2020 MIT STAMP Workshop (Virtual)

The STAMP/STPA Workshop will be held in a virtual form beginning July 20, 2020. It will be spread out over three weeks in order to reduce fatigue from all-day remote sessions. The virtual workshop is free and open to the public, but each attendee will need to register in advance to attend.

Presenters will have the option to allow their talks to be recorded and posted online, however there will be a delay due to new MIT requirements for online videos. We don't know how long that will be, but the delay may be substantial.

All times below are U.S. Eastern Daylight Time (EDT). Check the latest schedule at: http://mit.edu/psas/

Week 1: Tutorials

Note that the tutorials below are only introductions to the core concepts so you can follow the presentations next week. They are not training classes, and they will not be enough to make you an expert in using the techniques.

	Monday, July 20	Tuesday, July 21	Wednesday, July 22	Thursday, July 23	Friday, July 24
9:45-10:00	*Session open: test connection, chat, network*	*Session open: test connection, chat, network*	*Session open: test connection, chat, network*	*Session open: test connection, chat, network*	*Session open: test connection, chat, network*
10:00-11:30 (with breaks)	**Intro to STAMP Part 1: Accident and Causality Models** Nancy Leveson	**Intro to STPA: Anticipating & Preventing Loss Scenarios in Complex Systems** John Thomas	**Intro to STPA for Security** Bill Young (Suggested Pre-req: "STPA Exercise" on July 21)	**Introduction to CAST** Nancy Leveson	**Facilitating STPA (and CAST)** John Thomas
11:30-12:30	**Break**				
12:30-2:00 (with breaks)	**Intro to STAMP Part 2: Systems Theory, STAMP Causality Model and Tools** Nancy Leveson	**STPA Exercise** John Thomas (Pre-req: "Intro to STPA" on July 21)	**Designing an Effective Safety Management System** Nancy Leveson (Come prepared with the SMS design for your org. to evaluate)	**CAST Exercise** Nancy Leveson	**Homework Review: STPA Applied to Your Systems** John Thomas

Week 2: Presentations

	Monday, July 27	Tuesday, July 28	Wednesday, July 29	Thursday, July 30	Friday, July 31
10:00-10:20	*Session open: test connection, chat, network*	*Session open: test connection, chat, network*	*Session open: test connection, chat, network*	*Session open: test connection, chat, network*	*Session open: test connection, chat, network*
10:20-10:30	**Welcome, Introduction, and New Developments**	**Workshop Review and Overview**	**Workshop Review and Overview**	**Workshop Review and Overview**	**Workshop Review and Overview**
10:30-10:50	**Analyzing Hazards in Renewable Gas Technologies: Comparing STAMP and HAZOP/FMEA** Ben Riemersma (TU Delft)	**Safety Assurance: Is it Possible?** Nancy Leveson (MIT)	**Industrialization Session** (goes until 1:00pm, see below)	**STPA Applied to Factory Automated Ground Vehicles** Lori Smith (SES)	**Using a Conceptual Architecture to Improve Development of Complex, Control-Based Systems** Nancy Leveson (MIT)
11:00-11:20	**Comparative analysis of HAZOP and STPA** Faisal Jamal (Fatima Group) and John Thomas (MIT)	**Use of STPA in Practice: Lessons Learned** John Thomas (MIT)		**STPA applied to Servicability** Hannah Slominski	**Using STPA in the Early Conceptual Design of Future Manned and Unmanned Aerial Vehicles** Elias Johnson (MIT)
11:30-11:50	**When STPA Results Surprise You: An industry case study employing STPA, Fault Trees, and HAZOP** John Thomas (MIT)	**Improved Risk Management** Gregory Pope (Lawrence Livermore National Laboratory)		**Industry Trials to Evaluate STPA's Effectiveness and Practicality for Digital Control Systems** John Thomas (MIT), Matt Gibson (EPRI)	**Model-Based Certification of Automated Vehicles** Michael Schmid (MIT)

	Industrialization Session: Wednesday, July 29
10:30-10:50	**Short Talks: STPA in Industry Standards** Kyle Post (Ford), Mark Vernacchia (GM), Carlos Lahoz (ITA), Ricardo Santos (Embraer), Matt Gibson (EPRI)
11:00-11:20	**Panel Q&A**
11:20-11:45	**Break**
11:45-12:30	**Short Talks: Industry Use of STPA** Dan Montes (USAF), Reid Archibald (L3Harris), Michael Stone (Akamai), Paul Butchart (NuScale Power), Kyle Post (Ford), Mark Vernacchia (GM), Scott Reeves (FedEx Air Operations), Marc Nance & Lori Smith (STAMP Engineering Services), Ricardo Santos (Embraer), Gus Larard (Air Hong Kong/Cathay Pacific)
12:30-1:00	**Panel Q&A**

Week 3: Presentations

	Monday, August 3	Tuesday, August 4	Wednesday, August 5	Thursday, August 6	Friday, August 7
10:00-10:20	*Session open: test connection, chat, network*	*Session open: test connection, chat, network*	*Session open: test connection, chat, network*	*Session open: test connection, chat, network*	*Session open: test connection, chat, network*
10:20-10:30	**Workshop Review and Overview**	**Workshop Review and Overview**	**Workshop Review and Overview**	**Workshop Review and Overview**	**Workshop Review and Overview**
10:30-10:50	**Virtual Button and Graphical Interface System Safety Evaluation using STPA** Jesse Johnston, Mark Vernacchia (GM)	**STPA applied for Safety Security and Privacy Issues in Smart Airport Terminal New Concepts** Idoaldo Lima, Max Schwienhorst (RWTH Aachen University), Johannes Reichmuth (RWTH Aachen University, German Aerospace Center (DLR))	**Improving Accident Analysis with CAST: A Group Exercise** Led by Darren Straker, Shem Malmquist, Elias Nikolaidis, Gus Larard, Nancy Leveson, and Fred George	**Assuring Maritime Autonomy through STPA and STAMP** Giles Howard (L3Harris)	**Identification of Causation Scenarios and Application of Leading Indicators in the Interconnection Mode of Urban Rail Transit Based on STPA** Mo Li, Fei Yan, Nannan Xiang, Ru Niu, Tao Tang, Jidong Lv (Beijing Jiaotong University)
11:00-11:20	**Estimating Security Risk Using Adversary Capability** David Weller-Fahy (Lincoln Laboratory)	**Early Australian Experience with using Causal Analysis Based on Systems Theory (CAST) to Investigate Medical Events** Wallace Grimmett (FANZCA, University of Queensland, RAAF)		**STPA Applied to Military Certification Process** Antonio Merladet (Brazilian Air Force, Technological Institute of Aeronautics), Carlos Lahoz (Technological Institute of Aeronautics), Rodrigo Silveira (Brazilian Air Force, Technological Institute of Aeronautics)	**Backup session in case of technical glitches** [TBD]
11:30-11:50	**Applications of STPA in Software Testing** Anders Dinsen (ASYM APS)	**Implementing CAST in Health Care** Lawrence Wong (MIT) Todd Pawlicki (University of California-San Diego)		**Identifying Loopholes in Emergency Response Plans with STECA: An Application** George Kafoutis, Ioannis Dokas (Democritus University of Thrace), Constantinos Andritsos (University of Leiden)	**Backup session in case of technical glitches** [TBD]