

Sraf[®] HTML5 Browser Freeview Play Edition

The affordable Freeview Play solution compliant with the industry leading hybrid TV technology

Freeview Play Overview

Freeview Play (FVP) is the next evolution of the UK's most popular TV service and will be central to Freeview's and Digital UK's long term vision for an open hybrid DTT platform. This new service will give audiences easy access to both broadcast and On Demand (OD) content, including a range of popular OD players that are available free to users. FVP will offer users a common set of the most popular players presented in a way that is consumer-friendly and broadcast-centric.

FVP draws on experience of working closely with manufacturers and their proven ability to align with open international standards (D-Book and HbbTV) to facilitate mass market deployment. FVP creates an open internet-connected TV technical standards environment built in HTML5 and a Metadata Delivery System (MDS) to enable manufacturers to have a backwards EPG with deep links to OD content, aggregated browsing, search and viewing recommendations across all FVP content.

SERAPHIC, the leading digital TV browser technology provider cooperates with Digital UK closely to support Freeview Play compliant solutions in a very early stage. By leveraging the powerful Blink based Sraf HTML5 TV Browser and co-work with the mainstream DTV SoC vendor, SERAPHIC provides the ready-for-certification Freeview Play solution, which is highly optimized for embedded DTV platform and is the best cost-effective solution for massive affordable product deployment. SERAPHIC keeps up with Digital UK closely to support the latest Freeview Play technology, whose specification is updated every year.

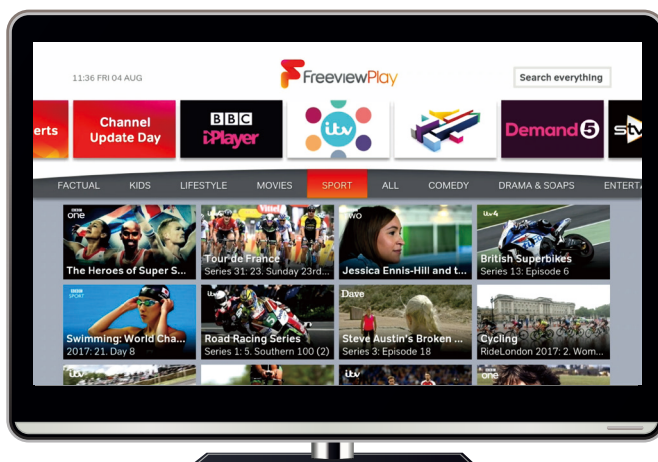


Figure 1. Freeview Play powered by Sraf HTML5 Browser
Copyright Freeview Play content: Freeview Play

Benefits of Freeview Play

Provides access to the UK's most popular free-to-air OD services

Enables manufacturers to offer the FVP players, including BBC iPlayer, Discovery, ITV, All 4, My5, UKTV, STV and etc.

One contract for many content Providers

FVP will represent a way to simplify negotiations between manufacturers and content providers (CPs) – by coming onto the FVP platform, manufacturers will be able to present all content players that have joined the FVP platform, with the exception of the BBC which needs a separate agreement. CPs must agree not to charge manufacturers for their content to be available via the FVP platform on manufacturers' FVP devices, and manufacturers must not charge CPs to list CPs' content via the FVP platform on their FVP devices.

Lower technical integration and testing costs

The detailed specification for devices and FVP Players will ensure that once initial product development has been successfully completed and tested it should be possible to integrate all existing and future FVP Players (bar BBC iPlayer) without further development time or costs i.e. all FVP Players should run on all devices.

Access to the FVP Metadata Delivery System (MDS) supports evolving, seamless consumer functionality

The MDS enables the backwards EPG, aggregated search, browse and viewing recommendations, as well as enhanced metadata throughout the UI.

High profile launch campaign

The multi-million pound campaign promoting a one-stop hub of popular broadcast and OD content is expected to drive significant customer interest in FVP products.

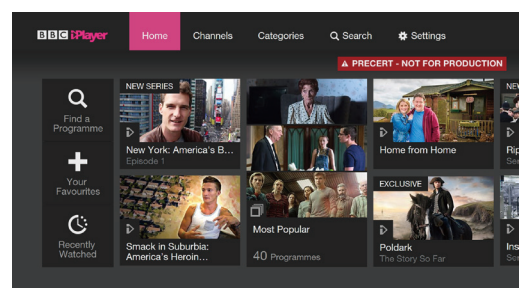


Figure 2. BBC iPlayer powered by Sraf HTML5 Browser
Copyright BBC iPlayer content: BBC

Specification

Product Highlights

One SDK supports all Freeview Play functionality
Easy-to-port HbbTV 2 integration
Best compliant common HTML5 Application runtime environment
Dynamic Ad-insertion into DASH-based streams
Digital Rights Management capability
Fully meet with general security requirements
EME(Encrypted Media Extensions) Clearkey
TTML (Timed text markup language)
DVB DASH

Content Players Highlights

BBC series including BBC iPlayer, News, Sports and RB+
Discovery
All 4
My5
ITV
STV
UKTV
Other New FVP CPs

Standard Compliances

ETSI TS 102 796 v1.2.1
ETSI TS 102 796 v1.3.1
ETSI TS 102 796 v1.4.1
Freeview Play specific tests
W3C HTML5
Freeview Play 2018
CEA-2014-A
DVB DASH ETSI TS 103 285

Browser Core Features

HTML5 (Canvas, Web Storage, Web Components, WebRTC, Web Workers,

Web Socket, Audio/Video Tags, Server-Sent Events, Web Cryptography API, Web Animations, WebAudio, WebGL, etc.)
HTML4.01 (XHTML 1.1, XHTMLBasic 1.1, XML 1.1, RSS feed, etc.)
CSS3 (3D Transforms, CSS3 Animations & Transitions, CSS3 Media Queries and Selectors, CSS3 Opacity, CSS3 Outline, CSS3 Background)
CSS1, CSS2.1
XHTML 1.1
Image support: GIF, JPEG, PNG, SVG
URL scheme dvb:// support
Smooth Streaming, HLS, DVB DASH
HTTP Caching, Redirect, Cookies, User-Agent
TLS 1.2

JavaScript APIs

Application Management
Audio/Video Component
Audio/Video Control Object
Companion Screen
Capabilities
Configuration and Settings
Channel and Channel List
Download Manager
Download Trigger
DRM Agent
DSM-CC Contents Access
DSM-CC Stream Event Listener
Gateway Information
HTML5 Media Elements
Object Factory
Parental Rating and Parental Control
Programme
Metadata
Media Synchronization
Scheduled Recording

Search manager
Scheduled Content and Hybrid Tuner
TTML based Subtitle
Video Broadcast
Other Mandatory HbbTV APIs

Supported CPUs

ARM
MIPS

Resource Requirements

ROM: > 43MB (ARM Linux)
RAM: > 198MB

Documents

Sraf HTML5 Browser Integration Guide
Sraf HbbTV Adaptor API Specification
Sraf HbbTV AMP Integration API Specification
Sraf MediaPlayer Adaptor API Specification
Sraf FVP System Adaptor API Specification

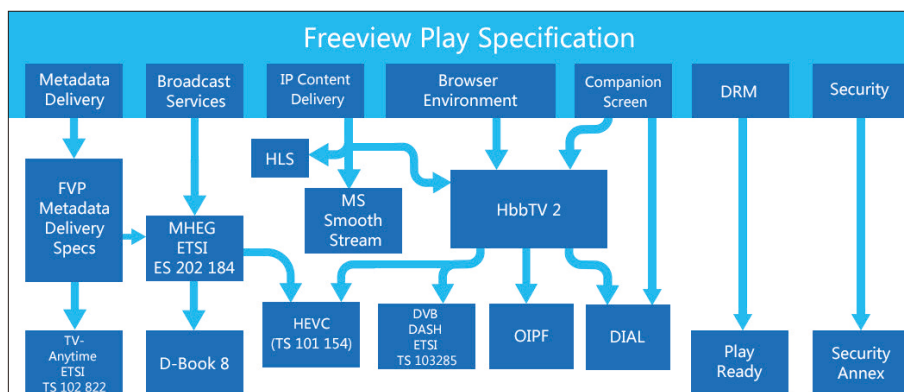


Figure 3. Freeview Play Module Diagram