Handle WP1 videoconference meeting

11h30-13h00 CET
March 9, 2009
AGENDA

• 1. Definition of scenarios
• 2. Definition of set of sensors and dataset format
• 3. Preview of experimental protocol
• 4. Database and data registration
• 5. WP1 Joint Meeting with GRASP project during ICAR 2009
• 5 March 14h-15h GMT: video conference meeting to address kickoff open issues (focus on WP1 and WP2 but others welcome):

• 1 - Scenarios. It was stressed the urgency on defining the experimental scenarios. In the end of the second meeting we should have a draft of the scenarios each partner finds more interesting, either in the point of view of the project's scientific objectives and their own research objectives. The idea is to have an internal "call for scenarios", bearing in mind that it would be useful to associate metrics for evaluation of success.

• 2 - Recordings. What type of data, sensors, sampling rates and calibration needs are required for the data acquisition? The consortium should define this at least for the initial experiments; it should also discuss instrumented objects as means for additional information acquisition.

• The next project meeting was set: Portugal, 2-3rd April 2009.

• Draft scenarios, draft D4 protocol
Define scenarios - Proposal

• Start with “simple”:
  – pickup polygon object, rotate and place with distinct pose
  – pickup pen and position for writing
  – pickup remote control, position for use and press key

• Launch an internal Call for multiple scenarios
Define sensors and dataset

• Ready to use:
  – Polhemous 6 point tracker
  – Data glove figure flexure
  – Videre stereo camera
  – Firewire colour camera
  – Human observer annotations, to be defined by the protocol...

• To be added (?):
  – Z-cam
  – Instrumented objects
  – Eye Tracker
  – Laser ? 2D? Scanning 3D?
  – Colour markers on hand and objects
Preview of experimental protocol

- Polhemus Liberty Source
- Mug: chosen object to grasp
- Magnetic sensors attached to the glove
- Laptop
- Polhemus Liberty System Central Unit
Preview of experimental protocol

- Polhemus Liberty Source
- Water bottle: chosen object to shape exploration
- Polhemus Liberty System Central Unit
- Laptop
- Magnetic sensors attached to the glove.
Preview of experimental protocol

A subject is stopped in the scenario. He is using a data glove in the right hand with 5 Polhemus sensors to record the trajectory data. His initial position is more or less 1m from the object. His position to the Polhemus referential is positive in x coordinate, negative in y coordinate and his hands is in z positive coordinate. The mug is placed on a table of 1m. Its position is 1m from the Polhemus referential.

The subject starts to move the arms/hand raising it. The hand pose orientation has changed from the initial position. The subject starts to move the right leg to walk to the object direction.

The arm has moved. The right hand is closer to the object. It is wide open a few centimetres of the top of the mug.

The hand preshapes the mug size to grasp it. The subject is refining the fingers to grasp the mug. The hand orientation still is as top-grasp.
Database and data registration

Top Level View of the Major Entities

- Devices
- Scenarios
- Experimental data (raw data)
- Database Server
Database and data registration

Detail level view

- Data
  - Sensor data
  - Annotation
  - Time Stamp

- Device
  - Camera
  - Data Glove
  - Motion Tracker
    - Calibration parameters
      - Intrinsic
      - Extrinsic
    - Other parameters
      - Width
      - Height
      - Color depth
      - Frame
      - Reference point
      - Listing vector

- Scenario
  - Object Representation by Grasping Exploration
  - Hand and Fingers pose analysis along the trajectory

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