

ITRON Newsletter No.15

ITRON Technical Committee, TRON Association
 Katsuta Building 5F, 3-39, Mita 1-chome, Minato-ku, Tokyo 108, JAPAN
 TEL: (03) 3454-3191 FAX: (03) 3454-3224

The ITRON Registration System for Products and Applications

The product listed in another page was newly registered in the period through June 1, 1995. Previously registered products are listed in ITRON Newsletter Nos.1 to 3, 5 to 7, and 9. Details of the product registration system can be obtained by contacting the TRON Association.

ITRON-related Publications

Listed in another page are the publications prepared and issued by the ITRON Technical Committee as of June 1, 1995. The ITRON- μ ITRON Standard Handbook is a one-volume compilation of μ ITRON (Ver 2.0) and ITRON2 specifications. Each of the publications below can be obtained directly from the sources indicated.

The latest version of μ ITRON3.0 is now Ver 3.02.00. Changes made since the μ ITRON3.0 Standard Handbook was released (Ver 3.00.00) are noted in Newsletter No.5 and No.11, as well as in ITRON Standard Guidebook 2.

The recently issued ITRON Standard Guidebook 2, which is a general introduction to the ITRON specifications, deals primarily with μ ITRON3.0. Meanwhile, the earlier ITRON Standard Guidebook '92-'93 remains as a valuable reference for use with the μ ITRON (Ver 2.0) and ITRON2 specifications, even though the dates in its title are now past.

Compatibility checksheets for μ ITRON3.0 specification

Since last year the ITRON Technical Committee has been working on a set of checksheets for confirming the compatibility of operating systems implementing the μ ITRON3.0 specification. A beta edition of the checksheets has now been released in order to get opinions

† This newsletter is reprinted from TRONWARE vol.34 and TRON PROJECT BIMONTHLY No.39.

from a large number of users and reflect these in the final version. The official release is expected to come around the end of this fiscal year (end of March 1996).

The μ ITRON3.0 compatibility checksheets are a tool to help users compare different implementations of the μ ITRON3.0 specification. The main use is for determining the amount of work involved in porting application programs from one system to another. Using these checksheets, for example, the user can get an accurate grasp of the extent to which an OS implements optional specifications or other specifications that are not mandatory for all implementations. The checksheets are designed to simplify this analysis considerably. Moreover, they can be read into a computer, then converted into tabular format so the functions of an OS can be listed in readily grasped form, or the differences among two or more OSs can be compared at a glance. After the official release, we are planning to require that μ ITRON3.0-specification products registered in the ITRON Registration System for Products and Applications be accompanied by the completed checksheets so these can be provided to users.

The beta version of the checksheets and samples of how they are to be filled in are available on the Internet by anonymous ftp at utsun.s.u-tokyo.ac.jp [133.11.11.11]. The files are located at /TRON/ITRON/CheckSheet. Questions or comments regarding the checksheets should be directed to the ITRON Technical Committee. We are further planning to distribute these beta files by floppy disk at the ITRON Open Seminar scheduled for July 20, and to give a summary explanation.

Participation in Embedded Systems Conference

As announced in ITRON Newsletter No.13, we are preparing to participate this fall in the Embedded Systems Conference in San Jose, California, as part of the ongoing effort to promote the ITRON specifications overseas. The ITRON presence will feature a booth and a lecture introducing the specifications. The Em-

Newly Registered Products (Jul. 1, 1994 – Jun. 1, 1995)

Specification	Product Name	Processor	Company
μ ITRON3.0 Specification	SR900	SPC900	Sony Corp.

ITRON-related Publications

Name	Type	Price	Publisher	Issued	ISBN No.
ITRON- μ ITRON Standard Handbook	Specification (Jap.)	4,800Yen	Personal Media Co.	1990	4-89362-079-7
μ ITRON3.0 Standard Handbook	Specification (Jap.)	4,000Yen	Personal Media Co.	1993	4-89362-106-8
ITRON/FILE Standard Handbook	Specification (Jap.)	3,000Yen	Personal Media Co.	1992	4-89362-092-4
ITRON Standard Guidebook '92-'93	Textbook (Jap.)	3,500Yen	Personal Media Co.	1992	4-89362-197-6
ITRON Standard Guidebook 2	Textbook (Jap.)	3,500Yen	Personal Media Co.	1994	4-89362-133-5
μ ITRON Specification Ver 2.01.00.00	Specification (Eng.)	12,000Yen	TRON Association	1989	–
ITRON2 Specification Ver 2.02.00.10	Specification (Eng.)	15,000Yen	TRON Association	1990	–
μ ITRON3.0 Specification Ver 3.00.00	Specification (Eng.)	–	TRON Association	1994	–

NOTES:

- Prices do not include consumption tax.
- The documents issued by the TRON Association are available to Association members at a special discount rate.
- English-language specifications can be obtained via the Internet from utsun.s.u-tokyo.ac.jp [133.11.11.11] with anonymous ftp. The usage of anonymous ftp is explained in Newsletter No.8.

bedded Systems Conference is a worldwide trade show in the field of embedded control systems, held twice a year in the United States (once each on the East and West coasts). The sponsor is Miller Freeman, Inc. We will be taking part in ESC West, the larger of the two annual events, scheduled for September 12–15 at the San Jose Convention Center. The lecture presented by the Technical Committee is entitled, “Standard Real-Time Operating System Specification in Japan for Consumer Applications,” noting the importance of embedded systems in Japan and introducing especially the μ ITRON specifications. The booth will be run by the TRON Association.

New Product

The latest product to be registered in the ITRON Registration System for Products and Applications is introduced here.

SR900

Sony Corp.

The SR900 is a real-time operating system developed by Sony for its SPC900 Series of 16-bit embedded microcontrollers, and implementing the μ ITRON3.0 specification.

The OS object size varies from a minimum 1 Kbytes to a maximum of approximately 7 Kbytes (not including connection functions), taking advantage of the compact μ ITRON architecture. Dispatching time is approximately 35 μ s (on an external 20 MHz clock supply). The interrupt handler adopts a direct-driving approach for high-speed interrupt processing.

The SR900 comes with a kernel generation tool (GR900) for setting static parameters when the OS is booted up and for selecting just the necessary functions, thereby configuring an OS optimized to its application.

A C language interface makes it possible to develop applications in both assembly language and C. Also provided with the OS is a driver library for operating the A/D converter, serial interface, timer and other SPC900 on-chip peripheral modules, by way of supporting embedded application development in C.

Using the SPC900's built-in serial interface function, connection functions are supported between multiple SPC900 chips, enabling development of multiprocessor systems.

The DR900 is provided as a dedicated debugger for efficient testing of applications using the SR900 OS. Among the debugging functions supported are those for referencing a task switching log and setting breaks for when a designated object is acquired. In these and other ways the DR900 provides an OS-oriented application debugging environment.