

  Information Society Technologies

Technology presentation "Intelligent Robotic Porter System"

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 **Goal of the IRPS Project**



- Assist the transport of customers and retail goods within a facility.

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How it works?

- **MCC Operator manages Mobile Robotics Platforms (MRPs)**


IRPS Service Request
 Phone call
 Button push
 Web service call...

• The Mission and Control Center (MCC) is in charge of controlling a set of mobile robotic porters attached to a given IRPS Reference Environment.

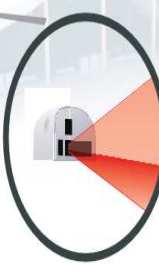




• The IRPS Global Reference 3D Model (IGRM) is a database storing all 3D navigation reference and configuration data.

MCC Operator The Mobile Robotic Porter platform (MRP) transports passengers and/or luggage from one location to another.



• The LIDAR Measurement System (LIMS) and Change Detection (CD) provide location information with millimetric accuracy by comparing acquired data to the IRPS Reference Model.



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Mobile Robotic Platform




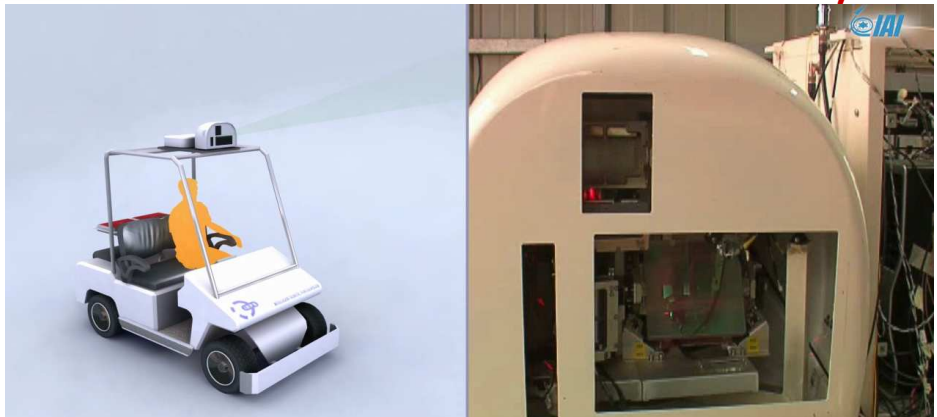

- The transport platform, can be « tele » operated
- Designed for accurate response of driving commands sent by wireless network

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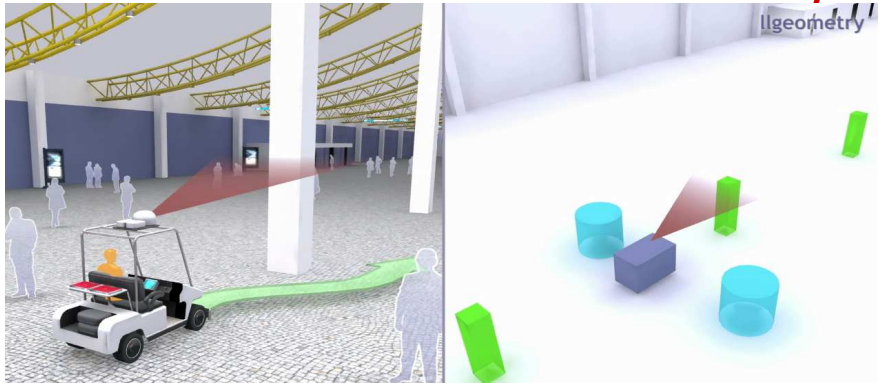
 **LIMS: LIDAR Imaging and Measurement System**



- Localization of the system with a millimetric accuracy
 - Rival to GPS which can barely work indoors
 - Do not require any modification of the facility


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 **LIMS: LIDAR Imaging and Measurement System**



- Scans the environment once: then navigates
 - **autonomous driving system**
- Lasers informs of obstacles, automatic avoidance
 - **max total system response : 100 ms**

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 **IGRM: IRPS Database**

- Stores the scanned facility

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 **MCC: Mission Control Center**

- Operators can monitor and control the platforms
 - 2D and 3D interactive visuals
- Operators can inform the security in case of a suspicious obstacle

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