

# Ict-PAMM

## 1st year Bilan

### Guangzhou december 7th 2012



**COORDINATOR : ANNE SPALANZANI**  
**INRIA RHÔNE-ALPES – FRANCE**  
**ANNE.SPALANZANI@INRIA.FR**

**CO-COORDINATOR : PHILIPPE MARTINET**  
**ECOLE CENTRALE DE NANTES**  
**MARTINET@IRCCYN.EC-NANTES.FR**



# Participants



- James Hu (Kumamoto University - Japan)
- Philippe Martinet (LASMEA - France)
- Fawzi Nashashibi (INRIA-IMARA France)
- Christian Laugier (INRIA-eMotion France)
- Anne Spalanzani (INRIA-eMotion France)
- Qadeer Baig (INRIA-eMotion France)
- Eric Castelli (MICA Center - Vietnam)
- Xinshuang Zhao (SKKU - Korea)
- Evangeline Pollard (INRIA-IMARA France)
- Excused: Ren Luo

# Schedule (1/3)



- **8:30-10:15 General presentation of the project**
- **Main objectives of the ict-Pamm project (A. Spalanzani)**
- **Presentations of the partners**
  - Mica Institute - Hanoi, Vietnam. Eric Castelli
  - Ircsyn - Nantes. Philippe Martinet
  - ITS Lab - Kumamoto, Japan. Zhencheng James Hu
  - INRIA-IMARA - Rocquencourt. Fawzi Nashashibi
  - ISRC-SKKU - Suwon, Korea. Xinshuang Zhao
  - INRIA-emotion - Grenoble. Christian Laugier
  - ~~iCEiRA - Taiwan. Ren Luo~~
- **10:15-10:45 coffee break**

# Schedule (2/3)

- **10:45-12:15 Bilan for each task. One presentation (5 to 10 min) per Task.**

~~Task 1: Demo. Remotely Augmented Reality. (Leader : R. Luo IRA LAB)~~

Task 2: new mobility devices for elderly people. autonomous wheelchair, autonomous table, very small device to assist navigation. indoor navigation, indoor modelling and understanding, indoor sensor network. (Leaders : J. Hu ITS and A. Spalanzani INRIA)

Task 3: Human machine interaction. Face recognition , gaze, emotion... tablet, smartphone... (Leader: F. Nashashibi INRIA)

Task 4: Sensor fusion and networks. global monitoring, tracking. Sensor networks who track specific objects. sensor fusion (vision, audio, smell,..) Human-object communication (Leader: E. Castelli MICA center)

Task 5: Human aware navigation and manipulation. co-navigation decision. (Leaders: A. Spalanzani INRIA, P. Martinet IRCCYN institut pascal)

**Bilan of the first year in term of collaborative actions (A. Spalanzani)**

- **12:15-13:30: lunch break**

# Schedule (3/3)



- **13:30-15.15: Scientific presentations (15 minutes)**
  - Vision-based control (Ircsyn)
  - Vision based human robot interaction (MICA center)
  - Fast Classification and Tracking (INRIA-emotion)
  - HomeMate: Cognitive Consumer Robot (SKKU)
  - Mobility Assistance with Stavi (ITS)
  - New mobility devices (INRIA-IMARA)
  - Socially-aware navigation (INRIA-emotion)
- **15:15-15:45: coffee break**
- **15:45-17:30 : discussion**
  - yours presentations on the website
- - Objectives of the 2nd year,
  - Organisation of the final workshop (James Hu)

# ict-PAMM 2011-2013



## • **Goals of the project**

- Propose a **common definition of service robots**, their use and interaction with humans
- Develop **reliable and safe algorithms and technologies** for mobile and manipulation service robots
- **Demonstrate** in real places for mobile manipulation service robot
- **Exchange** ideas, research results and technologies (workshops, students & researchers exchanges ...) in the field of mobile and manipulation service robotics

## • **7 Partners** (3 French and 4 Asian research groups)

- Intelligent Systems Research Center, Sungkyunkwan University, Korea
- Intelligent Robotics and Automation, National Taiwan University
- International research Center MICA, Hanoi, Vietnam
- Intelligent Transportation System Lab, Kumamoto University, Japan
- IRCCYN, Nantes, France
- INRIA Rhône-Alpes, e-Motion team, France
- INRIA Rocquencourt, IMARA, France

# Main topics of the projects



- Visual search and retrieval of objects
- Appliance manipulation
- Social interaction
- Human interaction and knowledge based behaviors
- Environment modeling and understanding
- Navigation techniques using vision, risk assessment and social rules

# Tasks of the project



- **Task 1: Demo.** Remotely Augmented Reality. (Leader : R. Luo IRA-LAB)
- **Task 2: new mobility devices for elderly people.** autonomous wheelchair, autonomous table, very small device to assist navigation. indoor navigation, indoor modelling and understanding, indoor sensor network. (Leaders : J. Hu ITS and A. Spalanzani INRIA)
- **Task 3: Human machine interaction.** Face recognition , gaze, emotion... tablet, smartphone... (Leader: F. Nashashibi INRIA)
- **Task 4: Sensor fusion and networks.** global monitoring, tracking. Sensor networks who track specific objects. sensor fusion (vision, audio, smell,..) Human-object communication (Leader: E. Castelli MICA center)
- **Task 5: Human aware navigation and manipulation.** co-navigation decision. (Leaders: A. Spalanzani INRIA, P. Martinet IRCCYN institut pascal)





|                        | Topic 1: Demo | Topic 2: new mobility devices for elderly people. | Topic 3: Human machine interaction. | Topic 4: Sensor fusion and networks | Topic 5: Human aware navigation and manipulation |
|------------------------|---------------|---------------------------------------------------|-------------------------------------|-------------------------------------|--------------------------------------------------|
| LEADER                 | R. LUO        | J. HU & A. SPALANZANI                             | F. NASHASHIBI                       | E. CASTELLI                         | A. SPALANZANI & P. MARTINET                      |
| INRIA eMotion          | X             | X                                                 |                                     |                                     | X                                                |
| INRIA Imara            | X             | X                                                 | X                                   |                                     |                                                  |
| IRA-lab                | X             | X                                                 | X                                   | X                                   | X                                                |
| ISRC                   | ?             |                                                   | ?                                   | ?                                   |                                                  |
| ITS                    | X             | X                                                 | X                                   |                                     |                                                  |
| IRCCYN institut pascal | X             | X                                                 |                                     | X                                   | X                                                |
| MICA                   | ?             |                                                   | ?                                   | ?                                   |                                                  |

# Presentations of the partners

(10-15 minutes per partners)



- Mica Institute - Hanoi, Vietnam. Eric Castelli
- Ircsyn - Nantes. Philippe Martinet
- ITS Lab - Kumamoto, Japan. Zhencheng James Hu
- INRIA-IMARA - Rocquencourt. Fawzi Nashashibi
- ISRC-SKKU - Suwon, Korea. Xinshuang Zhao
- INRIA-emotion - Grenoble. Christian Laugier

# Bilan of the first year: visits of partners



- **Skku**<-> **ITS** Dec.17, 2011, Prof. Sukhan Lee visited ITS(Intelligent Transportation System) Lab, Kumamoto University. He had a presentation for ‘Plenary Lecture 1’ on *SSI ProSemi 2011* Workshop
- **Skku**<-> **INRIA-emotion** September, 2011, Gabriel Synnaeve of Emotion team in INRIA has visited ISRC/SKKU and presented his interests with research works and discussed with ISRI members.
- **Ircynn**<-> **Skku** August, 2012, Prof. P. Martinet(Institut Blaise Pascal) visited ISRC to discuss with ISRC members about some progress on the intelligent vehicles with autonomous navigation and demonstrate his recent research results in the seminar.
- **NTU**<-> **ITS** June 21-25, 2011. Prof.Hu and two PhD students visited National Taiwan Univ. during the WCICA2011.
- **NTU**<-> **INRIA-emotion**<->**Institut Pascal** august 2012 C. Laugier and A. Spalanzani (e-motion team) and P. Martinet (IRCCYN institut pascal) visited R. Luo the iCeIRA lab (I-RICE) at Taipei and participated to a seminar on assistive robotics.
- **INRIA-emotion**<-> **ITS** september 2012 J. Hu (ITS Lab) visited INRIAE-Motion and made a seminar on assistive robotics.
- **INRIA-imara**<-> **ITS** september 2012 J. Hu (ITS Lab) visited INRIA-IMARA and made a seminar on assistive robotics.
- **INRIA-emotion**<-> **MICA** June 2012 – discussion between C. Laugier, A Spalanzani (E-motion-INRIA/LIG) and E. Castelli in Grenoble
- **ITS**<-> **Institut Pascal** Thomas... visited ITS for 6 months

# Bilan of the first year: publications



- Conferences :23 ira-lab – 7 emotion – 5 mica – 5 irccyn – 1 IMARA
- Journals: 7 ira-lab - 8 SKKU - 2 mica – 1 Irccyn
- Scientific books chapters: 1 emotion-SKKU, 1 Irccyn, 1 mica

# Bilan of the first year: workshops



- Prof. Sukhan Lee was chair of the 12<sup>th</sup> International Conference on Intelligent Autonomous Systems (IAS) was held in June 26-29, 2012 at Jeju Island of Korea and regarding workshops, “Personal Transport Service Robots” are held.
- A. Spalanzani organised a workshop at the IROS’12 conference on assistance and service robotics
- Ws Philippe by email

# Others



- 2 Invited sessions at icarcv 2012 (P. Martinet with Han Wang) (F. Nashashibi)
- Panel session on robotics and vision at icarcv 2012 (P. Martinet)
- Christian invited talk Fields and serv robotics march 2012
- Joint center ICEIRA
  
- Demo of the robotic wheelchair at Lyon (innorobo)
- Demo at SKKU ? ->wait of sukhan email (video ?)
- Demo at Rocquencourt « Citymobil » november. -> fawzi
- TRA (Picav 2012) -> fawzi

# Objectives of the 2<sup>nd</sup> year : meetings



- Hanoi (spring 2013) : meeting
  - 10-30 april
  - 12-30 may
  - Visit mica institute – 1 day seminar. – visit of research teams in polytechnics, 1 day (or more) tourism
- Kumamoto (novembre 2013 after IROS ?) : final workshop
  - Common open demo in the kumamoto campus. Stavi platform? Nao ?
  - Expensed partially financed by kumamoto university (J. Hu has applied for some fundings)
  - 1 day Workshop – 1 day meeting
- Thinking about DEMOS