ICT-PAMM

Task 3: Human Machine Interaction

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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

1. Research activities
   - PICAV – Development of a new driving interface for the PICAV vehicle
     Guangzhou, 07/12/2012
     ICT-PAMM – Task 3 – F. Nashashibi & E. Pollard
Human Machine Interface for PICAV

[Diagram showing the components of a human machine interface system for PICAV, including a monitoring station, wireless access point, onboard PC, and HMI.]
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)
    - Lights (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
  – ...

• 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
  – 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 2\textsuperscript{nd} 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