

W3C Web Intents

Local Network Service Discovery
Updated proposal May 15 2012

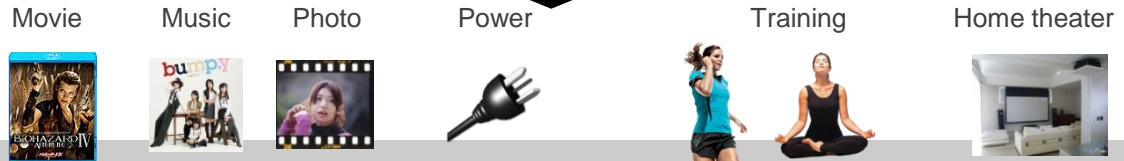
Technology Research / Sony Mobile claes1.nilsson@sonymobile.com

Web Intents for both cloud and local Services

Web Services



Web app

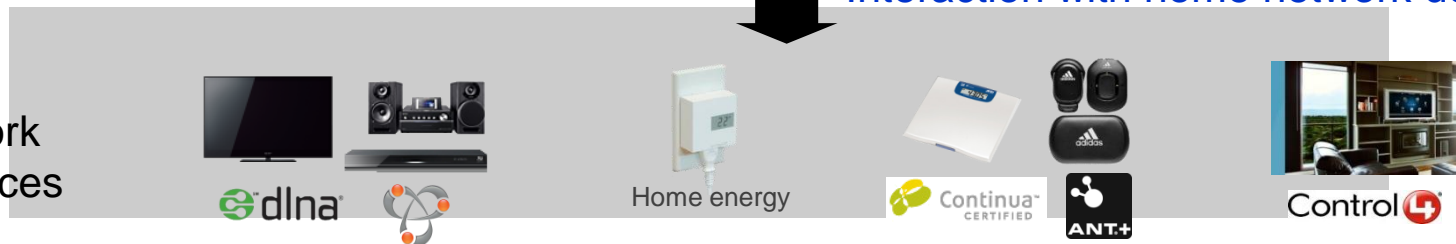


Browser



Interaction with home network devices

Home Network
Devices/Services



This presentation contains proposals for discovering and controlling Web Intents enabled UPnP devices in local networks

(discovery and control of legacy UPnP
devices is not covered in this
presentation)

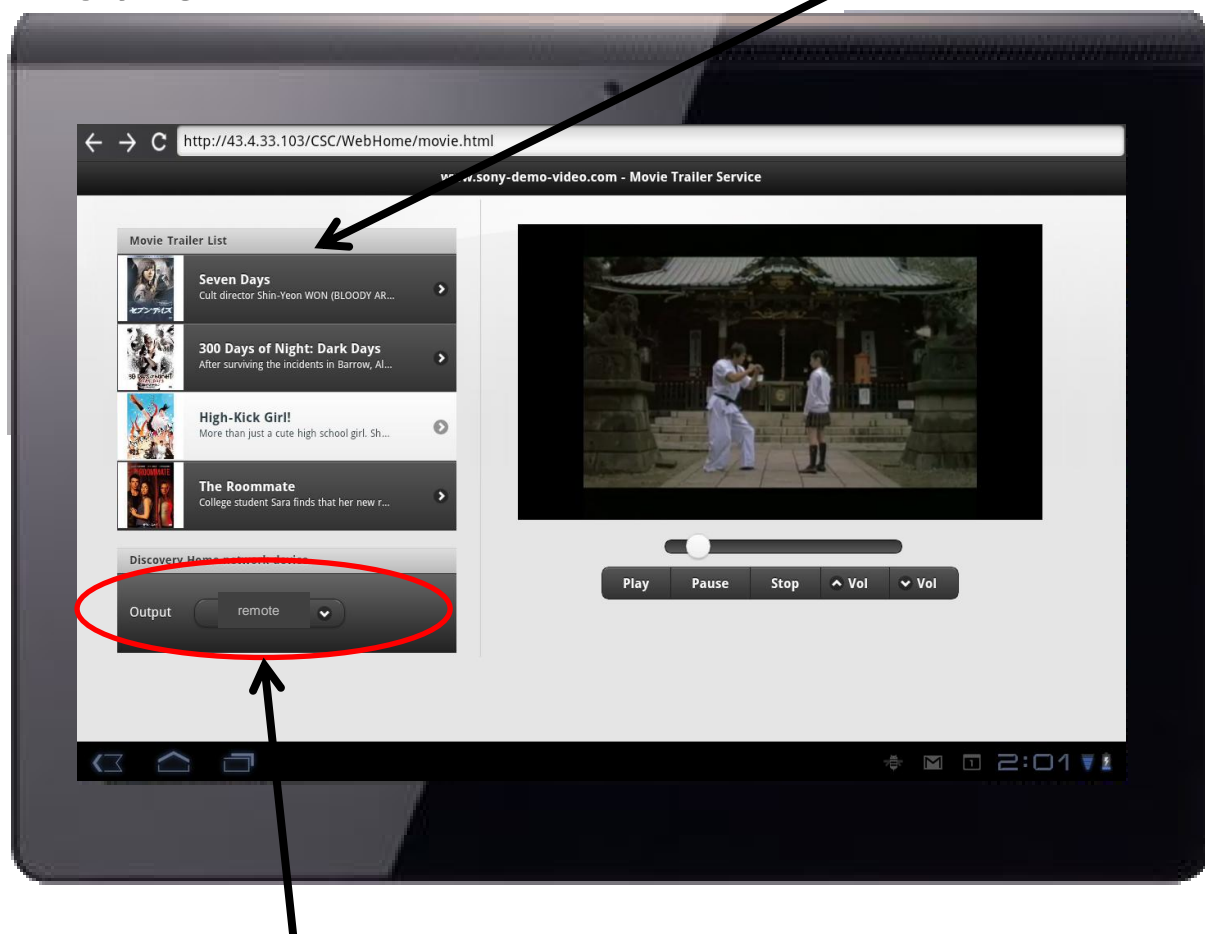
Use Case

Play video on remote device

Step 1: User invokes video play page

User selects video from list, inline playback starts

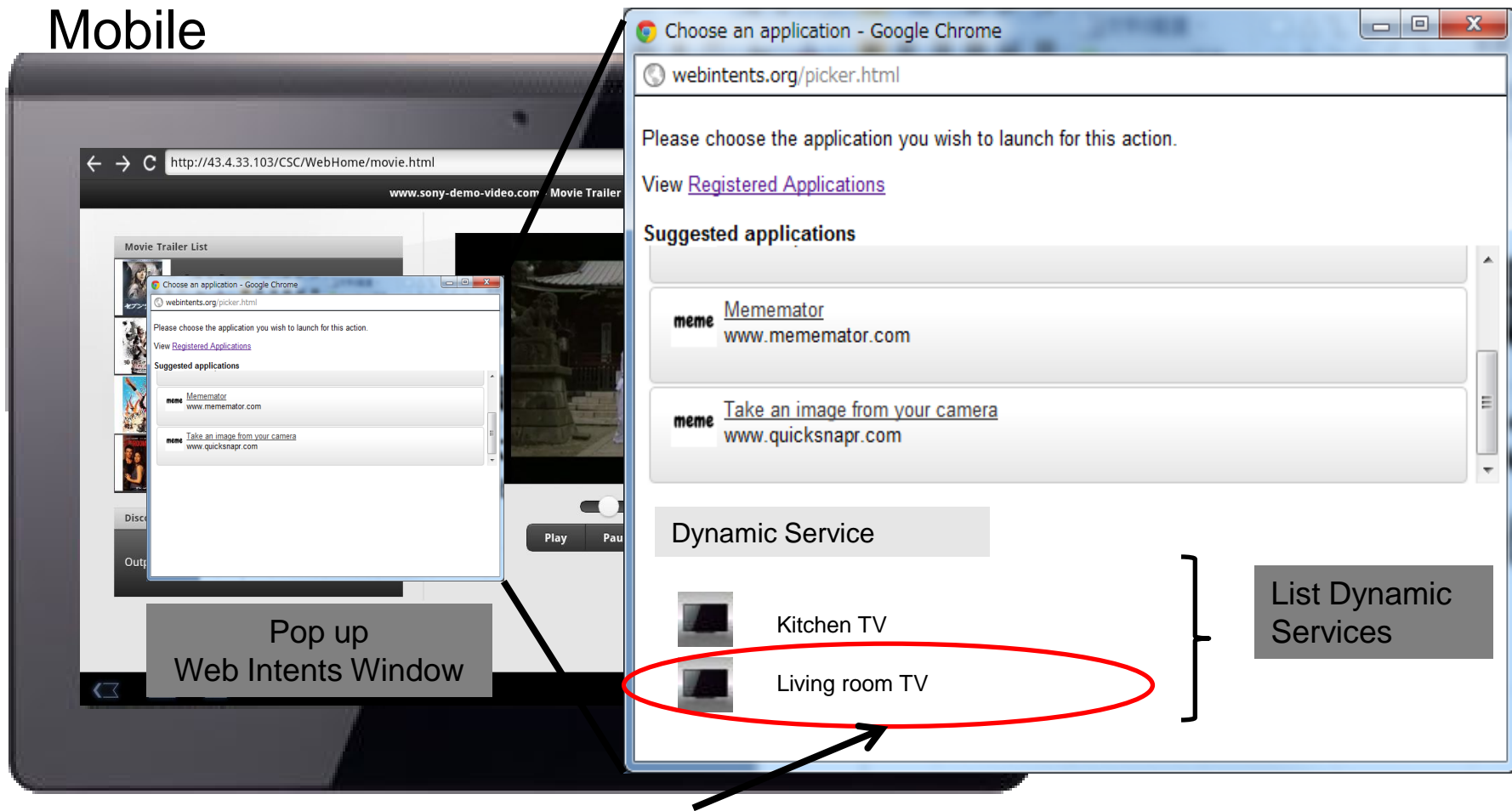
Mobile



User selects "remote"

Step 2: User selects the Service in Web Intents Service picker

Mobile



Select Service

Step 3: Two user experience alternatives

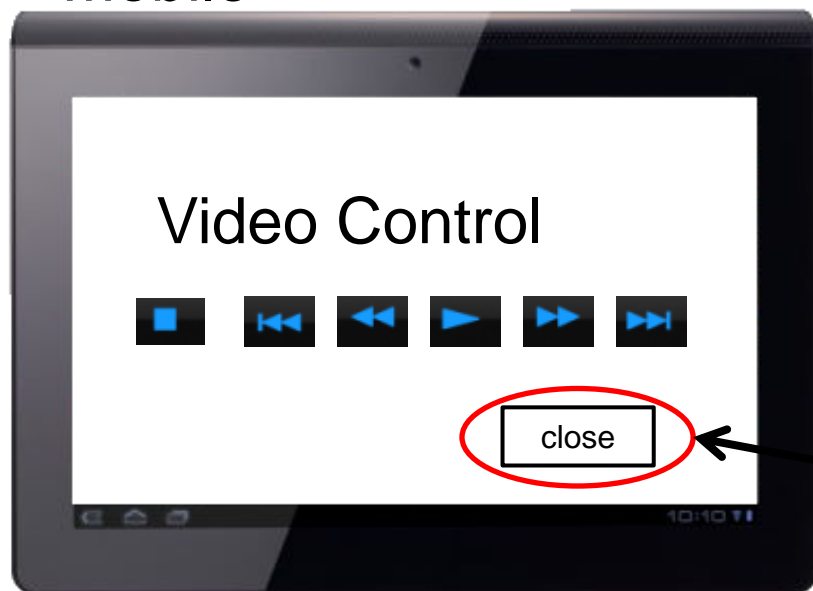
- Service page invoked and has UI that provides playback control buttons
- Control stays in Client page that provides playback control buttons

Step 3 – alt 1: Service control page is invoked

TV



Mobile



When "close" selected back to Client page.

Step 3 – alt 1

Implementation proposal with UPnP

- Dynamic Service registration through SSDP headers
- Service page with UI controls for video playback
- Service page may control the remote device (TV)

Local UPnP discovery

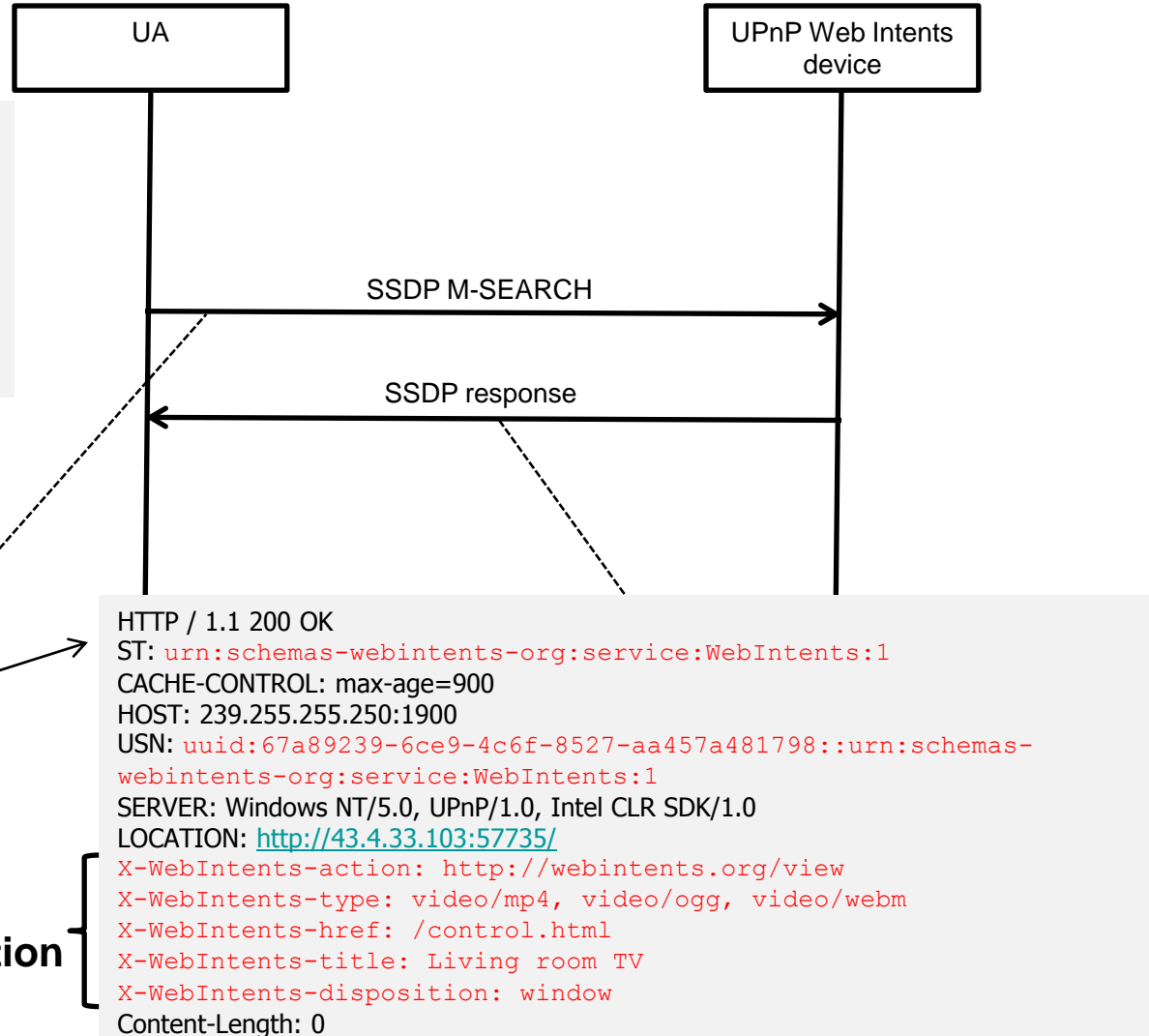
Client page Invocation

```
var intent = new Intent(  
    "http://webintents.org/view",  
    "video/mp4",  
    "http://demo-video-  
service.sony.com/content?id=462287");  
  
window.navigator.startActivity(intent,  
    function(intentData) {});
```

```
M-SEARCH * HTTP/1.1  
Host:239.255.255.250:1900  
ST: urn:schemas-webintents-  
org:service:WebIntents:1  
Man:"ssdp:discover"  
MX:3
```

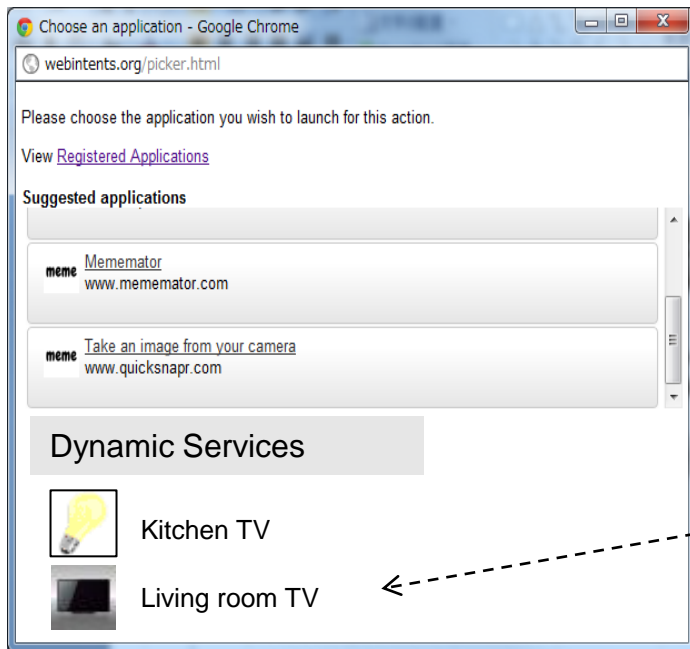
**New: Web intent
Search target**

**New: Web Intent
Service registration**



Service registration performed based on SSDP response headers

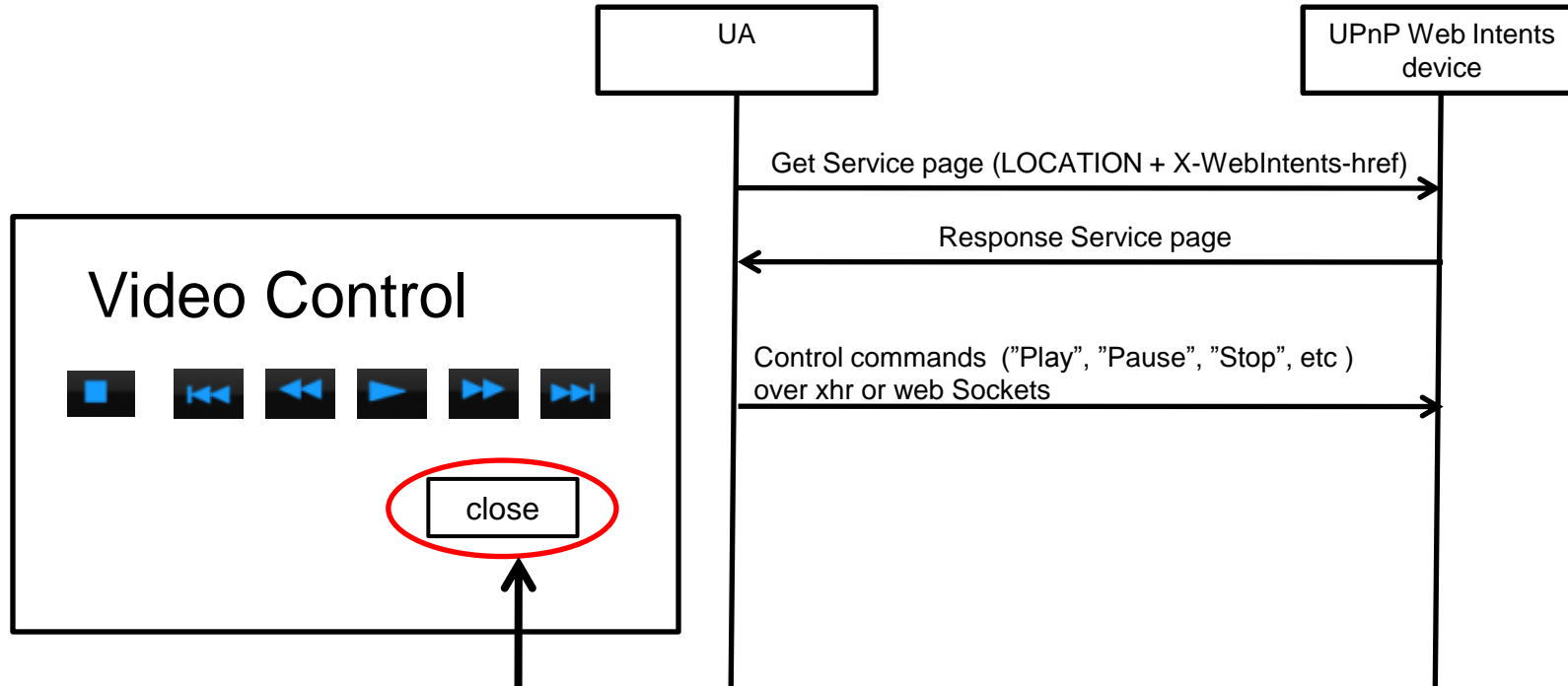
Web Intents Service picker



```
.....  
X-WebIntents-action: http://webintents.org/view  
X-WebIntents-type: video/mp4, video/ogg, video/webm  
X-WebIntents-href: /control.html  
X-WebIntents-title: Living room TV  
X-WebIntents-disposition: window  
.....
```

User selects Service

Service handler page is invoked



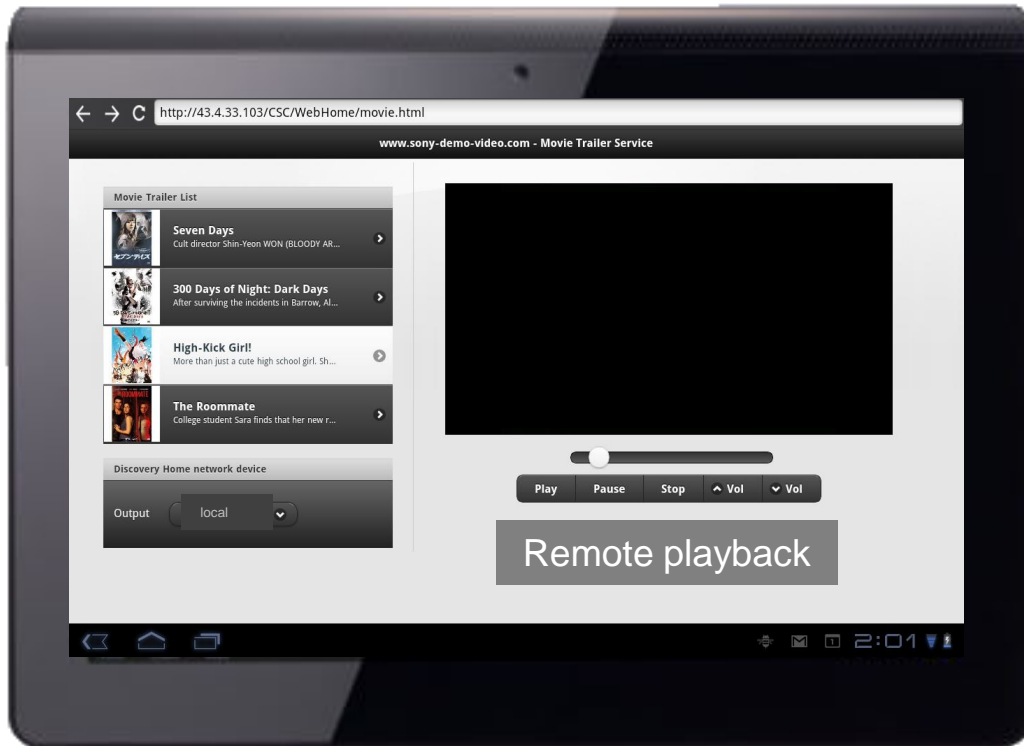
When user presses "close"
the original (Client) page is
invoked

Step 3 – alt 2: Control stays in Client page that provides playback control buttons

SONY
make.believe

TV

Mobile



User controls playback

Step 3 - alt 2

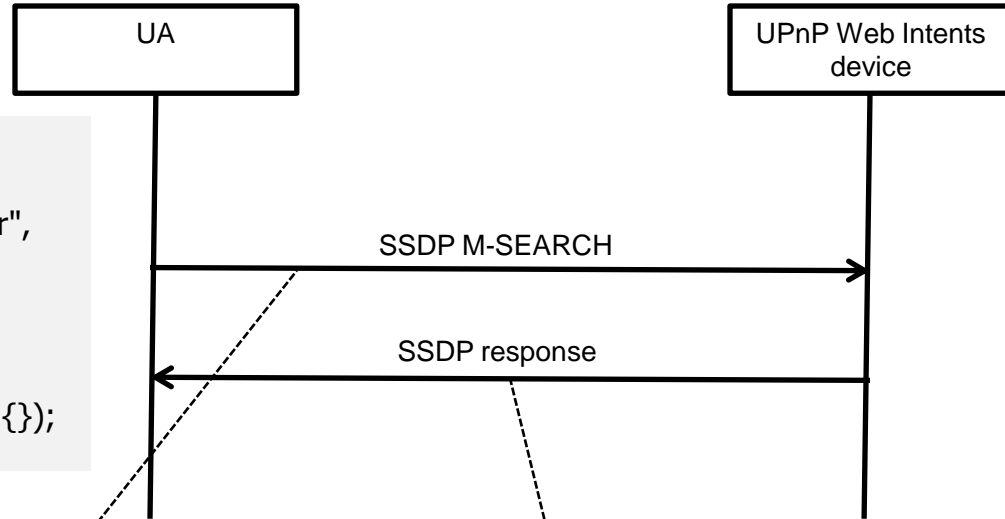
Implementation proposals with UPnP

- Dynamic Service registration through SSDP headers
- Client communicates through HTML5 channel messaging with "hidden" Service page that control the remote device (TV)

Local UPnP discovery

Client page Invocation

```
var channel = new MessageChannel();
var intent = new Intent(
    "http://webintents.org/discover",
    "application/octet-
    stream+mytvprotocol",
    [channel.port2]);
window.navigator.startActivity(intent,
    function(intentData) {});
```



```
M-SEARCH * HTTP/1.1
Host:239.255.255.250:1900
ST: urn:schemas-webintents-
org:service:WebIntents:1
Man:"ssdp:discover"
MX:3
```

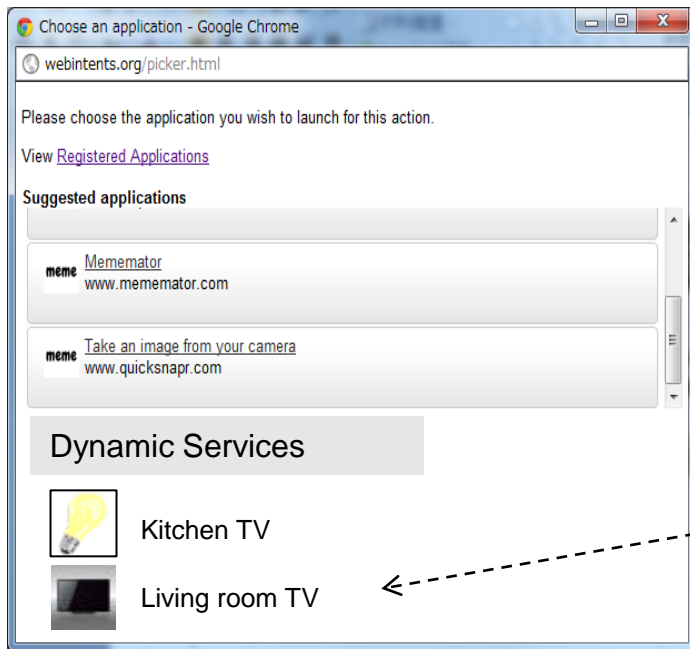
**New: Web intent
Search target**

**New: Web Intent
Service registration**

```
HTTP / 1.1 200 OK
ST: urn:schemas-webintents-org:service:WebIntents:1
CACHE-CONTROL: max-age=900
HOST: 239.255.255.250:1900
USN: uuid:67a89239-6ce9-4c6f-8527-aa457a481798::urn:schemas-
webintents-org:service:WebIntents:1
SERVER: Windows NT/5.0, UPnP/1.0, Intel CLR SDK/1.0
LOCATION: http://43.4.33.103:57735/
X-WebIntents-action: http://webintents.org/discover
X-WebIntents-type: application/octet-stream+mytvprotocol
X-WebIntents-href: /control.html
X-WebIntents-title: Living room TV
X-WebIntents-disposition: background
Content-Length: 0
```

Service registration performed based on SSDP response headers

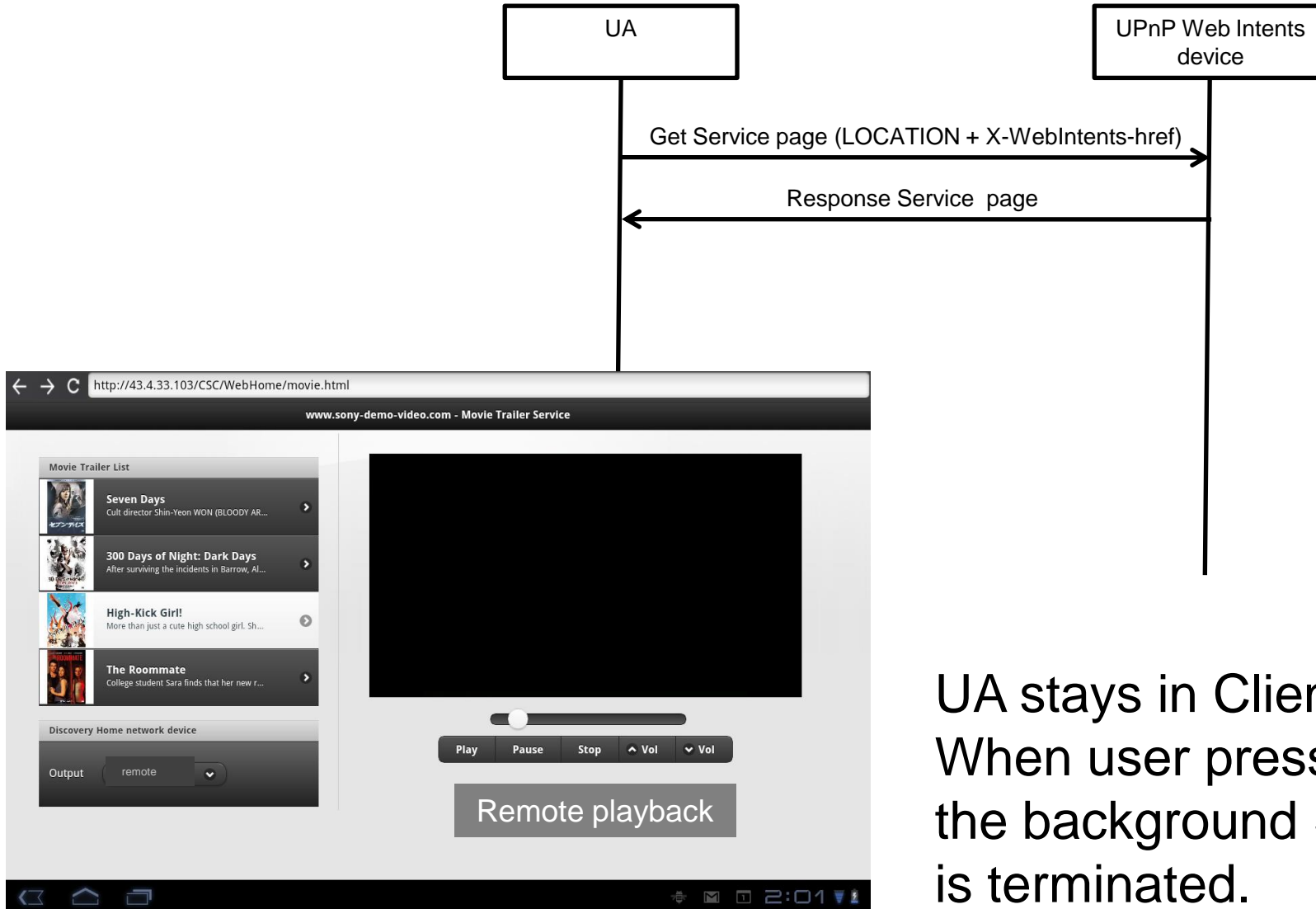
Web Intents Service picker



```
.....  
X-WebIntents-action: http://webintents.org/discover  
X-WebIntents-type: application/octet-  
stream+mytvprotocol  
X-WebIntents-href: /control.html  
X-WebIntents-title: Living room TV  
X-WebIntents-disposition: background  
.....
```

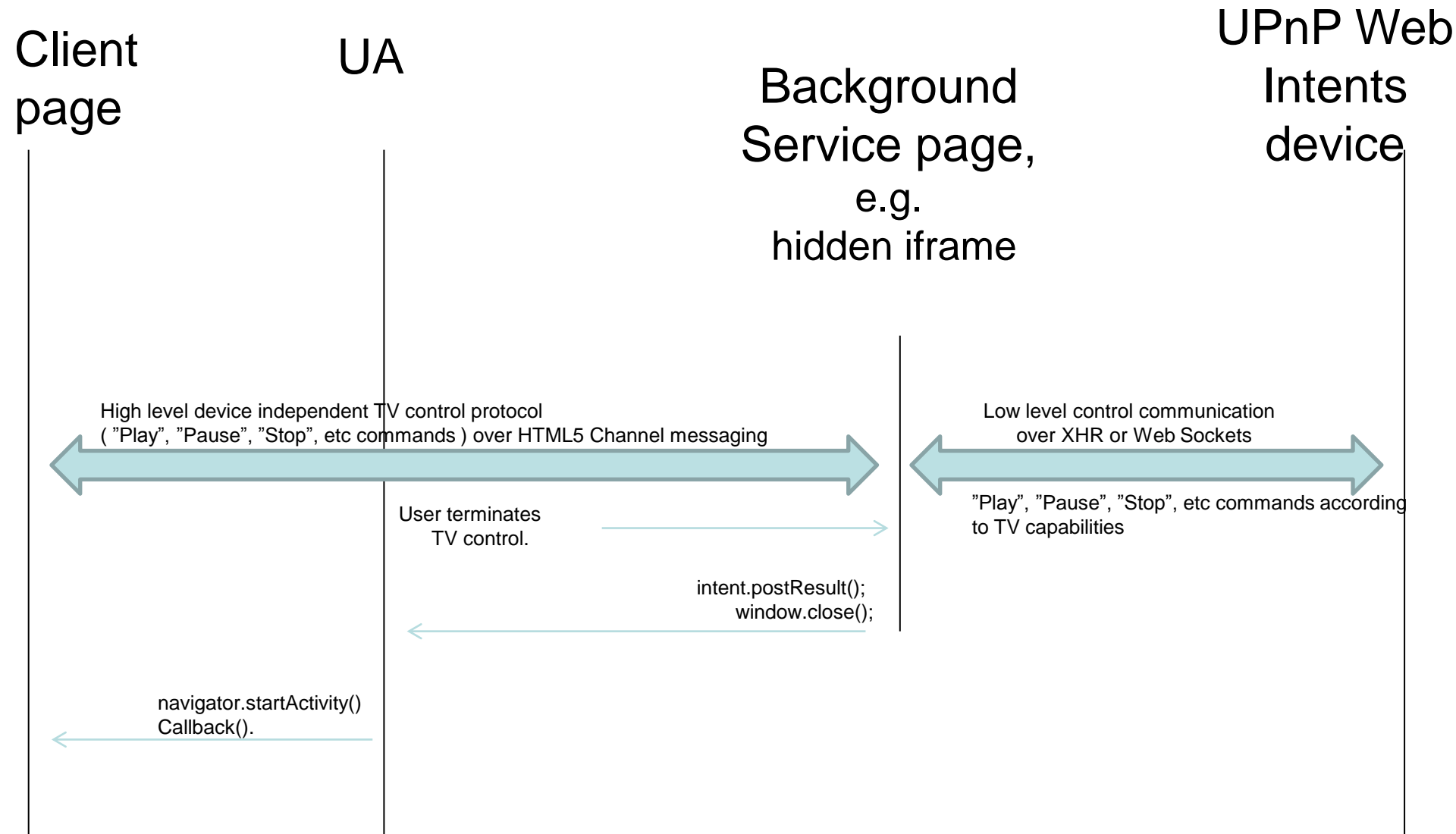
User selects Service

Background Service page is invoked



UA stays in Client page.
When user presses “stop”
the background Service
is terminated.

TV control communication



Summary of proposal

- Extension to Web Intents to support discovery of UPnP Services in local IP sub-networks (mDNS covered in another presentation)
- Presentation covers future Web Intents enabled devices
 - Sony has [W3C DAP Action 510](#) on a Web Intents addendum specifying dynamic registration of Services discovered on Web Intents enabled UPnP devices
- Existing legacy UPnP devices should also be enabled
 - Opera has [W3C DAP Action 511](#) on using Web Intents for discovery of Services on existing UPnP devices
- Support for Web Intents Service as background/hidden web content. Proposes "disposition"= background. Sony has [W3C DAP Action 519](#).

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