



# FRAUNHOFER SEMINAR ON SECURE AUTONOMOUS DRIVING AND E-MOBILITY

## CYBER SECURITY AS A KEY BUILDING BLOCK FOR DRIVERLESS CARS AND E-MOBILITY IN A HYPERCONNECTED ERA

FRAUNHOFER WORKSHOP SERIES (FWS) are bridging academia and industrial experts to tackle foresighted research into practical solutions. Our FWS events include background lectures, round-tables, and hands-on sessions. The goal is to contribute to application-oriented research and to support the transfer of academic research to the industry.

Connected, autonomous vehicles (CAV) are around the corner. Singapore is racing to bring autonomous transport systems and new services to the market. CAV creates new opportunities, where the economic and social gains will generate tremendous improvements in convenience, autonomous mobility-on-demand services, and safety. This has enormous potential to increase productivity and to reduce the costs of congestion, energy consumption, and pollution. However, any transformative technology creates new challenges and risks. Sophisticated cyber-attacks are inevitable on self-driving technology, where an attacker may try to hijack hyper-connected vehicles remotely, manipulate navigational data or attack the communication infrastructure - be it for cars, trains, public buses, or maritime vessels and cargo transport.

Hackers have manipulated the IT of vehicles already. With the move towards hyper-connected and autonomous transport systems, industry, academia, and government have to handle new challenges and risks, which must be addressed by holistic countermeasures, detection capabilities, and resilience mechanisms accordingly.

Information security becomes increasingly important. The objective of this seminar is to gain insight from academia and industry on the future challenges associated with cybersecurity in autonomous self-driving vehicles, and e-mobility. Researchers and experts are invited to discuss technology challenges facing the intelligent transportation systems of the future. The seminar will focus several topics to extend and transfer existing knowledge in the following directions and domains:

- Cyber Threat Landscape in the Autonomous Era
- Risks of Autonomous Vehicles as Cyberweapons
- Secure Connected Cars and e-Mobility
- Threat Intelligence and AI for CAV Security
- Cybersecurity Strategies, Building Blocks, and Best Practices
- Security and Trust by Design: Bootstrapping Secure CAV
- Embedded Security for Automotive and Autonomous Systems
- Privacy-Preserving Technologies and Data Protection
- Legal and ethic implications of Autonomous Driving
- Framework for automotive security
- Standards, Policies, and Regulation

**When:** 11th July, 2018 **Time:** 10:00am - 2:00pm

**Where:** Nanyang Technological University (NTU), The Arc (LHN)  
Room TR+25, 63 Nanyang Drive, Singapore 636922

 Register at [www.fraunhofer.sg/fws](http://www.fraunhofer.sg/fws)

 For more information please contact [fws@fraunhofer.sg](mailto:fws@fraunhofer.sg)

**Organizer:**

Fraunhofer Singapore  
Fraunhofer Institute SIT, Germany

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# FRAUNHOFER WORKSHOP SERIES

## FWS #02

### SECURE AUTONOMOUS DRIVING AND E-MOBILITY

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## SEMINAR PROGRAM

09:55 - 10:00	<b>Welcome &amp; Introduction</b>
10:00 - 10:55	<b>Cyber Security: A Key Fundamental for Automated Driving</b> Speaker: Dr. Estelle Wang, Specialist Security & Privacy, Continental Automotive Singapore Pte Ltd, Singapore
10:55 - 11:00	Q&A
11:00 - 11:55	<b>IT-Security for E-Mobility: Challenges and possible Solutions</b> Speaker: Prof. Dr. Christoph Krauss, Head of Department „Automotive Security“ Fraunhofer Institute for Secure Information Technology (SIT), Germany
11:55 - 12:00	Q&A
12:00 - 12:55	<b>Autonomous Vehicles: Safety, Security and the Grey Zone in between.</b> Speaker: Niels de Boer, Programme Director „Future Mobility Solutions (Autonomous Vehicles)“ Energy Research Institute @ NTU (ERI@N)
12:55 - 13:00	Q&A
13:00 - 13:55	<b>Embedded Security for Smart Cars: Protection against Attacks on Connected Cars</b> Speaker: tba
13:55 - 14:00	Q&A and Closing Session

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