

Laboratory / Center profile

System Design Methodology Laboratory

Representative: Associate Professor Seiko Shirasaka

Research Interests: systems engineering, design thinking, system assurance, system safety, system development methodology, and standardization

Applied areas/ Technological systems: Space systems, smart city/ smart grid, embedded S/W, IT systems

Applied areas/ Societal systems: Regional revitalization, community, business model, NPO model etc. He is engaged in research and education to re-design the world from space development to societal system design methodologies and design of safety and security.

Members: Professor Takashi Maeno, Project Professor Toshiyuki Yasui, Project Associate Professor Keiko Shimazu



Joint seminar of System Design Methodology Lab and Human System Design Lab

The System Design Methodology Laboratory researches on system design and management methodologies in a wide range of applied fields. Some lab members study system thinking methodologies and techniques based on systems engineering to take an overview of objects and view them as systems. Some members study methodologies and techniques on innovative design such as design thinking. Others study methodologies and techniques related to management such as project management and program portfolio management.

In the system thinking methodology area, our research is conducted together with outside experts and extends from general such as system development methods applied to space satellites, IT systems, smart-grid and system assurance methods to field-specific development methodologies. These research areas include recent research in new systems engineering areas such as SYSTEMS OF SYSTEMS and ENTERPRISE SYSTEMS ENGINEERING and in meta processes using architecture framework and meta thinking. Then, in our design thinking method area, our research focuses on techniques to create innovative design and is widely applied to, for example, regional revitalization and

urban planning. The outcome of the research is used in a class Design Project and corporate in-house training. Finally, our management method research includes management methodologies beyond PMBOK such as methods for efficient organization portfolio and program management and standardization strategies for intellectual property and technology management.

In practice all research results must be applied and validated in an area. We appreciate cooperation from SDM faculty members especially the Lab faculty members, Professor Maeno, Project Professor Yasui, and Project Associate Professor Shimazu.

It is fun to see that our methodologies and techniques are applied more widely than expected and produce good outcomes. If you are interested in our research, please visit our laboratory meeting.

System Design Methodology Lab and Human System Design Lab together hold seminar meetings every Saturday afternoon as the Extended Human System Design Lab. Presentation there includes research applied in various areas such as space development, smart-grid, agriculture, and community development. We seek development of general methods and techniques.



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