CubiSDK

TiVo presents CubiSDK, the flexible and efficient over-the-top (OTT) multi-screen solution for service providers and content owners within emerging markets. This software development toolkit makes it easy to extend, modify and customize the look, feel and navigation of CubiTV, TiVo's easily deployed advanced hybrid discovery engine. Or, use CubiSDK's set of software tools and libraries to create a customized electronic program guide. With CubiSDK, it's easy to integrate new OTT services, incorporate operators' OSS/BSS systems and build custom applications. Avoid vendor lock-in by taking advantage of CubiSDK, TiVo's open entertainment discovery solution.

FEATURES

Local Media Player

- Integrate IPTV and OTT video capabilities.
- Customize DVB signaling.

Catch-Up TV and PVR

- Enable on-demand access to previously broadcast television programming, giving subscribers the flexibility of catch-up TV.
- Give users a personal video recorder (PVR) to record chosen programming in the cloud and make it available on multiple devices, at any time.

Widgets

- Create specialized apps hosted within the CubiTV platform, such as weather forecasts or currency exchange rates.

Customizable Graphics

- Utilize CubiSDK's accelerated graphics engine to create uniquely branded animations and transition effects.

Easy Application Prototyping

- Prototype embedded applications on PC using Linux/x86 tools.
- Modify the UI look and feel using XML.
- Utilize automatic creation of firmware images.

BENEFITS

- Avoid vendor lock-in and create a customized electronic program guide to meet your subscribers' needs.

- Quickly deploy a flexible OTT multi-screen solution.

- Incorporate a PVR and enable catch-up TV.

- Easily add customized apps and widgets that enhance the discovery experience.

- Introduce innovative services to reduce subscriber churn and increase average revenue per user (ARPU).

TECHNICAL SPECIFICATIONS

Feature-Rich Cubiware Media Platform Stack

- RGBA 8888 graphics

- YUV16

- 8-bit mono bitmaps

- Blending with per-pixel and per-widget alpha channel

- Texture scaling

- Widget animations – linear logarithmic and mixed model movement

- Scene transitions

- Application switching

- Effect cancellation

- Font rendering with anti-aliasing and kerning

UI Layout

- XML 1.0 for layout description

- URI for resource identification

- UTF-8 character encoding

- PNG / JPEG / GIF / WEBP images

Media Player

- DVB broadcast

- Unicast (TCP / UDP) and Multicast (IGMPv2 / v3) support

- Trick play (play, pause, multi-speed fast-forward and rewind)

- Recording (PVR, time-shifting)

- Pre-roll, mid-roll and post-roll playlists

- Local playback (USB, DLNA)

- Efficient bitrate adaptation algorithms for adaptive streaming formats

Network Streaming Protocols

- HTTP Live Streaming (HLS)

- Microsoft Smooth Streaming

- MPEG-DASH

- RTP

- RTSP (RFC 2326); server-specific modules available

- SDP (RFC 2327)

- RTSP / RTP / MPEG-TS

- MPEG-TS / UDP / HTTP / File

Video Containers and Codecs Support

- AVI

- MP4, 3GPP

- MKV

- MPEG-TS

- H.264, HEVC (4K), MPEG-2, VC1

TECHNICAL SPECIFICATIONS

Audio Containers

- MPEG-1 layers 1, 2, 3

- AC-3

- AAC

- DTS

- LPCM

DRM / CAS

- Conax CAS7 / Contego

- Latens DVB / IP

- Verimatrix DVB, IPTV, WEB

- Cryptoguard

- Microsoft PlayReady

- HLS Pantos DRM-agnostic decryption

Supported Hardware

- Broadcom: BCM758x, BCM7251, BCM740x, BCM7320, BCM7358, BCM7428, BCM7445 and others

- ST Microsystems: STi7105, STi7167, STi7108, STiH225

- Ali Tech: M3515, M3715, M3733

- MStar: K5

SYSTEM ARCHITECTURE

Cubiware Media Platform

| CubiTV Application/Custom Native Application | HTML5 Applications |

QBAPIs (External) — **JS API**

n/PVR	CuTV	Search	WebSocket	VOD/PUSH-VOD	EPG	Media Browser	DVB-SSU/IP Upgrade	OSK/TXT/SUBS/Closed Captions	HBBTV Logic
CMT Task Scheduler	Media Player	Widget Engine/Library	Effects Engine/Library	High Level CAS/DRM	Text Rendering	XML/JSON	Objective Data Model	Net protocol Plugins/NAT/STUN	Browser Connector
Debug	RPC/IPC	Security	Media Parsers	Picture rendering	Settings	Record Filesystem	User Input	UPnP	FEC plugins

HTML5 Engine (Webkit/Opera)

HAL API

Display	Demux	Descrambler /CAS	Video Decode	Audio Decode	Graphics (2D/3D)	Audio Mixer	Networking	Custom H/W peripherals	POSIX API's

Linux (ARM, MIPS, SH4, x86