historian packets.

Size the IT-side receiver for peak telemetry rate; upstream filtering reduces load before it reaches the diode.

PROTOCOL SUPPORT & TRANSLATION

Protocol in (OT side)	Capture	Translates to (IT side)	Typical use
Modbus TCP/RTU	Full	HTTP or MQTT	PLC and RTU data
OPC-UA	Full	REST/JSON	Historian, SCADA
IEC 104 / 101	Full	Syslog or HTTP	Energy, substations
DNP3	Full	MQTT or syslog	Water, energy RTUs
Profinet / EtherNet/IP	Full	Pass-through	Manufacturing PLCs
MQTT / Syslog	Full	HTTP, REST or syslog	IIoT, logging, events
Custom / File / SQL	Via disaggregator	Defined per protocol handler	Database replication, file transfer

COMPLIANCE MAPPING

IEC 62443 SL2-SL3 · NERC CIP · NIS2 · ISO 27001 · CIS Controls

DEPLOYED ACROSS

Camera streaming · OT/ICS telemetry · database replication · disaster-recovery backup · file transfer — in power, oil & gas, manufacturing, transportation, finance, defence, and engineering / design services.

New to data diodes? See **"What Is a Data Diode? A Plain-English Guide"** in Basics · 101. For the full architecture walkthrough, see **"A Guide to Data Diodes"** in Deep Dive Guides — both on the Resources page.