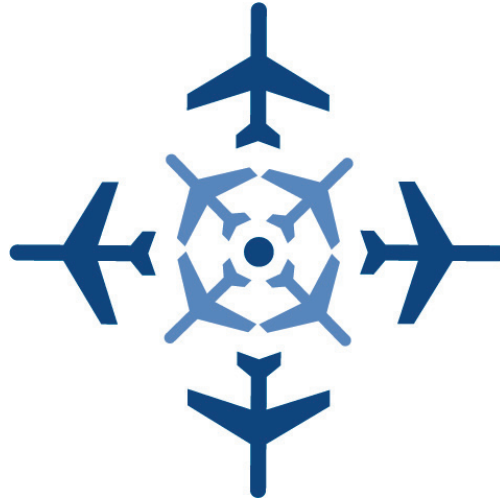


NetGate/AFDX®

Protocol Conversion Tool

A615A/Ethernet – A615A/AFDX®



- Forwards UDP-based traffic between AFDX® and Ethernet interfaces
- Translates ARINC 615A over Ethernet to ARINC 615A over AFDX®
- Turns TechSAT's family of Ethernet Data Loader products into AFDX® Data Loader tools
- Fully supports all ARINC 615A operations: FIND/SNIP, Information Operation, Upload Operations, Download Operations
- Simple configuration using Excel/Open Office or text editor
- Highly configurable at AFDX® SAP port and VL level





mastering
realtime
complexity

NetGate/AFDX® Protocol Conversion Tool A615A/Ethernet – A615A/AFDX®

Application Scope

NetGate/AFDX® is a configurable gateway which can forward UDP-based traffic between AFDX® and Ethernet interfaces, i.e. it is able to move frames from each network to the other without modification of the data. NetGate/AFDX® combines the functionalities of a router and a gateway in the following way:

- > It can move every single Ethernet frame between different subnets associated to different Ethernet interfaces.
- > It can move every single AFDX® frame between different AFDX® ports associated to different virtual links and interfaces.
- > It can deliver every single Ethernet frame to the AFDX® interfaces and in the reverse direction with automatic IP fragmentation.

Different from a commercial gateway, NetGate/AFDX® does not perform any reassembly, de-encapsulation or inspection of the contents of the frames as they pass through, but rather automatically routes every frame (i.e. every fragment in case of IP fragmentation) according to the configuration only.

Hardware / Software Requirements

NetGate/AFDX® runs as a console application on Linux and Windows XP | 2000 platforms, and uses either the AFDX®-PM-2CTR or the PMC694/AFDX® AFDX® PMC card from TechSAT.

Hardware / Software Requirements

The NetGate/AFDX® configuration (see diagram) is stored in a csv (comma separated value) file which can be edited with Excel, Open Office or any text editor. NetGate/AFDX® allows defining the following declarations:

- > Ethernet declarations consisting of Ethernet interfaces, links (i.e. IP addresses), receive and transmit ports

- > AFDX® declarations consisting of AFDX® interfaces, receive and transmit Virtual Links, receive and transmit ports
- > Forwarding rules defining the routing of every frame on a port basis (combination of Ethernet / AFDX® receive ports and Ethernet / AFDX® transmit ports)
- > AFDX® and Ethernet Data Loading targets used for the Data Loading support

NetGate/AFDX® allows forwarding data from one receive port to multiple destinations and allows buffering frames on a forwarding rule basis.

Usage of SAP Ports

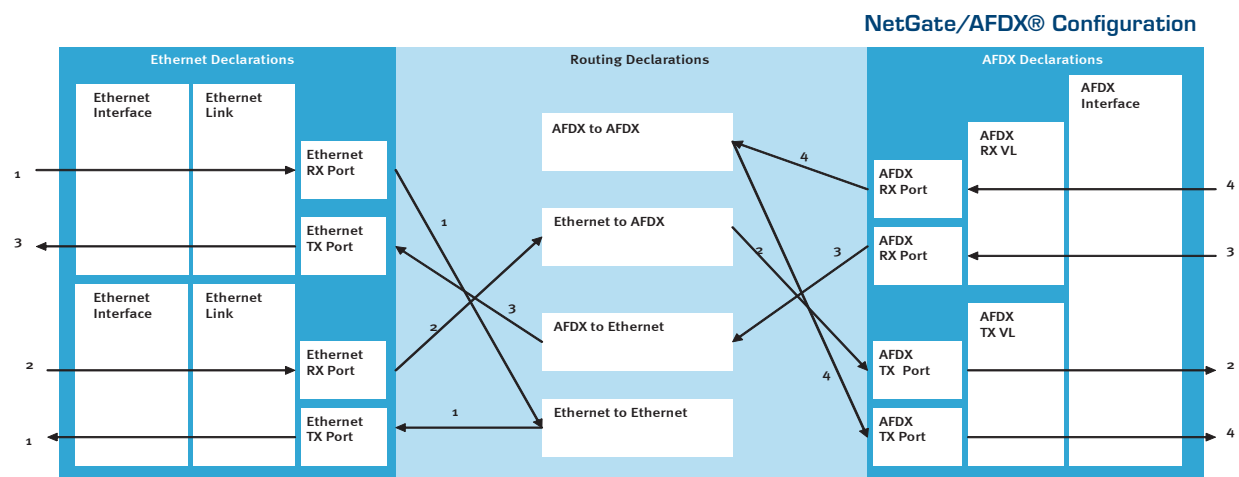
NetGate/AFDX® can use SAP ports to receive and transmit frames, providing routing flexibility, simplification of the configuration and reduction of the number of ports.

Support for Data Loading

NetGate/AFDX® allows turning an ARINC 615A NetLoader data loading system into an ARINC 615A over AFDX® data loading system with minimal configuration. NetGate/AFDX® can be used as an interconnecting device between Ethernet data loaders (e.g. TechSAT's NetLoader) and AFDX® targets, providing a suitable solution for loading AFDX® devices. NetGate/AFDX® is ARINC 665 compliant and fully supports all ARINC 615A operations:

- > FIND/SNIP
- > Information Operation
- > Upload Operations
- > Download Operations

NetGate/AFDX® permits automatic discovery of Ethernet targets and loading of multiple AFDX®/Ethernet devices from one data loader.



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