Discovery & Registration
for MMI Modality Components
Modality Component

- handles the input and output of different hardware devices or software services in a Multimodal System.

- is responsible for tasks that may be either co-resident on a device or distributed across a network.
The Modality Component Life-cycle

1 Advertisement
2 Discovery
3 Registration
4 Control
I Advertisement
In distributed configurations, advertisement allows the multimodal system to reach correctness in the MC retrieval.

A pertinent and expressive announcement enables the result to match more closely to the application's or user's requests.
I Advertisement

What information must be advertised?

Which functional Information?
Which non-functional Information?

It depends on the selection Criteria!
Ex: two concurrent concurrent synthesizers
I Advertisement

DLNA : device category + manufacturer capabilities

Bonjour : scope or federation information

Intent : Task & Media information

Web Services : operations + QoS + context
I Advertisement

MMI?

Multimodal Information?
Modality Information?
Functional Information?
Situation of use Information?
Coordination perspective / Sensing perspective?
Requirement:

Need of a description policy for Modality Components from a Multimodal System perspective
Four granularities:

- Identification (mode, modality, type)
- Behavior (media, supported events)
- Goal (generic intent)
- Invocation (privacy)
II Discovery
II Discovery

Service discovery allows the automatic detection of non-advertised MC at load and run-time.

It also allows to update the information about advertised MC already stored in a registry.
II Discovery

Fours types of discovery criteria:

1. Task Goal
2. Intention
3. Behavior
4. Capacities
II Discovery

Four Types of discovery:

1. Fixed (confirmation)
2. Passive (CC listen)
3. Active (CC request)
4. Mediated (consult)
II Discovery

Requirement:

Need of a mechanism of discovery using the MMI EVents
II Discovery
II Discovery

Modality Component (MC)
- Input
- Modality Capabilities Manifest
- Media URI & Type

Modality Component (MC)
- Output
- Modality Capabilities Manifest
- Media URI & Type

Announcement
- Interaction Manager (IM)
- Status Request to a known SERVICE
- PULL

Data Component (DC)
- Registry

Multimodal Capabilities Profile

Load-Time
III Registration
III Registration

Registration implies:

Information storing (Data Component)
Indexing criteria (Coordination? Capacities?)
Registration State (hard? soft?)
Registry Distribution (replication? federation?)
III Registration

Requirement:

System States Handling
Multimodal session
Registry Updates
IV Control
Use of MMI Events to control registration and registration updates.

Is it the same semantics?