Automating Production of Cross Media Content for Multi-channel Distribution

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DE9.3.2
Mock up of content production and distribution in push and for I-TV

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Abstract:
This is a report on the detailed specifications for demonstrating the content distribution via push
Keyword List:
Distribution channel, content, mock-up, prototype

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1 Executive Summary and Report Scope

This document represents an accompanying documentation to the Prototype for content production and distribution in push, as defined in the WP9.3. It contains a description of the mock-up of the prototype for content distribution via satellite data broadcast, delivered as DE9.3.2.
The prototype is based on the specifications resulting from WP4 and WP5, in particular WP4.8.

2 Introduction

Satellite Data Broadcast is a content distribution mechanism that will permit the distribution of the AXMEDIS content in a very efficient manner. This technology, provided by EUTELSAT OPENSKY platform, allows large quantities of data to be pushed via satellite directly on the user's PC without congesting local networks. The pushing mechanism can be used, again, to renovate the catalogue of the Distributors periodically at low cost.
The mock-up prototype for the Satellite Data Broadcast inside the AXMEDIS environment is based on the distribution towards i-TV, which, at this stage, is represented by a PC equipped with a DVB/IP card.
This platform supports the complete cycle performed by a new content to be distributed by the Content Provider to a large number of Content Distributors. The distribution process uses the PUSH transmissions of the content according to the protocols that have been previously defined.
The Distributors acts as proxies for the content, making it available for the clients without the need to contact the Content Provider directly. On the client side, the demonstrator focuses on the B2C distribution, with a typical scenario of transmission of contents from a Distributor to some i-TV Clients. Client stations are able to store the received data in a cache area, where additional applications can access the data and handle it, likely for filtering, statistics, etc.
The prototype validates the distribution in multicast via PUSH technologies of a new multimedia content. The key elements for this system are:

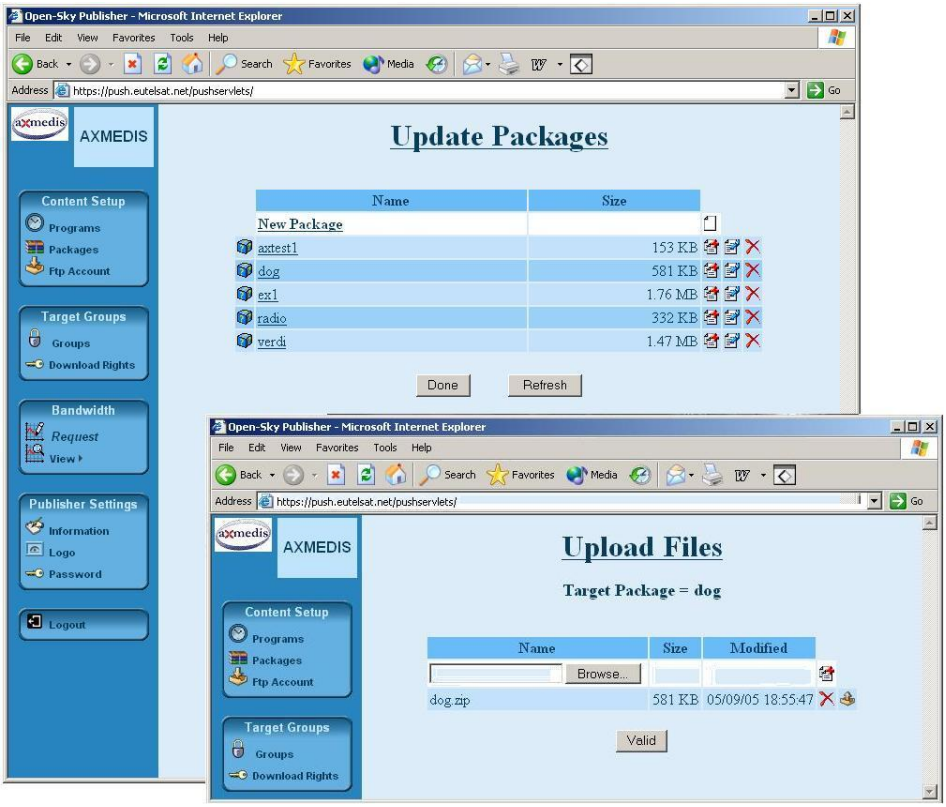
- Content Provider station,
- Adaptation server,
- Satellite network infrastructure,
- Distributor station,
- i-TV client (PC equipped with a DVB/IP Satellite Card).

3 Prototype for Content distribution in push and on-demand for I-TV

The first prototype of Satellite Data Broadcast for content distribution in push does not include a full integration within the AXMEDIS P&P Engine, although APIs are available in this order. Thus, the prototype for the Satellite Distribution channel makes use, at this stage, of graphical interfaces.
The prototype focuses on the two sides of the transmission: the sender and the receiver; for the first side of transmission, the packaging of AXMEDIS Objects into OPENSKY Packages before, and the program creation and scheduling then, are possible thanks to the OPENSKY Web Interface.
In parallel, the OPENSKY Client GUI is used to show what happens on the receiving station: how content transmissions are visualized on the Electronic Program Guide, then selected for download or even automatically downloaded, according to the transmission parameters.

3.1 Sender Side

Content Packaging
The content has to be transformed in an OPENSKY package before being inserted into a program. The OPENSKY package contains a set of metadata used by the satellite distribution protocol. Once the package created, the content is associated uploading it on the OPENSKY platform.



OPENSKY Content Packaging

Program Scheduling

A program is a collection of content with a transmission schedule. Packages are grouped together inside a program, and then the program is scheduled for transmission. The schedule defines the speed (bandwidth), the start, the duration and possible repetitions of the distribution.

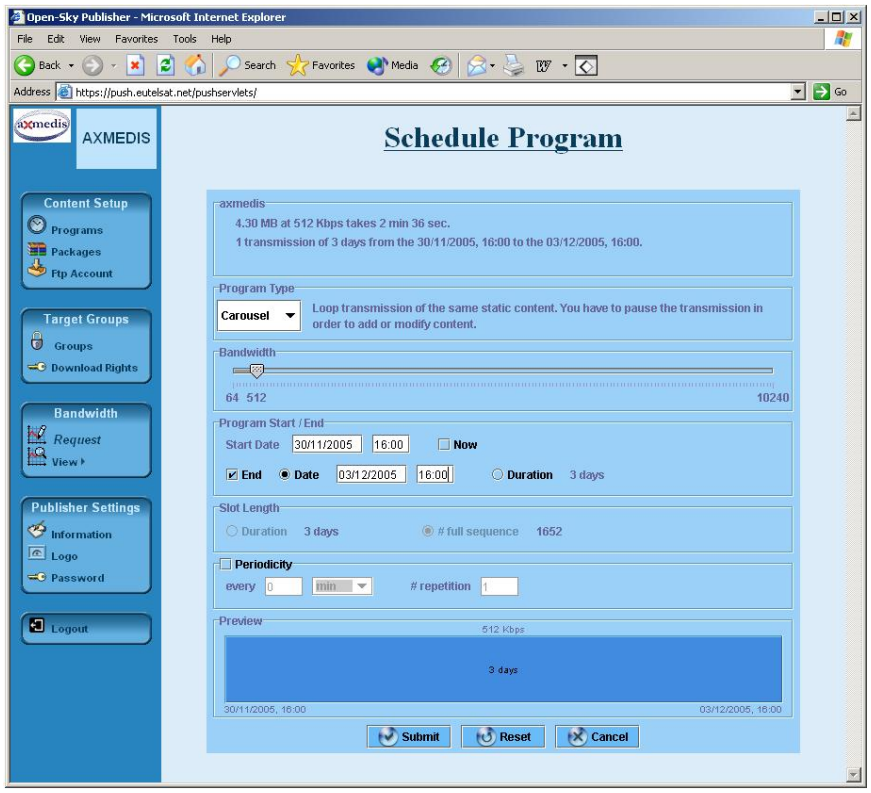


Figure: OPENSKY Program Scheduling

Program activation / stop
When the program has associated a schedule, the program enters an “active” state. When is such a state, the program can receive commands like play / pause / stop.

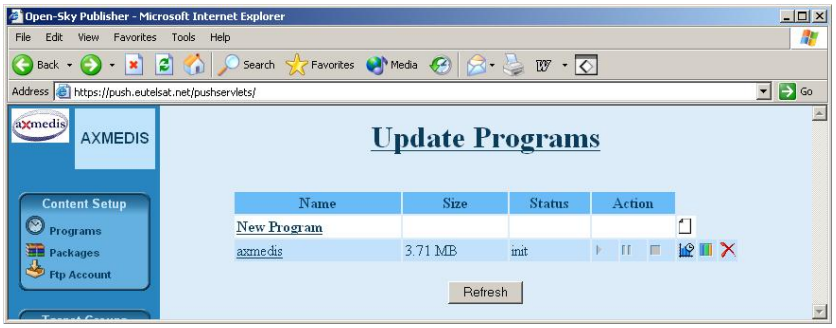


Figure: OPENSKY Program Updating

3.2 Receiver Side

The reception is then validated on a client station previously installed with needed material, i.e. DVB card connected to a dish. The AXObjects sent with the programme are received on the enabled station, and stocked in the AXMEDIS cache area for further filtering. The pictures below show the GUI of the client application from which is possible to know which content is on air, what is currently download, and the content already received.

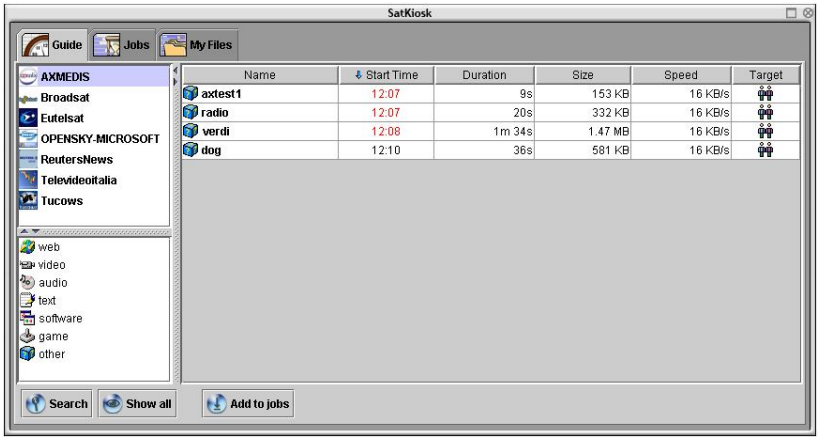


Figure: Program Guide with on-air content

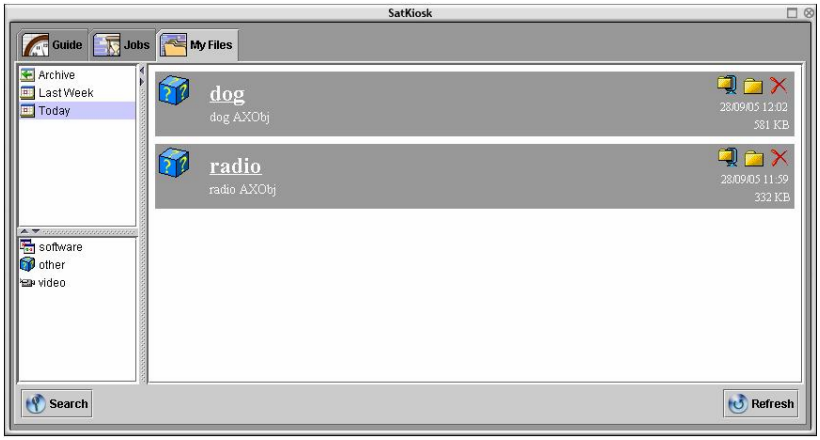


Figure: List of received content

Note that this graphical application is used to better explain how the reception works. It is a merely visual aid on the demonstration. The client application for the satellite data broadcast proposed by EUTELSAT includes this GUI, but, of course, it is not essential. The core of the client application is composed by other components that run in background and automatically let the receiving station download and store the content, without the necessity of a human interaction (except for the initial configuration phase).

4 Bibliography

DE 9.3.1 Specification of content production and distribution in push and for I-TV