RENESAS Tool News

A Note on Using the Real-Time OSes for the SuperH MCU Families --With Using the ivset_tfl Service Call--

Please take note of the following problem in using the real-time OSes for the SuperH MCU families:

- With making the ivset_tfl service call

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1. Products and Versions Concerned
(1) All the versions of the real-time OS for the SH-4- and SH-4A-cored MCUs, HI7750/4 V1.00r1 through V.2.02 Release 02

(2) All the versions of the real-time OS for the SH-4A- and SH4AL-DSP-cored MCUs, HI7300/PX V.1.00 Release 00 through V.1.02 Release 00

(3) All the versions of the real-time OS for the SH4AL-DSP-, SH-3-, and SH3-DSP-cored MCU, HI7700/4 V1.00r1 through V.2.03 Release 00

(4) All the versions of the real-time OS for the SH2A-DUAL-cored MCUs, HI7200/MP V.1.00 Release 00 and V.1.00 Release 01

(5) All the versions of the real-time OS for the SH2-DSP-, SH-1-, SH-2-, SH-2A-, and SH2A-FPU-cored MCUs, HI7000/4 V1.00r1 through V.2.02 Release 02

2. Problem
If the program is running through the following steps, the ivset_tfl service call issued in Step (4) may prevent task event flag specific to the task in Step (1) from being set by the vset_tfl or ivset_tfl service call in Step (2).

(1) A task, here called A, is in WAITING state for task event flag.

(2) A program makes the vset_tfl or ivset_tfl service call to set any bits that task A is waiting for.

(3) An interrupt (including a timer interrupt) is occurred while the kernel is servicing the call in (2).

(4) The handler (an interrupt-, cyclic-, alarm-, or overrun handler) invoked by the interrupt in (3) issues the ivset_tfl service call to task A to set any bits that task A is waiting for.

3. Workaround

Use general event flag instead of task event flag as follows:

(1) Create an event flag as follows:
- Attribute of event flag (T_CFLG.flgatr):   TA_WSGL|TA_CLR
- Initial value of bit pattern (T_CFLG.iflgptn): 0

(2) Set an event flag using set_flg or iset_flg in place of vset_tfl or ivset_tfl.

(3) Clear an event flag using clr_flg or iclr_flg in place of vclr_tfl or ivclr_tfl.

(4) Wait for an event flag using wai_flg, twai_flg, or pol_flg in place of vwai_tfl, vtwai_tfl, or vpol_tfl with TWF_ORW for parameter 'wfmode' (waiting mode).

4. Schedule of Fixing the Problem

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