



OIPF

SERVICES AND FUNCTIONS FOR RELEASE 2

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FOREWORD

This document has been produced by the Open IPTV Forum.

Introduction

This document summarises the services and functions that have been selected for Release 2 of the Open IPTV Forum specifications.

1 Services and Functions for the Open IPTV Forum Release 2

The solution described by the Open IPTV Forum specifications shall address the following services and functions in Release 2. This applies to both the Managed Network and the Open Internet models, unless otherwise noted.

The Open IPTV Forum is targeting IPTV business models that will enable retail consumer electronics (CE) devices with IPTV Terminal Function (ITF) capabilities. Users should be able to use both operator-provided as well as user-purchased CE ITF devices to access these IPTV services and functions.

Release 1 services and features have been retained for ease of understanding, and, where appropriate, to show how these are expected to evolve in the next release. The descriptions are not exhaustive, but provide a high level view of the principal capabilities in each category. The reader is advised to consult the Requirements for Release 2 [REF] for greater detail.

1.1 Services

Scheduled Content Service (also known as Broadcast or Linear TV Service)

Scheduled Content Services is an audio and video content service where the play-out schedule is fixed. The content is delivered to the user for immediate consumption or recording. Service and Content protection mechanisms may be applied to the content.

Scheduled Content Service was specified as a part of Release 1.

Content on Demand (also known as Video on Demand and including Content Download)

Content on Demand is a service where a user can select individual content items they want to watch from a list of available content. Play-out of the content is started at the user's request. Content can be streamed from network-based storage for immediate consumption, or played out from the local storage of the ITF device after user or service provider initiated download to the ITF device.

The basic features of Content on Demand were specified as a part of Release 1.

In Release 2, the CoD service will extend basic playout controls with additional capabilities (e.g., skipping to chapters, bookmarks, jump to time etc.).

For download CoD services (e.g. Push CoD, Deferred Download CoD), Release 2 will provide a mechanism for the synchronization of content and its associated rights between a CoD service and the local ITF storage. This will be useful for recovering content after failure or replacement of an ITF storage device.

Release 2 provides mechanisms for inserting messages and comments from a user in line with the content. These comments are made visible to other viewers of that content item.

Personal Video Recorder (PVR)

PVR is a service which enables a user to record scheduled content program events using local or network-based storage. The recorded items can be played back under the control of the user.

The basic features of local and network-based PVR were specified as a part of Release 1.

In Release 2, the PVR service will extend basic playout controls to support additional capabilities (e.g., skipping to chapters, bookmarks, jump to time etc.). In addition, an authorized user will be able to perform PVR scheduling and content management operations using devices such as mobile phones, PDAs etc. that are associated with the IPTV subscription. It will also be possible for a user to have these operations performed by the service provider on her behalf.

Time shift

The time shift service allows a user to halt a scheduled content service and continue watching the program later, by providing buffering for pause, rewind and resume.

Release 1 supports time shift using local ITF storage.

Release 2 adds the support of network storage for the time shift service, and extends basic playout controls with additional capabilities (e.g., skipping to chapters, bookmarks, jump to time etc.).

Content Guide

Content guide is an information service tailored to user preferences that provides a searchable list of Scheduled Content Service and Content on Demand items. The presentation to the user can be created from metadata available on local equipment or received over the network in a form equivalent to web pages.

The basic capabilities of the Content Guide were specified as a part of Release 1.

Release 2 will enable a user to access information about his recorded content (e.g., availability locally or on the network, the length of availability etc.) through the Content Guide. The Content Guide will also be enhanced with search capabilities, so as to allow a user to search by content, genre, actor, etc. In addition, the Service Provider will be able to use the Content Guide to alert the user of the availability of new services.

Notification service

The Notification service enables a user to be informed of delivered messages, including emergency alert notifications, and events. This service also enables a user to set reminders and be informed of scheduled content program events. Reminder notifications will be displayed on the customer equipment at the pre-configured time before the program event starts.

Basic notification capabilities were defined as a part of Release 1.

Release 2 will provide for access to emergency notifications. Users will also be able to receive notification (e.g., the start of a program) on devices associated with their subscription (e.g., mobile phones) when outside the home network. Notifications can be prioritized appropriately by the service provider, and, if needed, their delivery guaranteed. Notifications can be filtered based on user preferences or targeted to specific or groups of users by the service provider.

Integration with Communication services

This service provides IPTV users with access to person-to-person communication services. Aspects of such communication services may be integrated with the IPTV service, providing a richer experience to both. Examples of communication services include presentation of Caller ID, textual messaging, chatting and presence.

Release 1 provides for presentation of caller ID, textual messaging, chatting and providing presence status.

Release 2 will provide integration of IPTV with voice and video telephony, i.e., the establishment and management of voice and video telephony, the ability to deliver different components of the media stream to different devices, and additional enhancements to presence and chat/messaging.

Web access

Allows IPTV users to navigate and display information provided in the World Wide Web in a manner dependent upon the presentation capabilities of the display equipment.

Release 2 will provide mechanisms to filter web content based on criteria set by an authorized user (e.g., a parent for children in a household).

Information service

Portal for presenting tailored information to the IPTV user with or without relation to the content.

Interactive Applications

Interactive applications are those that allow user interaction via the ITF device or other user devices. Both network-based applications, which interact with the ITF device using web technologies, as well as local applications in the home network are supported. The applications can be both related and unrelated to the content. Applications might interact with the IPTV services using standardized APIs. Applications might be authenticated to prevent misuse and the service provider might charge for applications.

Release 2 will provide mechanisms to use a mobile terminal or a portable terminal for interactive actions towards an application connected to an IPTV service (e.g. SMS-based voting on a program shown on TV).

Parental control including remote control

This service limits access by minors to certain content and services based on parental ratings and spending limits. Parents should be capable of using remote devices to check the usage and grant access to requested items.

Release 1 offered basic parental control.

Release 2 will allow parents to remotely check on the content being watched at home, and, if necessary, block access. It will also support filtering of web content according to criteria set by parents.

Home networking

The ITF device will provide access to DLNA content stored on other devices in the home as well as offering IPTV content to DLNA devices.

Release 2 will enable IPTV users to discover and list content that is available on DLNA devices within the home.

Remote Access

Release 2 will provide access to the home via a remote device (e.g. a mobile phone), enabling a user to, for example, schedule recordings or access content stored within the home.

Support of hybrid services

The ITF device may provide access to TV services delivered over traditional broadcast networks (satellite, cable or terrestrial broadcast) in addition to, or as a substitute for, IPTV services.

Release 1 defines basic hybrid capabilities.

Release 2 allows an application (e.g., a presence application) to receive status information (e.g., watched content) from the broadcast stream, or receive a notification of the availability of an interactive application via the broadcast stream.

Personalized channel service

Release 2 will provide a variation of a scheduled content service where the program line up is modified on a per user basis according to the user's preferences, viewing habits or service provider recommendations. This will be reflected in the user's Content Guide.

Digital media purchase

Digital media relates to content items such as ring tones and video clips, which can be purchased by users.

Release 2 supports the advertisement of purchasable digital media, the purchase of digital media using the ITF and delivery of digital media to various end-user devices.

Content Sharing

Content sharing allows a user, when allowed by DRM policies, to share content with other users.

Release 2 will allow a user to select content available at its ITF and send it to other users. The receiving user can select the appropriate ITF for consumption of the content.

1.2 Functions

Access networks

Release 1 supports only fixed line access networks such as DSL and PON networks. Release 2 also includes mobile access networks, although allowing for a variation in the service experience and availability.

Advertising

Advertisements can be delivered as part of the content, in the content guide or in a separate window. Advertisements can include links to further information, such as web pages. Regional advertisements are supported for the Managed Network model.

Release 2 provides for additional personalization of advertisements based on user preferences, the ability for users to interact with advertisements and the means to provide feedback to the service provider and/or advertiser on the user interaction with the advertisement.

Content formats

Audio, video, subtitles/closed captions and images in Standard definition and High definition formats shall be supported.

Release 2 will allow for the adaptation of content formats, such as the picture aspect and resolutions, to the capabilities of different ITFs (e.g., from a TV format to that for a small screen portable device).

QoS

The IPTV solution shall provide the means to guarantee the delivery of IPTV services with appropriate QoS in the home network, on the access line and in the network. Guaranteeing network QoS is not applicable for the Open Internet model.

Release 2 will provide additional mechanisms for the recovery of media streams from transmission errors.

Service Platform Provider

Common functionality such as authentication, charging and access control which can be provided by a service platform provider, through the use of a portal, on behalf of IPTV service providers. A service provider can offer its services directly without the support of a service platform provider.

Charging

The IPTV service includes a common charging mechanism capable of interacting with billing systems.

Release 2 will provide additional charging capabilities such as the consolidation of charges across all of a user's services, including the purchase of digital content.

Service usage

The Open IPTV Forum shall allow users concurrent access to Managed Network and Open Internet IPTV services with their ITF devices.

User interface

The means by which the user interacts with the IPTV services on the ITF device. The IPTV user interface might be branded to the service (platform) provider.

User management

Single user and family account with several individual users shall be supported. Each user shall have their own IPTV profile which they can manage.

Release 2 will provide additional information in the user profile such as additional devices available to the user (e.g., a mobile phone) towards which supplemental information regarding a content item may be sent, and user-specific preferences/configuration of an ITF.

Security

Unauthorized access to and usage of services and content shall be prohibited. Users and device authentication shall be supported to prevent malicious access or fraudulent use.

Release 2 will allow for a user single sign-on to a variety of IPTV services based on authentication by a trusted service platform provider. The single sign-on mechanism will also allow service providers access to selected user information without revealing the user's identity.

Service portability

A user may access IPTV services from different ITF devices at any location using different access networks supported by its service (platform) provider.

Session continuity

This is the ability to move, in real time, a given service or application from one ITF to another resulting in the continuation of an existing session.

Release 2 will enable scenarios such as moving a session between home and mobile devices, e.g. moving a VoD session from the home TV to a mobile phone when leaving the house.

Remote management

Remote management of the ITF devices supplied by the service provider is supported in the Managed Network model in order to support maintenance, trouble shooting and control of service delivery. Configuration, fault and performance management shall be supported. Firmware upgrade for the ITF devices shall be supported both for the Managed Network and Open Internet model.

Content Delivery Networks

A Content Delivery Network is a fundamental capability needed in an IPTV CoD solution that allows the optimization of the network resources through the distribution of the media servers in the physical network, and the optimization of the storage resources through appropriate algorithm based distribution of audio-video content on the media servers. Foreexample, popular audio-video content is massively distributed on media servers at the edge of the network (as close as possible to the customer) while less popular content are distributed on an reduced number of media servers.

Release 1 provided basic CDN functionality.

Release 2 will provide information on the capacity and availability of media servers that can be used by the control elements of a CDN to optimize the choice of the media server best able to handle a particular request for content.

Audience metrics

Release 2 will provide the ability to generate and distribute audience metrics (e.g., the number of ITFs accessing a particular content item) to the service provider or an application, which, in turn, can make (portions of) this data available to users.

Bookmarks

A means to identify a specific point in time during the play out of a Scheduled Content or Content on Demand program.

Release 2 will permit users to bookmark programs, manage bookmarks, share bookmarks with other users (e.g., via a chat message), and access a program item from the bookmarked position from any ITF. Service Providers will be able to offer pre-configured bookmarks.

Forced playout control

Release 2 will offer mechanisms by which service providers and/or content owners can indicate to the ITF that some or all user play out control operations such as pause/resume, fast/slow forward, fast/slow backward, skip, and record etc. are not supported for a particular (portion of a) content item

Remote Control

Release 2 supports the remote control of an ITF via a mobile phone or portable device. This includes control of the ITF and of IPTV services, including interactive services. The remote control function may have its own presentation capabilities as a part of the user interface.