Curso Multimedia Home Platform 1.1.2

Interaction Channels Downloaded Applications

Return Channel APPs

Curso Multimedia Home Platform 1.1.2

Introducción

- En las MHP 1.1.2 A068r1 Specs, pag 48 dice:
  - **MHP service:** a logical service in an MHP which can be selected through the service selection API or functional equivalents
    - *NOTE: This includes*
      - *broadcast DVB services*
      - *stored services and*
      - ***MHP applications executed in response to an AIT file loaded over the interaction channel.***
- Un **Interaction Channel** es un Service que se “sintoniza” proporcionando el fichero que contiene la AIT mediante una URL HTTP/HTTPS que se ejecuta sobre el canal de retorno.
- Todas las aplicaciones de esta AIT usarán como protocolo de transporte el **Interaction Channel (0x0003)** (Ver App Signalling)
- **El Broadcast NO interviene en absoluto para ningún tipo de Signalling.**
- **Otra cosa distinta es un DVB MHP Service: un Service de tipo MHP Applications (0x10: DVB MHP Service) que sólo contiene Aplicaciones MHP, y cuyo esquema es Broadcasted.**

¿ Cómo “sintonizo” un Interactive Channel (IC) ?

- El Locator para sintonizar un **IC** es similar al usado para referenciar un Broadcast Service, la diferencia es que el Locator contiene una URI apuntando a la AIT File.
- La forma de seleccionarlo será mediante el API de **JavaTV Selection**.
- Recordemos en la siguiente slide lo que ocurre con la selección de Services mediante Locators con Java TV.

Selección de Services con Locators conociendo la url, p.e. dvb://22d4.a.12c

- Los mecanimos siguientes NO funcionan (al menos en Strong 5510). El select() NO entiende el Locator y lo considera erróneo.

```
ServiceContext sc...
sc.select( new Locator[]{new org.davic.net.dvb.DvbLocator("dvb://22d4.a.12c")});
sc.select( new Locator[]{javax.tv.locator.LocatorFactory.getInstance().createLocator("dvb://22d4.a.12c")});
```

- Sin embargo si obtenemos el Service primero a través de SIManager y después seleccionamos el Service SÍ funciona.

```
Service ser =javax.tv.service.SIManager.createInstance().getService(new org.davic.net.dvb.DvbLocator("dvb://22d4.a.12c"));
Service ser
    =javax.tv.service.SIManager.createInstance().getService(javax.tv.locator.LocatorFactory.getInstance().createLocator(dvb:
    //22d4.a.12c));
sc.select(ser);
```

- Curiosidad: ni siquiera usando el mismo Locator de un Service funciona.

```
sc.select(new Locator[]{ser.getLocator()});
```

- Por último: ved toExternalForm de un Locator: efectivamente puede ser platform dependent:

```
SERVICE LOCATOR toString:dvb://22d4.a.64    SERVICE LOCATOR toExternalForm:osmo:0015dvb://22d4.a.64bound:ptl=
```

Ejercicios Bloque INTERCHA-1

¿ Cómo “sintonizo” un Interactive Channel (IC) ?

- Habremos hecho algo parecido a:

```
XletContext xc = ...
javax.tv.service.selection.ServiceContextFactory serviceContextFactory  = javax.tv.service.selection.ServiceContextFactory.getInstance();
javax.tv.service.selection.ServiceContext serviceContext = serviceContextFactory.getServiceContext(xc);
javax.tv.service.SIManager sim = javax.tv.service.SIManager.createInstance();
javax.tv.locator.LocatorFactory locFactory=  javax.tv.locator.LocatorFactory.getInstance();
service =sim.getService(locFactory.createLocator(“http:/wwww.host.com”));
serviceContext.select(service);
```

Y habéis visto que no funciona:

```
javax.tv.locator.InvalidLocatorException
    [2#15:2]    at com.adb.tv.service.SIManagerImpl.getService(Unknown Source)
    [2#15:2]    at code4tv.mhp112.exercise_ichan1.Exercise_ichan1.selectInteractiveChannel(Unknown Source)
    [2#15:2]    at code4tv.mhp112.exercise_ichan1.Exercise_ichan1.run(Unknown Source)
    [2#15:2]    at java.lang.Thread.run(Unknown Source)
    [2#15:2]    at java.lang.Thread.startup(Unknown Source)
```

¿ Cómo sé si se soporta Interaction Channels ?

- En las MHP Specs 1.1.2 , 9.7.2 se dice:
  - In profiles where application signalling over the interaction channel is supported, the method SIManager.getService shall accept instances of javax.tv.locator.Locator whose external form is valid "http" and "https" URLs and return a Service object. The method ServiceContext.select shall support selecting services identified by such service objects. This is described in more detail in clause 11.11.12.
- MHP Specs 1.1.2, 11.11.12 Dice:
  - On MHP terminals supporting applications downloaded over the interaction channel as defined in clause 9.7, the method LocatorFactory.createLocator(String) shall additionally accept Strings containing URLs using the "http" and "https" protocols as being valid and return a corresponding Locator. This method shall only validate the string to the extent that this is possible without network access.
  - On MHP terminals supporting applications downloaded over the interaction channel as defined in clause 9.7, the method SIManager.getService(Locator) shall accept such Locators as being valid and return a corresponding javax.tv.service.Service. This method shall only validate the locator to the extent that this is possible without network access.
- **En nuestro caso :NO son soportadas!**

Fichero AIT Interaction Channels

- Contendrá una sucesión de Application Information Sections (ved MHP 1.0)
- A las apps sólo se les permite descriptores de transporte de tipo Interaction Channel: **0x0003** (Ver App Signalling)
- Sólo se permiten AUTOSTART y PRESENT
- No se monitorizan cambios en la AIT una vez se carga.
- El ciclo de vida sigue las mismas pautas que las Broadcast APPs.
- Para poder “sintonizar” se necesitan permisos de acceso al return channel. Sólo signed apps que lo hayan solicitado en el PRF (permission request file)

Referencias

code4tv.com
enhancing your content...

ISO/IEC 13818-1	Part 1. Elementary Streams transport definition
ISO/IEC 13818-6	Part 6. Extensions for DSM-CC. Digital Storage Media Command and Control
ETSI EN 300 468	Digital Video Broadcasting (DVB);Specification for Service Information (SI) in DVB systems
ETSI EN 301 192	DVB specification for data broadcasting
ETSI TR 101 202	Implementation Guidelines for Data broadcasting
ETSI TR 101 162	Digital broadcasting systems for television, sound and data services; Allocation of Service Information (SI) codes for Digital Video Broadcasting (DVB) systems
ETSI TR 102 154	Implementation guidelines for the use of MPEG-2 Systems, Video and Audio in Contribution and Primary Dist
ETSI TR 101 211	Guidelines on implementation and usage of Service Information (SI)
ETSI TR 101 200	Digital Video Broadcasting (DVB); A guideline for the use of DVB specifications and standards
DAVIC	Digital Audio Visual Council. davic 1.4.1
HAVI	Specification of the Home Audio/Video Interoperability (HAVi) Architecture
Interactivetvweb	http://www.interactivetvweb.org/
Wikipedia DSMCC	http://en.wikipedia.org/wiki/DSM-CC
MHP 1.1.2	Multimedia Home Platform, A068r1 & tam668r23_11xdraft_20061115
MHP 1.1.3	Multimedia Home Platform, A068r3
CDC 1.1	Connected Device Configuration (CDC) 1.1 (JSR=218).
PBP 1.1	Personal Basis Profile 1.1 (JSR 217)
MHP.org	www.mhp.org
INTRO MHP 1.1.3	tam1032r1-mhp-iptv-presentation