ICT-PAMM

Task 3:
Human Machine Interaction

Fawzi Nashashibi

Evangeline Pollard
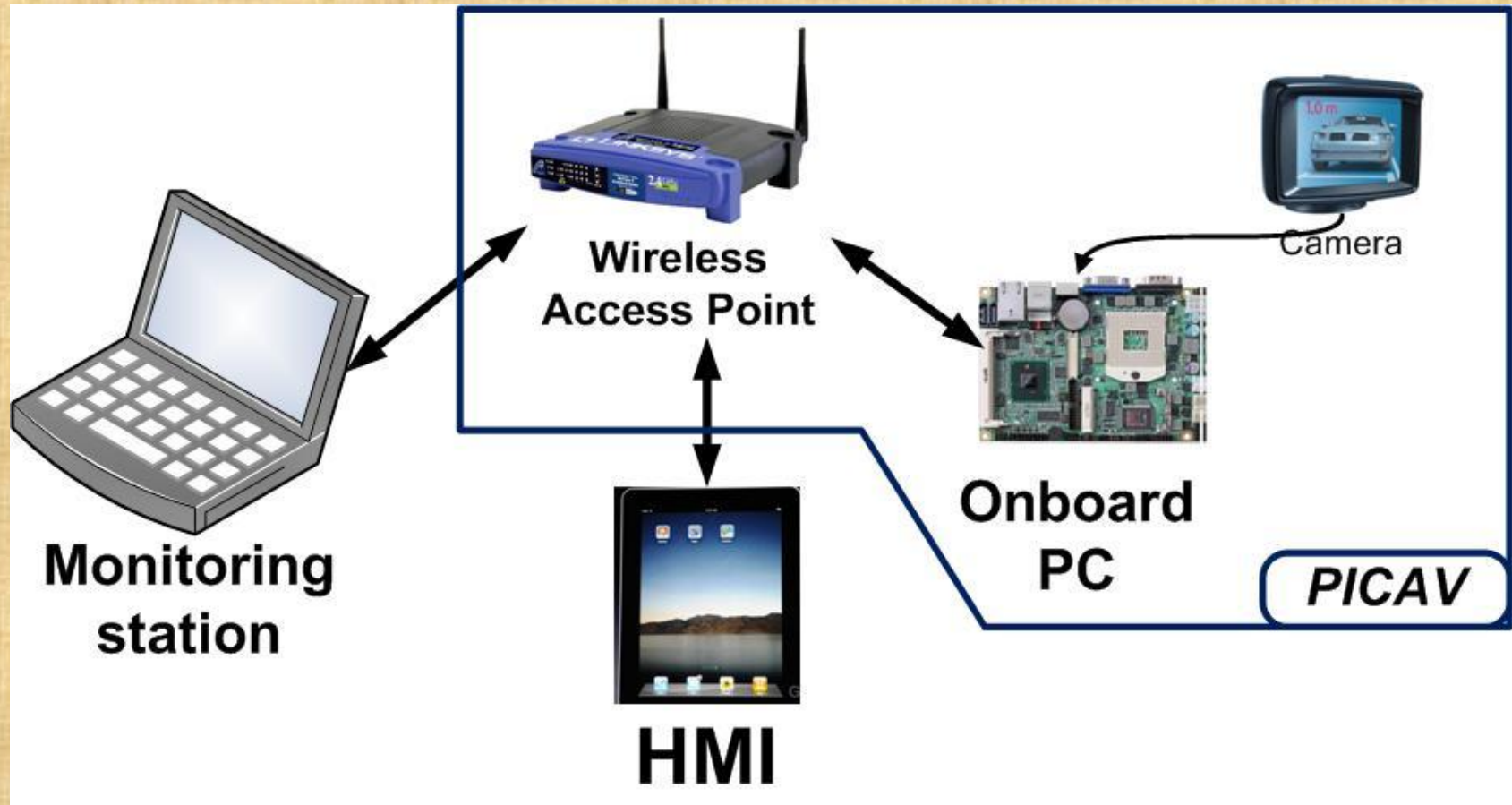
Guangzhou, Dec. 7th 2012

Task 3: goals of the research topic

- Two main topics:
  - new mobility devices for the elderly people,
  - human machine interaction

Bilan of the 1st year activities

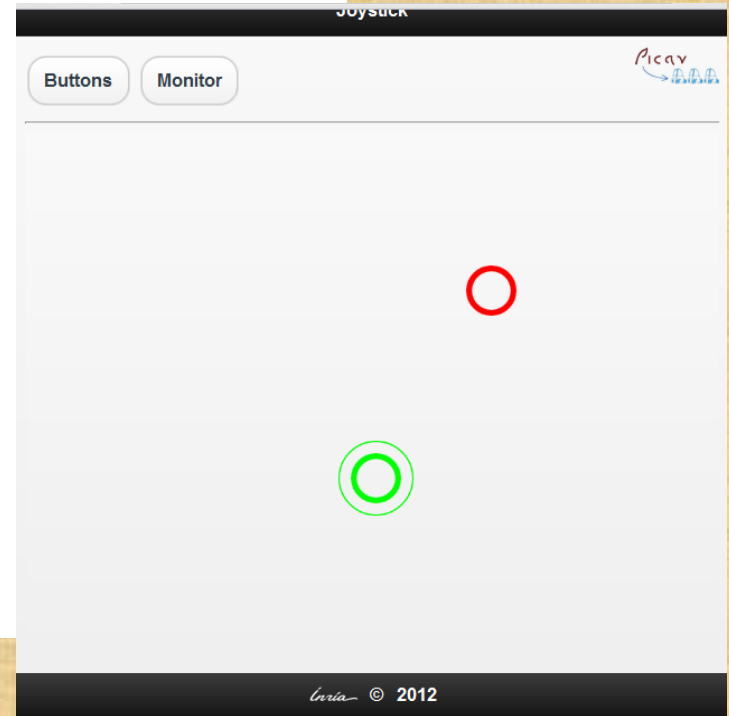# Human Machine Interface for PICAV

Human Machine Interface for PICAV

- ## *html web interface:*

  - *It runs in a smartphone (ipad)*
  - *Microsoft Visual Studio -> RTMaps components*
  - *Three interactive pages:*
    - *Joystick*
    - *buttons*
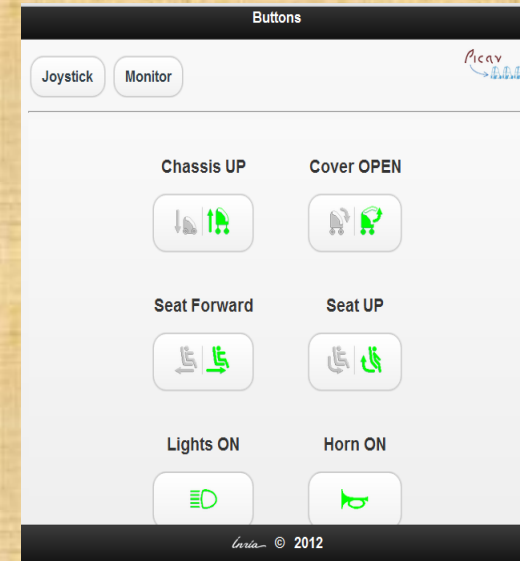   - *monitor.*

- ## *Joystick:*
  - *Low past filter*
  - *Speed and steering angle*
  - *The default value is zero.*
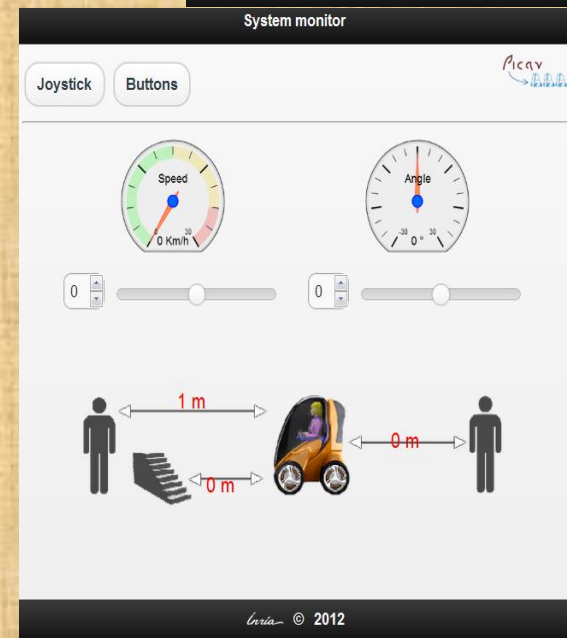
Human Machine Interface for PICAV

- ## *Buttons:*

  - *6 buttons were added to different tasks:*
    - *Chassis (up & down)*
    - *Cover (open & close)*
    - *Seat (forward & backward)*
    - *Seat (up & down)*
    - *Ligths (on & off)*
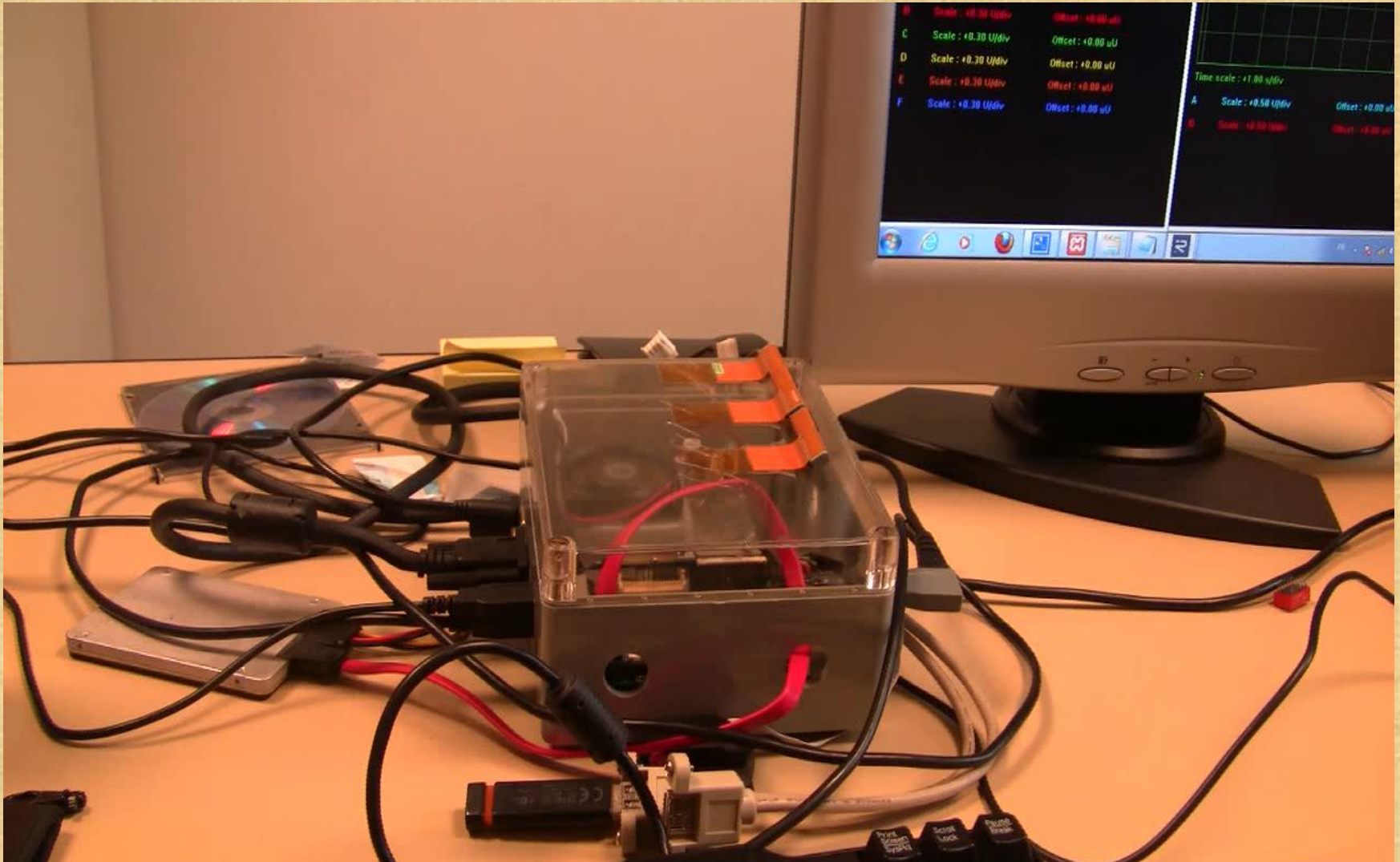   - *Horn (on & off)*

- ## *Monitor:*
  - *Actual speed*
  - *Actual steering angle*
  - *Reference speed (slider)*
  - *Reference steering angle (slider)*
  - *Distance to the obstacles.*
  - *Distance to the steps.*
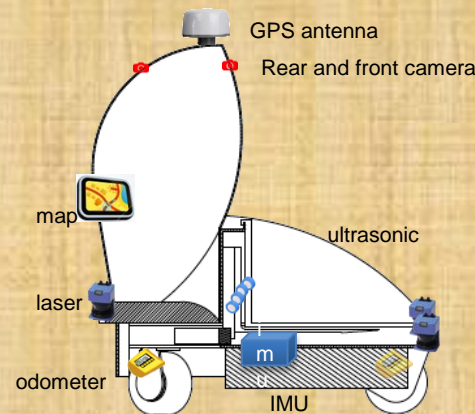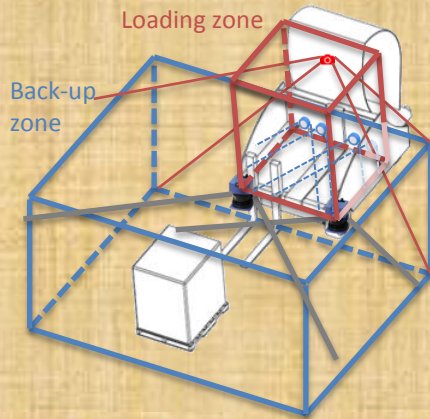 - *Distance range to the back obstacles.*

Human Machine Interface for PICAV

Bilan of the 1st year activities

- FURBOT
  - Design of a new light duty vehicle for urban freight transport

- CYBUS developments
  - Improvement of the CityMobil system
    - Introduction of cooperative navigation

Bilan of the 1st year activities

- ABV:
  - French ANR project (ends in March 2013)
  - Shared driving : driver vs. Co-pilot of electric vehicle
    - What amount of automation or assistance is needed accounting the current driving situation and the driver wishes ?

Bilan of the 1st year activities

- **Publications**
  - A Cooperative Personal Automated Transport System - A CityMobil Demonstration in Rocquencourt. Fawzi Nashashibi, Paulo Resende, François Charlot, Carlos Holguin,Laurent Bouraoui, Michel Parent. ICARCV'2012.
  - …

- **Dissemination**
  - **TRA Conference, Athens, 2012**
  - **TRB Conference, Washington DC, January 2012**
  - **IEEE ICRA'2012, Saint-Paul (USA), May 2012**
  - **IEEE IV'2012, Alcalà de Henares, June 2012**
  - **IEEE ICVES'2012, Istanbul, July 2012**
  - **ICARCV 2012, Guangzhou, December 2012**
- **Visits:**
  - Professor WANG Han (NTU) visits INRIA-IMARA on December 7th, 2011
  - Professor Zhengcheng Hu (Kumamoto) visits INRIA-IMARA on September 27th, 2012

Expected work in the 2ⁿᵈ year

- FURBOT
  - HMI and AI integration ?
- IRISS
  - European call: « Cognitive Robotics »
  - Human-Vehicles (cybercars) interactions
- CITYMOBIL-2
  - Showcases in European cities
- Kashiwano-ha ?
  - Possible demonstration in 2014
  - Collaboration with Yamaha