In the last three decades of the 20th century, many information and communication technologies have been developed and also introduced in social infrastructures, which are supporting our daily lives. Since the information technologies have progressed very rapidly, the basic structure of each social infrastructure, which was mostly designed in the 19th or the beginning of 20th centuries with few possibility of information technology, should be redesigned with an assumption of the existence of the advanced information technologies. Based on the high-performance SoCs (System-on-a-Chips) connected by wide-band networks, we can design next generation of social systems, which are directly related with quality of our society including individual rights and national security. In this talk, two social infrastructure information technologies are introduced. Personal Identifier (PID) system is an infrastructure for bidirectional mutual authentication, which will be used for electric commerce and governmental services. An RF-ID tag system is also important technology to implement efficient management of products and economic activities. Using PID and RF-ID tags, we can bridge a gap between the real world and the virtual one on computers automatically. We call the society, in which all persons and goods have their own digital names (identifiers) and are recognizable both in the real and virtual world, Digitally Named World. The systems require advanced technologies of SoC, networking, security and software. Here, technical challenges and social requirements for the new technologies are discussed. Some people are afraid of the infringement of their privacy in the digitally named world. Our discussions also include the technology to protect privacy and individual rights as well as efficiency and stability of our society.

About Hiroto Yasuura
Hiroto Yasuura is a professor of Department of Computer Science and Communication Engineering, Graduate School of Information Science and Electrical Engineering, Kyushu University. He is also a director of System LSI Research Center in Kyushu University. Prof. Yasuura received the B.E., M.E. and Ph.D. degrees in computer science from Kyoto university, Kyoto, Japan, in 1976, 1978, and 1983 respectively. He was an associate professor in Kyoto University and moved to Kyushu University in 1991. Prof. Yasuura developed several EDA systems for VLSI and hardware algorithms of arithmetic operations, sorting and unification in Kyoto University. In Kyushu University, Prof. Yasuura have conducted research projects on the system LSI design methodology, which includes data-path width optimization, low-energy system design, SoC architecture and a core base LSI test method. He also developed an educational microprocessor, KUE-CHIP2, and promoted education of VLSI design in computer science area in Japan. His current interests includes embedded system design, hardware/software co-design, system design methodology and social infrastructure. Prof. Yasuura served as Technical Program Chair and General Chair of ICCAD in 1997 and 1998, respectively. He is serving as a Vice President of IEEE CAS Society, ACM SIGDA advisory board member, and Steering Committee Chair of ASP-DAC. He is also the research director of Silicon Sea Belt Project in Fukuoka.