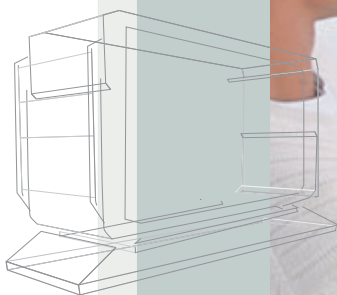


Tune in to Digital Convergence

DVB-SCENE



26



Spotlight on Asia-Pacific

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The Standard for the Digital World

This issue's highlights

- > Mobile TV in India
- > IPTV in Asia
- > DVB-H Trials in Singapore & Indonesia
- > DTTB Australia Update
- > Market Watch



Developed in Europe at Fujitsu Microelectronics Europe's headquarters in Germany, this decoder is supported world-wide by Fujitsu's local technical centres

A NEW EXPERIENCE IN DVB DECODING!

Fujitsu's latest DVB solution for digital TV - the MB86H60 - is a highly integrated System-on-Chip incorporating all the processing functions required by digital HDTV receivers, including those for digital video, audio and graphics - ideal for IDTV sets and set-top boxes.

This cost effective, low power, high definition media processor can decode both MPEG-2 and H.264 compressed video up to full HD resolution (1920 x 1080i) and thus delivers a complete solution for new satellite, terrestrial and cable HDTV receivers. The flexible audio processor can decode a wide variety of audio standards required by the broadcast market.

The high performance ARM11 core incorporated into the MB86H60 provides all the processing power needed to enable a whole host of middleware software.

Based on more than 10 years of DVB silicon development, this flexible solution from Fujitsu helps deliver a high quality audio and video experience regardless of encoding source or broadcasting standard.

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AND HERE COMES ANALOGUE SWITCH OFF!

A word from the DVB Project Office

With many countries in Asia launching a variety of digital terrestrial services in the coming year, some countries in Europe already have or are coming close to the point when there will be no more analogue services. Germany will shut down all analogue services in 2008. The US, another highly cabled country, will do so in February 2009. The market is learning that DTT (digital terrestrial television) services will be received on many more devices than a simple TV set as in the past. Numbers of USB DVB-T sticks, laptop PCs with integrated DVB-T receivers, portable

media players, and even mobile phones in some markets, are set to far exceed the number of TV households in developed DVB-T markets. As ASO approaches and countries heavily promote the switchover, these numbers will skyrocket.

Asia is already leading the way in the mobile TV sector, and this DVB-SCENE issue examines DVB-H trials and deployments with a view to understand the business and what makes it tick. In this time of heightened debate on mobile TV standards, we mustn't forget that it's primarily a business



Peter MacAvock, Executive Director

we're talking about. Will it be a pay TV service? A free-to-air service? Will it deliver made-for-mobile content, or concentrate on simulcasting existing content? All important questions. And DVB's work is only the starting point. Another area that Asia leads in is IPTV and this issue looks at how it is developing in the region.

NEW STANDARDS

TS 102 542 V1.2.1 "Guidelines for DVB IP Phase 1 Handbook" (Published 02/08)

TS 102 539 V1.2.1 "Carriage of Broadband Content Guide (BCG) information over Internet Protocol (IP)" (Published 02/08)

TS 102 543 V1.1.1 "Globally Executable MHP (GEM) Specification 1.2" (Published 02/08)

EN 302 583 V1.1.1 "Framing Structure, channel coding and modulation for Satellite Services to Handheld devices (SH) below 3 GHz" (Published 03/08)

TS 102 585 V1.1.2 "System Specifications for Satellite services to Handheld devices (SH) below 3 GHz" (Published 04/08)

NEW MEMBERS

DMT System SpA – Italy based company operating in the communication infrastructures sector. www.dmtonline.com

Innovationszentrum Telekommunikationstechnik GmbH (IZT) – Manufacturer of products for test and measurement, digital broadcast, information technology and communications. www.izt.fraunhofer.de

Norges Television AS – Licence owner and platform operator of the DTT network in Norway. www.ntv.no

Sisvel – Patent management company that enables the acquisition of patent rights for a particular technology standard from multiple patent holders. www.sisvel.it

Thales Alenia Space France – Provider of system solutions for telecommunication systems. www.thalesaleniaspace.com

Top Up TV – UK pay TV operator utilising DVB-T to offer linear pay channels and a push VoD system. www.topuptv.com

Elektrobit Corporation – Creator of advanced technology specialising in embedded software and hardware solutions for the automotive and wireless industries. www.elektrobit.com

ADI (Advanced Digital Institute) – UK based independent research and development institute dedicated to adding value to the high technology sector. www.adi-uk.com

DekTec Digital Video B.V. – Manufacturer of digital video input/output adapters for PCI and PCI Express bus, USB-2 and IP, as well as associated software. www.dektec.com

3Ietronica industriale spa – Italian digital terrestrial broadcast network operator. www.h3g.it

ANGA - Non profit association of German cable operators. www.anga.de

Groupe des Ecoles des Télécommunications (GET) – French administrative body overseeing the management of several higher education establishments and research in the sector of information technology and telecommunications. www.institut-telecom.fr

Trident Microsystems, Inc. - Designs, develops and markets multimedia integrated circuits for PCs and digital processing ICs for TVs and TV monitors. www.tridentmicro.com



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Mobile TV in India

OCCUPYING THE CREASE

Anand Madangopal, Architect and Head of Mobile TV Development Group, Tata Elxsi Limited

It is expected that the take up of mobile TV in India will be as popular as the mobile phone and will boast large volumes in years to come. In January 2008 the regulatory authority, Telecom Regulatory Authority of India (TRAI), gave its recommendations for mobile TV to the Ministry of Information and Broadcasting. Since then a lot has been said about the TRAI recommendations and how they affect the players in the industry. The salient features of the recommendations are:

- The service provider should have the choice over which broadcasting technology is used – providing the technology is approved by a recognised standardisation body.
- Handsets provided by an operator should be compatible with other operators that use the same technology and standards, enabling users to migrate.
- Terrestrial transmission only is allowed for the time being.
- Apart from Doordarshan, private mobile TV operators are going to be assigned at least 1 slot of 8 MHz in UHF Band V from 585 MHz to 806 MHz. This enables the transmission of 15 channels.

- Operators with UASL and CMTS licences do not require a separate licence for providing mobile TV services using already allotted spectrum.
- Operators planning to provide broadcast based mobile TV services require a new licence.

The summary of the set of issues that surround the recommendations are that telecom operators feel their existing licence should cover them for mobile TV. Broadcasters on the other hand feel that the current licence for broadcasting digital TV should cover mobile TV as well, and that the telecom operators should have to get new licences to provide mobile TV.

specific to a service provider. How this is going to happen with GSM based phones is unclear.

In India a large segment of the mobile phone market is retail based. Mobile TV will present new challenges to the consumer when selecting their phone and service provider because changing from one provider to another could result in the loss of their mobile TV service. This model might work in the case of CDMA where it is the other way around. Additionally, the recommendation is that if two mobile TV networks follow the same technology then the consumer should be allowed to shift from one network to

“...the consumer should be allowed to shift from one network to another using the same device.”

In India operators are launching mobile TV from a GSM perspective with streaming as an option. From a broadcasting point of view there exists a choice of standards from MediaFLO, T-DMB, ISDB-T to DVB-H. TRAI has left this decision to the broadcasters/operators. Nevertheless, stakeholders in the eco-system have deemed DVB-H to be a good choice for India.

Currently, discussions in the industry all revolve around the above issues. Assuming these can be solved, other challenges remain such as the cost and type of the device, and the service that will be successful in India. The current Doordarshan DVB-H mobile TV service in Delhi provides around 8 free-to-air channels. When the new services are launched it is expected that prime content, especially from other broadcasters/telecom operators, may not necessarily be free-to-air; payment models have a definite impact on the traction for mobile TV services. Sport, especially cricket, enjoys mass appeal and consumption in India while other content such as business and financial news have more segmented appeal.

This scenario is a little complicated because first you have to pay extra for a mobile TV handset. As it stands today from an eco-system perspective, the device will be enabled with software

the other using the same device. Both these issues are going to be difficult to solve and accountability will be a problem.

The other factor is the cost of the device; for instance a typical mobile TV receiver requires good processing power for H.264 decoding, a decent LCD screen and proper battery backup. In India phones retailing at over \$250 USD are more likely to meet these requirements, and then you have to add the cost of the mobile TV components. Currently, some mobile TV handsets retail at \$425. If there are to be volume sales then the devices have to be cheaper. The other two possible areas for mobile TV could be PCs / notebooks with USB dongles or inbuilt receivers and in-car receivers with or without DVD players. Aftermarket devices enabling mobile TV are expected to be a good market. However there could be a problem with pay channel management as the return channel is not as straightforward as it is in the case with mobile phone TV receivers. Conclusion

Spectrum allocation, the licence, and the business model between broadcaster and operator may be the first hurdles, but the real challenge lies at the consumer end in terms of the device and the kind of service that will be offered.





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SETTING THE GLOBAL PACE

IPTV In The Asia Region

Danny Wilson, President & CEO, Pixelmetrix

Broadband has become the buzzword in recent years. East Asia leads broadband penetration in the world. Korea, China, Japan, Taiwan and Singapore are regarded as the leading 'Asian Tigers' countries with significant amounts of exports by their electronics industry, and also as the 'Net Tigers' when it comes to the Internet.

Asia has demonstrated phenomenal growth in the uptake of broadband. A few years back, Asia was considered the underdog in the uptake of broadband technologies. The story has changed today. A report released by Internet World Stats (September 2007) [<http://www.internetworldstats.com/dsl.htm>] revealed that three countries in the top five for broadband subscribers are from Asia - China, Korea and Japan. Similarly, the uptake of digital television broadcasting has been the focus of emerging Asian economies. Customer demands have grown exponentially, and the need for higher quality of service dominates the reasons behind the efforts of governments across Asia to provide quality television to their population. Recently published research by independent research firm In-stat concluded that new digital satellite TV subscribers in Asia would help the market generate more than \$88b in revenues worldwide by 2010. The research also concluded that the

challenges exist in the uptake of IPTV in the region, including technology, business models, standardisation, human mindset and so on.

IPTV & Its Benefits

As a technology, IPTV has existed for several years, but is only really taking off now. The reason it has weathered a number of shaky starts is because the arguments in favour of delivering TV signals to television sets via the Internet are so strong.

IPTV is more efficient than cable in its use of bandwidth. That means it can be carried over smaller connections than cable and have more options along with video-on-demand. IPTV beats satellite on interactivity grounds. It has allowed telecom giants to enter the media space, something many have sought for years.

IPTV Problems In Asia

IPTV has its share of problems too, especially in Asia. The key factor underpinning the success of any end user oriented service lies in the degree of consumer awareness. Some believe that IPTV has something to do with the Internet! And there must be many more who do not fully comprehend the nuances of IPTV.

While a handful of service providers are offering IPTV services across Asia, there are not many fully scalable, advanced IPTV deployments to date.

beyond their core business and must also understand the sensitivities of the broadcasting/video industry, which is entirely new to them.

It is difficult to overlook an important component of the IPTV solution - content. High quality content and variety in content are the key differentiators, and as competition intensifies, would be crucial in gaining market share and reducing churn. In Asia-Pacific, barring a few advanced markets, the introductory phase is prolonged, where service delivery still revolves around broadcast services and VoD. The bandwidth problem is a concern in many emerging markets, where some low end DSL dominates the last mile.

A Status Report - IPTV In Some Asian Countries

More than half the countries in Southeast Asia have some sort of IPTV service in operation. Total subscriptions are to climb from 1.47 million at the end of 2006 to 27 million by 2013, according to technology research house Frost & Sullivan.

The benefits and problems of IPTV, as mentioned earlier, are reflected on how the Asian countries have embraced IPTV. Some countries are in the process of fighting against problems and realising the benefits the robust technology presents.

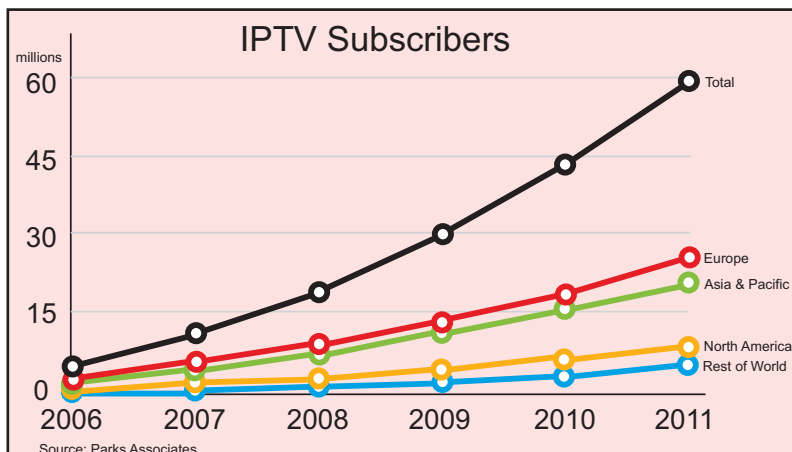
Hong Kong

One of the world's top demonstration of IPTV is Hong Kong's PCCW group, with its Now Broadband TV service. Boasting some 882,000 subscribers at the end of January 2008, Now is on course to overtake cable company I-Cable and become the leading pay TV platform in the territory.

With a large installed base of landlines and a growing number of homes lining up for its broadband Internet service, PCCW (formerly Cable & Wireless) applied a phone company approach to issues such as ubiquity, reliability and picture quality.

PCCW started to win attention from studios and channel owners when it demonstrated that its system was secure and less inclined to piracy than its rivals - despite coming over the unregulated public Internet. Unlike cable or satellite, which multicast all the available channels and use sophisticated set-top boxes as gatekeepers, PCCW was able to demonstrate that it was safer even with its rudimentary STBs (based on video disc technology), by drawing down one encrypted channel at a time. Having initially offered generous

DVB-SCENE : 08



mature markets are slowing down and Asia is the growth region in the coming years.

Internet Protocol Television (IPTV), an amalgamation of these two technologies, is no different. However, it would be wrong to say that the story for IPTV does not have its set of thorns. The region is in the midst of a war to demonstrate a robust business proposition for IPTV. Multiple

The key reasons for the slow progress of IPTV are twofold. Firstly, IPTV is still in the initial stages of evolution and services are relatively undeveloped. Competitive technologies such as cable and satellite have set the bar very high in terms of both quality and content. Secondly, one has to go beyond the understanding of telecom services to establish a strong business case for IPTV. Service providers should go

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incentives to attract subscribers, PCCW has gotten customers to sign up for its a la carte programme menu and the bundle that makes it an easy add-on to PCCW's Netvigator Broadband and email services.

China

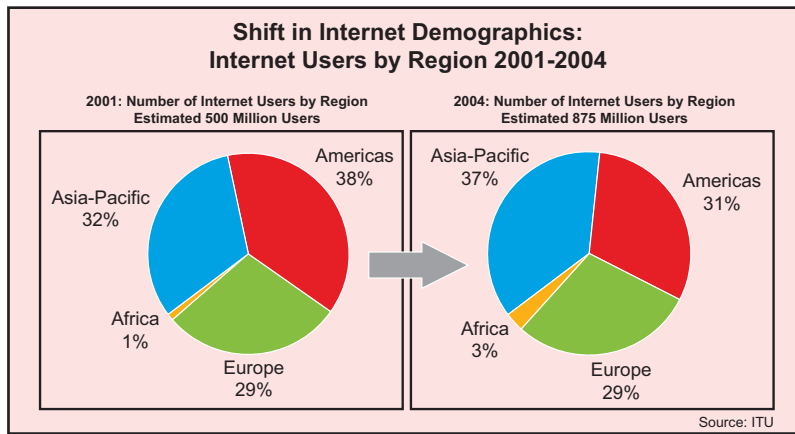
China's State Administration of Radio, Film and Television (SARFT) issued four IPTV licences in 2006, and the country's audio and video coding standard (AVS) was confirmed the same year. However, even with powerful Shanghai Media Group, commercial rollout of IPTV platforms has been modest. The biggest issue appears to be the unwillingness of the state to unleash a new competitor to the cable networks it has invested in.

South Korea

Though South Korea is, by some measures, the most wired country in the world and could rollout IPTV quickly, incumbent cabling have put up strong resistance, and government departments are at loggerheads as to who should regulate. Recently the regulatory issues have been resolved and KT (Korea Telecom) launched their IPTV service with XBOX as the customer premises equipment. Others in the market, such as Hanaro Telecom, are already providing IPTV services but not with the numbers it expected when it first started the service.

Singapore

The most recent entrant is mioTV, which was started in August 2007 by Singapore Telecom. The service is a direct competitor to the cable TV dominant StarHub, and comes with such gadgetry as remote access by



mobile phone and a 30-day electronic programme guide. But like Now, mioTV appears to have learned that when it comes to TV services, unlike personal hardware, consumers are relatively agnostic. What counts is the content. For instance, both SingTel and PCCW paid top dollar to outbid ESPN Star Sports for English Premier League soccer in their respective territories.

India

India has seen tremendous growth in digital broadcasting and broadband connectivity over the past five years. Mobile phone penetration is now amongst the highest in the world. Many private and public limited companies are joining the IPTV bandwagon. The largest private telecom companies (such as Reliance, Bharti, etc) have already invested in their networks to carry video over their data networks and are planning to launch IPTV sometime in early 2008. BSNL, the

largest public limited teleco, and MTNL have launched commercial services to select cities across India. Regulation was the biggest hindrance as the government was still in the process of defining a unified licence to operate IPTV, which has been completed recently.

Conclusion

IPTV as a technology provides unparalleled benefits to the end consumer. If packaged correctly, it would be the first true 'interactive' TV platform ever. Most research reports predicted Asia to be the driver in the growth of IPTV. Growing economies and greater demand from customers in Asia provide a great environment for the technology to be adopted ubiquitously. IPTV will penetrate. It requires a push in terms of establishing standards, providing better quality and choice to customers and a robust business model.

A shared vision

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A SUNNY ASPECT

Experiences Of DVB-H Trials In Singapore & Indonesia

Edmund Yong, CTO, Innoxius Technologies

Having been involved in DVB-H mobile television trials in Singapore and Indonesia both as a solution provider and also as an operator, Innoxius Technologies shares some insights into the region's progress in the rollout of mobile TV.

From the perspective of a potential mobile TV operator, various obstacles and opportunities exist. The issue of outdoor coverage has not been a major concern for operators. Strategically located transmitters are able to provide good outdoor coverage. However, from our trials both in Jakarta and Singapore, the user experience of outdoor viewing is adversely affected by the sun's glare. The best way to enjoy mobile TV is under shelter away from direct sunlight. This can limit the potential usage zone to inside transportation vehicles such as buses, cars and sheltered areas like

indoor coverage, could easily be five times the cost of outdoor coverage. Unlike mobile telephone services, operators do not get the opportunity of additional revenue from providing indoor mobile TV coverage when the income is derived from fixed monthly subscriptions. This could prove to be a disincentive for operators. Without the investment we can expect poor service quality and thus poor subscription rates. The last thing paying subscribers want to experience is not being able to access the services they paid for. If this obstacle is not addressed, the low service quality and eventual low service take up rates will kill the momentum. The indoor coverage issue presents an opportunity for solution providers to come up with a cost effective answer that enables indoor coverage and at the same time allows for additional revenue

market, operators are confused which platform to utilise for their service. This decision has to be made when committing to large orders of handsets. A wrong decision would require a major overhaul of the entire network and to replace the entire batch of handsets. Technical directors usually do not like to make such decisions, they would rather wait the decision out and let other operators rollout services and learn from their mistakes or successes. For a successful service rollout, operators must enjoy economies of scale and subscribers must be able to switch across different operators – this translates to a common DRM/CA platform.

In a drive to reduce the stalemate, pre-commercial trials of dual ESG, DRM/CA systems are taking place. It is probable that such a setup will be the system

“...opportunity for solution providers to come up with a cost effective answer..”

bus stops as well as indoor venues. Providing mobile TV services for subscribers when they are commuting would fit a commonly accepted usage scenario, but it would be hard for an operator to justify a business model to provide subscription based services solely to commuting consumers. Operators will have to overcome certain indoor coverage issues before they can see a successful business model. From our technical trials, usually in high buildings, we are able to get good reception three to five metres into a building from the first window. The challenge is to provide service in low rise buildings and deep indoors, e.g. shopping malls.

An initial estimate shows that network infrastructure investment, to provide

to be generated. Commercial trials of such solutions, if successful, could help drive the broadcast mobile television market in this region.

During the course of our trials, we came across another obstacle for a successful service rollout. The issue of available receiver devices is a concern. Presently, there are only a handful of DVB-H handsets available. Operators are concerned about launching a service that depends on a handful of handset models to drive the market. In addition, manufacturers usually ask for a large volume commitment from operators. This introduces risks that the operators may not be willing to take for an unproven business venture. To add to the complexity, due to the nature of a rather fragmented DRM/CA

that will be deployed eventually in this region. There may not be a dominant DRM/CA within the system - but a combination of two or more. This way operators keep their options open, are able to tap into economies of scale, and most importantly, not have to wait out this decision.

Moving forward, the stage is set for the launch of services in Indonesia and Singapore. The regulator in Singapore has already completed a public consultation and commercial licences will be available very soon. To increase the momentum, the problems with indoor coverage and a common DRM/CA platform are crucial.

AUSTRALIA TODAY



Ian McGarrity Provides An Update

The digital terrestrial television broadcasting (DTTB) story in Australia is a remarkable one. Among all the countries which have introduced DTTB, Australia is the most reliant on terrestrial delivery for free-to-air television services. Over 95 percent of its homes have at least one television tuner/receiver device which relies on a terrestrial aerial for its free-to-air television input. A complete array of local free-to-air television services is only available via cable and satellite pay TV platforms to around 1.4 million subscription television homes or about 17 percent of all TV homes. In the vast majority of these subscription homes, at least one device remains attached to a terrestrial aerial.

Consequently the digital conversion of the terrestrial platform in Australia, may present a greater consumer challenge than anywhere else.

At the end of 2007 approximately 4.1 million DTTB receivers had been sold to the public. Of these something like 62 percent were set-top boxes (STBs with hard drive recorders are included in this category), 37 percent were IDTVs and nearly 1 percent ID-DVD recorders. About 50 percent were high definition receivers.

Allowing for homes with multiple DTTB receivers and receivers that have become non-functional, over 40 percent of Australian homes now have some DTTB reception capability.

Well what has driven this take up? The basic structure of Australian free-

to-air television is that there are three metropolitan private TV networks and two government funded broadcasters, the ABC and SBS.

The three private networks have regional affiliates everywhere and the ABC and SBS have a slightly different version of their services transmitted in each state.

When introducing DTTB the government required all free-to-air services to provide an exact replica of their analogue service in both HD and SD format.

While the ABC and SBS were allowed to provide an independent standard definition multichannel, until the beginning of 2007 the private TV entities were not allowed to provide any new channels. Since then they have been allowed to provide separate high definition multichannels.

In 2008 I expect more than 20 percent of all Australian homes will purchase a large LCD or plasma widescreen display device costing an average of \$1,600 AUD (\$1,450 USD) each. Since the middle of 2006 it has become difficult (now impossible) to purchase a widescreen television display device in Australia which did not have an embedded DTTB tuner. Hence for widescreen sets the marketplace has effectively mandated digital tuners.

The new Australian government has set up a Digital Switchover Taskforce. It has just provided it with \$37 million AUD to assist the analogue switch off task. It has also set 31 December 2013 as the

date by which all analogue terrestrial television signals should cease.

This will be a difficult task. Including the 2,400 community run analogue television terrestrial transmitters, currently less than 40 percent of existing analogue terrestrial television transmitters have digital transmitters operating alongside them. Further, even at the current rate of DTTB receiver sales, I believe only 22 percent of all analogue tuner TV devices (TV sets, VCRs and DVD recorders) used to receive/record free-to-air terrestrial TV will have a DTTB receiver 'attached' to them by the end of 2009. Home uptake and overall device conversion provide very different perspectives.

The communications campaign and help scheme to assist the conversion of analogue tuner devices to digital will be significant, but nothing like the licence fee funded \$1.67 billion AUD, or \$66 AUD per TV home budgeted for in the UK. My guess is that between \$100 and \$150 million AUD will be spent on help schemes, communications and converting the 2,400 community owned analogue television transmitters in Australia. That is somewhere between 10 and 15 percent of the UK per home outlay.

Ian was the first Head of SBS TV and later, as GM TV Resources and Services, deputy to the Head of ABC TV. Today he is an independent consultant on digital TV matters and from 2004 until 2008 Chair of Digital Broadcasting Australia.

Tim O'Keefe, Coordinator of ADSIF Tracks The Sales OF HDTVs

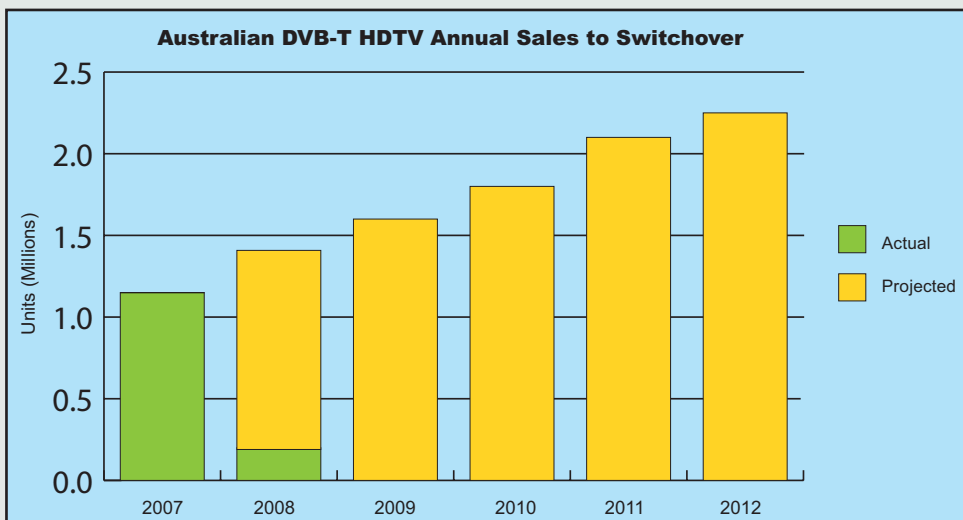
One of the first decisions of the incoming Labor government was to announce that digital switchover would be completed by 2013. Considering that only 40 percent of Australia's homes have made the switch to digital, this is a huge undertaking for the new government.

The Minister for Broadband, Communications and Digital Economy, Senator Stephen Conroy, has asked that a firm market-by-market timetable be developed by the Digital Switchover Taskforce. This group will also be responsible for government initiatives to drive uptake.

Australians spent \$2.5 billion (US \$2.1 billion) purchasing 1.3 million HD plasma and LCD TVs in 2007, with the typical screen size being over 100cm. Suppliers are now also targeting the second TV market introducing smaller HDTVs for the kitchen and bedroom. A branded 48cm HDTV is priced at less than \$499 (US \$450).

The HD Tick logo initiative for certified HDTVs has proven to be a success (see DVB-SCENE Edition No.24). Six months after the launch ADSIF

(Australian Digital Suppliers Industry Forum) now has ten major suppliers with 120 HDTV models HD Tick certified.





DUBLIN, BUDAPEST & NEXT STOP BERLIN!

Having always taken place in Dublin, the DVB World conference moved to Budapest this year, with almost 250 delegates from across the world gathering for three days in March for what was broadly agreed to be the best edition yet of the event. The keynote address was delivered by European Union Commissioner Viviane Reding, who took the opportunity to express her support and appreciation of the work of the DVB Project in the creation of open standards. Her presentation focused on mobile TV, the opportunities for DVB technologies worldwide, and the digital dividend strategy of the European Commission. Dominant themes to emerge over the course of the conference included: the challenges of managing content in our increasingly networked lives and the role DVB-CPCM can play; the implications for the broadcast industry of DVB-T2; the growing role of IP in content delivery, whether through 'traditional' IPTV or Open Internet television; and the importance of clarity in IPR issues for the implementation of all DVB standards. Lively discussion, both inside and outside the conference room, was in evidence throughout the course of the event.

DVB World 2009 will take place in Berlin from March 9 - 11. Watch out for more details later this year.

DVB - SCENE 1/13

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TechnoTrend TT-connect CT-3650 CI

TechnoTrend AG presents its TT-connect CT-3650 CI external USB box for receiving DVB-T and DVB-C signals. A CI slot allows the operation of conditional access modules for pay TV offerings. The external design allows for the connection to desktops and notebooks. www.technotrend.com

Imagination Technologies has announced the latest member of its family of video decoders and encoders. The POWERVR VXD380 advanced multi-standard video decoder supports all major HD and SD video formats. The unit efficiently decodes using the smallest silicon area and lowest power consumption. www.imgtec.com

DekTec is launching transport stream over IP (TSolP) converters featuring Power over Gigabit Ethernet, giving new flexibility to expand server I/O. Its first two products convert DVB-ASI streams to and from TSolP. Also new is Xpect, a new transport stream monitoring application from offering real-time validation of MPEG-2 streams against TR 101 290 or a user-defined template. www.dektec.com



DekTec TSolP Adapter

The Nagravision mobile TV solution supports DVB-H, DVB-SH and other digital standards. It offers comprehensive DVB-H Open Security Framework support as well as µSD/SD card delivery for unconnected devices such as PMP and GPS, enabling secure content portability across devices. www.nagra.com

Because the DVB-S2 standard optimises the efficiency of a wide range of applications beyond broadcast, Newtec has redefined and extended its professional line of modulation equipment. In the Azimuth and Elevation families, new specific modem types have been defined for applications such as broadcast, telco, WAN, IP trunking or corporate networks. www.newtec.eu



Newtec Azimuth Range

Rohde & Schwarz is adding the R&S XLx8000 transposer family to its product portfolio in the UHF/VHF low-power range. Together with the R&S SLx8000 low power transmitters, these transposers make it possible to flexibly fill coverage gaps. The extremely high level of integration of the equipment provides a very favourable price/performance ratio. The transposer can be converted to a gap filler by means of options. The R&S XLx8000 supports both digital and analogue TV standards. www.rohde-schwarz.com

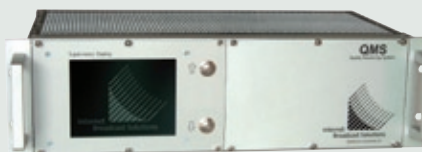


R&S XLx8000 Transposer

Latens BCAS is a next generation, DVB compliant conditional access system designed for operators of broadcast cable, satellite and digital terrestrial networks.

The company claims that it is the first software based solution for networks without an always on return path. Key advantages include low cost of ownership and improved cash flow, dynamic renewability and proven scalability. A full and flexible range of pay TV services and business models are supported. www.latens.com

The QMS from GCS is a compact solution for monitoring DVB based IP networks. Applications range from observing attacks, monitoring of traffic patterns, bandwidth usage and PID statistics. The QMS is based upon a high performance DVB receive hardware and a sophisticated software system providing IP/DVB decapsulation, dissection and storage of metadata of IP dataflows (source and destination IP address, service type, transmitted bytes, etc.) and MPEG transport stream metadata (PID, PSI/SI). www.gcs-salzburg.at



GCS QMS Monitoring System

DVPProbe-C from Pixelmetrix allows cable operators to analyse and verify channel line-up information at the edge of complex cable delivery networks. With on-air content validation, it alerts operators when a channel line-up deviates from the preset configuration. It can also report alarms and other logging information to a central NMS using SNMP or CORBA interfaces, and can be controlled through web browsers or VNC clients. www.pixelmetrix.com

Arabsat is to launch a new broadband IP-based Multimedia Exchange Network Over Satellite (MENOS) service. Developed by Newtec, MENOS takes advantage of DVB-RCS, DVB-S2 and MPEG-2, MPEG-4 standards

to deliver a unique ground breaking satellite based content exchange for Arabsat customers and ASBU (Arab States Broadcasting Union) members throughout the Middle East and North Africa region. www.arabsat.com

SysMedia has launched the 2017 DVB Reference Signal Generator. It provides a complete DVB-ASI output containing teletext, subtitles and MHEG-5 reference test streams as well as video and audio, allowing the accurate testing of set-top boxes and IDTVs. It's packaged with its own video source, multiplexer and modulator so users can connect it directly to the RF input of the receiver under test. www.sysmedia.com

Silicon Labs claims its recently introduced Si2161 and Si2165 digital video demodulators, to be the smallest, lowest power and highest performance demodulator solutions to support DVB-T, DVB-C and fixed reception DVB-H in a single chip. The new devices enable customers to simplify their design and reduce cost by pairing their tuner solution with one of these demodulators for applications such as iDTV, free-to-air or pay TV set-top box receivers, PC-TV add-on cards and DVD/HDD personal video recorders. www.silabs.com



Silicon Labs Si2161/Si2165 Digital Video Demodulators

NetUP Inc. has announced a product for interactive TV called IPTV Combine. This is a complete IPTV solution in one 1U rack-mount server configuration, which includes DVB to IP gateway, VOD server, middleware and billing. The solution is designed for small deployments of up to 500 users, such as for the hospitality industry. The device combines functions of a DVB receiver, decoder, remultiplexer and supports CA modules of various vendors. www.netup.ru



NetUP IPTV Combine

New from Alticast, altiExcite is the next generation channel navigation solution created for VOD, PVOD, NVOD, and other broadcast content that provides mosaic style EPG with instantaneous channel tuning. altiExcite is based on patented technologies and can run in most STB environments. Also new is altiVBM (Viewer Behavior Monitoring) a TV rating solution that gathers and analyses DTV viewers' service usage through digital broadcasting and STB networking. www.alticast.com



ENENSYS NN6-MIP SFN Adapter

The TransCaster mobile TV transcoder (DVB-S2/T to DVB-H/-SH) from ENENSYS combines MPEG-2 decoding, pre-processing, and broadcast quality MPEG-4 and AAC-HEv2 encoding. It supports statistical multiplexing and CAS integration. The company has also introduced SFNGuard, a feature for its NN6-MIP SFN Adapter designed to securize SFN networks by strengthening 1+1 switchover. This innovative synchronisation mechanism ensures both SFN seamless switchover and reliable end user experience. www.enensys.com

The WiMAX MBS Controller from **UBS** enables the transporting and broadcasting of digital video services over existing WiMAX networks. The MBS Controller encapsulates the digital video transport stream into WiMAX MBS frames forwarding them to the ASN Gateway. The main requirement to the MBS Controller is to preserve specific timing components for accurate time slicing and SFN synchronisation on the receivers. The reuse of the existing WiMAX infrastructure speeds up time-to-market and lowers cost. www.uniquesys.com



UBS WiMAX MBS Controller

Motorola has unveiled the latest addition to its mobile TV devices portfolio, the Mobile TV DH02, a personalised TV, multimedia entertainment and navigation device. The new device features a touch screen user interface with intuitive click, drag and scroll icon-based menus. The inclusion of HSDPA/ GPRS back channel support gives mobile network operators the potential to offer rich interactive services to their customer base. www.motorola.com

UDgateway-WANcompress is the latest in the family of network optimisation controllers from **UDcast** for improving IP communication over DVB-RCS links. The controller allows enterprise branch offices connected via satellite, or other wide area networks to work as efficiently as in the LAN environment. It reduces the average bandwidth usage by up to 50 percent and achieves acceleration rates of over 20 times faster than traditional networks thanks to the storage based network compression technology. www.udcast.com



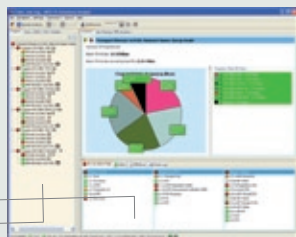
UDcast UDgateway-WANcompress

The new **TANDBERG Television's** RX8300 integrated receiver decoder range is designed to simplify content acquisition for cable, satellite and telco operators in the all digital future of TV broadcasting. The range can provide single or multi-service descrambling, as well as multi-format MPEG-2 and MPEG-4 AVC 4:2:0 video decoding. Additionally, high definition services are down-converted and output as standard definition video; providing a simple and cost effective route to video distribution. www.tandberg.com



TANDBERG Television's RX8300 Integrated Receiver Decoder

The **Tektronix** full set of analysis software for H.264 is now available online as a demo download allowing evaluation of the functionality before purchasing. The MTS4SA software package offers transport stream analysis of MPEG-2 with H.264 content, a software multiplexer and a buffer analyser. www.tek.com



Tektronix MTS4SA Interface

The CMR-8500 DVB-IP Encapsulator by **Comtech EF Data** encapsulates IP data into MPE format for distribution over an ASI. It utilises the latest high speed packet processing technology on an embedded platform. Equipped with two Gigabit Ethernet inputs and dual ASI outputs, it's capable of 155 Mbps throughput and an aggregate of 140,000 pps. Supporting 80,000 simultaneous routes increases network density and maximises the number of clients supported in a single DVB outbound carrier. www.comtechefdata.com



Comtech EF Data CMR-8500 DVB-IP Encapsulator

Verimatrix has launched ViewRight PC Player 2.0, a next generation IP client application with advanced digital video recorder functionality, mirroring the best time shifting features on TVs. Consumers can perform popular trick play functions on live premium IP broadcast streams and record up to four simultaneous programmes. It enables pay TV operators to offer premium content packages across a range of home network devices, while also creating new revenue streams with tiered pricing. www.verimatrix.com



Infineon OMNITUNE TUA 9001

The **Infineon** OMNITUNE TUA 9001 is a highly integrated RF CMOS DVB-H/T Direct Conversion Receiver for mobile and portable applications. The TUA9001 is a multiband RF silicon tuner (VHF, UHF and L-bands for Europe and US) that is amongst the best-in-class for low power consumption, quality and performance. TUA 9001 also integrates all elements of the conventional pre-stage tuner block (LNA and VCO resonators), and an external SAW filter is not required. www.infineon.com

ATEME is introducing Kyrion AS2204, its new multichannel MPEG-4 encoder offering broadcast quality for IPTV operators. This fully programmable and field upgradeable 1 RU encoder provides PiP service generation for each channel and encodes up to 8 stereo pairs with MPEG-2 and AAC codecs. It includes dual IP output for redundancy, SNMP interface for easy integration with a network management system. www.ateme.com




ATEME Kyrion AS2204 Encoder

ProTelevision Technologies has launched the PT2091 Digital Repeater OEM solution based on one Eurocard sized board (100X122 MM) offering the following configurations: PT2091 + PT2761 Tuner: gap filler function (RF input/RF output – ISO channel operation); PT2091 + PT2761 Tuner + PT2791 Echo Canceller: gap filler function (RF input/RF output – ISO channel operation with echo cancelling); and PT2091 + PT2761 Tuner + PT2762 Synthesizer: transposer function with independent setting of input and output frequency. www.protelevision.com



ProTelevision Technologies PT2091 Digital Repeater



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