

**Systems Concepts and Integration (SCI) Panel**  
**SCI-341 Symposium (RSY) on**  
***'Situation Awareness of Swarms and Autonomous Systems'***  
**18-19 May 2021**

**NATO UNCLASSIFIED open to NATO Nations + Australia, Finland, Sweden**

**\*\*\*Please note this agenda is in Central European Time (CET) \*\*\*\*\***

**18 May 2021 - Day 1**

- 14:00**      Opening Ceremony  
Dr K. STEIN, SCI Panel Chair, Fraunhofer IOSB, Germany, Dr J. KAUGERAND,  
Symposium Chair, Tallinn University of Technology, Estonia
- 14:05**      Introductory Speech  
Mr K. SALM, Permanent Secretary of Ministry of Defence, Estonia
- 14:20**    **KN1**    KEYNOTE SPEECH 1  
Situation Awareness with Autonomous Systems: Challenges and New Directions  
Dr M. ENDSLEY, SA Technologies, United States

**15:20**      **Break**

**Session 1: Situation Awareness and Autonomy**

*Chair: Professor M. HENSHAW, Loughborough University, United Kingdom*

- 15:30**    **1**      A Comparison of Distributed and Centralized Control for Bearing only Emitter  
Localization with Sensor Swarms  
H. SCHILY, F. HOFFMANN, A. CHARLISH, Fraunhofer FKIE, Germany
- 15:55**    **2**      AI-Powered High Resolution Weather Intelligence Platform  
R. GOFFER, R. SAHAF, Climacell, United States
- 16:20**    **3**      Synthetic Environment for Robotics and Autonomous Systems  
M. BIAGINI, S. DE MATTIA, M. PIZZI, M. TURI, B. KOERNER, M. PICOLLO,  
NATO Modelling and Simulation CoE

**16:45**      **Break**

**Session 2: Humans as Systems in the Loop**

*Chair: Dr J. GEISLER, Fraunhofer IOSB, Germany*

- 17:00**    **4**      Swarm View: Situation Awareness of Swarms in Battle Management Systems  
L-F. BLUHM, C. LASSEN, L. KEISER, J. HASBACH, Fraunhofer FKIE, Germany
- 17:25**    **5**      Anomaly Detection and XAI Concepts in Swarm Intelligence  
M. ANNEKEN, N. BURKART, M. VEERAPPA, Fraunhofer IOSB, Germany
- 17:50**      **End of Day 1/ Look ahead for Day 2**

**19 May 2021 - Day 2**

- 14:00**    **KN2**    KEYNOTE SPEECH 2  
Situational Awareness and Adversarial Machine Learning  
Prof. R. ANDERSON, University of Cambridge, United Kingdom

**Session 3: Swarm Intelligence and Situation Awareness**

*Chair: Dr J. KAUGERAND, Tallinn University of Technology*

- 15:00 6**      A New Swarm Collection Tasking Approach for Persistent Situational Awareness  
J. BERGER, DRDC, N. LO, SATWII Solutions Inc., Can, A-C. BOURY-BRISSET,  
DRDC, Canada
- 15:25 7**      A Framework Based on Deep Learning Techniques for Multi-drone ISR Missions  
Performance Evaluation in Different Synthetic Environment  
A. ANTENUCCI, L. MESSINA, A. PALUMBO, S. MAZZARO, W. MATTA,  
Vitrociset, Italy
- 15:50 8**      Interacting Swarms Sensing and Stabilization  
I. SCHWARTZ, J. HINDES, NRL, V. EDWARDS, University of Pennsylvania, United  
States
- 16:15**      SCI-341 adjourns temporarily to allow participants to attend COGSIMA conference  
KEYNOTE SPEECH on Human-Machine Teaming: Evolution or Revolution, and the  
Ethical Dimensions of Cyborgs  
Dr W. CASEBEER, Riverside Research Institute, United States
- 17:45**      Symposium reconvenes for common discussion between SCI-341 and IEEE CogSIGMA,  
led by COGSIMA Chair, Prof. L. Mõtus, Tallinn University of Technology
- 19:00**      **End of Symposium**