RENESAS Tool News

RENESAS TOOL NEWS on June 1, 2010: 100601/tn1

A Note on Using High-performance Embedded Workshop

Take note of the following problem when using High-performance Embedded Workshop:

- With coverage rates calculated incorrectly in the Coverage window and the Code Coverage window

High-performance Embedded Workshop is bundled with the compilers and other software products that it manages.

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1. Product and Versions Concerned

High-performance Embedded Workshop
V.3.00.01 through V.4.07.01

2. Debuggers Involved

The following simulator and emulator debuggers are involved in this problem when used with High-performance Embedded Workshop:

- Simulator debugger for the SuperH family
- Simulator debugger for the H8SX, H8S, and H8 families
- E6000H Emulator Software
- E6000 Emulator Software
- E200F Emulator Software
- H8SX E100 Emulator Software
- H8S/Tiny E100 Emulator Software

3. Description

Even if all the instructions within a specified range has been executed in a coverage measurement, the coverage rate may not reach 100%. An example is shown below.

Example:

```
-------------------------------------------------------

00001000 0000              .DATA.W          H'0000
```

```
00001002 604C          EXTU.B      R4,R0
00001004 2008          TST         R0,R0
-------------------------------------------------------
```

In this example of instruction codes, take addresses 1002 through 1005 as a range of coverage measurement. Even if all the instruction codes are executed, the coverage rate does not reach 100% in this example.
The reason is that immediately before address 1002, at which the coverage measurement begins, exists an assembler directive .DATA, and its code 0000 and the next instruction's code 604C are interpreted as a single 4-byte instruction, so EXTU.B, the instruction at address 1002, is interpreted not to exist in coverage measurement.

The following explains how a single 4-byte instruction is assumed from two codes:

```
-------------------------------------------------------------------------
-------------------------------------------------------
00001000 0000604C   MOVI20  #H'0604C,R0   -->   assembler directive .DATA's code 0000 and next instruction's code 604C are concatenated.
00001004 2008       TST     R0,R0
-------------------------------------------------------------------------
-------------------------------------------------------
```

4. Schedule of Fixing the Problem

We plan to fix this problem in the next release of the product.
