Abstract
Radio Frequency Identification (RFID) system poses serious security and privacy risks that must be carefully mitigated in order to realize the numerous benefits the technology has to offer. In this talk I am going to present different security issues required to secure a RFID system. I will also describe some desirable characteristics of RFID security protocols for use in operational distributed environment. I will then present a security protocol and a layered security framework and show how it will secure the RFID system while at the same time provide operational efficiency. The framework has the ability to achieve compatibility with distributive systems (DS) in a multi reader situation. The novelty of this work is that it reduces trade-offs caused by the security protocols such as slow performance, redundant tag read and scope of intercepting transmission. It does this using a security check handoff (SCH), improved search techniques and layered architecture. I will present experimental results to show that the new search technique is significantly improved compared to the linear search based protocols.

Biography
Morshed Chowdhury received his PhD from Monash University, Australia in 1999. Dr. Chowdhury is an academic staff member in the School of Information Technology, Deakin University, Melbourne, Australia. Prior to joining Deakin University, he was an academic staff in Gippsland School of Computing and Information Technology, Monash University, Australia. Dr. Chowdhury has more than 12 years of industry experience in Bangladesh and Australia. As an International Atomic Energy Agency (IAEA) fellow he has visited a number of International Laboratory/Centres such as Bhaba Atomic Research Centre, India, Brookhaven National Laboratory, New York, USA, International Centre for Theoretical Physics (ICTP)-Italy.

Dr Chowdhury’s current research interests are information security, wireless network security, and privacy & security of social networks. He has published more than sixty eight research papers including a number of journal papers, conference papers and book chapters. He has organized a number of international conferences and served as a member of the technical and program committee of several international conferences since 2001. He is also acted as reviewer of many journal papers.
Research Trend of Development Technologies for Automotive Control Software

Noriyoshi SANO
Toyota Central R&D Labs. Inc.
Aichi, JAPAN

Abstract
Electronic control systems (ECUs) have roles to meet safety, environment and convenient requirements for vehicles. ECUs communicate each other via in-vehicle networks and realize automotive control functions which are implemented mainly by software embedded in ECUs. Because some of those functions are safety critical, it is very important to ensure quality of software. In this discussion, recent empirical research trends of development technologies for high quality automotive embedded software are introduced.

Some of the main topics are the following:
- Systematic validation of the software specification by graphical software modeling.
- Verification of the implemented source code by static code analysis and model checking.
- Root cause detection in complex embedded systems with abstract model-based diagnosis.

Biography
Noriyoshi SANO is a research manager in Software Science Laboratory, Information and Electronics Research Division, Toyota Central R&D Labs., Inc. He received his Bachelor of Science and Master of Engineering degrees from Nagoya University in 1982 and 1984, respectively. He joined Toyota Central R&D Labs., Inc. in 1984. His research interests include technologies for analysis and verification of embedded software.