A national laboratory for electromobility

Electromobility – Back to the future
Chalmers Sept 13, 2018
CEVT is an innovation centre for the Geely Group, developing automotive technology that will meet the demands of tomorrow’s global markets. Modular development and advanced virtual engineering enable us to deliver world-class technology to all Geely brands.
CEVT facts

• Founded in 2013
• Keeping some 2000 people occupied
• Over 25 nationalities among the experienced employees
• Located in the automotive cluster in Göteborg and Trollhättan, Sweden
• Deliveries to Volvo Cars, Geely Auto and Lynk & Co
Geely innovation centre

- First part ready 2020
- Room for 3500 people
- Will house offices, hotel, shops and a design studio
Virtual engineering

- Virtual development and verification
- An integrated part of product development
- Advanced testing of e.g.
  - Safety
  - Structural dynamics
  - Aerodynamic and thermal properties
  - Driving dynamics
Innovation

• Driving innovation to meet new market demands
• Automotive industry transformation
• Electrification
• Environmental responsibility
• New requirements of global markets

2018-09-13 Johan Hellsing, CEVT PTE
Hybrid development

- An urgent priority for the Chinese market
- 7DCT in hybrid version
- Hybrid cars must exceed the performance of regular cars
- Prepare for full electrification
Testing at CEVT

• Efficient and agile product development is crucial for CEVT

• To be reached by several efforts, but for testing one very important effort is to move testing from **Road to Lab** and from **Lab to Math**

• Our efforts in virtual engineering handles the lab-to-math part well
Testing at CEVT

- We need to move a larger share of on-the-road testing to laboratory testing
- This goes for complete vehicles as well as for system and component testing

- A world-class automotive innovation center - in a future where powertrains are more electric - will need high quality testing of new electromobility technologies
Activities for a national e-mobility lab

- Initial discussions with RISE and the Swedish automotive industries in late 2016, aiming at a national test bed dedicated for electromobility
- Positive response from Ministry of Enterprise and Innovation and from the City of Gothenburg
- Participation in the RISE prestudy
- Participation in the FFI ChargeLab project
- Signing long-term user agreement
- An open environment will improve testing competence and testing quality
A world-class electromobility lab – SEEL

- Complete vehicle testing
  - Running on virtual roads
  - Vehicle charging

- System testing
  - Hybrid powertrains
  - Fully electric powertrains
  - Battery systems

- Component testing
  - Battery cells and battery modules
  - Electric machines
  - Power electronics

Power levels up to 400 kW

Very important attributes are
- NVH
- Efficiency/fuel economy