

# W3C Web Intents

Local Network Service Discovery  
Proposal May 29 2012

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# Web Intents for both cloud and local Services

Web Services

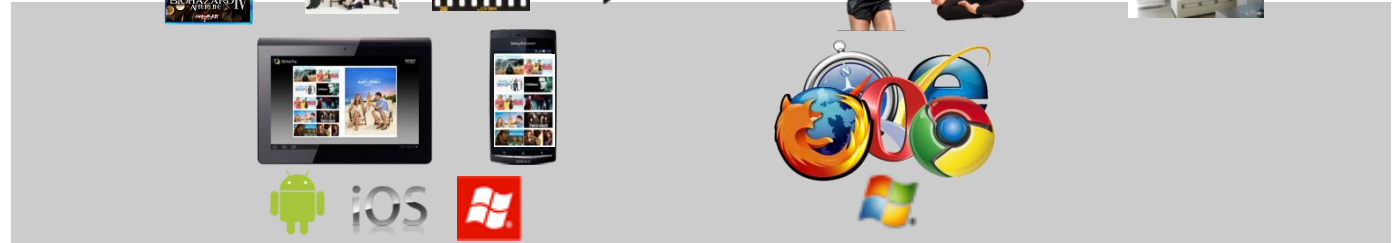


Web app

Movie Music Photo Power Training Home theater



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)

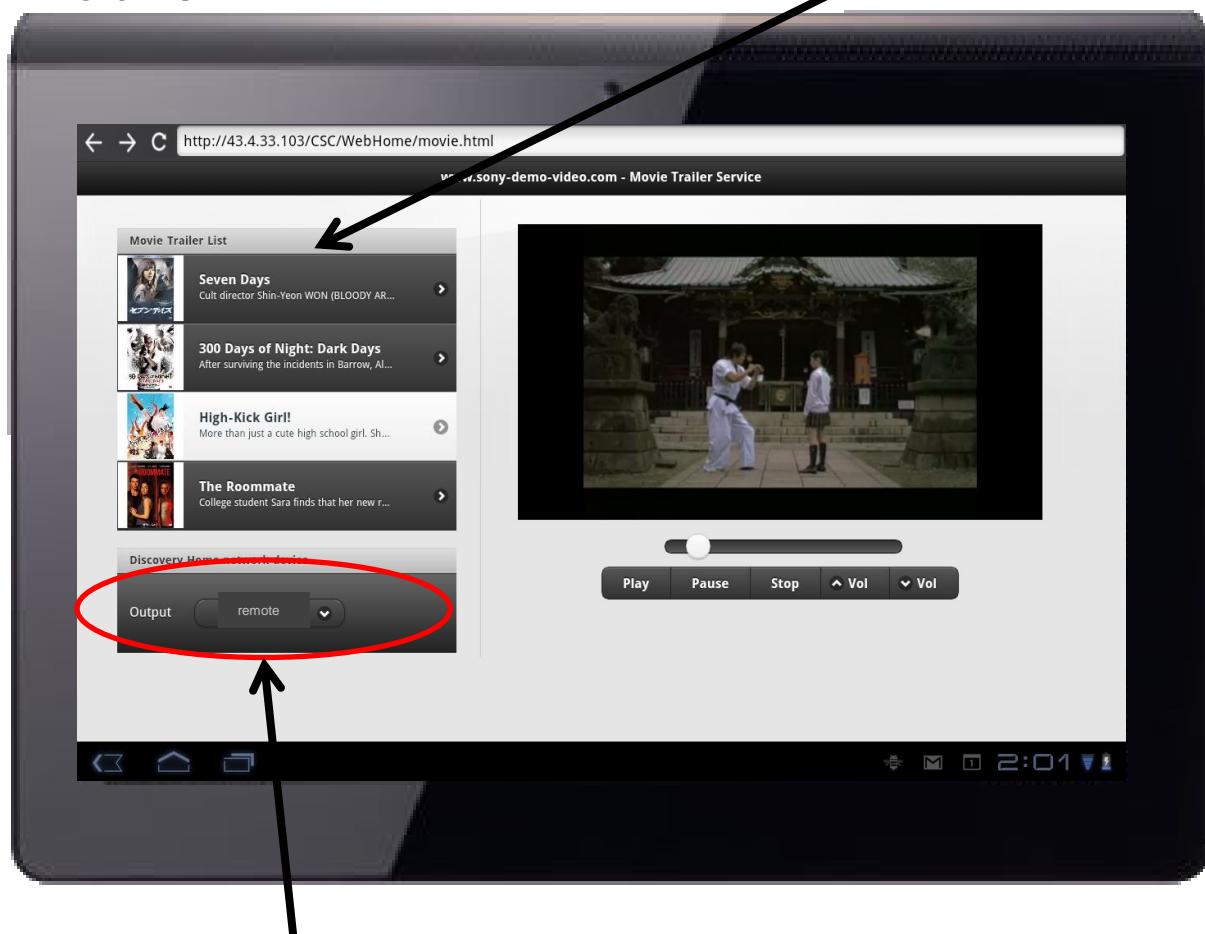
## Use Case

# Play video on remote device

# Step 1: User invokes video play page

User selects video from list, inline playback starts

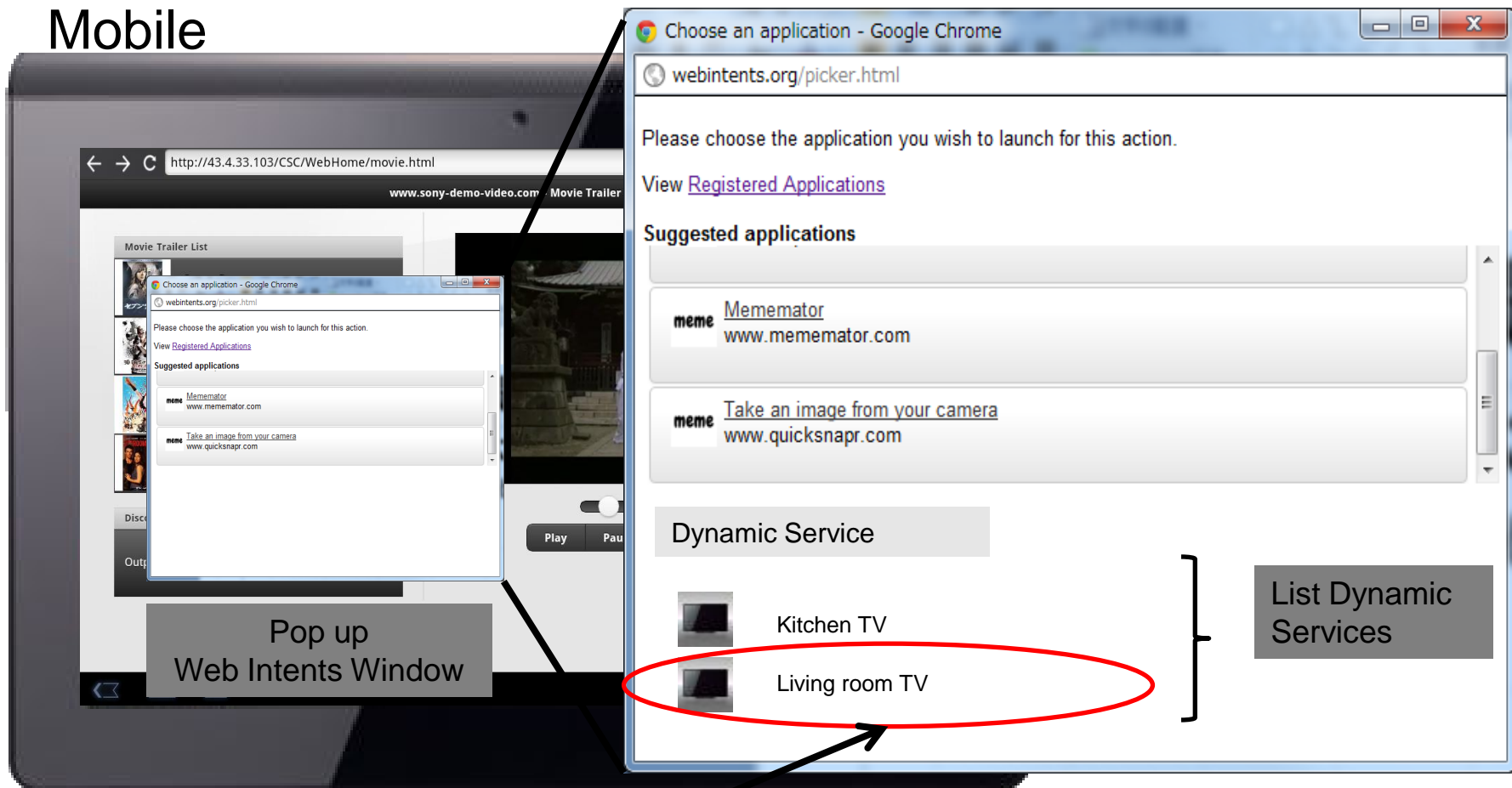
Mobile



User selects "remote"

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

Mobile



Select Service

## Step 3: Two user experience alternatives

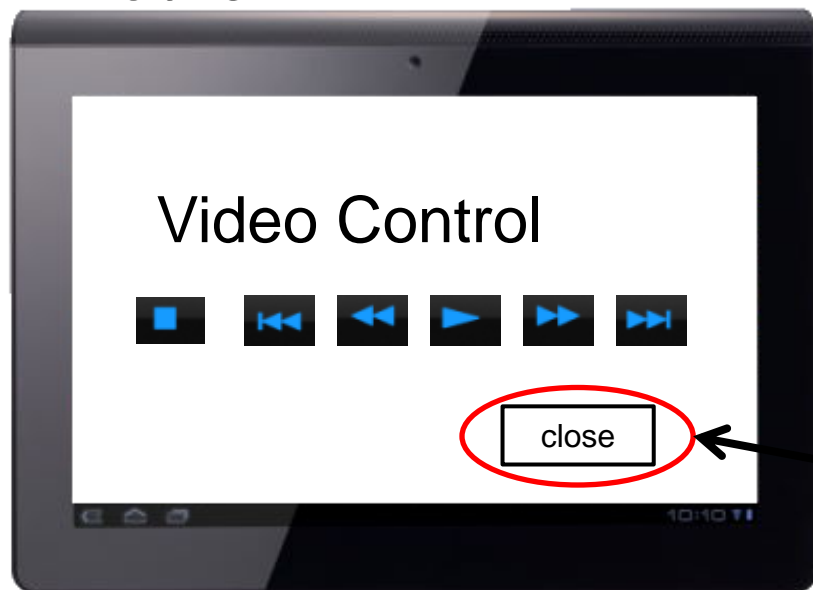
- Service page invoked and has UI that provides playback control buttons
- Control stays in Client page that provides playback control buttons

# 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 based on new SSDP headers and specific Web Intents Service registration document
- Service page with UI controls for video playback
- Service page may control the remote device (TV)

# Local UPnP discovery

## Client page Invocation

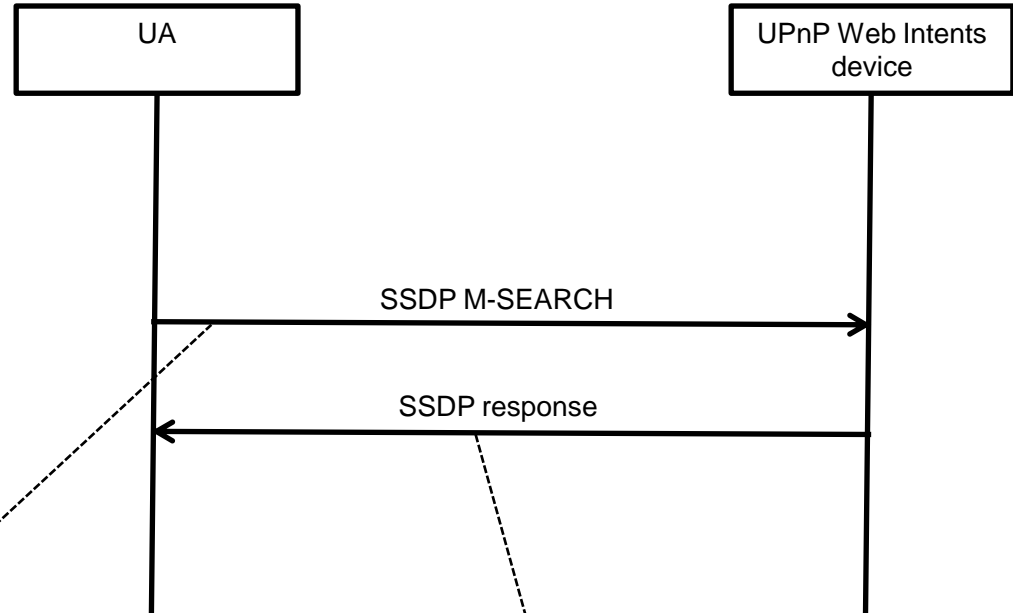
```
var intent = new Intent(  
    "http://webintents.org/view",  
    "video/mp4",  
    "http://demo-video-  
service.sony.com/content?id=462287");  
  
window.navigator.startActivity(intent,  
    function(intentData) {});
```

```
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 Action**

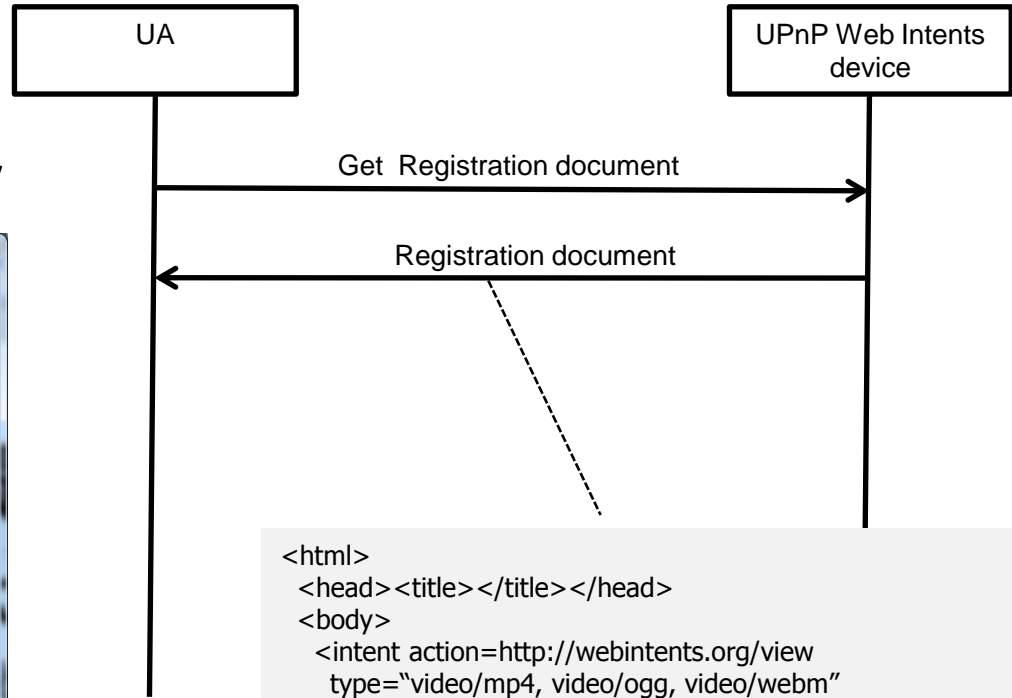
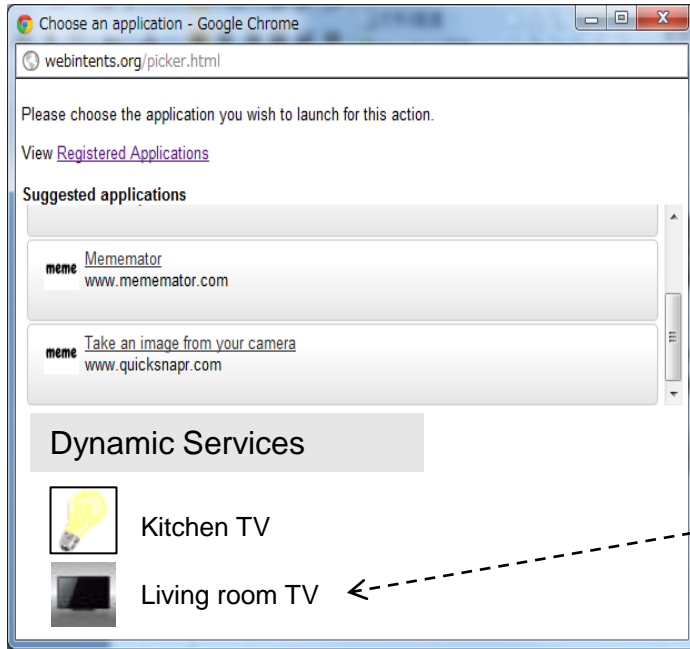
**New: Web Intent Registration doc**



```
HTTP / 1.1 200 OK  
ST: urn:schemas-webintents-org:service:WebIntents:1  
CACHE-CONTROL: max-age=900  
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/  
action.webintents.org: http://webintents.org/view  
registration.webintents.org:/registration.html  
Content-Length: 0
```

# Dynamic Service registration performed based on registration document in UPnP device

## Web Intents Service picker

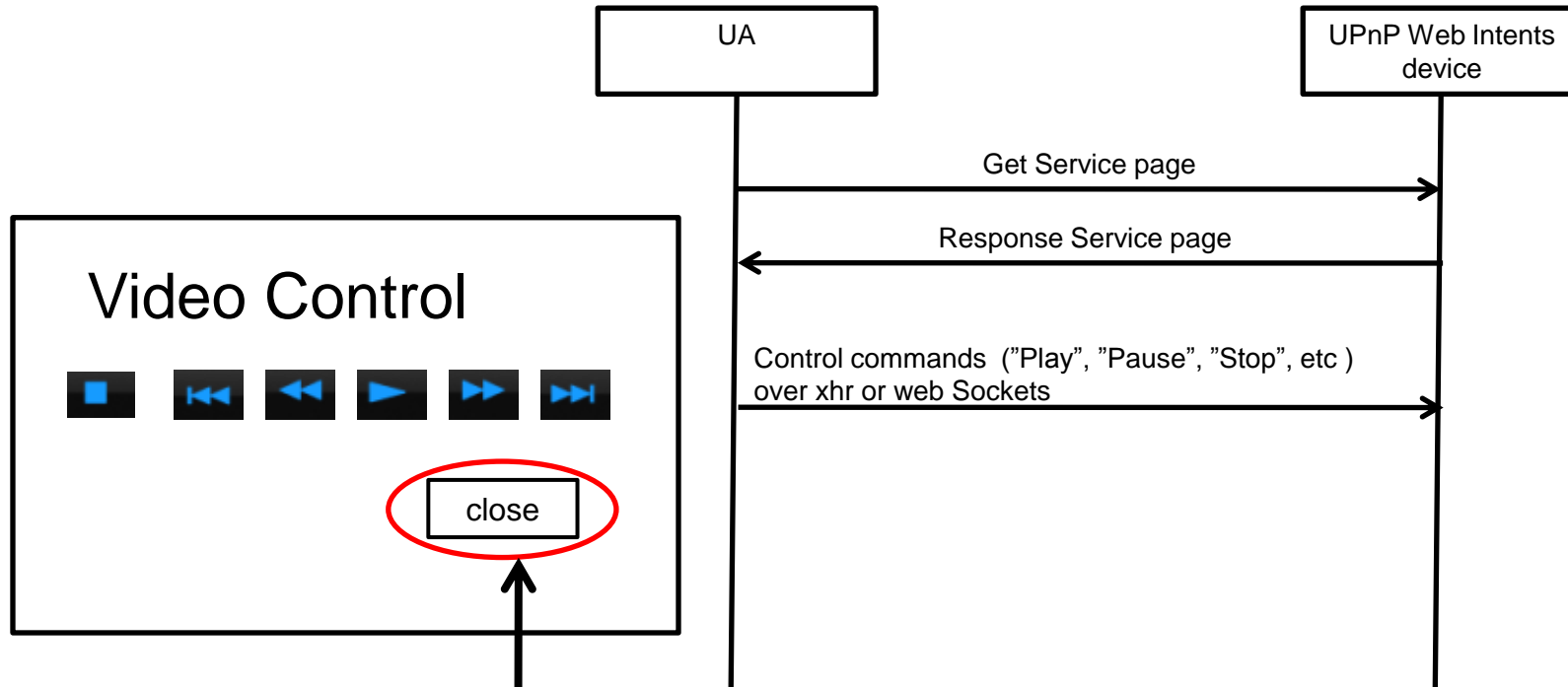


```
<html>
<head><title></title></head>
<body>
<intent action=http://webintents.org/view
type="video/mp4, video/ogg, video/webm"
href="video-control.html"
title = "Living room TV"
disposition="window" />
</body>
</html>
```

User selects Service

*Note: UPnP Device and Service Description documents follow standard UPnP*

# Service page is invoked



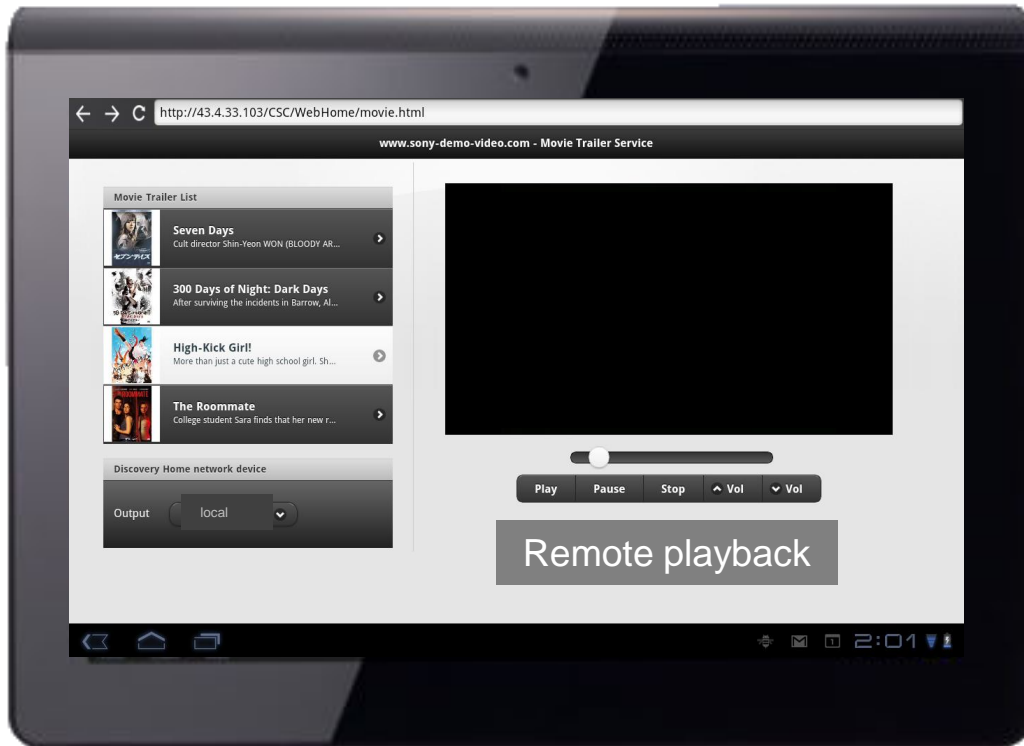
When user presses "close"  
the original (Client) page is  
invoked

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

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TV

Mobile



User controls playback

## Step 3 - alt 2

### Implementation proposals with UPnP

- Dynamic Service registration based on new SSDP headers and specific Web Intents Service registration document
- Client communicates through HTML5 channel messaging with background Service page that control the remote device (TV)

# Local UPnP discovery

## Client page Invocation

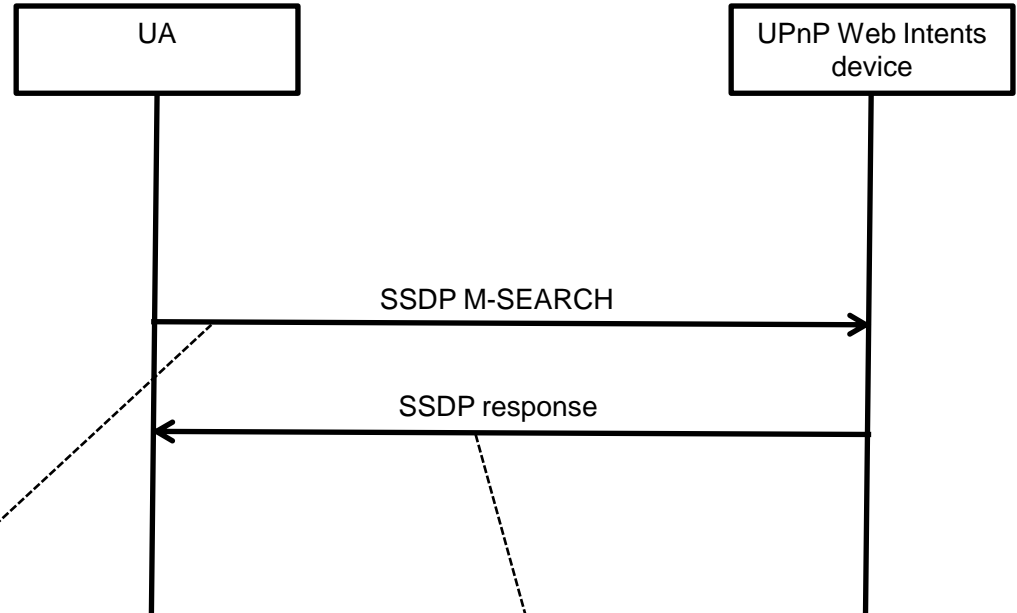
```
var channel = new MessageChannel();  
var intent = new Intent(  
    "http://webintents.org/discover",  
    "application/octet-  
stream+mytvprotocol",  
    [channel.port2]);  
window.navigator.startActivity(intent,  
    function(intentData) {});
```

```
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 Action**

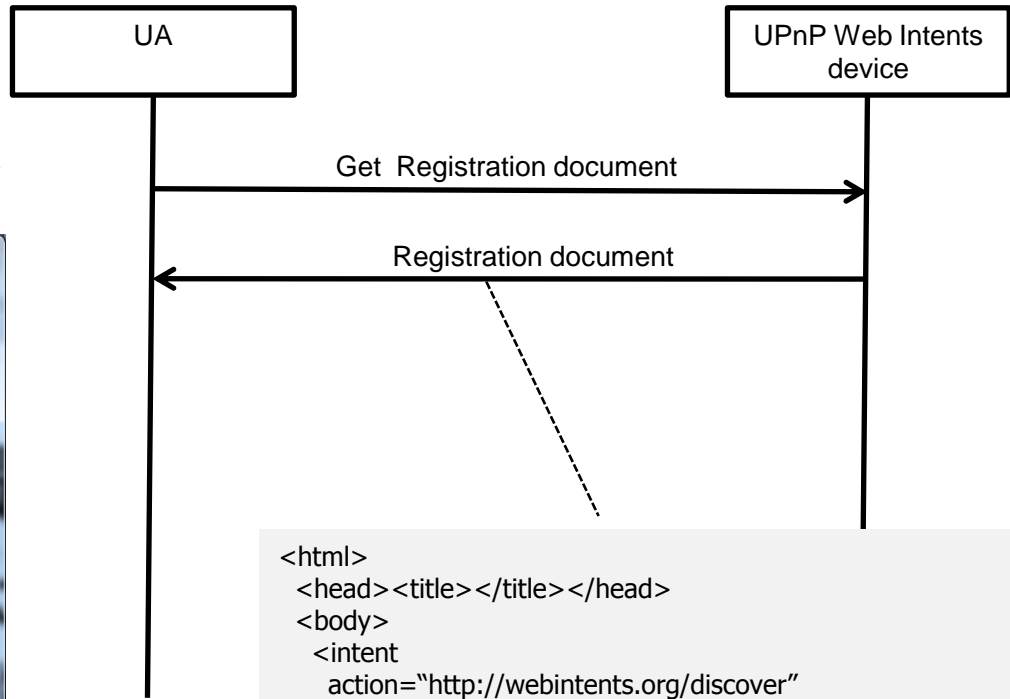
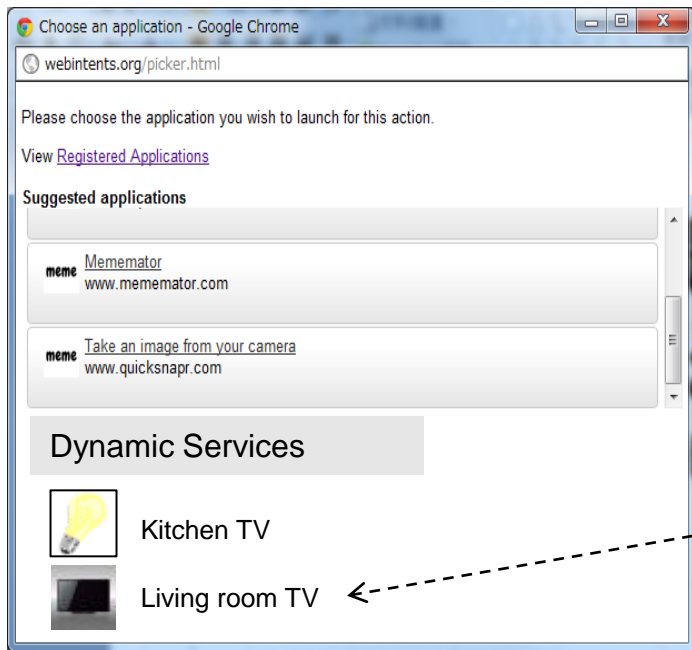
**New: Web Intent Registration doc**



```
HTTP / 1.1 200 OK  
ST: urn:schemas-webintents-org:service:WebIntents:1  
CACHE-CONTROL: max-age=900  
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/  
action.webintents.org: http://webintents.org/view  
registration.webintents.org:/backgroundregistration.html  
Content-Length: 0
```

# Dynamic Service registration performed based on registration document in UPnP device

## Web Intents Service picker



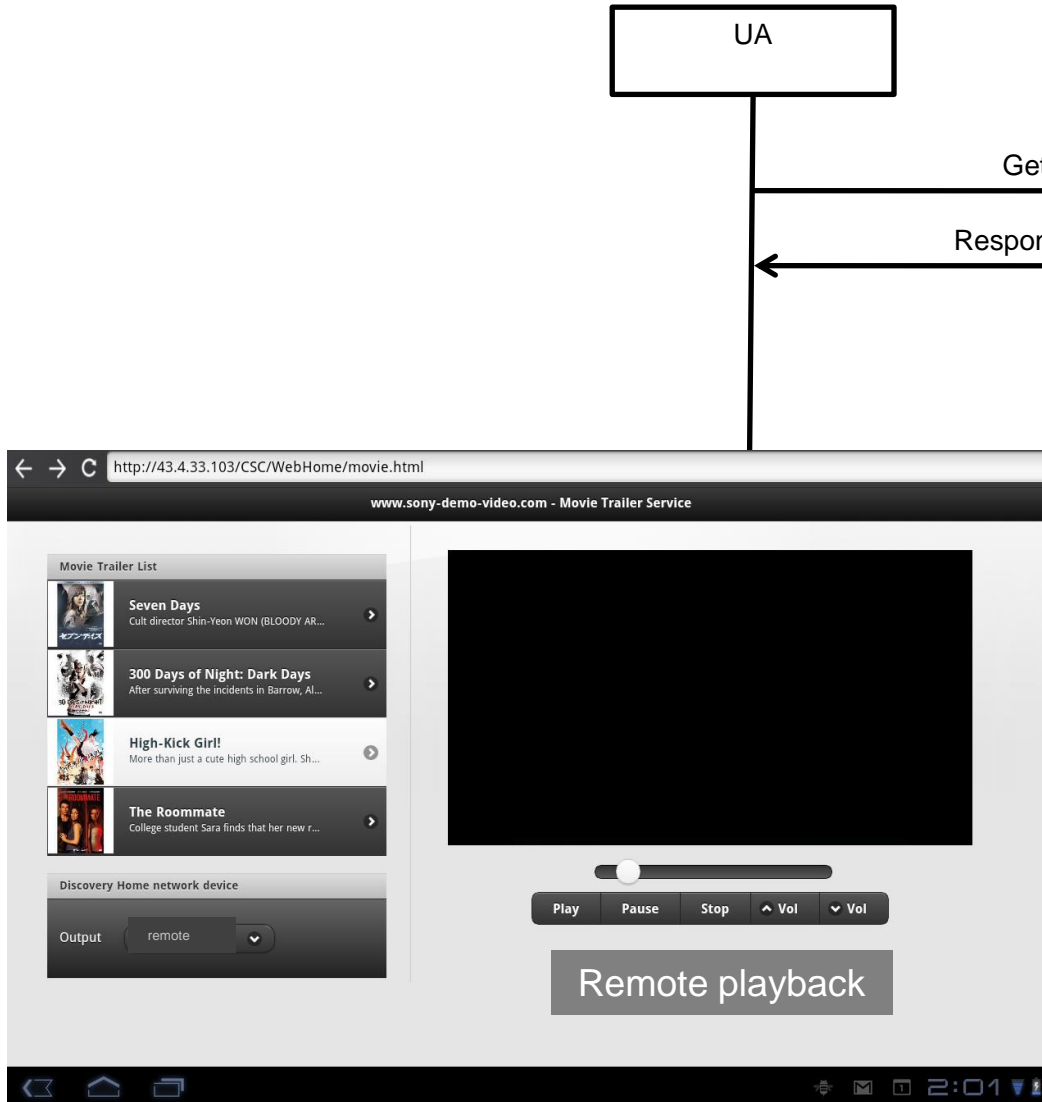
```
<html>
<head><title></title></head>
<body>
<intent
  action="http://webintents.org/discover"
  type="application/octet-stream+mytvprotocol"
  href="background-video-control.html"
  title = "Living room TV"
  disposition="background />
</body>
</html>
```

User selects Service

*Note: UPnP Device and Service Description documents follow standard UPnP*

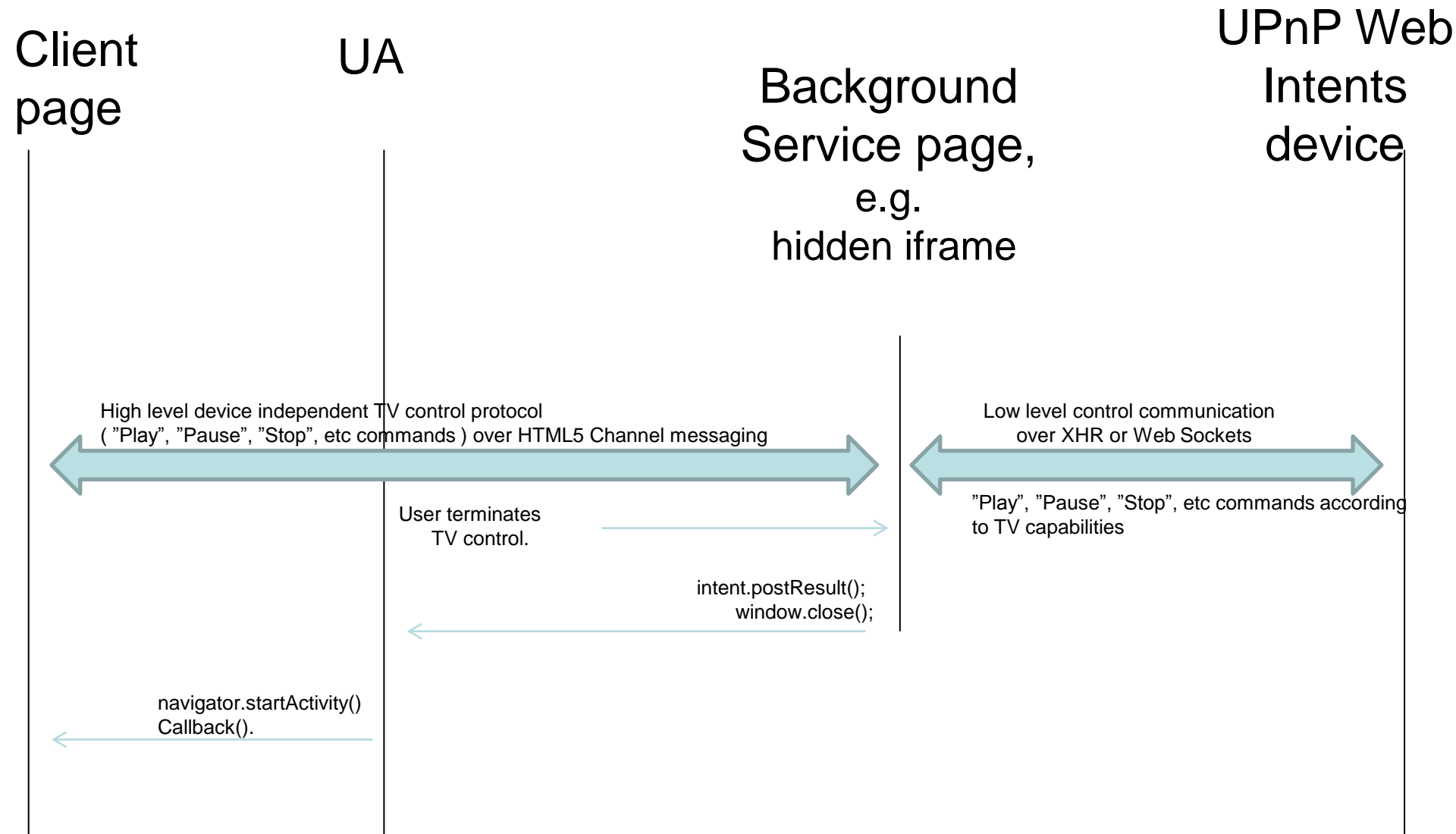


# Background Service page is invoked



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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