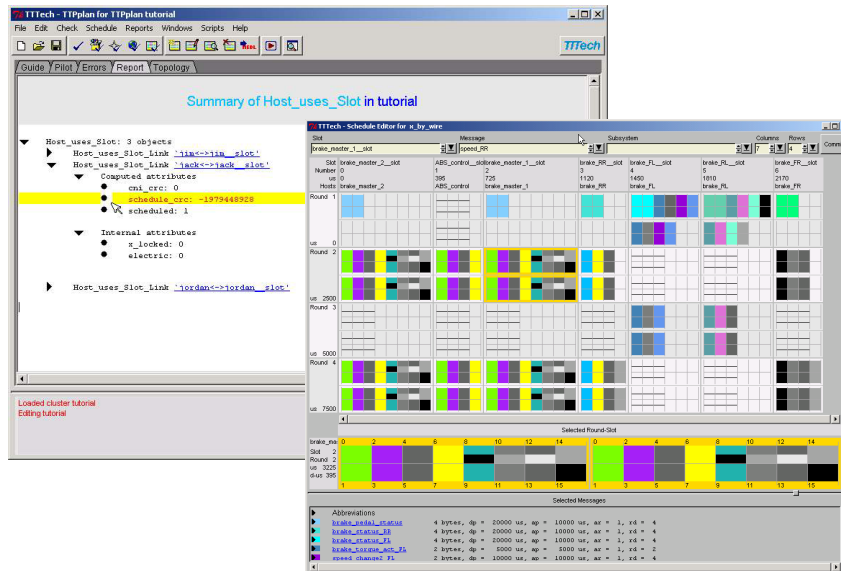


TTTech Automatic Communication Scheduling



TTPPlan – The TTP Cluster Design Tool

TTPPlan is a comprehensive tool for design of distributed real-time systems using TTP[®]. Based on the concepts of state messages and temporal firewalls, it allows the precise definition of global timing and communication patterns on the TTP bus. All input is checked for consistency with the time-triggered architecture and a complete TTP communication schedule is automatically created. As a result, the cluster design serves as a central database for subsequent node designs, monitoring, and other purposes.

Specifying Communication Parameters

The composability and modular testability of systems based on the time-triggered approach relies on a correct and complete specification of the system-wide communication schedule both in the value and time domains. TTPPlan creates such a schedule by using a powerful object-oriented data model that can be accessed via an intuitive graphical user interface or import/export interfaces. The graphical user interface approach offers a step-by-step guide, a pilot navigation window, and easy-to-use forms.

Data Checking for Consistency and Correctness

Once the cluster has been specified, TTPPlan checks the design for correctness. The error browser offers detailed explanations and hyperlink functionality. By simply clicking on an error message, the appropriate form is opened and the error can be corrected. The automatic scheduler translates the communication design into a TTP communication schedule which can be edited graphically. Significant schedule properties – bus utilization and spare bandwidth, message update frequencies, and so on – can be viewed immediately. The schedule is the basis for the generation of the configuration data (MEDLs – message descriptor lists) files, which are needed to configure the TTP communication controllers of the cluster for proper operation.

Functionality

- Clear and easy-to-understand object model
- Check of input data against object model
- Application-specific agreement algorithms
- Optimal scheduling algorithm automatically generates a message structure for the TTP bus (MEDL). The message structure and configuration can be verified by ^{TTP}Verify.
- TTP multiplexing support
- Virtual TTP controller
- Handles design of bus-, star-, and multi-star-topologies
- Support for array-type messages
- Schedule editor with graphical representation of messages on the bus
- Schedule display options (e.g. net utilization and free bandwidth)
- Error browser with hyperlink functionality for quick and easy debugging
- Report of scheduling statistics
- Report generator for standard and custom reports
- Context-sensitive help
- Guided mode for first-time users, object browser for experienced users
- Drag-and-drop editing of generated schedule
- Batch mode execution for automated usage via script files, or integration with complementary tools such as ^{TTP}Matlink or comparable interface tools
- Flexible programming/scripting interface (Python)
- Support for austriamicrosystems AS8202NF TTP communication controller

System Requirements

- Operating system: MS Windows 2000 (SP 1 or 2), Windows XP (support for other operating systems is available upon request)
- Processor: Intel Pentium 4 or above, AMD Athlon XP or above, or compatible (1.5 GHz or above recommended)
- Disk space: 30 MB
- RAM: 256 MB (minimum), 512 MB (recommended)
- Graphics: 1024x768 16-bit colors (minimum), 1280x1024 32-bit colors (recommended)
- CD-ROM drive
- Adobe Acrobat Reader 4.0 or above

^{TTP}Plan is part of the ^{TTP}Tools software development suite.

Subject to changes and corrections.

For further information, including price and availability, contact products@tttech.com.

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