

# OuluZone+

RESEARCH, DEVELOPMENT  
JA TRAINING CENTER



European Union  
European Regional  
Development Fund

Leverage from  
the EU  
2014-2020



UNIVERSITY OF OULU



**Open Infrastructure Building  
Information Modelling and  
Automation**

**Artificial Intelligence and  
Robotics**

**Autonomous Working Machines**

**Autonomous Vehicles**

**Drones**

**Small Robots**



**OuluZone+** is research, development, and training center for various types of machines using open infra-BIM and automation.

- Professional events for infra sector
- Training and research support from Oulu Vocational College, Oulu University of Applied Sciences and University of Oulu
- A fixed point network for testing and calibration equipment and systems
- High speed wireless communication



## Research Topics



### DEVELOPMENT AND DEPLOYING AN ARCTIC TEST CENTER FOR AUTONOMOUS MACHINES AND VEHICLES:

Structures and Construction Technology Research Unit from the University of Oulu with the collaboration of companies has been developed the University Campus and OuluZone integrated research, development and testing center. Both national and international training workshops and technology exhibitions are organized.

The key functions of the Research Unit include: machine and vehicle automation testing, training of building information modelling, GNSS system testing, machine control AI-systems, remote site workflow, infra site workflow processes and crash prevention training.



### IMPROVING INFORMATION SECURITY AND ANALYSIS OF VEHICLE CONTROL SIGNALS:

Biomimetics and Intelligent Systems group (BISG) from the University of Oulu are using Big data methods for analysis of vehicle control signals. The collected data is visualized and clustering algorithms are used to find patterns

in the data. In addition, using computational methods in analyzing the control signals of autonomous vehicles makes the process more efficient. At the same time, improvements in information security can be achieved.



### DEVELOPMENT, TESTING AND DEPLOYMENT OF HEAVY EQUIPMENT TIRE RESEARCH EQUIPMENT:

The Research Unit of Machine Design from the University of Oulu has implemented a heavy duty tire metering trolley in OuluZone test center to measure the dynamic power output of tires on various road surfaces such as ice, snow and asphalt. The results apply to tire product development, to the definition and deve-

lopment of tire models and to simulation of the driving dynamics of heavy vehicle combinations. Areas of Research Unit expertise are: simulation of vehicles and combinations, vehicle technical measurements, railway equipment and internal combustion engines.



## OuluZone

Asphalt Track

Karting Track

Motocross Track

Snowmobile Enduro  
Track

Rally cross / JM-track

The Test-EK-Winter  
Track

ATV Area

Cafeteria

Office Space

The Referee Building  
Optical Fiber



## Contact Details

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