Face and body Analysis Natural Computer Interaction

REST API DESCRIPTION

1. REST API

The REST API is the asynchronous communication interface between the software modules running on the IMX6 hardware (local host) and the application running on the system host. Both sides create a server interface on their side for receiving messages from the other side.

The four big functions blocks for the REST API are:

1. Initialisation
2. Enrolment
3. Profile Handling
4. Use Case Handling

JSON data structures are used for formatting the transferred data.

REST API – Initialization

The Initialization interfaces are:

- **Initialize** [IMX6]
  Initializes the server on the IMX6 side and defines the response interfaces on the OC side.
- **SetLogLevel** [IMX6]
  Defines the log level, up to which the IMX6 side will send logging events to the PC. Available log levels are TRACE, DEBUG, INFO, WARN, ERROR and FATAL.
- **LoggingEvent** [PC]
  Receives logging events up to the specified log level.
- **SetupGazeWorldModel** [IMX6]
  Defines the gaze world model, that describes the positions of screens and the gaze sensors and their correlation to each other.
- **DefineGazeRegions** [IMX6]
  Defines the gaze sensitive regions inside the screens.
- **DefineGazeGestureEvents** [IMX6]
  Defines combinations of gaze and gesture action, about which the application should be informed when they are triggered.

REST API – Enrollment

The Enrollment interfaces are:

- **EnumEnrollmentModules** [IMX6]
  Returns a list of all modules that can be enrolled.
- **StartEnrollment** [IMX6]
  Start the enrollment of a specific enrollment module (like gaze, authentication, …).

- **EnrollmentDataEvent** [PC]
  Receives enrolment progress events to react on by showing corresponding information on the screens.

REST API – Profile Handling

The Profile Handling interfaces are:

- **EnumUserProfiles** [IMX6]
  Returns a list of all available user profiles on the system.
- **CreateUserProfile** [IMX6]
  Creates a new user profile and returns its ID to the PC side.
- **ActivateUserProfile** [IMX6]
  Activates a user profile by its ID.
- **DeleteUserProfile** [IMX6]
  Deletes a user profile by its ID.

REST API – Use Case Handling

The Use Case Handling Interfaces are:

- **EnumUseCaseModules** [IMX6]
  Returns a list of all use case modules. Each module can be activated and deactivated individually.
- **StartUseCase** [IMX6]
  Activates a specific use case module. While the use case module is active, corresponding events are sent to the PC.
- **StopUseCase** [IMX6]
  Deactivated a specific use case module.
- **UseCaseEvent** [PC]
  Receives use case events like detected gestures, facial expressions, etc.

The exact definition of the JSON structures for the interfaces are defined in the Annex document: REST API iMX6 – PC (Controller).

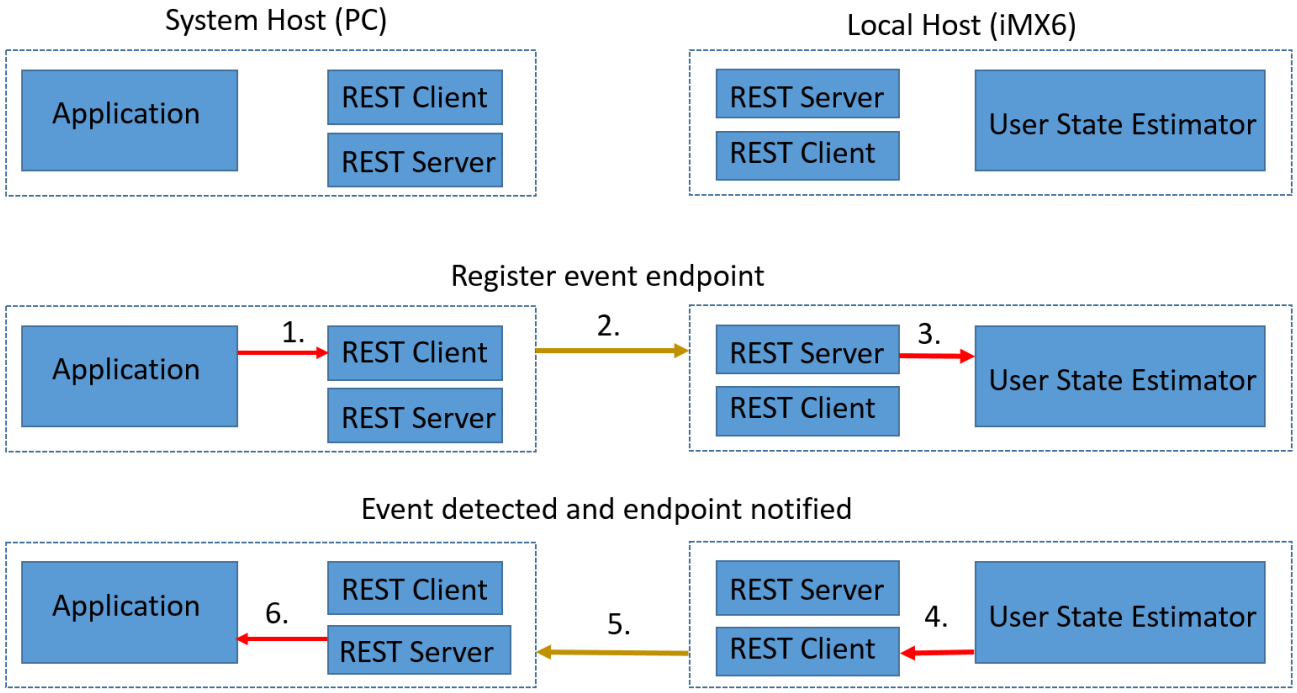

Figure 1-1: System host and local host connectivity

1. The Application notifies its REST client that it is interested in an event.
2. The Application's REST client notifies the Local Host, and includes a return address (URL) to invoke upon said event.
3. The User State Estimator registers the interest in said event.
4. Upon said event, the User State Estimator notifies its own REST client.
5. The User State Estimator's REST client, having stored the return address for said event in (2), invokes it, thus notifying the System Host.
6. The System Host's REST Server forwards the notification to the Application, which can then act upon said event.

Note: For further information, please refer to the external document "FANCI_REST_Api_Overview.pdf".