

# Testing enhanced Web TV services over mobile phones

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## I. SHORT USE CASE DESCRIPTION

Web TV is a common application over the open Internet but enhancements of this service is contemplated thanks to additional components permitting to add Quality of Service.

Typically real time video adapters and transcoders are under investigations to ensure more efficient delivery of the video streams over the internet. The adapters offer to resize the video content with respect to terminal characteristics. The transcoders permit to face different network bandwidth capabilities.

The two components proposed here are the starting and ending points of the web TV service

The particular use case setup offers the possibility to perform tests upon:

- A Video on demand Service platform
- End users in a real «mobile operator» context.

Potential service customers include i.e. a firm developing an IMS compatible MRF (Media Resource Function) providing buffering and video transcoding capabilities or an operator that intends to differentiate from ordinary WebTV service offer and trial the aforementioned MRF.

In this context, the setup is providing:

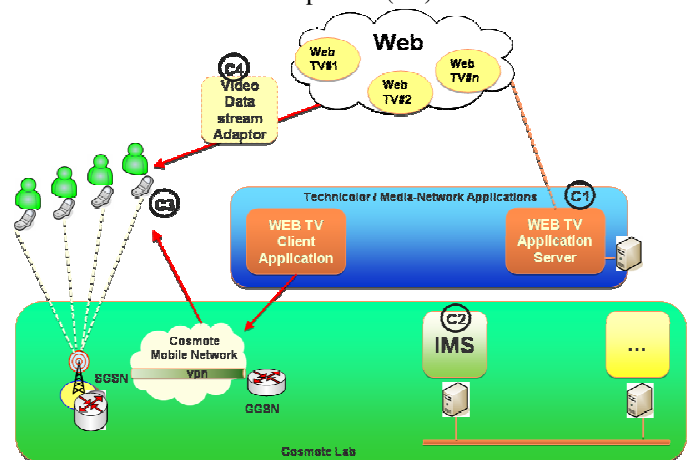
- The service platform as needed by the customer (service is including to build and maintain a list of available web tv service)
- The end user network, terminals and the related application to run the service.

The Virtual Customer Testbed (as shown in Figure 1) includes the following resources:

- Web TV service data server (C1): a software component for the delivery of WEB TV channels service data. All request and delivery procedure follow most of the TISPAN IMS specification for IPTV services.
- IMS core (C2): a software component acting as an IMS router interfacing the end user through a proxy

CSCF and interfacing the WebTV application servers via the standardized ISC interface.

- Web TV client (C3) : a software component capable to connect to the Web TV service and to activate an audio video rendering client such as Videolan. The client is compliant with Web TV server component and as such following most of the TISPAN IPTV specifications.
- The customer component (C4) : not available.



**Figure 1 Provided Resources**

The developed federated testbed environment offers the possibility to instantiate new IMS users and provides them (over-the-air) with the necessary client application and configuration settings. The mobile user (trial customer) can then (from the application GUI) register to the IMS platform, get the list of available Web TV channels with an HTTP request and SIP INVITE to watch a channel and assess Quality of Service understood from the mobile user perspective.

### A. Technical environment

Putting the whole concept into Panlab's context, apart from establishing new or configuring existing resources for testing the potential customer (i.e. firm developing MRF) should utilise the tools to deploy, monitor and run the experiments that are offered by the Panlab architecture [1]. A Web Portal is available where customers and providers can access services, a visual Creation Environment which is called "Virtual Customer Testbed (VCT) tool" where a customer can define requested services. Experimenters can browse through the resource registry content and can select, configure, deploy and access reserved resources. Part of Teagle is also the Teagle Gateway, the component that is responsible for transferring provisioning and configuration commands to selected resources lying in various administrative domains.

Some additional components for integrating testbeds that belong to various administrative domains, are the following: the Panlab Testbed Manager (PTM) which is responsible for configuring the domain's resources. PTM implements the so called Resource Adaptation Layer where Panlab partners "plug-in" their Resource Adapters (RA). A Resource Adapter (a concept similar to device drivers) wraps a domain's resource API in order to create a homogeneous API defined by Panlab.

The VCT provided for the particular use case is comprised by the following resources (in the context of Panlab) that are available through the VCT tool:

- Host: this is the access to the machine running the Technicolor or Media Network Cluster PTM.
- Web TV server: performing the start and stop of the application server for web TV services. Potentially customer specific domains could be created.
- WebTV testing client: a first implementation of a client in a fixed environment. The client is a machine offering access to upload files and to execute SSH

commands. The RA is reading relevant parameters from the machine, and then creating a specific configuration file for this machine, sending a java file plus the configuration file. The machine is then ready to run the WebTV application.

- Web TV Mobile client: that collects info from WebTV server and IMS provisioning resource, constructs WebTV client configuration file and notifies (SMS or email) subscriber of URL to download software/configuration file from.
- IMS subscriber provisioning: that adds an IMS subscriber in the open-ims.cosmo realm.

### B. Results

A customer developing the MRF for content adaptation is identified and has been contacted but not yet involved in real testings. This current situation prevents us from concluding to results as far as the usability of the service in a QoS trialling endeavour. Yet, the particular setup has shown encouraging efficiency in terms of federating services like WebTV and IMS from different testbeds and providing (over-the-air) all the necessary communication between end users, providers of the service and potential customer component's under test.

## II. TEST BED AVAILABILITY

The resources for creating similar scenarios are going to be available under the Panlab Office offerings. Potential users would simply have to utilize the VCT tool to build their own VCT utilising the Resources available there, after incorporating their system under test to the Panlab framework.

- [1] Website of Panlab and PII European projects, supported by the European Commission in its both framework programmes FP6 (2001-2006) and FP7 (2007-2013): <http://www.panlab.net>