

TTP Driver and TTP TD-COM Layer

The Certifiable Embedded COTS Solution

The TTP Driver and the TTP TD-COM Layer are DO-178B Level A certifiable embedded software components. The COTS components handle all aspects of TTP communication. TTP Driver handles startup, reintegration, and error handling of the TTP network. The TTP TD-COM Layer provides a simple interface for sending and receiving data over the network. The components are operating system-independent and come with full tool support.

KEY FEATURES/BENEFITS

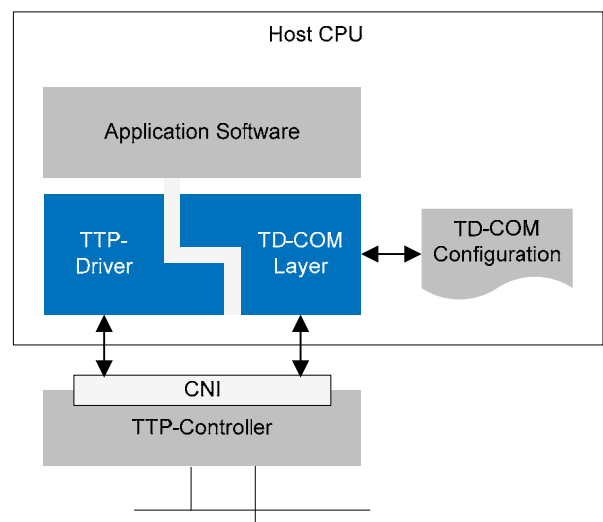
- TTP communication middleware
- Executes a communications defined in configuration tables
- Startup, reintegration, error-handling
- DO-178B Level A certification artefacts
- Operating system-independent
- Full tool support, RTCA-DO-178B tool for verification of configuration tables is available
- Transparent redundancy management
- Mature COTS solution

Modular Communication Infrastructure for TTP

TTP is a time-triggered communication protocol for fault-tolerant, distributed, hard real-time systems. Distributed embedded computing based on TTP enables design of applications independent of underlying communication architecture, physical layer, topology or embedded host hardware.

TTP Driver and TTP TD-COM Layer provide a modular communication middleware for TTP with the focus the development on the aircraft functions. TTP Driver and TTP TD-COM Layer can be reused for different aircrafts functions, and allows manufacturers to reduce life-cycle costs. TTP Driver and TTP TD-COM Layer can be seamlessly ported for different platforms and facilitates the introduction of new hardware and software to replace obsolete subsystems.

TTP Driver and TTP TD-COM Layer are deployed in an aircraft programme for implementing the power distribution network.



Easy Configuration and Integration

The TTP TD-COM Layer is a reusable engine that executes configuration tables. These configuration tables are created by the tool TTP Build , and define the messages that are sent and received by a specific node.

The two embedded components are operating system-independent. They can be integrated in any COTS (commercial of the shelf) or proprietary operating system. The TTP Driver and the TTP TD-COM Layer access the interface of the controller and provide all necessary information to the application tasks. The application tasks are scheduled by the operating system.

RTCA DO-178B Level A certification artefacts form embedded code are available. A qualified RTCA DO-178B verification tool for the verification of communication tables completes the set of certification artefact for TTP TD-COM Layer.

TTPDriver Features

- Initialization of the TTP controller
- Diagnostics of TTP operation
- Access to the globally synchronized TTP time
- Frame status information
- MEDL CRC check performed by the TTP controller
- FAA accepted DO-178B Level A certification artefacts
- Network synchronization support

TTPTD-COM Layer Features

- Table-driven configuration for fast certification
- Operating system-independent
- Synchronous and asynchronous sending and receiving of messages
- Simple and efficient API in C language
- Tool support for generation of configuration tables
- Qualified tool for verification of configuration tables
- Support for multiple networks
- FAA accepted DO-178B Level A certification artefacts

TTPTD-COM Layer Configuration and **TTP**Tools

The system engineer defines the network requirements with **TTP**Plan and creates the network schedule.

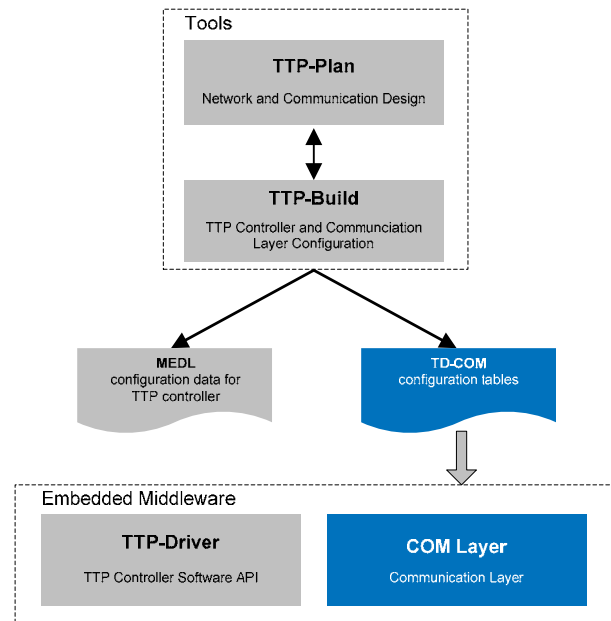
TTPBuild reads the network schedule from the database. The node designer provides additional implementation-specific information. **TTP**Build generates the configuration tables for the **TTP**TD-COM Layer and the MEDL.

Related Products

TTPTD-COM-Layer needs **TTP**Build for configuration.

TTPTD-COM Verify provides RTCA DO-178B compliant verification of the configuration tables.

TTPHardware-COM Layer and **TTP**FT-COM Layer provide different communication layer implementations.



Supported Platforms

- Freescale MPC555, MPC5567, MPC5554 PowerPC for austriamicrosystems AS8202NF communication controller
- Other platforms are available upon request

Order Number

- S25.00.0: **TTP**Driver
- S26.00.1: **TTP**TD-COM Layer

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