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A Note on Using Real-Time OS--RX850 Pro--for the V850 of MCUs

When you use real-time OS RX850 Pro, take note of the following problem:

- With cyclic handlers not being invoked and the tasks in the timeout wait state waiting for timeout periods not being advanced (No. 18)

Here, the number at the end of the above item is a consecutive one of the problems in RX850 Pro. For details of the problems from No. 1 through No. 17, see the following Web page:

<http://tool-support.renesas.com/eng/toolnews/rx850pro.html>

This page will be opened on July 21.

1. Versions Concerned

Kernel of RX850 Pro V3.21 and earlier

(In the RX850 Pro package, V3.30 and earlier are concerned.)

2. Description

A cyclic handler whose attribute is the activity state may not be invoked. (See NOTE 1.) And a task in the timeout wait state waiting for timeout may not be advanced. (See NOTE 2.)

NOTES:

1. If you refer to information about any cyclic handler that cannot be invoked, TCY_ON is displayed which indicates the handler is in the activated state. To refer to information about these handlers, issue the ref_cyc service call or use the RD850 Pro task debugger.
2. If you refer to information about any task that is waiting for timeout and whose queue time does not advance, TIM is displayed

which indicates the task is waiting for timeout. To refer to such tasks, use the RD850 Pro task debugger.

3. Conditions

This problem arises if the following conditions are both satisfied:

- (1) While the cyclic handler "cychdrX" whose attribute is the activity state, a system-clock interrupt is requested by the OS.
- (2) While the interrupt requested in (1) is handled, interrupt handler "inthdrA" issues the act_cyc system call that takes two parameters TCY_ON and TCY_INI to "cychdrX" in (1).

Note, however, that even if the above conditions are both satisfied, this problem may not arise depending on when interrupts are requested or how data is processed within the OS.

4. Workaround

Prohibit "inthdrA" from issuing the act_cyc system call that takes two parameters TCY_ON and TCY_INI to "cychdrX".

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