

IRPS Achievements

- **Cooperative Project**
 - Technology Innovation brought from lab to Operational application
 - IRPS Service Demonstration (IRPS Simulators+ Live demos)
 - IRPS/ LIMS showcase
- **Technology Integration & Showcase**
 - **Mobile Robotic Platform : MRP development & Integration (PIAP, ISR)**
 - LIDAR Measurement System Sensor :LIMSS development & Integration. (IAI,Scisys)
 - LIDAR Measurement System development & Integration (LLG,ISR,CS)
 - Mission Control Center MCC development & Integration (Scisys, CS)
 - IRPS Global Reference Model IGRM development & Integration (CS, LLG)

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ISR INSTITUTO DE SISTEMAS E ROBÓTICA
UNIVERSIDADE DE COIMBRA

Mobile Robotic Platform (MRP)



- The transport platform, can be tele-operated
- Designed for accurate responses to MCC commands sent through wireless network

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PIAP

MRP goals

- Comfortable indoor people transport platform
- Automated, Autonomous
- Safety System
- Modular Architecture
- Adaptable



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PIAP

MRP overview

- Adapted Melex 945 vehicle
- Safety system
- Control & automation system



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MRP features - automated people transport

- Passenger seats - MRP is capable of taking two people onboard
- Speed stabilization - the MRP keeps the speed at desired level



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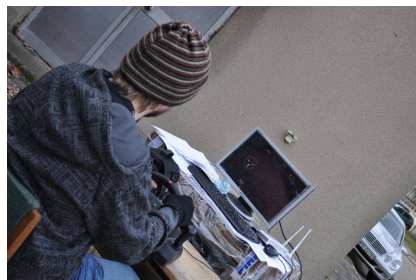
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MRP features - interoperability

- Platform can be controlled from different sources
 - *IRPS autonomous navigation system*
 - *Software application on computer connected to network*
 - *Remote driving control set*
 - *Driving wheel*
 - *Live video*



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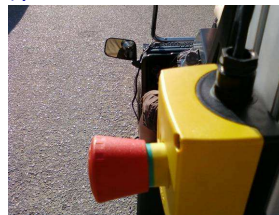
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MRP features - Safety system

- Laser scanners - prevent the platform from hitting an obstacle
- Emergency Stop System - allows the passenger to stop the MRP immediately at anytime
- Remote Stop Command - allows the remote operator to stop the MRP
- Speed Limitation - speed is limited accordingly to airport terminal conditions, 3 km/h



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MRP features - manual control

- At any time passenger can take over control of the platform:
 - *On board joystic for manual driving*
 - *Driving wheel - control just like normal car*



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PIAP **MRP perspectives**

- Autonomous people transport
 - *Transport services for the disabled*
 - *Hospitals*
 - *Airports*
 - *Shopping malls*
- *Other applications*
 - *Storage facilities*
 - *Mines*
 - *Factories*



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