

# ENEAS<sup>®</sup> OPTIMA OSE



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## Integrated Development Environment (IDE) for the Enea OSE<sup>®</sup> Real-Time Operating System

Enea<sup>®</sup> Optima is a suite of powerful system debug, profiling, and tracing tools for the Enea OSE<sup>®</sup> real-time operating system. Based on the standard open source Eclipse™ platform and C/C++ development tools, Enea<sup>®</sup> Optima provides a complete integrated software development environment (IDE) that covers the entire life cycle of embedded systems, from board bring up, through kernel and application development, to fielded systems.

### Read, Write and Build C/C++ Code

The amount of software needed to meet the requirements on devices and embedded systems is increasing. The sheer size of the source code can make it difficult for developers to navigate and understand.

The Eclipse C/C++ development tools, included in Enea Optima, feature a rich set of tools to help developers with these challenges. The workspace provides an up to date view of the entire source code and keeps track of changes made to the version fetched from the version control software. The parser and indexer allow the developer to navigate from a function or variable name to the declaration or definition, and back again, with a single keystroke. The content assist framework provides automatic completion of type, variable and function names, and assistance filling in function arguments. And the makefile builder and error parsers allow builds and compilation errors to be tracked and handled within the IDE even if the source code is built using external makefiles or scripts.

### Debug Kernel and Application C/C++ Code in a Running System

In distributed applications, the nature of communication links often makes it difficult to stop execution on a

processor in a running system to inspect and debug the state of the software, as is required with hardware assisted debug solutions. Multi-core hardware and multithreaded software also make the traditional debug model, where the user takes control over an entire program or process, more difficult to implement and more difficult to use.

Enea Optima C/C++ debug support and OSE optimized GNU debugger (GDB), together with the Eclipse C/C++ development tools, provide a flexible software based debug solution that allows developers to take control over individual threads, or groups of threads, from both program and kernel images, in a running system, without affecting the rest of the application.

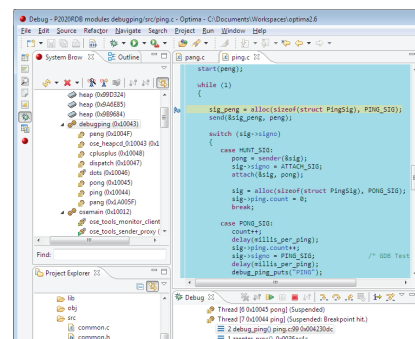


Figure 1. Enea<sup>®</sup> Optima C/C++ Debug Support

### Debug Kernel and Application C/C++ Code using a Hardware Probe

Before a processor or board can be used in a system and applications run on it, it must be able to boot and basic device drivers must be functional.

To assist in this phase of development, Enea Optima C/C++ debug support includes support for hardware assisted debugging, using BDI2000/3000 debug probes from Abatron AG. This provides a convenient debug environment that supports direct access to target hardware and that works when no software services on the target device are available.

### Explore and Manage the System

As the amount of software in modern multi-CPU, multi-DSP and multi-core embedded systems increases, it becomes more and more difficult to get the understanding of system structure needed to be effective developing, testing and maintaining the software. To help solve this problem, Enea Optima tools let the user raise the abstraction level and get one coherent view of the entire system

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