

The Digital Living Network Alliance

Digital Living Network Alliance (DLNA)

- Delivering on the vision of interoperability in the connected and digital media through:
 - Industry collaboration
 - Standards-based interoperability
 - Certification
- DLNA offers a certification program and extensive test tools for interoperability testing.
- Publishes interoperability guidelines.
 - Available for free on www.dlna.org
 - IEC 62481-x : The International Electrotechnical Commission (IEC) recognizes DLNA as an industry standard



International
Organization for
Standardization

DLNA Leadership

Membership comprised of over 200 leading consumer electronics manufacturers, service and content providers, software developers and more



- Consumer Electronics
- Mobile Devices
- Personal Computers
- Service Providers
- Automotive
- Semiconductor

Over 25,000 Certified Device Models



13,020
Televisions



1,701
Mobile Devices



178
Tablets



17
Software



6,917
Personal
Computers



500
Network
Attached Storage



319
Gateway
/Routers



4
Game
Consoles



1,424
Blu-ray & DVD Players



31
Appliances



71
Printers



194
Cameras
/Camcorders



894
Audio Video System &
Network Speakers



131
Set Top Boxes



40
Projectors



Over 4 Billion Certified Devices on the Market



2018	7.32 Billion
2017	6.08 Billion
2016	4.92 Billion
2015	3.86 Billion
2014	2.93 Billion
2013	2.16 Billion

How DLNA Certified Works

DLNA: builds on UPnP to specify the interoperability of devices that share Images, Audio, and AV content on the home network.

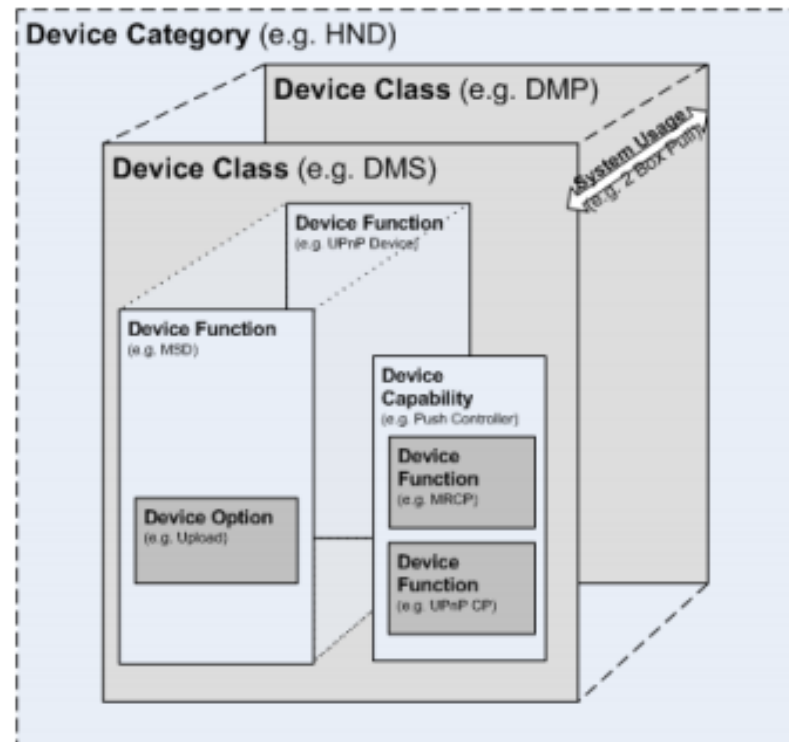
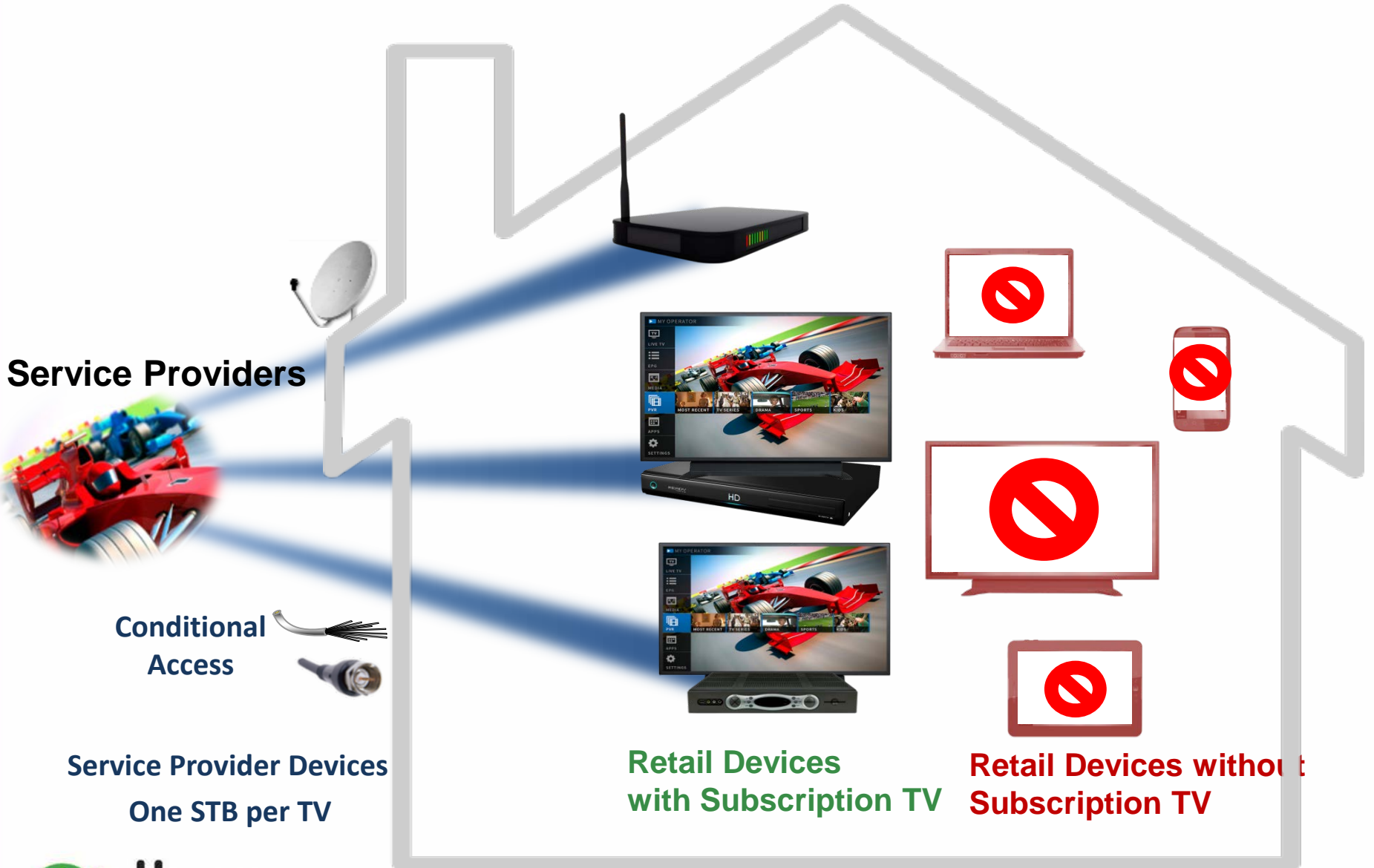


Figure 2 — DLNA Device Model Terms Hierarchy

VIDI *PATH*

Subscription TV user interface and content on all
of your devices

Subscription TV Today



Service Providers

Conditional Access

Service Provider Devices
One STB per TV

Retail Devices with Subscription TV

Retail Devices without Subscription TV

Subscription TV with **VIDI[®]PATH**

Service Providers



Service Provider Gateway



The full subscription TV experience on consumer electronics

How VidiPath Works

VidiPath: builds on DLNA to share premium content. VidiPath features include-

- HTML5 UI
- DTCP-IP Link Protection
- Diagnostics
- Networked Devices Power Save
- MPEG-2 and AVC Video in MPEG-2 TS and MP4 containers
- HTTP Adaptive Delivery (MPEG-DASH)
- Authentication of Certification (using DTCP-IP and X.509 keys)

HTML5 RUI: Renders Service Provider User Interface on User Devices



- Enables service providers to render their UIs (e.g. program gui) onto VidiPath Clients.
- HTML5 RUI profile for DLNA Clients conformant to commercial browsers implementations.
- HTML5 allows for a single unified user interface adapted to screen resolution.
- Pixel-accurate relies on CANVAS, a HTML5 tag for dynamic, scriptable rendering of 2D shapes and bitmap images.

VidiPath Key Benefits



Deliver HD now, and soon UHD, onto every screen:

- ⇒ Leverage broadcast infrastructure and avoid unicast CDN and network costs
- ⇒ Lower your CPE capex, with no extra STB needed for second TV



Relies on **Robust and Next Generation** standards

- ⇒ DLNA certifies compliance of client implementations
- ⇒ HTML5 UI framework
- ⇒ No need to maintain separate applications for Android, iOS, Windows Phone
- ⇒ Speed up your user interface improvement on all platforms
- ⇒ **Protect content** with Hollywood-ready standard: DTCP IP



Future-proof technology choice

- ⇒ Supports hybrid broadcast / OTT delivery with MPEG DASH
- ⇒ Supports addressable advertising inside broadcast content



Operationally ready for service provider use cases

- ⇒ **Remote diagnostics** that diagnose consumer device connectivity
- ⇒ Isolate service provider network *versus* home network failures
- ⇒ **Low power** with tools to wake up idle home gateways
- ⇒ Ready for future regulation on power consumption

VIDI[®]PATH Contributors

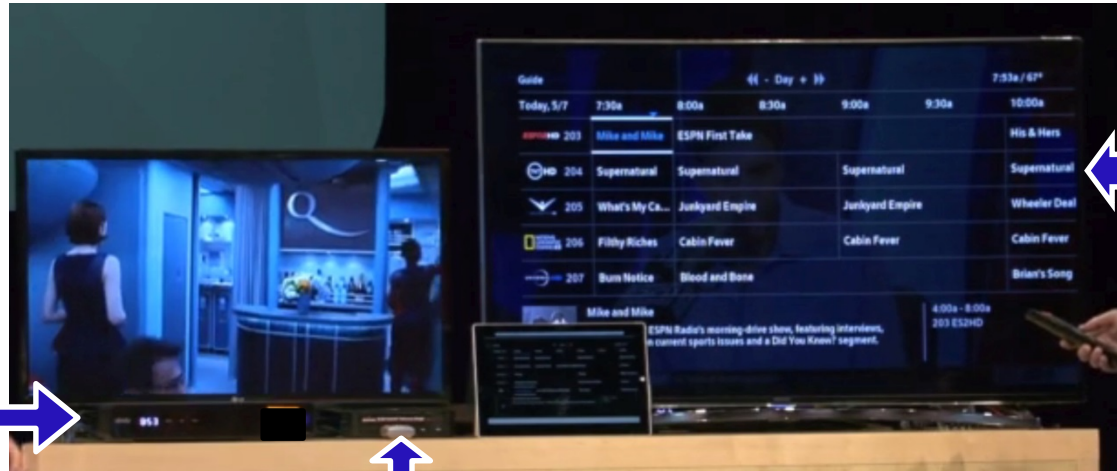
Development led by service providers in conjunction with CE manufacturers and technology suppliers.



VIDI[®]PATH Certification is Open

- Approximately 20 members are preparing for certification
- Service providers services have launched
- Providers publically support VidiPath: Comcast, Time Warner, Cox
- Program draws on expertise from more than a decade of proven interoperability testing on 25,000+ device models, enabling more than 4 billion devices to share personal content
- A solution for streaming 4K/Ultra-HD TV profiles will be included in the DLNA guidelines by Q3 2015, enabling users to view content on multiple devices in the home with at least four times the resolution of today's typical full HD 1080p formats.
- Reference designs are available to speed time to market for Certified products.
- Test tools also available to Members for product development to streamline troubleshooting
- Products can be submitted to any of five Test Labs (ICVs) worldwide.

The VidiPath Opportunity is Now

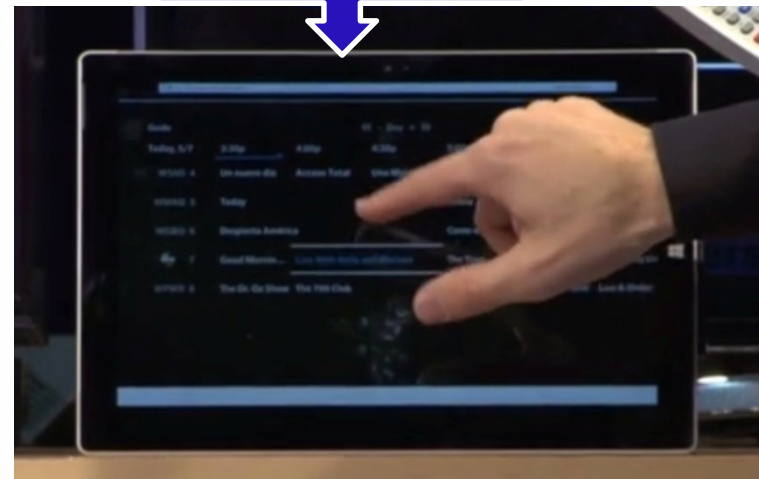
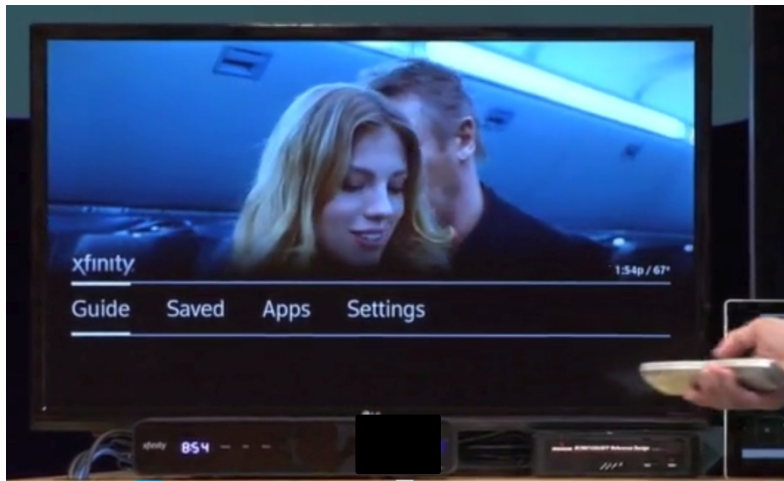


Xfinity VidiPath Service on X1 Platform

Broadcom VidiPath Client

Tablet VidiPath Client

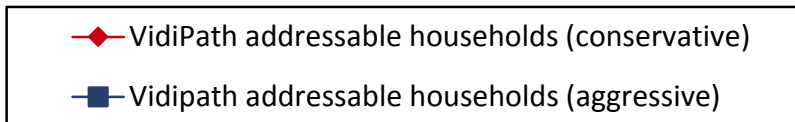
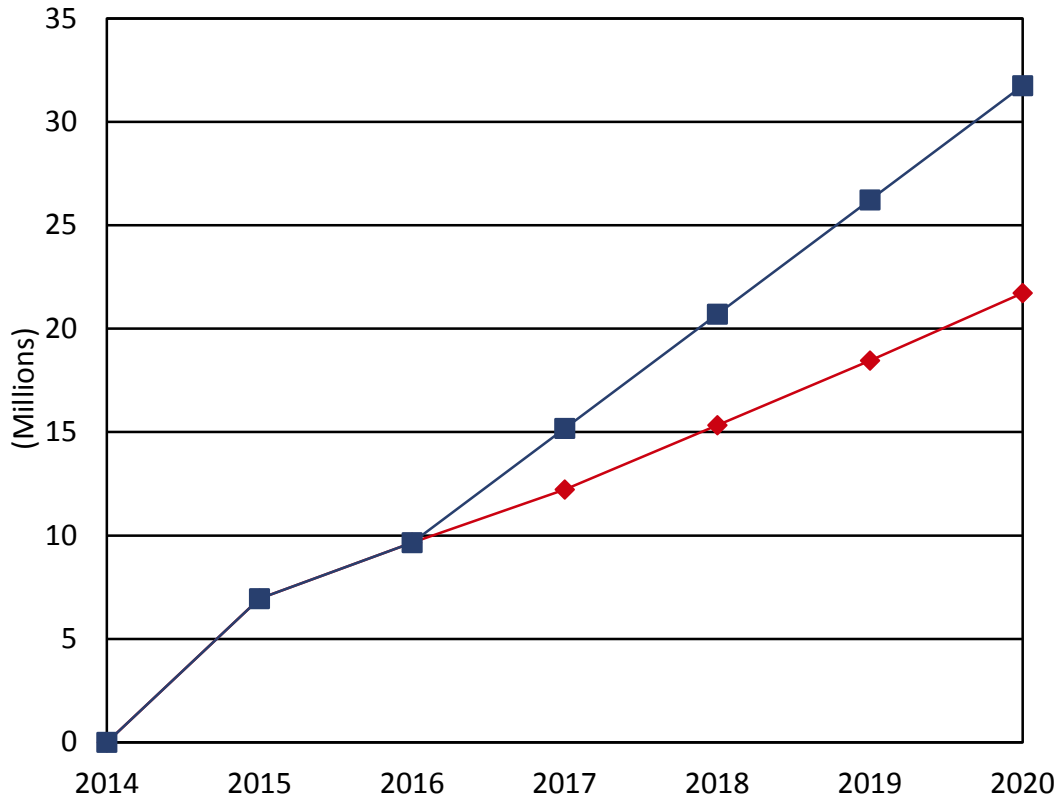
Samsung VidiPath Client



Xfinity VidiPath Service for the X1 Platform running on Comcast production plant displayed on Samsung TV, Broadcom STB and Awox reference tablet.

VidiPath Addressable Households, Millions

North American Cable Market



ABIresearch

40% of all U.S. cable households that subscribe to advanced services by 2016, and 70 percent by 2020.

Additional VidiPath capabilities could extend footprint to 100 percent of advanced services footprint by 2017.

For more information from the ABI report, including financial analysis for Operators please visit:
<http://www.dlna.org/dlna-for-industry/newsroom/cvp-2-webinar-series>

How do I launch VidiPath?

Roles

- **Service Provider**

- Envision your UI on every device
 - Think about unified linear, VOD & DVR
 - Think about the TV experience (10 foot) as well as mobile experiences for 9-inch and 5-inch devices
- License or develop a server stack
 - Cloud-based UI or Gateway-based UI are possible
 - You likely already have HTML5 & DTCP-IP enablement
 - Leverage gateway and IP headend to deliver content
- Multiple stack suppliers are active in this space

- **TV OEM**

- Ask your existing stack vendor how to add VidiPath
- Work with DLNA for certification compliance
- Work with service providers on joint marketing and business relationships

- **Mobile OEM**

- Build VidiPath into the O/S (leveraging stack vendor)
- Build a VidiPath enabled app (leveraging stack vendor SDK)
- Work with service providers on service-specific VidiPath framework apps

Call to Action

- Join DLNA: <http://www.dlna.org/join>
- Implement VidiPath client in your Consumer Electronics products
 - Certification <http://vidipath.com/certification/>
 - Tools <http://vidipath.com/test-tools/>
 - Information <http://vidipath.com/>
- Deploy VidiPath server in your network
- Spread the excitement
- Watch a VidiPath demonstration streaming live content:
<https://www.youtube.com/user/DLNACHannel>

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