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TTETools – TTEthernet Development Tools 5

The software tools for developing a TTEthernet® network

Key Benefits

- ✅ Complete tool chain from system-level communication requirements to loading of device configurations
- ✅ Modeling of real-time communication requirements, network and topology
- ✅ Based on open XML databases for flexible exchange with third-party tools
- ✅ Specialized editors for each design step
- ✅ Command line interface for scripting purposes

The TTETools development suite enables seamless design, configuration and data loading for TTEthernet®-based networks. TTETools are used to capture system-level communication requirements and automatically generate network and device configuration files. The network design process is built around open, layered XML databases. Therefore, TTETools enable a seamless integration with existing design processes.

Network Design and Configuration

The TTETools development suite includes the following core software tools for designing networks and creating device configurations:

- TTEPlan: TTEthernet®/AFDX® network design tool that generates the network configuration. It features schedule generation, routing of virtual links and calculation of parameters for the TTEthernet® clock synchronization.
- TTEBuild: Creates the individual device configurations (in human-readable XML format and in loadable binary format) from the system-wide network configuration database

All software tools include a command line interface for batch processing. A graphical user interface using the Eclipse environment is also available.
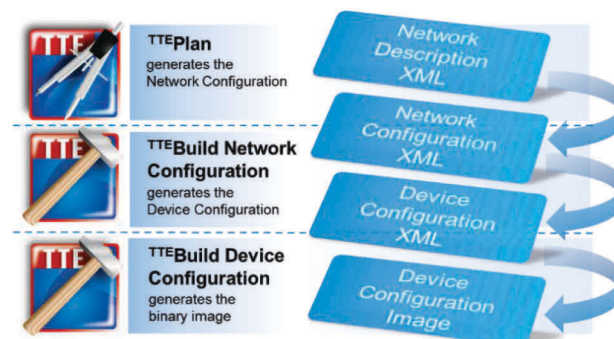
Reports are generated in XML or HTML format for easy readability and facilitation of post-processing.
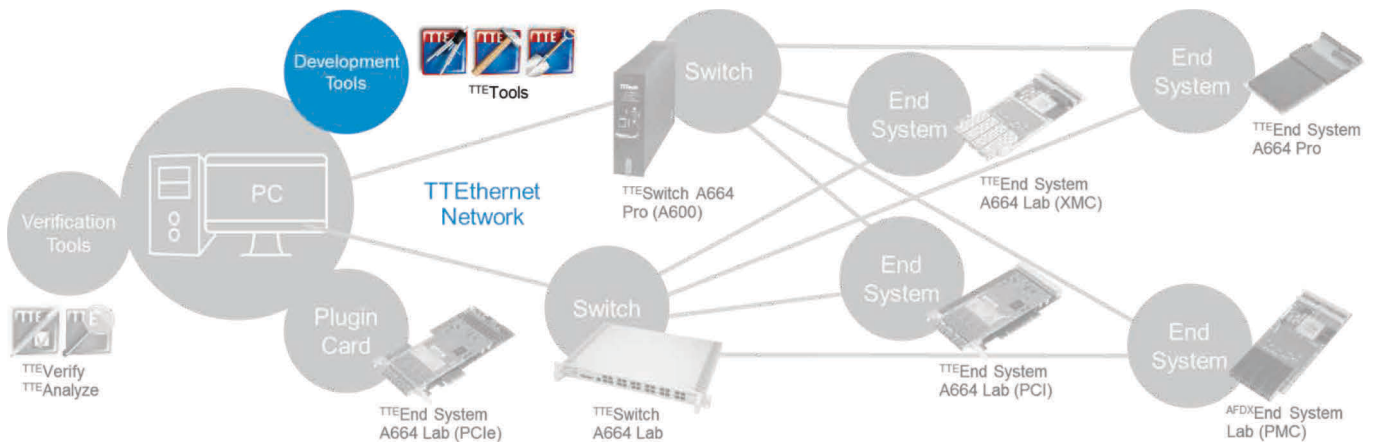
Network Design Flow

The complete set of TTETools automates the transformation of the network-wide configuration specification into device-specific configuration files.

The figure below presents the data flow and the tooling support for creating the device configurations for a TTEthernet® network.

Application Fields

- Aerospace
- Rotorcraft
- Space

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Configuration Databases

The software tools of the ^{TTE}Tools development suite use the following configuration databases:

- Network Description: System-level communication requirements for the network including topology, virtual links, timing requirements, etc.
- Network Configuration: Hardware-independent configuration format for the complete network including the planned schedule and routing information.
- Device Configuration: Set of device-specific configuration parameters.

All data formats are specified and implemented using the open XML standard. Third-party tools may be used to create or modify parts of the different configuration databases or to extract relevant information for further post-processing and analysis.

Data Loading

The ^{TTE}Tools development suite also includes the necessary software tools for loading configuration files to TTTech switches:

- ^{TT}615A3-Loader: ARINC 615A compliant data loader
- ^{TTE}Load: For loading configuration files to TTTech switches not supporting ARINC 615A

General Product Features	– Configuration of TTEthernet® and AFDX® networks – Network scheduling, routing and configuration of AS6802 clock synchronization – Create device configurations for TTTech network components – Loading of device configurations using ARINC 615A
Supported Operating Systems	– Microsoft Windows 10 Enterprise, 64-bit – Ubuntu Linux 18.04 LTS, 64-bit – CentOS Linux 7, 64-bit
Recommended System Specification	– 2.0 GHz or faster processor – Minimum of 4 GB physical RAM – Minimum of 2 GB available disk space
Product Variants	– ^{TTE}Tools 5 Expert (Order number: 13057) – ^{TTE}Tools 5 Starter (Order number: 13056) The starter edition is limited to configuring networks with a maximum of 100 virtual links. The expert edition has no such restrictions.
Software Maintenance Service	The optionally available Software Maintenance Service entitles customers to receive ^{TTE}Tools updates for a period of 12 months, so they can fully benefit from continuous product development and improvement. (Order number: 12074)

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