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Press Release

T-Engine Forum  
Ken Sakamura, Chair  
The TRON Association  
Naoyuki Akikusa, Chair

### Introduction of the TRON Engineer Certification Examination

The TRON Engineer Certification Examination will be held starting in 2008 by T-Engine Forum (Shinagawa, Tokyo; Chair: Ken Sakamura, professor at the University of Tokyo) and TRON Association (Minato, Tokyo; Chair: Naoyuki Akikusa), targeting embedded systems developers, as described below. In anticipation of this program, an initial trial examination will be held at TRONSHOW 2008 (<http://www.tronshow.org/>).

### Details

#### ■ Background of the TRON Engineer Certification Examination System

The field of embedded software supports the Japanese electronics industry, yet industry observers note a current significant shortage of embedded engineers. According to *Embedded Software Industry Survey 2007*, published by Ministry of Economy, Trade, and Industry and the Information-Technology Promotion Agency, there are now approximately 235,000 engineers in Japan working in the field of embedded software, falling short of the estimated required number by approximately 99,000 engineers.

To make up for this shortage, much embedded software development is being outsourced to companies both in Japan and overseas. When software development is outsourced, it is critical that the contracted company and their employees have sufficient technical expertise. However, in the absence of existing standards that could be used in an accurate evaluation of embedded software knowledge, technical expertise, and experience, outsourcers often outsource work without a solid understanding of the expertise of the developers to whom the work was entrusted.

As a result, outsourcers have often received software of insufficient quality,

because the developers lacked sufficient technical expertise. Problems of this nature are more likely to occur when development is outsourced overseas, in part because basic communication will likely prove more difficult under these circumstances.

To resolve this issue, the T-Engine Forum and TRON Association will establish the TRON Engineer Certification Examination system for certification of the technical expertise of embedded real-time software engineers. The TRON Engineer Certification Examination certifies the engineering capabilities required in using embedded RTOSs (such as T-Kernel and ITRON) and in actually developing embedded real-time system software.

#### ■ Purpose

1. To improve the technical expertise of embedded real-time software engineers by establishing recognized objectives and providing motivation
2. To provide objective standards of evaluation useful in indicating the level of technical expertise of contracted developers when these developers receive orders for development of embedded real-time systems
3. To provide objective standards of evaluation useful in indicating the level of technical expertise of potential employees to companies hiring embedded real-time software engineers, and through these standards, to enhance the social standing of engineers.

#### ■ Advantages

1. Engineers may:
  - Use examination results to evaluate their own technical expertise
  - Use examination results as objective standards of evaluation when seeking new career opportunities
2. Corporations may:
  - Motivate employees to improve technical expertise by encouraging them to take the examination
  - Gain an accurate understanding of the technical expertise of employees, information likely to be useful when organizing internal projects
  - Use examination results to evaluate the expertise of contracted

companies when outsourcing development work

- Evaluate engineers' skills based on the same standards when procuring engineers

## ■ Overview of Administration of the TRON Engineer Certification Examination

- Organizers
  - T-Engine Forum and TRON Association
- Intended Examinees
  - Engineers involved in embedded real-time system development in various businesses who currently use or plan to use TRON-specification operating systems
- Overview of Exam Administration
  - Examination time: 90 minutes
  - Maximum possible score: 100 points
  - Method of taking the exam
    - No separate time limits are established for each section.
    - Examinees can focus on questions in any section within the 90 minutes.
- Exam format
  - Computer-based test (CBT) or machine-scored test
- Schedule
  - Dec. 2007: First trial exam, at TRONSHOW 2008
  - Jan.–Mar. 2008: Second trial exam
  - First quarter of fiscal 2008: Formal examination starts
  - Fiscal 2009: Examination starts overseas
- Examination frequency
  - About 10 times a year

## ■ Overview of First Trial TRON Engineer Certification Examination

- Date and time
  - Dec. 12 (Wed.), 15:15–17:00
  - Dec. 13 (Thu.), 11:45–13:30, 15:15–17:00
  - Dec. 14 (Fri.), 11:45–13:30, 15:15–17:00
- Participants
  - Approximately 12 people at each session described above; total: 60

examinees

- Venue
  - Exhibition Hall, Tokyo International Forum (Glass Building, B2F)
  - 3-5-1 Marunouchi, Chiyoda, Tokyo 〒100-0005
- Application method
  - Apply online at <http://www.tronshow.org/>
- Examination fee
  - Free (However, advance online registration is required at the website noted.)