
RCSL No: 31-D530

Edition: December 1978

Author: Peter Jørgensen

Title:

RC8000 INTERVAL CLOCK PROCESS

Keywords:

RC8000, Interval Clock, External Process.

Abstract:

This paper describes the conventions of an external process controlling synchronization between internal processes and the interval clock.

(7 printed pages)

Copyright © 1979, A/S Regnecentralen af 1979
RC Computer A/S
Printed by A/S Regnecentralen af 1979, Copenhagen

Users of this manual are cautioned that the specifications contained herein are subject to change by RC at any time without prior notice. RC is not responsible for typographical or arithmetic errors which may appear in this manual and shall not be responsible for any damages caused by reliance on any of the materials presented.

Interval Clock

General Rules

The process kind is 2. Operations can be initiated by any internal process. Initialization and reservation have no effect. The clock accepts messages simultaneously from more than one internal process.

Delay Operation

A message to the clock specifies a time interval either in seconds or in 0.1 milliseconds. After the elapse of the interval the clock returns an answer. A maximum delay is specified by a time interval equal to -1. Otherwise the time interval must be from 0 to 24 hours, or else the message is treated as unintelligible.

The clock process is synchronized with the hardware interval timer; it is activated at each clock interrupt to update the delays in its queue and will return answers for delays which have expired.

Thus the actual delay can have a maximum error equal to the interrupt frequency of the hardware interval timer depending on whether a message is sent at the beginning or at the end of an interval.

The mode field of message is zero, equals one of the following values, or is a sum of the values:

Mode 2 Time interval is specified in 0.1 milliseconds. If mode 2 is not used, then time interval is specified in seconds.

Mode 4 Specifies that the answer is to be returned, when the programmed real-time clock of the system reaches the value:

current value of real-time clock + time interval

This means that the actual delay may differ from the specified time interval if the real-time clock is changed by another internal process at a time when the message is queued to the clock process.

The mode is only meaningful at time intervals different from -1. If mode 4 is not used, then the actual delay will always equal the time interval specified.

Statusword of answer will normally be zero. However, if mode 4 is used, and the real-time clock is changed to a value beyond the calculated time for the expiration of the delay, then the answer contains a statusbit, intervention.

Operation to Wait for Clockchange

Equivalent to Delay Operation, except that the answer is always returned if the programmed real-time clock is changed by another internal process, before expiration of the time interval. In this case the answer contains a statusbit, intervention, otherwise the statusword is zero.

Operation to Wait for Power Restart

Equivalent to Delay Operation, except that the answer is returned, if a power restart or power failure restart is executed before expiration of the time interval. In this case the answer contains a statusbit, intervention, otherwise the statusword is zero.

Status Bits

0 intervention

Messages and Answers

<u>operation:</u>	<u>message:</u>	<u>answer:</u>
delay	0<12 + mode seconds or interval(0:23) interval(24:47)	statusword 0 0
wait for clockchange	2<12 + mode seconds or interval(0:23) interval(24:47)	statusword 0 0
wait for power restart	4<12 + mode seconds or interval(0:23) interval(24:47)	statusword 0 0

RETURN LETTER

Title: RC8000 Interval Clock Process

RCSL No.: 31-D530

A/S Regnecentralen af 1979/RC Computer A/S maintains a continual effort to improve the quality and usefulness of its publications. To do this effectively we need user feedback, your critical evaluation of this manual.

Please comment on this manual's completeness, accuracy, organization, usability, and readability:

Do you find errors in this manual? If so, specify by page.

How can this manual be improved?

Other comments?

Name: _____ Title: _____

Company: _____

Address: _____

Date: _____

Thank you

..... Fold here

..... Do not tear - Fold here and staple

Affix
postage
here

 **REGNECENTRALEN**
af 1979

Information Department
Lautrupbjerg 1
DK-2750 Ballerup
Denmark