

# Liaison Router (Pass-through) Functionality

## Real-world Application Report

Liaison communication processor technology was designed with the objective of providing extensive flexibility to users commissioning communication links as a result of our own on-site experience with the process over many years. Design considerations were many, but central was a software architecture that allows Liaison to add functionality as needed so that Liaison communication processors could “grow” to be as comprehensive a communication tool as possible.

Synchrude, an energy company active in the Alberta oilsands, was implementing an extensive control system which featured a very large redundant Ethernet backbone. Liaison was called upon to provide protocol conversion services for several legacy networks that were technically challenging because of the functional peculiarities of both hardware and software elements in the system.



After successful implementation of a solution, Liaison was called upon again to provide a **bridging** functionality between a number of redundant Modbus Plus networks and its redundant Ethernet networks featuring multiple masters (at least three) simultaneously requesting data from Quantum PLCs. Additionally, Quantum PLCs were redundantly requesting data from the Ethernet network.

The functional specification for this capabilities included the recoverability of the Liaison communication processors from network anomalies like broadcast storms, support for multi-master requests from the Ethernet network, and similar support from Quantum PLC request from a redundant Modbus Plus network.

Validation involved testing the system with dozens of Quantum PLCs representing hundreds of messages. Fortunately Liaison communication processors have extensive hardware resources (RAM, storage) to accommodate even very heavy communication traffic.

- Redundant Ethernet Support
- Multiple masters requesting data simultaneously from the same source
- Recoverability from Ethernet anomalies (Broadcast storm)
- Redundant Modbus Plus Support
- Multiple Modbus Plus route support

