SCHWEIZERISCHE VEREINIGUNG FÜR FLUGWISSENSCHAFTEN
ASSOCIATION SUISSE DES SCIENCES AERONAUTIQUES
SWISS ASSOCIATION OF AERONAUTICAL SCIENCES

ICAS International Council of the Aeronautical Sciences

Intelligent and Autonomous Technologies in Aeronautics - Software Engineering and Unmanned Aerial Systems

ICAS Workshop 2017

Shinji SUZUKI, PC Chair,
the University of Tokyo

Automatic to Autonomous

- Perception
  - Sensor
  - camera

Logical Decision

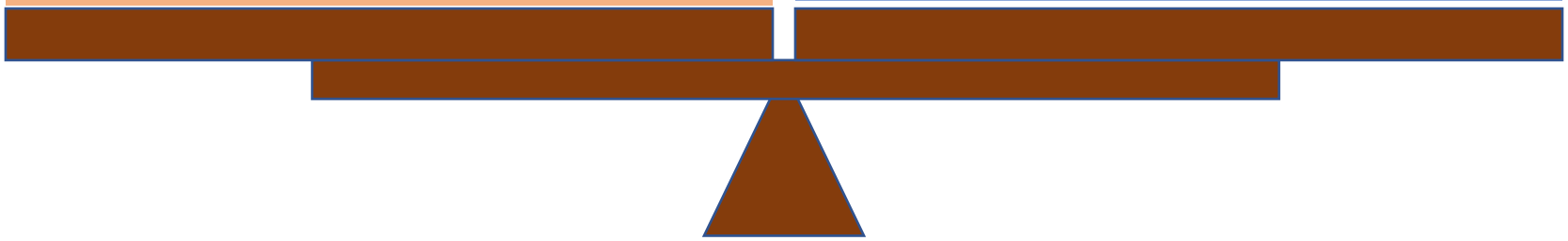
- Automatic Control
  - Rule Based
- Autonomous Control
  - Learning and Evolution
  - Prediction

- Action
  - Engine
  - Actuator

Big Data Analysis
Predictive Control

Intelligent and Autonomous Technologies

- MERITS
  - Increase Safety
  - Solution for Shortage of PILOTS and Skilled Engineers
  - Reduction of Cost and Time
  - Improvement of Service and Performance
- DEMERITS
  - Increase Complexity
  - Certification for Safety
  - Responsibility for Accidents
  - Security
  - Take Away of Human Work
  - Privacy



SCHWEIZERISCHE VEREINIGUNG FÜR FLUGWISSENSCHAFTEN
ASSOCIATION SUISSE DES SCIENCES AERONAUTIQUES
SWISS ASSOCIATION OF AERONAUTICAL SCIENCES

International Council of the Aeronautical Sciences

09:00 – 09:50	**Software Engineering in Aeronautics** Dr. Paul Nielsen, CEO of SEI (Software Engineering Institute), Carnegie Mellon University, USA
09:50 – 10:10	Coffee Break
10:10 – 10:40	**What ANA expects for the Progress on Intelligent Data Analysis for Aircraft Maintenance** Mr. Toshihiko Noguchi, All Nippon Airways, Vice President, Engineering & Maintenance Center, Tokyo, Japan
10:40 – 11:10	**Digital Flight Engineer: Autonomy for Pilot Assistance** Dr. Jae-Woo Choi, Aurora Flight Sciences, Lucerne, Switzerland
11:10 – 11:40	**H2020 VISION : EU-Japan collaborative research on intelligent flight control systems** Dr. Yoko Watanabe, ONERA, France
11:40 – 12:10	**Can AI pass CPL(H) Skill Test** Mr. Luuk van Dijk, Founder and CEO, Daedalean AG, Zurich, Switzerland
12:10 – 12:40	Lessons learned from deployment and operation of 30k small aircraft and drone cooperative collision avoidance systems Mr. Andrea Schlapbach, FLARM Technology Ltd., Swissland

SCHWEIZERISCHE VEREINIGUNG FÜR FLUGWISSENSCHAFTEN
ASSOCIATION SUISSE DES SCIENCES AERONAUTIQUES
SWISS ASSOCIATION OF AERONAUTICAL SCIENCES

International Council of the Aeronautical Sciences

14:00 – 14:30	**From Industrial Big Data to Artificial Intelligence at Airbus** Mr. Ronny Fehling, head of data-driven technologies, AirBus, Germany
14:30 – 15:00	**On the Horizon for the Global Drone Ecosystem – from concept to practicality** Mr. Sebastian Babiarz, Head of Strategic Business Development, CTO Office, Airmap, USA
15:00 – 15:30	**Collision Avoidance for Remotely Piloted Systems** Mr. Johan Pellebergs, SAAB
15:30 – 16:00	**Integrating Drones into Civil Air Traffic – Challenges and Concepts** Dr. Peter Lenhart, Head of Human Factors Engineering, Center of Aviation, zhaw, Switzerland
16:00 – 16:20	Coffee Break
16:20 – 16:50	**Meteodrones – Moving Towards an Operational Drone Network for Weather Measurements** Dr. Martin Fengler, CEO Meteomatics, Switzerland
16:50 – 17:20	**Aerial Object Tracking from an Airborne Platform** Dr. Daniel Ambuehl, RUAG Aviation, Switzerland
17.20 – 18:00	Discussion, Moderator: Dr. Gunnar Holmberg, SAAB, Sweden

SCHWEIZERISCHE VEREINIGUNG FÜR FLUGWISSENSCHAFTEN
ASSOCIATION SUISSE DES SCIENCES AERONAUTIQUES
SWISS ASSOCIATION OF AERONAUTICAL SCIENCES

International Council of the Aeronautical Sciences

08:40 – 09:20	**High Fidelity Small UAS Collision Damage Modeling Strategies and Frangibility Studies** Dr. Javid Bayandor, Associate Professor, Virginia Tech, College of Engineering, USA
09:20 – 09:50	**FAA UAS Regulation** Mr. Ian ROSS, FAA, USA
09:50 – 10:10	Coffee Break
10:10 – 10:40	**The Development of the Future European Rules on Unmanned Aircraft –a Risk Based and Proportional Approach** Mr. Antonio Marchetto, RPAS Technologies Expert EASA, Germany
10.40 – 11.10	**Remotely Piloted Aircraft System (RPAS) Regulations in Australia** Dr. Cees Bil, Associate Professor, RMIT University, Melbourne, Australia
11:10 – 11:40	SORA – Risk Assessment for Unmanned Airborne Mobility Mr. Markus Farner, manager innovation and advanced technology, Swiss Federal Office for Civil Aviation, Switzerland
11:40 – 12:20	Discussion, Moderator: Dr. Cees Bil, RMIT, Australia

SCHWEIZERISCHE VEREINIGUNG FÜR FLUGWISSENSCHAFTEN
ASSOCIATION SUISSE DES SCIENCES AERONAUTIQUES
SWISS ASSOCIATION OF AERONAUTICAL SCIENCES

International Council of the Aeronautical Sciences