Lauterbach APIs

With its APIs, Lauterbach provides software interfaces that enable:

• A TRACE32 development tool to be controlled by an external application

• A TRACE32 development tool's set of functions to be extended by means of an external application

Here is an overview of the individual TRACE32 APIs:

TRACE32 API

The TRACE32 API is the standard API used to control a TRACE32 development tool using an external application. The following function-specific APIs are part of TRACE32 API:

• **Visual Basic** API provides a precompiled DLL, which enables a TRACE32 development tool to be controlled using a Visual Basic program.

• **FDX API** provides C libraries, enabling an external application that runs on the host to rapidly exchange data with the application on the target system. The TRACE32 development tool serves as a communication interface for the FDX communication.

• **JTAG API** provides C libraries that enable an external application to communicate with a JTAG TAP controller in the target system using TRACE32 ICD debugger hardware. This way, users can implement, for example, boundary scan test programs or basic functions of a debugger for another core in the JTAG chain of the microcontroller without their own hardware interface.

The following APIs have independent software interfaces:

Simulator API

The Simulator API enables users to define timers, external communication interfaces, and other peripheral components for Lauterbach instruction set simulators. This means that an instruction set simulator can also be used to test programs that operate timers, or exchange data over communication interfaces.

Communication API

For a number of microcontrollers, Lauterbach offers ROM-Monitor-based debuggers. These debuggers communicate with the ROM-Monitor installed on the target system over an RS232 interface or over the interface provided by the Lauterbach EPROM-Simulator hardware.

The Communication API now enables a ROM-Monitor-based debugger to be extended using an external application in such a way that it can also be operated using other communication interfaces such as Ethernet or CAN.

Lauterbach GmbH   *www.lauterbach.com*

Altlaufstraße 40 • D-85635 Höhenkirchen-Siegertsbrunn • Tel. +49 8102 9876-0 • Fax +49 8102 9876-999 • sales@lauterbach.com

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Kernel Awareness API

TRACE32 development tools typically support most real time operating systems currently available on the market. The main functions supported are:

• Display of operating system resources during debugging

• Comprehensive methods of analyzing the run-time behavior of tasks

The Kernel Awareness API enables users of TRACE32 development tools to customize this operating system support to their proprietary real-time operating systems.

APU API

Lauterbach already supports the debugging of a couple of complex coprocessors. Examples are:

• eTPU debugger for the MPC5554 from freescale

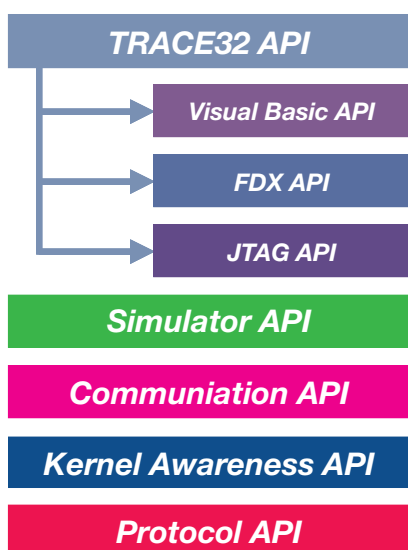• PCP debugger for the TriCore from Infineon

The APU (Auxiliary Processing Unit) API allows to implement basis functions for debugging coprocessors not yet supported by Lauterbach. The basis functions include disassembling of the coprocessor code, run-time control and the display of memory/register contents.

Protocol API

The TRACE32 PowerProbe and PowerIntegrator products allow to record the time behavior of any communication interface as well as any bus protocol. TRACE32 software already supports the evaluation and the display of important communication and bus protocols.

The Protocol API enables raw trace data to be converted into higher-level protocols using an external application, even if TRACE32 software provides no customization of the communication or bus protocol. This means that run-time behavior recorded in the trace can be analyzed quickly and intuitively.

TRACE32 API
- Visual Basic API
- FDX API
- JTAG API

Simulator API

Communiation API

Kernel Awareness API

Protocol API

Andrea Martin, February 2005

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Altlaufstraße 40 • D-85635 Höhenkirchen-Siegertsbrunn • Tel. +49 8102 9876-0 • Fax +49 8102 9876-999 • sales@lauterbach.com

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