



PANEL #3

Athens
March 2024

InfoSys 2024 & InfoWare 2024

Theme:

**Trends in Automotive and Energy
Industry**



CONTRIBUTORS

Athens
March 2024

Moderator

Prof. Dr. Lasse Berntzen, University of South-Eastern Norway, Norway

Panelists

Prof. Dr. Vítor H. Pinto, FEUP, Portugal

Dr. -Ing Eric Veith, Carl von Ossietzky University Oldenburg, Germany

Prof. Dr. Tomonari Furukawa, University of Virginia, USA

Dr. Elena Haller, Halmstad University, Sweden



Panelist Position

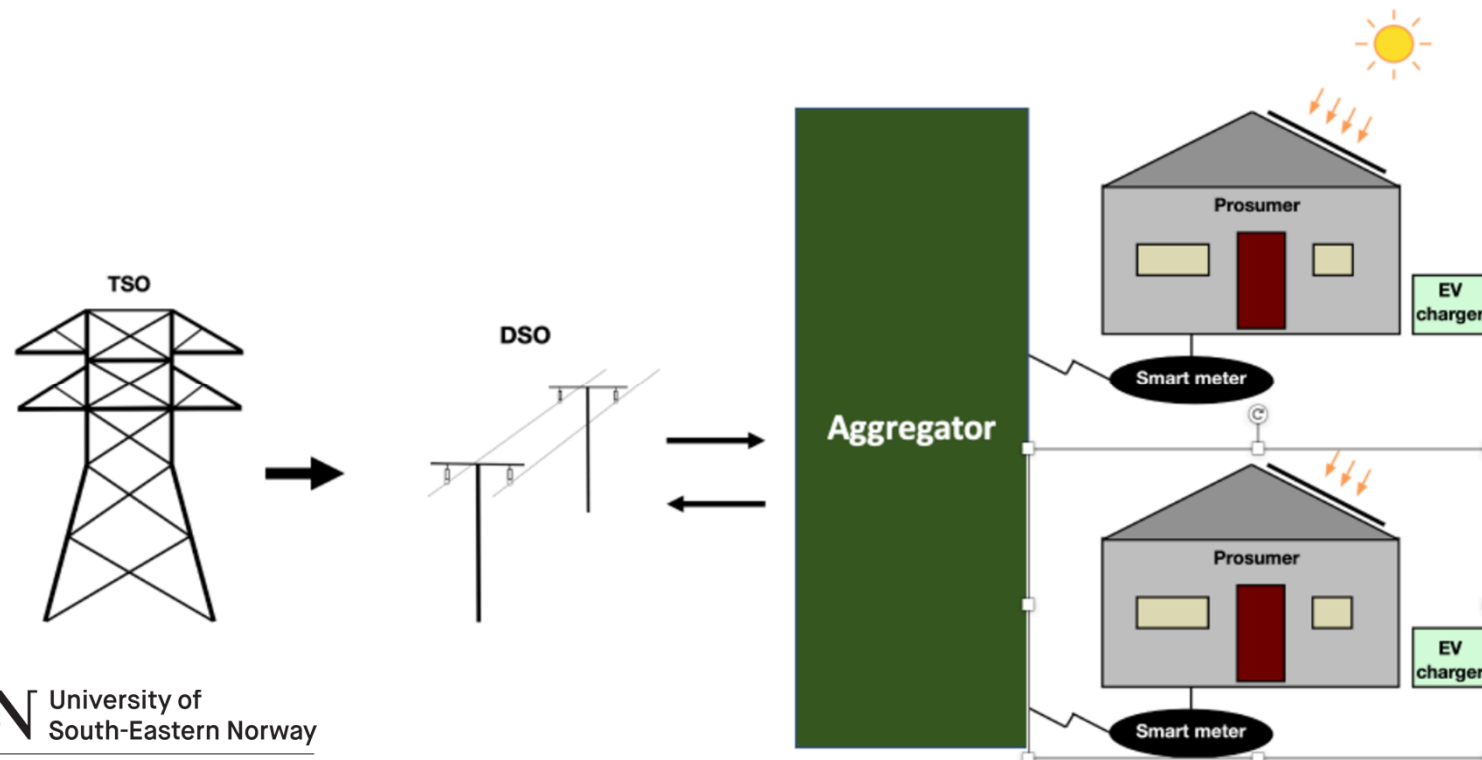
Athens
March 2024

- Aggregators as a new business construction
- An aggregator represents prosumers in the energy market

- Electric vehicles have batteries
- Vehicle to Grid (V2G)
- Aggregators can use the capacity of electric vehicle batteries



Lasse Berntzen
University of South-Eastern Norway



- Examples of use:
 - Load-shifting
 - Peak-shaving
 - Emergency power
 - Frequency market
- Vehicle to home (V2H)



Panelist Position

Athens
March 2024

- **EV grid integration:** EVs become relevant beyond the scope of a pure consumer
 - large scale or critical in sum
 - Real power management
 - Even reactive power management
 - Challenges are not just grid integration & transparency, but also battery lifetime
- **Black starts with EVs:** EV can be part of an islanding or blackstart scheme
 - Movable batteries
 - Strategy needs to be learned beforehand, assume no communication during the event
 - Centralized learning/decentralized execution has already been shown as feasible in the literature



Eric MSP Veith
University of
Oldenburg





Panelist Position

Athens
March 2024

- **Passive and Active Safety for Electrified Vehicles**
 - **Electrified Vehicles: Hybrids, battery-electric vehicles, plug-in hybrids, hydrogen fuel-cell vehicles**
 - **Passive Safety: Vehicle design for passive safety changes depending on the vehicle type. Extensive passive safety study is needed for electrified vehicles since vehicle crash is unavoidable.**
 - **Active Safety: Active safety reduces vehicle crash significantly and relaxes vehicle interior design, which again concerns passive safety.**



Tomonari
Furukawa
University
of Virginia



Panelist Position

Athens
March 2024

- **EV in industry – production/assembly process:**
 - Having new operators for EV models, when they are missing already;
 - New ways of teaching new operators;
 - Safety on working with complex electric and electronic systems.
- **EVs leads to more batteries → What happens in 8/10 years?**
 - Recycling batteries → Parts division/reuse;
 - Continue to produce new batteries → Raw metals?
 - Circularity of a very unstable materials' market.



Vítor H. Pinto
University of Porto

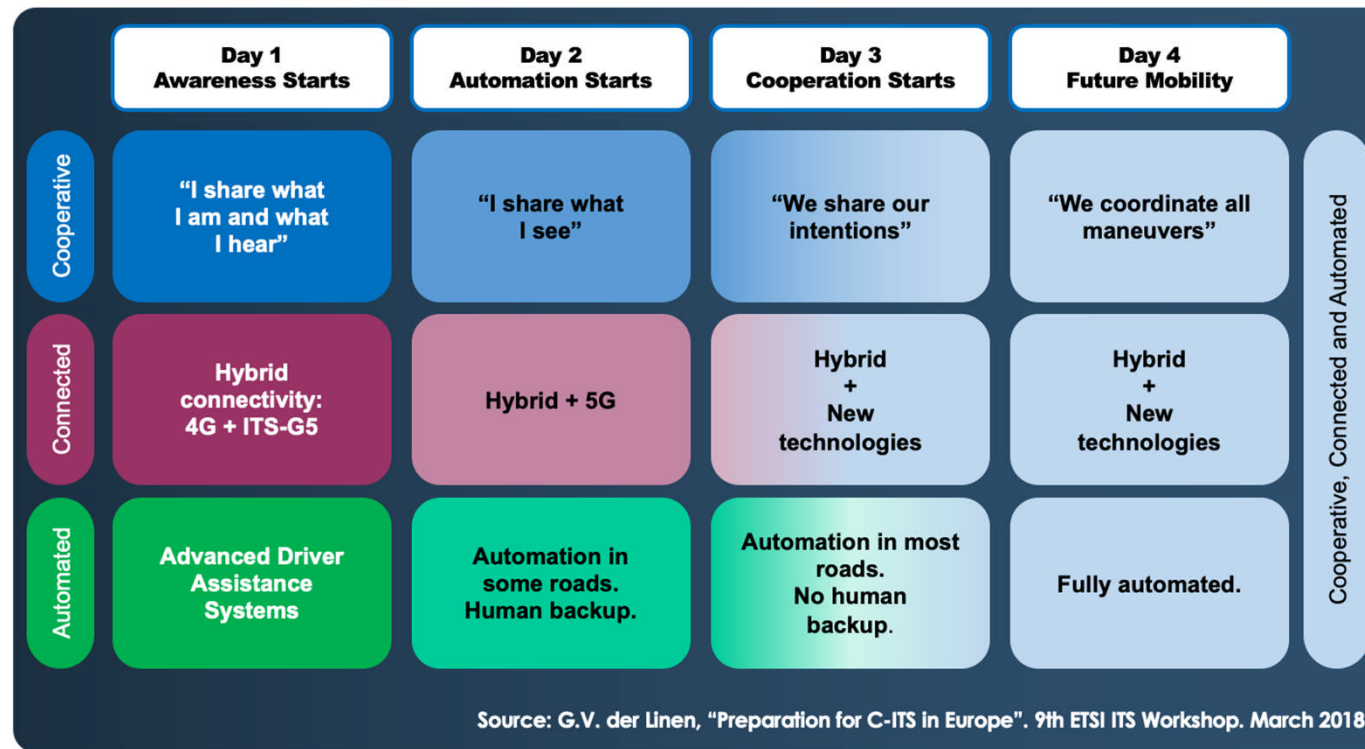


Panelist Position

Athens
March 2024

■ SUSTAINABLE VEHICLES

■ Vision Zero



Elena Haller
Halmstad
University

- Traffic flow optimization (efficient road use)
- Lower fuel consumption (planned maneuvers)

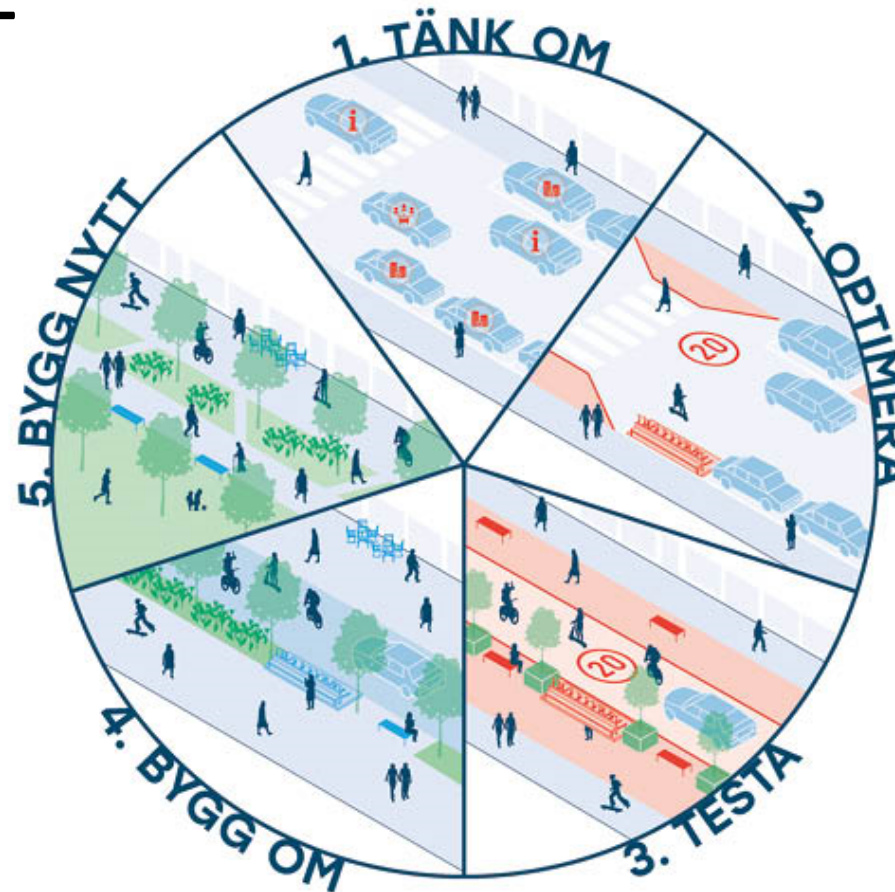


Panelist Position

Athens
March 2024

▪ SUSTAINABLE INFRASTRUCTURE

- Care about / Rethink
- Optimize
- Test
- Rebuild
- Build new



Elena Haller
Halmstad
University

Source: <https://www.spacescape.se/project/smarta-gator/>



Panelist Position

Athens
March 2024

- **SUSTAINABLE REGULATIONS**

- School areas



Elena Haller
Halmstad
University

- Roundabouts



- etc.