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■ **Humanoid (Human-like Robot)**

Osamu Tezuka, a famous comic book writer, proclaimed before that his mascot hero, “Steel Armed Atom” (Astroboy, as known in USA) will be born in Japan on April 7, 2003. Atom is a humanoid boy with immense power and intelligence in Tezuka’s comical books which attracted all Japanese children in 1960’s & 1970’s. In commemoration of the birthday of Atom, many various projects were planned and carried-out across the country. In Yokohama, Robodex 2003 was held with more than 75,000 visitors in three days to look at many humanoids in action from 51 companies and universities. One of the most famous humanoids displayed was Honda’s Asimo. I was surprised to watch a pair of Asimo playing football. After positioning himself in the proper location relative to the ball, Asimo kicks the ball while he supports his whole body by his single leg !! According to the 2001 statistics, 360,000 industrial robots (48% of the world) are working in Japanese factories. One of the conclusions at the panel discussion of Robodex 2003 is that by the middle of 21 century each family will have at least one humanoid robot at home to do chores or routine works such as cooking, care-taking of the old.

■ **TRON-an OS very little known but widely used**

Bill Gates has become the world richest businessman through his famous Window series of computer operating software. Today more than 90% computers around the world are operated by his Microsoft black-box. Professor Ken SAKAMURA of Tokyo University developed back in 1984 an OS named TRON (The Real time Operating Nucleus) and offered the open and free use of the system to any body. The first computer soft-ware based upon TRON was completed in 1987. But USTR applied in 1989 “Special 301 Provision” to TRON as one of unfair trade barriers to Japanese market for US companies. It’s a political pressure. All Japanese computer makers succumbed to the US demand and abandoned TRON and used MS-DOS instead. But today TRON is extensively used for various electronic products : including digital cameras, portable telephones, video cameras, DVD, car navigation systems, copying machines, computers, engine control system. Toyota Motor openly announced for the first time in 1999 in newspaper that they successfully developed super fuel-efficient engines by using TRON as OS. This was to retrieve the reputation of TRON after 15 years of public neglect and disregard. In NHK TV program “Project X”, Professor SAKAMURA responded to the question of what he would be now if he decided to charge patent fees on TRON as follows, “I still think that OS should be the common property of human being and it should be open to all people”

Source : NHK TV Program “ Project X” April 15, 2003