



VTT Robot Drive Experience - packages

VTT Robot Drive Experience is an advanced vehicle laboratory for studying future autonomous driving needs. The packages are mainly aimed for companies which are developing products linked into autonomous driving. Products can be such as V2X messages, environment perception, services, 5G, automated vehicle functions - you may give a name for it.

VTT Robot Drive Experience suites also for demonstration purposes. This laboratory-on-wheels is the missing piece of your demonstration environment for convincing your investors and stakeholders. The Finnish Minister of Transport, Mrs. Anne Berner, was impressed with the VTT Robot Drive Experience. **Your investors will also love it!**

Connected driving

- Applicability study (latency times, communication range, etc.)
- Appropriate demo plan, and its implementation including the safety personnel needed
- V2V (Marilyn & Martti)
- V2I (Marilyn/Martti & RSU)

Sensor feasibility study

- Optimising sensor selection
- Possible feasibility tests
- Sensor fusion algorithms recommended and prototyped offline (applicable VTT in-house software commercially available, non-exclusively)
- OpenDDS idl descriptions

Sensor data collection

- Selected sensors in use
- Downgrading their performance with software, if simulation of lower cost sensors preferred
- Fusion algorithms applied offline
- (the applicable VTT in-house software commercially available, non-exclusively)
- OpenDDS idl descriptions for interfacing

Automated functions and demos

- Autonomous driving of selected route in defined conditions
- Demo plan including recommendations for guest program
- Obstacle avoidance functions
- Implementation of the vehicle demo, including the safety personnel needed
- Preparative work needed
- (the utilised VTT in-house software commercially available, non-exclusively)
- Traffic safety arrangements





Service	Assets involved	Tools and SW involved
Robot Drive Experience <ul style="list-style-type: none"> - Automated driving of selected route in defined conditions - Preparative work needed - Traffic safety arrangements 	Marilyn Martti, Modulaire, RSU DemoKits for quest briefing and recording data	Sensors (lidars, cameras, radars) Computer units and disk drives
Connected driving <ul style="list-style-type: none"> - applicability study & demo - V2V (Marilyn & Martti) - V2I (Marilyn/Martti & RSU) 	Marilyn, Martti, RSU NEC LinkBird G5 CohdaWireless G5 LTE/5G modules	Communication functionalities Visualisation SW, map databases
Sensor data collection <ul style="list-style-type: none"> - selected sensors (and downgrading their performance, if customer wants to study lower cost sensors) - Fusion algorithms applied; their SW for sale non-exclusively? - OpenDDS idl descriptions 	Marilyn, Martti, Modulaire DemoKits Available laser scanners, radars, cameras etc. perception sensors IMUs and GNSSs 4G, G5, 5G cellular networks	Perception sensor driver SW, DDS 'library', data fusion algorithms, visualization SW Performance analysis
Sensor feasibility study <ul style="list-style-type: none"> - Assistance in selection - Possible feasibility tests - Fusion algorithms recommended and implemented; their SW for sale non-exclusively - OpenDDS idl descriptions 	Marilyn, Martti, Modulaire DemoKits Available laser scanners, radars, cameras etc. perception sensors IMUs and GNSSs 4G, G5, 5G cellular networks	Perception sensor driver SW, DDS 'library', data fusion algorithms, visualization SW Analysis and recommendations



**VTT TECHNICAL RESEARCH CENTRE
OF FINLAND LTD**

VTT
 Tekniikankatu 1
 FI-33720 Tampere, Finland
 Tel. +358 20 722 111

www.vttresearch.com/vehicle-systems

ASK US MORE!

Matti Kutila
 Senior Scientist
 Tel. +358 40 820 8334
matti.kutilla@vtt.fi

Pertti Peussa
 Principal Scientist
 Tel. +358 40 501 5819
pertti.peussa@vtt.fi

Jukka Laitinen
 Research Team Leader
 Tel. +358 40 518 1098
jukka.laitinen@vtt.fi