

# HOME NETWORKING 01.INFO

12/05/2011 |

## HomePlug now integrated in the power supplies for “triple-play” equipment

21/04/2011 04:39

### Articles

These French-language articles are both from France, which is one of the few countries which can boast a lively competitive ADSL2 or fibre-optic powered “triple-play” Internet-service market. Here, these services are based around each service provider providing an Internet gateway device known as a Freebox, Neufbox, Box SFR or something similar, which I refer to as an “n-box”. These are connected up to an IPTV set-top box that is connected to the TV set and they are known as a Freebox Décodeur or Décodeur SFR or something similar.

neufbox Evolution : le CPL intégré dans l'alimentation - DegroupNews.com[1]

FreePlugs: Free.fr[2] (France - French language)

### My comments

#### The HomePlug that is a power supply unit

Previously I have been observing the developments concerning HomePlug powerline networking and have seen some HomePlug devices in an interesting form-factor. This form-factor is in the form of a single-box combination device which works as a power supply for a piece of equipment as well as a HomePlug-Ethernet bridge for that device.

These devices would have three cables

1. AC-voltage cable to plug into the AC outlet
2. Low-voltage cable to plug in to the device in order to supply power to that device
3. Ethernet cable to transmit data to and from the device and the HomePlug-Ethernet bridge in this box

A few companies like Netgear had tried these as “on-ramp” accessories for their routers but Free[3] and SFR[4] are taking off in their own right to use this as part of their “triple-play” environment where the TV set-top box and the modem are effectively part and parcel of each other in the home network. This is also achieved as a way of “idiot-proofing” these setups and avoiding unnecessary service calls.

### Why not take this further

#### Bringing network printers to the HomePlug network

Quite a few network-capable inkjet printers that I have used or reviewed are using an external power supply rather than having the power-supply in the unit.

This is typically in the form of a power-supply “lump” similar to the typical charger unit that comes with a laptop. On the other hand, Lexmark and Dell use a power-supply module that plugs in to the printer and the AC cord plugs in to this module.

These setups could be used to provide HomePlug powerline networking capability to a printer as long as the printer has an Ethernet socket. This would provide a logical alternative to Wi-Fi wireless networking which is known to be unreliable at times. It is due to the fact that Wi-Fi it is based on radio technology which can be affected by metal furnishings, walls that are made of dense-material construction like double-brick or stone walls; or building insulation or double-glazing that uses metal foil to improve its insulation qualities.

On the other hand, manufacturers could simply integrate HomePlug powerline networking in to a SOHO printer design like the HP Envy 100 [5] which has an integrated AC power supply without the need to create an extra socket for the Ethernet connection.

#### 802.3af and 802.3at Power-Over-Ethernet - a perfect marriage with HomePlug

The 802.3af Power-Over-Ethernet standard and 802.3at high-power version of this standard uses the same Category 5 cable to provide power to a device as well as convey data between the device and the network. This is typically implemented with wireless access points, security cameras and IP telephones to provide a robust yet simple power-supply setup for these devices in business networks.

Here, a HomePlug-AV-Ethernet bridge could be integrated in to an 802.3af/802.3at compliant power-supply module to provide a “one-cord” solution for connecting a device to a home network as well as powering that device from the AC power. The device would have to have an Ethernet socket capable of taking the Power-Over-Ethernet power; and this could appeal to a wide range of device classes like Internet radios, IPTV set-top boxes and electronic picture frames as well as the usual suspects like desktop IP telephones, Wi-Fi access points, Ethernet switches and security cameras.

### Conclusion

This demonstrates that the use of power-supply integration can bring the reliable no-new-wires network that is HomePlug AV to more devices in a cost-effective design-friendly manner.

### Links

[1]

<http://www.degroupnews.com/actualite/n6188-neufbox-evolution-cpl-modem-decodeur.html?xtor=RSS-1>  
[2] <http://www.free.fr/assistance/790-freebox-freeplugs-associer-les-freeplugs.html>  
[3] <http://www.free.fr>  
[4] <http://www.sfr.fr>  
[5] [/2011/03/product-reviewhph-envy-100-eprint-enabled-all-in-one-printer/#utm\\_source=feed&utm\\_medium=feed&utm\\_campaign=feed](/2011/03/product-reviewhph-envy-100-eprint-enabled-all-in-one-printer/#utm_source=feed&utm_medium=feed&utm_campaign=feed)

# Understanding the National Broadband Network

20/04/2011 04:32

## Article

Australian Communications Consumer Action Network - National Broadband Network: Guide for Consumers[1]

## My comments

After reading this article, I have made a few comments in a manner that isn't intended to "dig at" the National Broadband Network and its operations but intended to provide level-headed service information about this next-generation broadband service. This may also be similar to other deployments where an FTTH next-generation broadband service is intended as an upgrade over an existing-technology communications service.

The connection will be delivered free of charge while the fibre-optic system is being rolled out in your area and you will receive notice of this from your service provider or NBN Co as it rolls out in your area.

The cabling will be similar to what is used for the current telephony cabling in that area. For most cities, this will be underground fibre-optic cabling, but for outer-urban areas, regional and rural areas, this will be overhead fibre-optic runs on existing telegraph poles.

## Tenants and Multi-Tenancy Units

An issue that may arise with rental premises and multi-tenancy units (apartment blocks, shopping centres, office blocks) is that you may have to seek permission from your landlord, body-corporate or building manager to have the fibre-optic wiring done in the building. Your telecommunications /Internet service provider or the National Broadband Network Company will have procedures and forms in place for liaising with these people

## Multi-Tenancy Unit /Multi-Dwelling Unit Buildings

The National Broadband Network will be a full "fibre-to-the-premises" deployment with a fibre-optic run to each unit (apartment, house, shop, office space) in the building. Here, the NBN may have to install extra equipment in the building's wiring closet which may be in the basement or an auxiliary passageway of the building.

## Post-changeover

For most people, the telephony and Internet service that you will benefit from will be similar to what you are getting for your current service. There may be revisions to the Internet service concerning download allowances as you benefit from bigger download bandwidths.

## Customer Premises Equipment

The device illustrated in the article may be a proof-of-concept article, prototype or pre-production sample that wouldn't be supplied to customers as part of the NBN rollout. As well, there may be variations in the device's functionality for the final-issue device. It is also worth knowing that the information that is provided is for the average "Joe Six-pack" who would be running just one classic phone service and one broadband Internet service.

The customer premises equipment will be an "optical network terminator" (ONT) which is a fibre-optic modem that has handset connections for 2 phone services, and four Ethernet ports with 1 port for each Internet service. There is no knowledge of the port speed available through these ports but they may be Gigabit Ethernet ports.

Because there is no power transmitted through the fibre-optic cable, the exchange won't provide the required power for "lifeline" telephony service. Instead, the power supply that comes with this box will have a backup battery that works in a similar way to an alarm system's backup battery. Here you will be able to place and receive calls for a certain amount of time when the power goes down.

Of course, this device will be managed by NBN Co and end up being seen by them as a demarcation point for service responsibility.

Customers who have wireless and satellite services will have different CPE requirements but they will have a similar form of connectivity.

## Connectivity issues

### The home network

Of course, you will have to use an Ethernet-WAN broadband router as your Internet-network edge and there will be the high-end units on the market that will have the Gigabit Ethernet connections on the WAN and LAN Ethernet sockets. For Wi-Fi, these units will need to work with full 802.11n wireless and for HomePlug you would have to use HomePlug AV or HomePlug AV2 setups.

### IPTV and IP Telephony

There was nothing mentioned about how one should connect IPTV or IP Telephony equipment; whether via the "edge" router or direct to this ONT box? As well, there wasn't mention about use of other VoIP hardware like IP telephone to provide the voice telephony service that is normally provided to the telephony ports on this box? This will become more interesting as people consider the use of enhanced IP-telephony technology for their regular telephony services.

### Three or more phone services

Similarly, the device doesn't cater for households with 3 or more classic phone lines such as a business operated from home with the need for a fax service or individuals like elderly relatives residing in the house but wanting the responsibility and dignity of their own phone service under their control. As well, a larger house may be split in to two or more smaller residences and let as such as a way of keeping it viable but may be amalgamated to the larger house for use as a "family house". Here, there should be support for two or more ONTs in these situations.

This may be rectified through the use of IP telephones that are connected in to the home network and associated with one or more of the phone services; and really shouldn't be of concern when we move towards full IP telephony.

### Modem-to-modem communications

As far as I know, the NBN setup should work with G3 fax, all "human-response dial-out" alarm systems, or most modem-driven monitored-alarm systems connected to the telephony sockets but you will need to check with system provider in the case of your security setup. You may have to scale your fax machine's throughput to lower "G3" speeds like 14400bps for reliable transmission for reliable operation. I have written further on faxing and monitored alarms in the IP Telephony age in a special article[2] which should be read by customers and industry alike as the National Broadband Network nears.

### Small businesses

The four Ethernet ports may be of benefit to the small-business owner like a café operator who wants to run a public wireless hotspot as a separate Internet service. Here, one port can serve a dedicated broadband router like a hotspot gateway for the public Internet service while the other port can serve the business's "line-of-business" network.

For some other businesses like bars where online vending or amusement machines that are managed by third parties are the order of the day, the separate Ethernet ports can be used to provide an Internet service under the control of the machine's operator.

### Conclusion

This is not simply NBN "spin" but issues that may be of concern whenever an imminent conversion to FTTH technology ins in place for established telecommunications networks.

### Links

[1]  
[http://accan.org.au/index.php?option=com\\_content&view=article&id=263&Itemid=319](http://accan.org.au/index.php?option=com_content&view=article&id=263&Itemid=319)

[2]  
[/2010/11/faxing-and-machine-to-machine-communications-in-the-ip-based-telephony-age/#utm\\_source=feed&utm\\_medium=feed&utm\\_campaign=feed](/2010/11/faxing-and-machine-to-machine-communications-in-the-ip-based-telephony-age/#utm_source=feed&utm_medium=feed&utm_campaign=feed)

# Deutsche Telekom now converting from VDSL to FTTH in Potsdam, Germany — what future-proof part-fibre part-copper next-generation broadband setups are about

15/04/2011 14:50

Telekom startet FTTH-Ausbau für VDSL in Potsdam[1] - VDSL.de (Germany - German language)

### My comments

The fat pipe is becoming fatter in Germany

Deutsche Telekom are intending to roll out FTTH (fibre-to-the-home) next-generation broadband into Potsdam, Germany. This is although there is a great penetration of VDSL-driven FTTC (fibre-to-the-curb /fibre-to-the-cabinet) setups in most of Germany, including this capital city of Berlin-Brandenburg.

They intend to have this fibre infrastructure pass at least 21,000 households in the southern and western areas of this city. Building owners will need to give Deutsche Telekom a permit to give the "go-ahead" for the fibre-optic installation work to start in their building, as would be required for most telecommunications works in these buildings; but this could be simply a formality as they realise the benefits of this technology for their tenants.

The deployment pricing will be similar to what has been called for Australia's National Broadband Network where the installation will be free when the service is rolled out to the area but will cost more for installations commenced after the rollout.

As well, Deutsche Telekom do have a long-term intent to roll out FTTH next-generation broadband to Germany's major cities.

### Moving from FTTC to FTTH

What has interested me about this work is that it is an example of being able to move from an FTTC or FTTN setup with a copper run from a street box to the customer's door; to an FTTH /FTTP setup which has fibre-optic all the way to the customer's door. Thi is done while reusing existing fibre-optic cabling infrastructure rather than laying down new infrastructure.

Some of the FTTC or FTTN setups like a few of the deployments occurring in rural Britain are being designed with support for migration to the all-fibre layouts. So anyone who does want to advocate for a part-fibre part-copper setup for a next-generation broadband rollout would need to factor in a future-proof arrangement for FTTH/FTTP all-fibre setups down the track. As well, this approach can cater for environments where some buildings like offices or educational facilities could have an all-fibre rune but as needs change, other buildings could have

the all-fibre run. Similarly, it can allow reuse of existing head-end equipment used for the copper deployment like DSLAMs on newer extensions of the part-copper part-fibre setup such as entry to new neighbourhoods for example.

So this setup means that even a part-copper part-fibre setup like an FTTC setup could benefit from higher throughput speeds by moving towards an all-fibre setup while retaining the existing fibre-optic backbone infrastructure.

#### Customers please note with these conversions

When these networks switch over from a VDSL2-based part-copper part-fibre network to an all-fibre network, you will have to move from a DSL modem router to a broadband router with an Ethernet WAN (Internet) port.

Some high-end modem routers will have a dual-WAN setup which uses an Ethernet port as a secondary WAN port and this may be in the form of a LAN port that can become a WAN port or as a dedicated WAN port. It is worth checking if your modem-router has this setup by referring to its instruction manual or manufacturer's Website.

#### Links

[1]

<http://www.vdsl-tarifvergleich.de/vdsl-news/telekom-ftth-voip-otsdam/>

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## Integrating next-generation Internet in to a natural-gas rollout project in Germany

14/04/2011 02:58

Mehr VDSL im Raum Bopfingen[1] - VDSL.de (Germany - German language)

#### My comments

Just lately, the German VDSL2 next-generation broadband Internet network could be increasing its footprint in parts of Bopfingen, a small city in Baden-Württemberg. The intended scope is to cover the communities of Pfaumloch, Goldburghausen and Utzmemmingen

This is intended to be part of a natural-gas rollout project that is servicing the neighbourhood and this project would provide the opportunity to lay down a fibre-optic backbone to service this same area with VDSL2 next-generation Internet service.

The Bundesregierung (German federal government) were intending to offer to underpin this project at a cost of 450k Euro.

There is some resentment about the VDSL deployment in Goldburghausen because of the perceived extra expense that the fibre-optic backbone would cause. It is more so for a small VDSL2 deployment which covers fewer "doors" than the other deployments in this region because the economies of scale don't exist in these locations. This is although Goldburghausen could increase its VDSL2 service demand due to business wanting to set up where there is the "full-on" next-generation Internet.

There is public money going towards this project, especially from

the Bundesregierung as previously detailed. But the main feature that I liked of this project is that it is intended to be part of an already-funded infrastructure-rollout project i.e. the gas rollout where similar work is being done, thus avoiding the need to put up more of the public money just to perform new works for this project.

It should still be subject to competitive access requirements so that there is the ability to deliver competitively-priced service.

Therefore I would support the concurrent deployment if next-generation Internet service with a major customer-facing infrastructure project like a natural-gas rollout or power-cable undergrounding project.

#### Links

[1]

<http://www.vdsl-tarifvergleich.de/vdsl-news/vdsl-raum-bopfingen/>

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## UPnP Telephony DCP-One step towards easy-to-implement IP telephony

13/04/2011 09:54

Another step towards easily-configurable IP telephony systems has been taken with the UPnP Forum just releasing the UPnP Telephony Device Control Protocol this week. Here, this provides the management of telephone-related devices that are connected across a small network in a heterogenous manner. This involves the ability for the devices to make or take phone calls, be notified of incoming calls, send and receive text and multimedia messages as well as updating local user-presence status.

It is also intended to be service agnostic so as to cater for phone services based on IP-Telephony (VoIP), cellular wireless or classic landline (ISDN or Plain Old Telephony Service) technology; as well as being device form-factor agnostic.

As with the whole of the UPnP ecosystem, this DCP provides increased room for innovation due to a logical "building-block" approach in designing these systems.

#### Logical Devices

##### Telephony Client

A UPnP Telephony Client is a device that is used by the end-user to interact with the caller at the other end of the line.

A multi-handset phone system would have these devices referred to as an "extension". This could be a device like a VoIP handset, a "softphone" program run on a computer, a TV or set-top box with IP-based video speakerphone function or a "legacy-handset-bridge" like an analogue telephone adaptor or DECT base station.

The UPnP Telephony system allows different clients to be media-specific, thus allowing for situations like an electronic picture frame that has a Webcam to become a videophone adaptor with the voice part of a videocall placed using this device being hosted through a regular VoIP handset.

## Telephony Server

A UPnP Telephony Server device represents anything that can provide a telephone service to the local IP-based network. This can be in the form of a 3G mobile phone connected to the home network via WiFi, a regular telephone that has integrated PSTN/ISDN - IP bridge functionality, but would typically be in the form of a device that works as an "IP-PBX" with VoIP lines and servicing VoIP handsets.

A physical device can have multiple logical "Telephony Server" devices, with one for each "service" that calls come in on. It doesn't matter whether the calls come in via VoIP or a classic telephony service like a 3G mobile service or the "Plain Old Telephone Service". This can cater for the VoIP-enabled router or "IP-PBX" that can handle a few VoIP services as well as a "Plain Old Telephone Service" line; or a mobile phone or "MiFi" router that "front-ends" its 3G/GSM telephony service to the network.

## Telephony Control Point

This is effectively the "control surface" for a UPnP Telephony system and can be integrated with a Telephony Client or Telephony Server or be its own device. Typically this would be the buttons and display on a phone but could be a device with its own display or a "widget application" on a computer showing up the incoming call details or incoming text /multimedia messages.

## Functionality provided

This device class manages the creation, management and conclusion of a voice or video call between UPnP-compliant telephony "hub" devices and endpoint devices.

The technology allows for a call to be set up using multiple devices on the local side. A good example of this would be to instigate a videocall with the video display appearing on a videophone-enabled TV with integrated Webcam and the conversation sound coming through the cordless handset. Of course, it will do the usual call-management features like call transfer are able to be performed across a UPnP Telephony-based phone setup.

As well, there is support for a common address book that is based on vCard standards as well as the management of answering-machine /voice-mail setups in these systems. Of course, a UPnP-based IP telephone system can support sending and receiving of text or multimedia messages. This would mean that, for example, incoming messages could appear on devices like networked TVs or a Wi-Fi-based cordless IP phone could send messages through VoIP SMS services or "landline-SMS" services provided on PSTN or ISDN services.

## Issues that need to be looked at

### Establishment of IP-telephony services

An issue that needs to be looked at is the setup and management of IP-based telephony services. Here, this may include the addition of a new service or the establishment and modification of outbound and inbound call-management profiles associated with multiple phone services.

This may involve the use of predefined call classes like "local" or "international" with the ability to determine which service is

used for a particular class. Similarly, there could be the use of "default" outbound dialling plans such as "VoIP for all calls except emergency or service calls". As far as the small-business owner is concerned, this issue may encompass the creation of IP-based "tie lines" between business locations or the creation of "virtual extensions" which are phone numbers dialled as if one is calling an extension within a business phone setup.

The solution that can be used to answer the problem regarding establishment of such services could be in the form of a standard "service manifest" file. This could be an XML file that is prepared by the ITSP (Internet Telephony Service Provider) with all of the parameters associated with an IP telephony service including SIP parameters and default call-management plans for that service. The service's customer would upload the file to their VoIP gateway through a client-side application or the gateway's Web interface and simply enable the service.

## Inter-extension calling

In the same case, another issue that may need to be looked at is the ability for a UPnP-based telephony system to support the placing of calls between Telephony Client devices, as required of a business phone setup.

This question could be answered through the use of a virtual Telephony Server in a gateway device that represents and handles the internal calls. This could have the internal phone book which is simply a user-friendly list of Telephony Client devices on the system as well as handling that traffic.

## Conclusion

Now that the UPnP Telephony DCP has been determined as a standard, it now requires industry to set about the task of implementing it in as many IP-Telephony devices and software programs as possible.

This could be made feasible through this standard being part of one or more logo-compliance programs like how the UPnP AV DCPs have become mandatory for devices that are DLNA-compliant or the UPnP Internet Gateway Device standard has become mandatory for various standards encompassing Internet modems and routers.

It can also open up opportunities of innovation for any device that offers some sort of telephony function while facing a small IP network; or any computer program that works as a bridge to a telephony service like Skype or as a telephony endpoint like a "softphone".

# IPTV now being featured on mainstream TV media

08/04/2011 14:21

## Articles

Smart TVs (A Current Affair article) - NineMSN[1] VIDEO

## My Comments

From the recent "A Current Affair" broadcast on the Nine Network, it seems to me that the "Smart TV" or "Internet TV" concept is now ready for prime time.

### What is this trend all about?

This is where functionality like access to IPTV channels, "catch-up" TV and video-on-demand is now being integrated in to most of the big-name TV sets that are to be sold at the likes of Harvey Norman. It will also include an "app-store" interface so that users can add functions to these sets in a similar way to how they add functions to a smartphone or tablet computer.

Some of the sets will come with an integrated hard disk which will provide PVR functionality. But what wasn't mentioned was that most of the sets from the big brands, especially LG, Samsung and Sony, will support integration with the DLNA Home Media Network. This means that these sets could play content held on a computer or network-attached storage device that uses this standards-based technology.

Typically, these functions will be pitched at TVs targeted for the main viewing area i.e. the main lounge room or family room. But this kind of function may be added to existing sets through the use of some of the current-issue Blu-Ray players and network-media adaptors like the Sony SN-M1000P network media adaptor.

### A few key questions that I have

#### "TV plus Apps" or IPTV and interactive-TV content?

There could be a fear that this could turn out as "TV plus apps" with the same old TV content plus some apps such as clients for the popular social networks, photo-sharing sites and YouTube-type sites thrown in.

But some providers are making ties with the various manufacturers to set up free and pay-TV front-ends through the IPTVs. Examples of this include Samsung establishing a tie with BigPond TV to provide direct access to that content or most of the manufacturers running ABC iView through their TV sets. It may also open up opportunities like video-on-demand or boutique content services. As well, once there is a level playing field for adding TV services, this could lead to the addition of extra TV content.

If there is a desire to provide new live or on-demand IPTV services, there needs to be support for adding the newer services to existing IPTV equipment. This could be achieved through an always-live app store on these sets. Similarly, existing broadcast content, both editorial and advertising, must be able to support

links to apps and interactive front-ends that are accessible to the average viewer with one click of a particular button through the use of interactive-TV content-delivery standards.

This can include applications ranging from interactive games and competitions that are part of children's TV through "play-along" quiz shows to polls run in conjunction with current-affairs shows which have the option for you to view "extended-version" interviews.

### Equipment Useability

A key issue that I have raised in this site [2] was the useability of services like the Social Web on this class of equipment. Typically, the "smart TV" concept prides itself on connection with social-network services like Twitter and Facebook; but there will be the desire to gain access to photo-sharing sites like Flickr and Picasa or gain full benefit from sites like YouTube. These can make use of "smart-TV" services more daunting for someone who doesn't find themselves competent or isn't experienced with technology.

An example of this was when I mentioned to a friend of mine about the Pixel Eyes app on the TiVo platform where they could view their Picasa albums through the lounge-room TV connected to the TiVo PVR. I mentioned that they would have to log in to their Google account using the "pick-pick" method of entering their credentials in order to view their pictures on this service and this idea frightened them off it.

The main problem is that different users will want to log in to this common terminal or, in the case of the Social Web, leave comments in relation to what they are viewing. Typically, this will require a fair bit of text entry and most remote controls won't be fully engineered to cater to this requirement. The user will typically have to work a D-pad or wave a Wii-style "magic remote" around to pick letters from an onscreen keyboard and may have to switch between logical keyboards to use different character sets like numbers, different-case characters or punctuation. Try entering in a Facebook /Twitter /Google username and password that way or "knocking out" a Tweet that way. As well, I have raised in that same article methods in which logging in to these services from devices like TVs and set-top boxes can be simplified and referenced how Facebook achieved a login experience suitable for these devices with their HP ePrint app. This includes being able to change the active user associated with a TV or set-top box to another user.

Similarly, I would look at issues like keyboard support for IPTVs. This is whether a TV comes with a QWERTY-enabled remote or not. The best method for add-on keyboard support would be to use Bluetooth HID connectivity so that a Bluetooth-based wireless keyboard can be used as a text-entry tool. Similarly, the ability for one to plug a standard USB computer keyboard in to the USB port usually reserved for USB memory keys and use this for text entry may make things easier. This would work well with those wireless-keyboard sets that plug in to the computer's USB port.

A remote that doesn't have a QWERTY keyboard but uses a numeric keypad for direct-channel-selection or parental-code-entry could use this keypad as an "SMS-style" text-entry interface, something which many nimble-fingered teenagers are used to. This would work better if it used the

character-set-selection practices used on popular mobile phones.

Other methods that can be looked at include the use of smartphone apps as virtual remote controls like what Samsung has done for their Android smartphones. Here, a user could download an app to their Galaxy S phone and have this become the TV remote control. This could be extended to ideas like multi-control for interactive applications such as “own-account” operation for Social Web and similar applications with the TV screen becoming a “common monitor”.

### **What to consider when choosing or using your network-enabled TV**

#### **DLNA functionality**

The TVs or set-top devices should support DLNA Media Player functionality at least, with preferable support for DLNA 1.5 Media Renderer functionality. Initially this would give you access to content held on your computer’s or network-attached-storage device’s hard disk.

The Media Renderer functionality can allow the TV to be controlled by a UPnP AV /DLNA control point such as TwonkyMobile, PlugPlayer or Andromote on your smartphone or tablet computer, or TwonkyManager on your netbook. In the case of Blu-Ray players and set-top devices, you may even be able to play music from your network storage through your favourite stereo without the need to have the TV on to select the music

If the TV or set-top box offers integrated PVR functionality, look for DLNA Media Server compatibility because this may allow you to play recorded TV shows on other TVs in the house without them needing to be of the same brand.

It is also worth noting that some DLNA functions like DLNA server or Media Renderer may not be enabled by default even though the set has these functions. Here, you may have to go to the setup menus and look for “DLNA control”, “Media Server” or similar options and enable them to benefit fully from these functions.

For further information, it is also worth reading the DLNA Networked Media articles that I have written on this site.

- Getting Started with DLNA Network Media Sharing[3]
- Setting up “PC-less” Networked AV[4]
- The 3-Box DLNA Home Media Network[5]

#### **Connecting the set to your home network**

When you connect one of these TVs to your home network, I would suggest that you avoid using Wi-Fi wireless connectivity, especially if the TV or set-top box uses a dongle for this connectivity rather than integrated Wi-Fi connectivity. This is because of the fact the Wi-Fi network is radio-based and if anything is shifted slightly between the Wi-Fi router and the TV, you may have service-reliability issues.

Instead, I would recommend that you use a wired method such as Ethernet cable or a HomePlug AV[6] powerline-network setup. The Ethernet-cable solution would work well if the router and TV are in the same room; you have wired your home for Ethernet or you can get away with snaking Ethernet wiring through windows.

On the other hand, the HomePlug solution would work well for most users who don’t want to or can’t lay new wiring through their homes because this uses the house’s existing AC wiring.

In fact, if you are renovating or rewiring your home, it may be worth considering wiring the house for Ethernet [7]and making sure you have an Ethernet connection in the main TV-viewing areas of the house. This may be achievable if you have an electrician who is competent or knows one who is competent with communications or data work doing the job.

### **Conclusion**

This site will have regular coverage of home media network issues that will become of importance as we head down the the path towards online home entertainment.

#### **Links**

- [1] <http://aca.ninemsn.com.au/article.aspx?id=8233148>
- [2] [/2011/03/authenticating-users-to-services-on-limited-user-interface-devices/#utm\\_source=feed&utm\\_medium=feed&utm\\_campaign=feed](#)
- [3] [/2008/11/getting-started-with-dlna-media-sharing/#utm\\_source=feed&utm\\_medium=feed&utm\\_campaign=feed](#)
- [4] [/2008/12/feature-article-dlna-network-media-series-setting-up-pc-less-networked-av/#utm\\_source=feed&utm\\_medium=feed&utm\\_campaign=feed](#)
- [5] [/2009/09/feature-article-dlna-network-media-series-the-three-box-dlna-network-model/#utm\\_source=feed&utm\\_medium=feed&utm\\_campaign=feed](#)
- [6] [/2009/02/feature-article-understanding-and-managing-your-home-plug-network/#utm\\_source=feed&utm\\_medium=feed&utm\\_campaign=feed](#)
- [7] [/2010/06/feature-article-wiring-a-house-for-ethernet/#utm\\_source=feed&utm\\_medium=feed&utm\\_campaign=feed](#)

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## **Simplifying login and authentication processes for WiFi hotspots**

07/04/2011 04:38

#### **Articles**

Wi-Fi body wants hotspots to override 3G • reghardware[1]

#### **From the horse’s mouth**

Wi-Fi CERTIFIED™ Hotspot Program to Ease Subscriber Connectivity in Service Provider Wi-Fi® Hotspots - Press Release[2]

Wi-Fi Alliance Webpage[3]

## My comments

One main thrust behind the Wi-Fi Alliance's new initiative concerning authentication, authorisation and accounting on public hotspots was to permit a wireless-broadband carrier to use Wi-Fi hotspots as a complimentary cellular technology. This is to avoid the need to buy cellular-telephony spectrum in order to increase service capacity and is increasingly necessary as the available radio spectrum becomes increasingly scarce.

Here, a cellular carrier could run their own Wi-Fi hotspot networks like what Telstra is doing or they could form a partnership with a wireless Internet service provider like "The Cloud" in the UK as a way of providing this service. They could then allow for a customer to seamlessly hand over from a 3G network to a Wi-Fi network that supports these credentials.

The way this is going to operate is to use a SIM card in a smartphone to store credentials for Wi-Fi networks. This card is typically controlled by the cellular carrier and may be only used for login credentials that continue the carrier's partnerships.

A limitation I find with this is that the carrier could implement software locks so that the customer can't use public networks other than those provided for by the carrier or their partnership. As well, there are other issues that haven't been looked at properly with this goal for improved authorisation, authentication and accounting on these networks as I list below.

### Venue-controlled hotspots

It can also make life difficult for customers who use hotspots provided by venue owners like hotels or cafes. Here, the login experience is typically managed by the hotspot owner and this may require information like a session ID in the case of a hotspot at a bar or café, or a room number for a hotel. These may apply for hotspot service where you pay the premises owner for that service or the service is part of the business's main operation. In some free hotspots, you may have to click on a form to assent to terms and conditions of the service before you continue using the service.

As well, a user could use a hotspot run by an independent wireless hotspot operator and buy their access themselves through a Web-based user interface before using the service.

What I would like to see is support for these kind of hotspots because the user interface that is provided by most of them can become awkward for people who use handheld devices. This is typically because most of these user interfaces are designed for devices like laptops rather than handheld devices.

The improved interfaces could support "app-style" login experiences including "remember-me" login experiences where applicable. Other improvements that could be facilitated include the use of barcodes that are scanned by the phone's camera to load "session keys" for docket-controlled hotspots or MMS direct-load support for login tokens for "SMS login token" WISPs. It could then lead to a venue-branded experience which some users may find as a "safety net" for their hotspot experience.

As well, a branded experience can be part of a "walled-garden" of sites that a person can visit free of charge or can be

a sophisticated experience with such things as an online menu or the ability to order food and drink from your computing device.

Similarly, the idea of "franchising" WISP service to owners of venue-controlled hotspots hasn't been worked out fully with this technology. Here, a person could have the rights to resell a WISP's service under varying risk-return models and have the clients associated with that service use their hotspot in exchange for a cut of the costs paid by the clients.

### Selective device-cluster creation

It is also a preferred standard to have devices in a public network isolated at lower network levels in order to prevent unwanted peer-to-peer discovery of the devices on these networks. This is typically achieved through functions like "AP isolation" or "Wireless Network isolation" and makes it appear to the devices that they are connecting directly to the Internet privately.

There are situations where a person may want to provide local connectivity between their own devices or devices owned by other users that are in their trust circle. Examples of this include LAN-based gaming over a wireless hotspot network, workgroups sharing data during a café meeting; one shifting data between a smartphone and a tablet computer at a coffee lounge or simply uploading pictures from a Wi-Fi-enabled camera to a 13" traveller laptop at their favourite "watering hole".

Here, the authentication needed for this could be achieved through "same-token" login for devices with integrated Web browsers to entry of MAC addresses or WPS PIN numbers into a "cluster-creation" screen provided by the hotspot gateway. The Wi-Fi Alliance could examine the feasibility of using the new authentication methods as a way of creating selective network clusters across a device-isolated public wireless network.

### Authenticating hotspots at the SSID-discovery level

The other question that has not been answered as far as I am concerned is whether there will be a system for authenticating hotspots and public networks in a similar manner to what is done when a user logs on to a banking site for example. This is to verify that the user has discovered a "safe" network before they select that SSID and begin to login to the hotspot.

The data that would be verified would be the MAC addresses of the access points as well as the gateway device's IP address and MAC address. This can be used to verify that the user has logged in to a network that is operated by the venue that is providing the hotspot service. For a WISP like "The Cloud" or FON, this may be useful for verifying that users have logged in to the WISP's network. In this case, this information may pertain to the locally-installed hardware for the WISP.

Here, this could be achieved through a private-key /public-key exchange setup where the successfully verified hotspots could at least be highlighted in a wireless network with a "key" or green-light icon. If this system does also support the transmission of logo icons, the client device could also show a company logo for that hotspot host.

It can also work as a way of encouraging customers to be sure of where they are surfing the Web through. As well, a business could have a Windows 7 laptop or Blackberry smartphone that



supports this kind of verification for public wireless networks to prohibit logging in to public wireless networks that don't have this kind of verification.

The main issue with this is that independently-run cafes and bars may need to be able to have access to any certification setups at a modest price, preferably through a government business-support agency or their bank.

### Conclusion

Once these issues are ironed out concerning the provision of public Wi-Fi Internet service to the hordes of users with notebooks, netbooks, smartphones and tablet computers, then they can use these services to full capability in a secure manner.

### Links

- [1] [http://www.reghardware.com/2011/03/23/wifi\\_public\\_hotspots/](http://www.reghardware.com/2011/03/23/wifi_public_hotspots/)
- [2] [http://www.wi-fi.org/news\\_articles.php?f=media\\_news&news\\_id=1048](http://www.wi-fi.org/news_articles.php?f=media_news&news_id=1048)
- [3] <http://www.wi-fi.org/>

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## Toshiba's latest "portable-typewriter" laptop to beat according to CNET

04/04/2011 03:59

### Article

Toshiba Portege R835-P56X Review - Laptops - CNET Reviews  
[1]

### My Comments

There is now a "race for the best" going on with the 13" "traveller /hotspot-user friendly" class of laptop at the moment thanks to the new Sandy Bridge technology. This is even though the netbook is appealing as a The gauntlet had been laid down by Apple with their latest MacBook Pro laptop for the MacOS X platform and everyone is trying to match this goal in an affordable way.

Examples of the improvements we will see with these computers will be improved video performance as well as an increase in the runtime available for the computer on its own battery. Some of these machines could allow for a hot-footed workday without the need to look for power outlets so you can charge up that laptop.

An example of this is Toshiba's Portege R835-P56X laptop which uses this technology. The CNET review posted improvements in battery life by 3 hours over the previous model as well as video performance. This battery runtime period that was quoted for the Toshiba when running a video clip was nearly 8 hours, which would cover a typical workday of hotspot-surfing or public-transport working. It also is ready for USB 3.0 and can work with Wi-Fi N wireless networks.

Yet this machine still comes with an integrated DVD burner as well as 4Gb RAM and 640Gb on the hard disk. This capacity may be important when you take those digital pictures and you want

to "dump" them to the computer for editing and uploading while on the go. But users may have to check their configuration comes with integrated Bluetooth when they "spec" the unit they want if they do want this function. This would be more important if you do want to pass audio to an amplifier using a Bluetooth A2DP audio module, use your favourite Bluetooth headset to Skype with or use this technology to "tether" your mobile phone to the computer.

At least the new Sandy Bridge technology could allow for this class of laptop computer to improve and become more appealing to those of us who create content while "on the go".

### Links

- [1] [http://reviews.cnet.com/laptops/toshiba-portege-r835-p56x/4505-3121\\_7-34449812.html?tag=mncolBtm;rnav#reviewPage1](http://reviews.cnet.com/laptops/toshiba-portege-r835-p56x/4505-3121_7-34449812.html?tag=mncolBtm;rnav#reviewPage1)
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