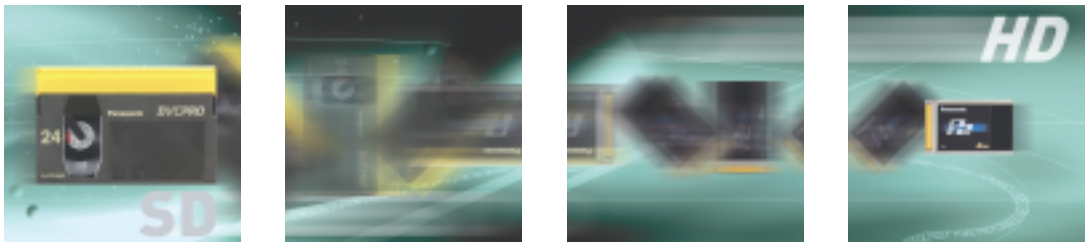
Panasonic

SEPTEMBER 2005

P2 AND HD SPECIAL



FROM TAPE TO IT AND SD TO HD

The benefits of P2 in the migration to HD production

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P2 AND HD SPECIAL

THE CHALLENGE OF A MIXED PRODUCTION ENVIRONMENT

P2 enhances return on investment

HDD5 VTRs in Alfacam's OB truck used at the Summer Olympics in Athens.

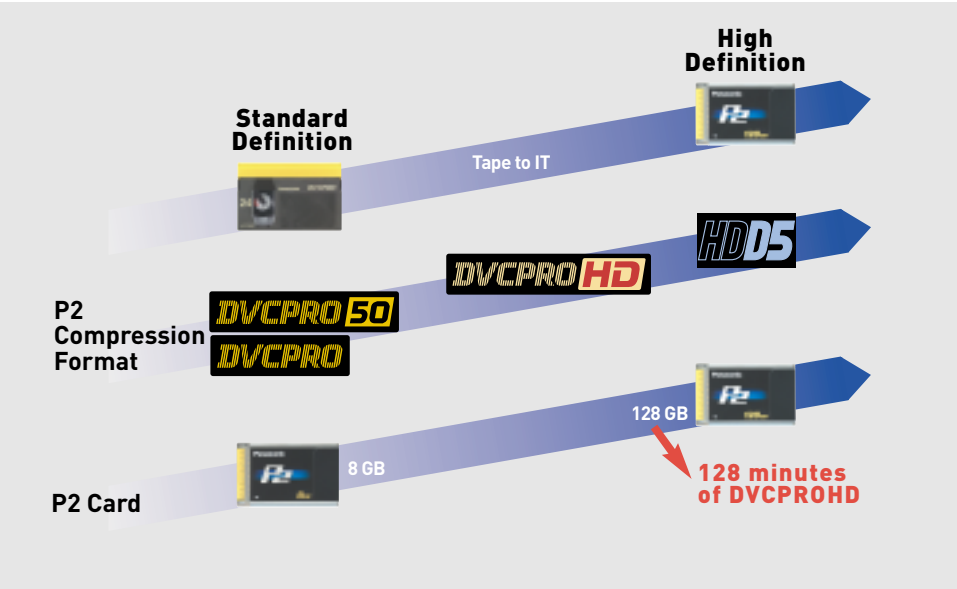
Varicam in use by the Toyota Formula1 team.

Over the coming years, the broadcast and TV production industry in Europe faces a major challenge with the move to HD. The demand for such services is increasing. Major pay TV satellite services such as BSkyB in the UK, Premiere in Germany and Canal Plus in France are already planning to introduce services over the next 12 months. Public broadcasters are set to follow from 2008 onwards. Customers are increasingly aware of and demanding HD content for the growing number of HD-ready flat screen displays, both plasma and LCD, now in homes and offices.

However a key issue for broadcasters is the migration to HD has the potential to increase operating costs while not growing revenue. Only by adopting new IT-based equipment and networks can greater productivity and operational efficiencies be achieved to reduce costs. That is why the introduction of Panasonic's P2 IT-based acquisition system is so important, as it serves the needs of both HD and SD production and provides a powerful platform for operational efficiencies across the whole content creation process.

The migration from SD to HD takes place against a range of major technological issues for the industry. Traditional tape technology is starting to be replaced by tapeless technology in acquisition, although tape will remain an important storage medium for the coming years. HD production

HIGH DEFINITION - TECHNOLOGY DEVELOPMENT



Panasonic provides a range of production solutions for the migration from SD to HD.

standards are still evolving with both interlaced and progressive production enjoying support. HD's large bandwidth requirements and file sizes pose challenges as the industry moves gradually to a networked environment based on commodity IT products.

PANASONIC SOLUTIONS BRIDGE THE WORLD OF SD & HD WITH TAPE & IT SOLUTIONS

A further key element facing media organisations in Europe, is that the move to HD is a migration, not a straight switch. It is a process, which has already started, but in Europe it will likely take some years. Media organisations and production companies face the problem of gearing up for HD production, which is already an important factor in programme sales in certain key global markets, while still keeping the main SD and tape production infrastructure up-to-date and efficient. Potentially this means considerable duplication of equipment throughout the production and post production process, with significant damage to an organisation's return on investment and overall financial performance.

It is in the context of the increasingly mixed SD/HD production environment that Panasonic's P2 DVCPRO IT acquisition system, with revolutionary products such as P2miniCam with both HD and SD acquisition support, is such a key development. P2 bridges the world of SD and HD and provides a clear migration path. The same camera can shoot HD for a documentary one-day and SD on a news programme the next day. There is no need to have separate equipment budgets for SD and HD with understandable concerns about over-investment in capital equipment and under utilisation. P2 allows one investment decision for both SD and HD production. It also allows broadcasters to build on their existing investment in the DV/DVCPRO compression scheme; the most popular digital compressed format in programme production.

ENHANCED RETURN ON CAPITAL DEPLOYED

For senior management, the message of P2 is therefore fundamentally simple. It is one of enhanced return on capital deployed, based on the premise that with P2, two production environments, SD and HD, are served for the price of one. There is no duplication of equipment or surplus investment waiting for the HD market to develop. P2 equipment can be deployed serving current market requirements but ensuring the organisation is fully HD production capable when required.

But the message of increased productivity goes further. It also applies to the way that P2 equipment networks together, in the growing IT broadcast environment. The workflow advantages of P2 compared with traditional video processes are considerable and are a key part of the financial argument supporting investment in P2.

This briefing explores the technical, network and financial issues related to the migration from SD to HD and from tape to P2. It looks at the range of options available for broadcasters and production companies. It examines the workflow benefits which come from P2's IT compatibility and the migration to HD depending on the post production infrastructure in place. It highlights the work of Panasonic's P2 Partners and their development which are further extending the power and flexibility of P2 in the SD and HD production domains.

BENEFITS

Key benefits of P2 migration

- P2 is fully IT compatible and can take advantage of continual developments in high speed networking - MXF compatible.
- P2 can switch easily from SD production to HD production and record on same cards. Current P2 cards are fully SD/HD compatible.
- P2 can record any format: DV, DVCPRO, DVCPRO50, DVCPROHD
- P2 can operate in both progressive and interlace mode both in SD and HD (multi-standard 576 - 720 - 1080).
- Transfer rate of P2 cards is in excess of 640Mbps enabling faster than real time transfers.
- Investment in P2 NOW for SD production will reduce investment requirements for HD production in the future.

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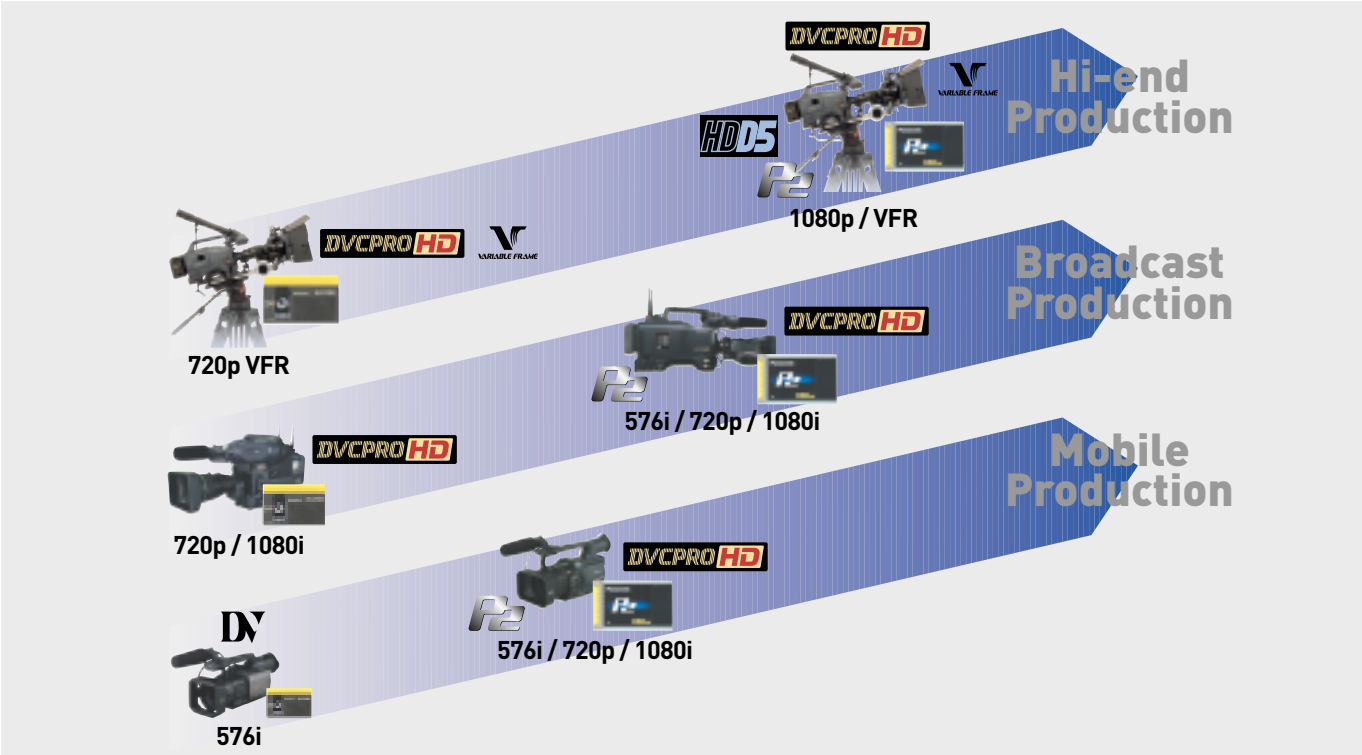
P2 AND HD SPECIAL

DELIVERING CHOICE WITH YOUR MIGRATION STRATEGY

Tape and P2 provide flexible solutions

HD MIGRATION WITH P2 AND TAPE



The migration from SD to HD with tape and P2, is not a single pathway with one route and outcome. In fact there a range of options depending on customers' existing infrastructure and investment plans as well as markets served. For many European broadcasters and production companies over the next few years, there is going to be a mixed production environment of SD and HD as well as tape and tapeless.

Panasonic believes that tape will play an important role in the HD production environment for the immediate future, as new production solutions such as 720/50p will be available in DVCPROHD and HDD5 as a tape based solution. P2 equipment is becoming the main production tool in the SD environment. Building on development trends in the IT sector, P2 is ideally placed to link both legacy investment in tape with new IT operating methods and standards. Looking to the future, P2 will link HD development in the same seamless way.

This ties in with Panasonic's strong belief in giving customers flexibility and choice in equipment configuration and providing long term support. With Panasonic, you can be free to choose the best solution.

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DVCPROHD
is a cost effective plattform for HD production supporting both 1080i and 720p

Varicam has set the standard for HD progressive production.

DV to DVCPROHD

Panasonic provides a clear and logical progression from SD to HD. DVCPRO P2 as well as tape systems support DV/DVCPRO at 25Mpbs, DVCPRO50 at 50Mpbs and DVCPROHD at 100Mbps. The DV signal format is not only a tape format but also an IT file format (.dif) operating on servers. The DV intraframe compression standard, with compression taking place only within the frame not across frames, has made the DV/DVCPRO family, the most popular standard for global production. P2 builds on this powerful legacy.

At NAB, Panasonic announced that it had shipped the 500,000th camcorder and VTR in the DVCPRO family of products (25, 50, 100Mbps). This demonstrates the philosophy of long term commitment and support, which has underpinned its development over the last 10 years. Customers using DV and DVCPRO have been provided with a clear production pathway in SD production from 25Mbps to 50Mbps and now to HD at 100Mbps. DVCPROHD VTRs can play back cassettes from DV at 25Mbps right the way through to DVCPROHD at 100Mbps including DVCAM.

DVCPROHD is therefore both a tape and a tapeless format. It provides a cost-effective platform for HD production capable of supporting both 1080 lines and progressive HD standards, such as 720/50p. DVCPROHD has benefited from major partnership development by other companies ensuring strong support across leading NLE manufacturers.

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DV
DVCPRO
DVCPRO50
DVCPROHD

Delivering choice with your migration strategy

(continued)

New P2 products including
P2minicam, P2 Store and 8GB card.

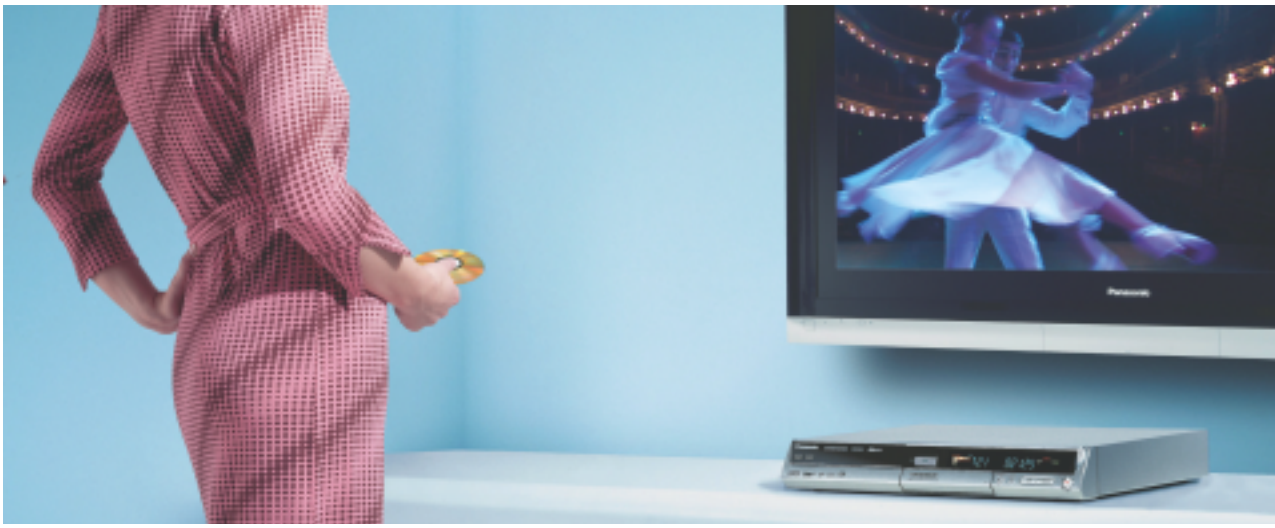
This is highlighted by the further development by Apple, Avid and Canopus of the IEEE 1394 interface for the HD environment. The IEEE1394 interface has become an industry standard for high speed digital transfer of DV content between devices without generation loss. The same IEEE1394 interface has been developed further for HD content with 100Mbps, and its introduction has helped lower the cost of HD post-production.

Tape to IT production

The world of HD production is currently dominated by tape-based recording systems and tape will remain an important storage medium in HD production. Panasonic, for example, is a major provider of leading HD tape solutions with its HDD5 VTRs which are the global standard for HD programme mastering and interchange as well as the DVCPROHD range of cameras and studio VTRs.

By 2010, a single P2 card will contain around 128GB of storage, capable of recording 128 minutes of DVCPROHD

However the introduction of P2 is set to change this and over the coming years the world of HD will follow the SD environment and increasingly move from a tape to a tapeless environment. By 2010, a single P2 card will contain around 128GB of storage, capable of recording 128 minutes of DVCPROHD content. As P2 memory cards double each year from the present 8GB by the end of 2005, so the take-up of tapeless acquisition solutions in the SD/HD production environment will grow rapidly.



Progressive & Interlaced - 720 & 1080

Both interlace and progressive HD standards are popular in HD production and both standards are supported strongly by Panasonic with P2 and with tape products. The recently announced P2miniCam (AG-HVX200) supports both 1080i and is the first Panasonic camera to support the emerging 720/50p progressive standard.

Modern flat screen displays such as plasmas or LCDs are best suited to showing progressive signals

Although 1080i is currently the leading HD production standard, this market position was strongly influenced by early HD adopters in the USA and Japan, where progressive technology was not available initially. However the position is changing and there is growing support for progressive production round the world, particularly in Europe, where 720/50p and in the future 1080/50p are proposed production standards.

One of the keys to the growing support for progressive production is that modern flat screen displays such as plasmas or LCDs are best suited to showing progressive signals rather than interlaced. Research by the BBC and Swedish Television has confirmed that for European consumers, 720p pictures in the home on large screen displays, are the best solution for the typical domestic configuration (2.8m from the screen).

Panasonic's strategy with HD production is to provide both interlace and progressive production options and allow the customer to decide the right format which will be supported by HDD5 or DVCPROHD such as 720/50p.

Panasonic has pioneered progressive production both in the SD and HD domain. Cameras such as the SDX900, Varicam (AJ-HDC27FE) and now the new P2miniCam (AG-HVX200) provide powerful cost effective opportunities for progressive production.

Panasonic has also indicated its support for 1080/50p production equipment in the future highlighting the format transparency and capability of P2 as a recording media for future and emerging HD production standards.

DV
DVCPRO
DVCPRO 50
DVCPRO HD

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P2 AND HD SPECIAL

ENHANCING WORKFLOW

How P2 increases productivity in SD and HD content production

P2 acquisition is helping transform traditional workflow processes.

Improved workflow is seen as fundamental to the increasingly competitive media environment. The move to IT-based networks is seen by many, as essential to the new workflow strategy based on team working, multi-tasking and re-purposing of content to serve multiple outlets. The broadcast and production industry is moving towards an IT-based approach to production and storage, away from traditional, linear and proprietary video networks.

This briefing looks at various workflow scenarios for SD and HD production and how P2 enhances the production process. These include:

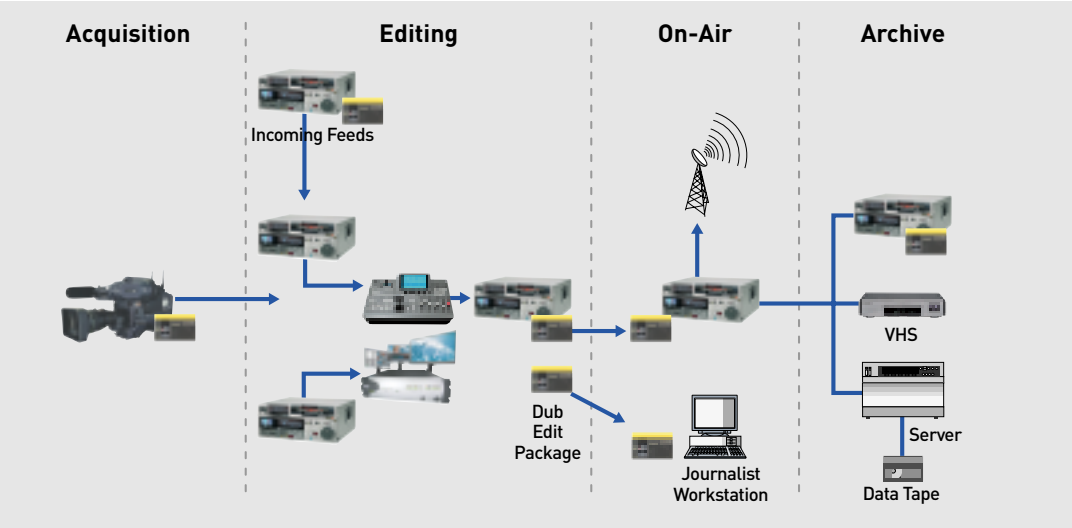
- **Scenario 1.**
  Tape based operations in acquisition and production
- **Scenario 2.**
  Tape post production with IT acquisition
- **Scenario 3.**
  Tape acquisition combined with IT post production
- **Scenario 4.**
  Complete IT production workflow in acquisition and post production

Whether in SD or HD, the migration to new operational procedures is highlighting the traditional production roadblock from acquisition to post production. Moving acquired programme material quickly, accurately and safely into the overall production system, monitoring and recording its progress throughout the production process remains a key issue.

Many broadcasters still have tape-based legacy operations which need support in the migration process

That is why Panasonic's P2 is so important to the plans of many broadcasters, developing and implementing integrated SD/HD digital production networks. With P2, programme material can be transferred rapidly on to the network, with no need for digitisation, and as an industry standard MXF file format.

All these features make P2 the most IT-compatible acquisition system currently available and ensure that it is a key technology in creating the wide area content production networks which broadcasters are planning.



Scenario 1: Tape based production.

SCENARIO 1.

Panasonic supports the migration process

Tape based operations in acquisition and production

The traditional tape-based environment with a linear workflow from acquisition through post production to archiving is becoming less common, but it is still a production environment which Panasonic supports strongly. Many broadcasters still have tape-based legacy operations which need support in the migration process.

While SD has made major strides in the adoption of IT-networks, the HD production environment remains strongly influenced by tape, although this will start to change. In acquisition and post production, Panasonic tape solutions are well placed to serve the growing HD market. For many broadcasters and media organisations seeking to move into HD production, particularly in an initial limited way, then tape provides a cost effective and efficient route and Panasonic is well placed to provide a range of production solutions.

Panasonic has a strong range of tape-based acquisition solutions from 25Mbps to 100Mbps and from DVCPRO, DVCPRO50 to DVCPROHD which serves demand for both 1080 and for 720 production. These are supported by a wide range of studio and editing VTRs covering all applications for SD and HD production. While Panasonic's HDD5 remains an industry standard for programme mastering and interchange, linking the world's of film and TV production and supports the upcoming demand for 720/50p.

The basic workflow environment, (Scenario 1), is typical of the SD/HD configuration which P2 could easily interface to and help in the migration process. As the recently introduced P2miniCam (AG-HVX200) highlights, with both tape and tapeless storage, Panasonic believes the interface between tape and tapeless media is going to be a key area of workflow interface over the next few years. The company will be developing products to handle these requirements in the SD and HD environment. (Scenario 2 next page)

HDD5 is an industry standard for programme mastering and interchange.

The interface between tape and tapeless media is going to be a key area of workflow

How P2 increases productivity in SD and HD content production

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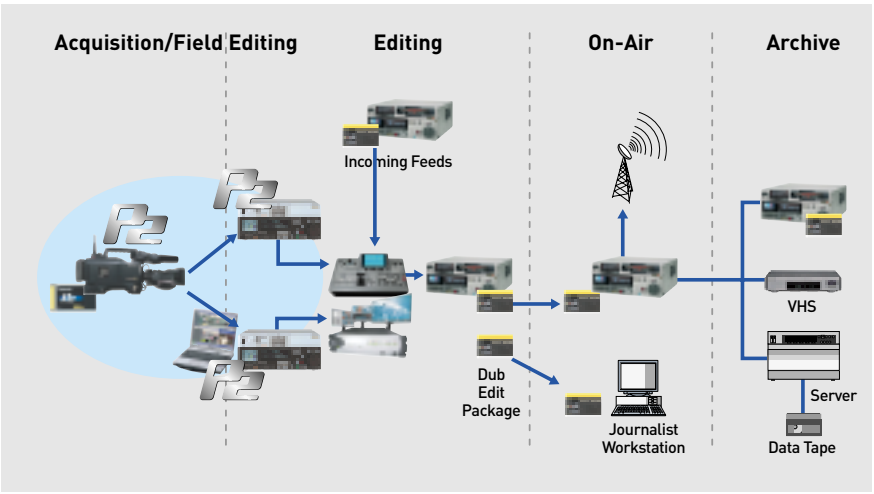

Scenario 2:
IT acquisition combined with tape production.

SCENARIO 2.
P2 - Speed and reliability in acquisition
IT acquisition combined with tape production

News and sports production are typically the first areas of SD content to move to tapeless acquisition because of their scale of production operations which can gain maximum advantage from workflow improvements combined with rapid speed-to-air requirements. Scenario 2 illustrates a network configuration for a media organisation seeking to make an immediate impact to speed-to-air by investing in IT acquisition.

This application is targeted by Panasonic's P2 camcorders such as the AJ-SPX900, AJ-SPX800, AJ-SPC700 and the AG-HVX200 first shown at NAB this year with both 1080i and 720p HD capabilities and with SD tape support. In this workflow scenario (Scenario 2), the acquisition process, based on P2, has a number of important workflow advantages over tape operations. These are:

P2 has transformed acquisition workflow.

- The P2 cards can be read directly by the laptop editor while on location via the PCMCIA slot allowing review of content and initial sort and even editing.
- P2 cards are hot swappable so that content from one card can be downloaded while the other is recording. 640Mbps fast transfer rates ensure that the download process is always quicker than recording.
- Content can also now be downloaded in the field into P2 Store, a compact 60GB ruggedised hard disk. P2 Store holds 120 minutes of DVCPRO50 and 60 minutes of DVCPROHD content. Via the USB2.0 interface, this can be reviewed by a laptop editor in the field.
- Content can be saved as separate files at the camera head including browse quality versions (MPEG4).

In this scenario, content is transferred back to the TV station where it is played into the tape based editing infrastructure via the P2 Deck. This has VTR-like functions and can play clips directly to air. It also includes standard video and control interfaces for edit control in a tape environment.

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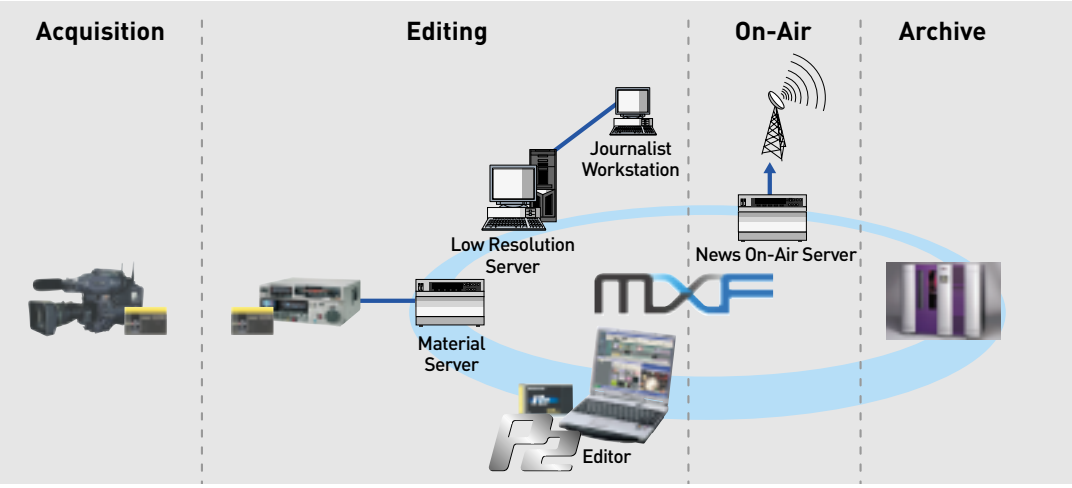
DVCPRO P2 Technology Partners have migrated the DVCPRO compression scheme extensively into the IT production environment



Scenario 3:
Tape acquisition combined with IT production.

SCENARIO 3.
DV/DVCPRO efficiency in acquisition and post production
Tape acquisition combined with IT production

A more typical configuration in the SD environment, is that the post production process including archiving has moved towards an IT-based network while the acquisition process is still tape based.

This scenario highlights the importance of the work by the DVCPRO P2 Technology Partners which together with Panasonic, have migrated the DVCPRO compression scheme extensively into the IT production environment running across servers, edit workstations and newsroom systems.

One of the current problems with this scenario is the time taken to get tape based content acquired in the field onto the server-based network. The process of digitisation can be lengthy and is typically slower than real time. One of the real benefits of combining IT based acquisition with IT based production is this process is no longer required, allowing faster than real time transfers.

(Scenario 4 next page)

News operations round the world are using DV/DVCPRO tape acquisition.

Foto: Bengt O Nordin

P2 AND HD SPECIAL

How P2 increases productivity in SD and HD content production

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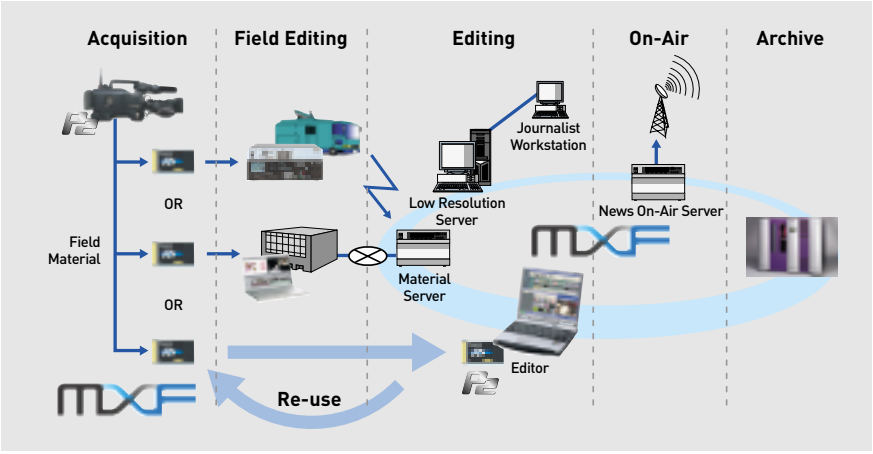

Scenario 4: Complete IT production workflow with MXF.

Expanding range of P2 products.

MXF at the camera ensures content is tracked throughout the network

SCENARIO 4.
P2 - enhanced productivity throughout the whole production process

Complete IT production workflow in acquisition and production with MXF

With the combination of an IT network right the way across all operations - acquisition, production and archiving - broadcasters and media organisations are in a position to gain significant extra flexibility and productivity in their operations.

A key element in this process is that content at the P2 camera head can be immediately identified as MXF. This means that all the data required by the station's content or media management system to track it through the various stages of production and storage is immediately in place. In the case of P2, this is via a MXF "wrapper" round the DVCPRO .DIF file structure.

In effect, with the IT capabilities of P2, the station's network has extended into the heart of field operations. This provides a control and access to content which allows greater team working, so vital when serving multiple programme requirements and distribution outlets.

In this scenario, the flexibility of P2 is highlighted with a range of field operations, all feeding content into the station and all content ready for immediate access by the production process. These include:

- Field editing P2 content on laptop editing system and MPEG4 content sent back as low resolution copy over broadband links for immediate access to review and edit content prior to delivery of full bandwidth content.
- Field operations with mobile truck and P2 content played back to station over SNG or microwave links.
- P2 card or hard disk sent back for editing and memory devices recycled.

The combination of IT-based acquisition and production is the migration target for many media operations. But it is early days for the adoption of IT networks across both acquisition and production. However the evidence from early adopters of P2 such as Danish Broadcast is that IT acquisition makes a significant contribution to the overall productivity of network based production.

P2 enables instant editing on location.

KEY WORKFLOW ADVANTAGES

- No ingest time. When a P2 card is inserted into a laptop computer's PCMCIA slot, it can be instantly recognised as a mounted drive. This permits instant editing or network transmission operations to take place, and there is no longer any need to spend time for "digitising" or "ingesting" prior to editing.
- Direct editing on the card. The P2 card containing programme material can also be used for direct editing with no need to transfer material onto the laptop. This means that the journalist in the field using a standard laptop can start editing immediately with no need to load up.
- Random access of material. Unlike tape, the P2 card provides random access allowing rapid search of material either at the camera head, P2 deck or laptop editor.
- Always ready on location P2 products offers continuous, pre-recording and loop-recording, so that a news crew has much less chance to miss an important event, and there is no waiting for scanners or media to spin-up prior to recording.
- Create browse video versions at camera head. P2 allows browse video as MPEG4 to be created at the camera head for review on PDA, laptop or distribution back to TV station.
- MXF at the camera head. The file format industry standard, MXF, is "wrapped" round the DVCPRO DIF file format at the camera head. This means that the file can immediately be recognised and tagged by newsroom and digital archiving systems.
- Additional connection to IT environment. Provision of IEEE 1394 and USB2.0 digital data interfaces on the camera supports in-field non-linear editing using existing laptop editing solutions and provides a path for supplemental hard disk recording or videotape dubbing directly from the camera.
- Rapid transfer rate onto network. At a lightning fast 640Mbps, P2 files can be quickly transferred onto the network. With some broadcasters archiving all material at the station prior to editing, then P2 offers massive time saving compared with current tape solutions.
- Marking key file scenes. The camera operator can mark at the camera head the key files and scenes with icons to help production staff back at the station identify crucial scenes so saving time in post production.
- Play list function. A unique feature of the P2 deck is the play list making function. The P2 deck can be a simple non-linear editor when cuts-only editing is required. The user simply inserts up to 5 P2 cards in the PCMCIA card slots of the P2 deck, and uses the "Mark IN" and "Mark OUT" buttons to create a play list just as linear editing does today. The P2 deck becomes a simple non-linear editor with linear-like operation, and the P2 deck can play the edited content according to the play list as baseband video and audio, or as a file transfer from the Ethernet port to the server.

A GROWING PARTNERSHIP

P2 Technology Partners speed the flow of content across the network

P2 delivers additional workflow benefits when implemented across the network

Panasonic has been working with leading companies in the digital media sector to bring the benefits of P2 IT acquisition, both in SD and HD to a wide customer base. P2 delivers additional benefits and productivity when implemented across a network, and Panasonic has been working with Partners whose products and technologies transform the networked content production environment.

Panasonic is working currently with over fifteen Partners including - Avid, Apple, Canopus, Dalet, Dayang, EVS, Focus Enhancements, Leitch, Microsoft, Omneon, Pinnacle Systems, SGI, Telestream, Thomson/Grass Valley and Quantel.

Each of the Partners highlight the key areas of their P2 development work and the benefits these are bringing to the networked production environment.

APPLE

Apple has enjoyed a long collaborative relationship with Panasonic which has delivered many industry firsts such as bringing FireWire technology to their DVCPRO50 and DVCPROHD tape decks, and real-time, native support for DVCPROHD in our Emmy award-winning Final Cut Pro video editing software. Apple are now working with Panasonic to usher in the new era of lightning fast tapeless SD and HD workflows. Final Cut Pro HD includes native support for P2 which allows editors faster than real-time ingest whether they're in the field working on a PowerBook G4 or back in the edit bay. The combination of Final Cut Pro HD and P2 brings new levels of flexibility, reliability and performance to the broadcast customers' workflow.

AVID

Panasonic's P2 format - combined with Avid® editing solutions - is transforming the industry and how customers approach media acquisition. The benefits that can be achieved once material is acquired in a new medium like P2 are tremendous. Since Avid users can read media directly from a P2 card, they are able to use material in Avid timelines and work directly with that material - saving precious time and money.

For example, with a laptop installed with Avid NewsCutter® XP software, Avid users can access the P2-acquired material directly, without importing into the Avid interface and begin editing immediately. This process eliminates the need to move or ingest the media, and to shuttle from the beginning to the end of a tape. In the studio or a broadcast facility, P2 cards support very fast transfers, which means that media can be moved quickly into a shared storage environment such as Avid Unity™, where everybody can have simultaneous access to that material.

It is easy to see how the P2 technology fits into Avid's workflow: from field editing, to shared storage, to asset management and playout. Avid and Panasonic will continue to build on interoperability that will further benefit customers with improved workflows and reduced costs. P2-compatible editing products from Avid - NewsCutter, Media Composer® Adrenaline™, and Avid Xpress® Pro - are available to customers now.

P2 global partnership.

CANOPUS

The partnership between Panasonic and Canopus started more than two years ago when Canopus HD nonlinear systems added support for DVCPROHD and DVCPRO50 formats for real-time HD resolution editing. At last year's NAB, Canopus announced the HQ video codec for HD real time editing, which supports variable bit rate encoding in order to maintain high image quality while lowering the data bandwidth for better real time editing performance. In addition, Canopus' EDIUS editing solution, with its real time multi-format mix of editing support for HD/SD resolution files, has received acclaim from many broadcast stations around the world. EDIUS, together with Canopus' HD editing hardware, allows real time editing of P2 format clips together with real time preview of the project on an HD monitor, via an HD-SDI output.

canopus

Canopus editing systems will allow broadcast stations to mix tape content and P2 content in both HD and SD

Many users are anticipating the arrival of P2 equipment that will support the DVCPROHD format. P2 cameras and decks that support the DVCPROHD format, together with Canopus editing systems, will allow broadcast stations to mix tape content and P2 content, in both HD and SD resolutions and frame rates, and edit in real time, all in one project.

DALET DIGITAL MEDIA SYSTEMS

Dalet, a developer of enterprise wide news production and automation solutions, works closely with Panasonic to fully leverage the benefits offered by P2 technology. The faster-than-real-time transfer of field content offered by Panasonic's P2 acquisition products, conquers one of the remaining bottlenecks in getting news to air. This cutting edge technology combined with the integrated, 'log-on-anywhere' capability of Dalet's news production and automation tools, offer broadcasters a true "next-generation" news production environment. In addition, P2's support for MXF metadata acquisition perfectly complements Dalet's integrated video browse and archive tools, allowing for the effective cataloguing and fast retrieval of broadcasters' growing library of digital video assets.

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dalet

P2 Technology Partners speed the flow of content across the network

(continued)

DAYANG

Dayang Technology Development Inc is China's leading developer of broadcast-quality digital solutions for video editing, archiving and networking. Dayang, Panasonic and Central China TV have signed an agreement selecting P2 technology and Dayang products for the development of the CCTV Economy Channel.

EVS BROADCAST EQUIPMENT

EVS's new MediaXchange and CleanEdit Non-linear system now ensure complete compatibility and interoperability with the popular P2 format in SD as well as in HD.

MediaXchange offers an easy to use interface that allows P2 material to be used on the EVS XT series Servers. The pictures are quickly available on the EVS Integrated Production system (IPS). MediaXchange keeps the process simple by transparently taking care of file formats or codec conversions.

The P2 files are loaded with the CleanEdit Media Importer, which allows users to give a description, choose a category and sub category of the mentioned clip for easy indexation into the CleanEdit database. The thumbnail view within the media importer eases the process. There is no need to wait for the ingest to finish and the acquired P2 material can be mixed into the CleanEdit time line with different formats.

The P2 drive connects to any workstation in the CleanEdit network. The CleanEdit Suite, built on the renowned EVS technology, is a nonlinear production system for news and sports that provides you with a complete solution from ingest to play out, with an efficient and intuitive Graphical User Interface (GUI).

FOCUS ENHANCEMENTS

Focus Enhancements offers solutions for the entire video production workflow including acquisition, conversion, production, processing, play-out and digital asset management.

Focus Enhancements is pleased to announce the latest member of the FireStore family of Direct To Edit (DTE) recorders, FS-100. The lightweight, battery-powered and portable FS-100 has been designed specifically for use with the new Panasonic AG-HVX200 DVCPROHD camcorder. With FS-100, it is possible to record DV, DVCPRO, DVCPRO50 or DVCPROHD streams via the camcorder's FireWire port direct to disk in the Panasonic P2 file format extending the AG-HVX200's DVCPROHD continuous record time to about 100 minutes. Files recorded to FS-100 can be immediately used in applications that support the P2 file format. When in DV or DVCPRO mode, recordings can be in any one of 10 Direct To Edit native NLE file formats for immediate use in DV NLE systems.

The combination of the Panasonic AG-HVX200 DVCPROHD P2 hand-held camcorder and the Focus Enhancements FS-100 DVCPROHD Direct To Edit Recorder will set a new standard for high quality, extremely affordable, portable HD acquisition. FS-100 is expected to be available in Q1, 2006.

LEITCH TECHNOLOGY

Leitch is partnering with Panasonic to add support for its popular P2 tapeless acquisition systems and MXF. The P2 and MXF initiatives are an integral part of functionality on Leitch's advanced NEXIO shared storage video server family and NewsFlash and NewsFlash FX non-linear editors for news. P2 integrates the workflow by enabling field content to be quickly moved into NEXIO shared storage for either further repurposing or direct play-to-air. Once content is in the NEXIO system, it can be edited and played out without copying or moving content from the common storage system. Panasonic's use of MXF fits perfectly with Leitch philosophy of supporting open standards, which benefit both end-users and manufacturers, by allowing content to be easily interchanged.

MICROSOFT

The combined strength of Panasonic's P2 and Microsoft Connected Services Framework for Broadcast and Film, allows broadcasters to realise the promise of 'seamless integration' by leveraging powerful Web services and industry standards such as XML to connect once-disconnected islands of information and enable an all-digital content workflow.

Microsoft Connected Services Framework enables dynamic workflows for the creation, management, billing, scheduling and delivery of digital content, while taking advantage of existing IT investments. By connecting Panasonic's P2 with Microsoft Connected Services Framework, customers can now automatically connect content captured and logged in the field and integrate with back-end applications, saving them significant time and money.

OMNEON VIDEO NETWORKS

As a leading provider of cost-effective and flexible networked media servers, Omneon Video Networks is working to support Panasonic and the P2 community. Omneon has embraced MXF, and enhanced the Omneon Spectrum™ system to capture, store and playout MXF files natively. Designed from inception to be format independent, the Omneon file system requires no changes in order to support this common format. Omneon looks set to play an important role in the revolutionary workflow enhancements enabled by P2. In the near term, that means receiving files directly from MXF edit systems such as the Avid Newscutter and the Apple Final Cut Pro. It also means seamlessly integrating with the Telestream FlipFactory in direct convert mode for pristine and faster-than-realtime transfers. And in the future, broadcasters will be able to transfer native P2 files into the Omneon media server for direct playout to air.

PINNACLE SYSTEMS

Pinnacle's leading real-time graphics, editing and content delivery products work together to help broadcasters craft their unique visual identity and efficiently deliver highly competitive programming. All of the new broadcast configurations of Liquid version 6 include native support for P2. Liquid supports high-speed ingest from P2 media, as well as editing directly on the P2 media itself.

Liquid also supports direct writing of edited video footage back to P2 media. Liquid's "SmartEDIT" technology allows P2's MXF / DV / DVCPRO 25/50 based video format to be edited natively, without the time-consuming and quality-deteriorating transcoding steps required by other editing systems. When combined with Liquid's new real-time CPU and GPU-based effects technology, advanced audio processing engine and seamless networking

(continues next page)

B E N E F I T S

P2 Partner products include:

APPLE
- Final Cut Pro

www.apple.com

AVID
- NewsCutter® XP
- NewsCutter® Adrenaline™ FX
- Media Composer® Adrenaline™

www.avid.com

CANOPUS
- EDIUS HD/SD/SP/NX

www.canopus.com

DAYANG
- D3-Edit
- DP-Edit

www.dayang.com.cn/

EVS BROADCAST
- CleanEdit

www.evs.tv/

FOCUS
- FS-100 Recorder

www.focusinfo.com

LEITCH
Products Supporting P2
- Nexio NewsFlash
- Nexio NewsFash FX

www2.leitch.com

PINNACLE
- Liquid Broadcast
- Liquid Chrome HD
- Liquid Blue

www.pinnaclesys.com/broadcast

QUANTEL
- sQ™ Edit Plus

www.quantel.com

TELESTREAM
- FlipFactory
- MAP
- Launch

www.telestream.net

THOMSON GRASS VALLEY
- NewsEdit LT/SC/XT

www.thomsongrassvalley.com

P2 AND HD SPECIAL

P2 Technology Partners speed the flow of content across the network

(continued)

capabilities, broadcast editors benefit from a "frictionless" environment in which less time is spent waiting, and more time is spent actually editing.

Broadcast configurations of Liquid version 6 with native P2 support, including Liquid Broadcast, Liquid Chrome HD and Liquid Blue, are now available.

QUANTEL

Quantel news and sports production systems are at the forefront in speed to air. The addition of P2 into the workflow only adds to the efficiency of the system. From the cost effective Newsbox tm News to Go series, all the way up to the hugely scalable and flexible sQ™ integrated production systems with thousands of hours of HD and SD online capabilities, Quantel takes great pride in the continuing collaboration with Panasonic in the streamlined process of implementing P2 media.

SGI

SGI offers IT infrastructure capabilities and professional services for the broadcast market, in particular in the news area where speed to air and content management are key demands. SGI offers central storage and archiving solutions which correspond to customer workflow. SGI is working to integrate P2 in workflow solutions for customers all over the world. In particular, the OP-Atom (P2) capability adds significant benefits for editing and workgroup control as SGI integrates this smoothly into a SGI suitable archiving and transport mechanism employing Op 1-a.

TELESTREAM

Telestream's FlipFactory® automatically converts and transfers media and metadata files between virtually all the leading digital formats and professional devices. This integration enables instant, high-speed file-based access to Panasonic P2 content by a wide range of systems, including nonlinear editing systems, media servers, and storage devices. Panasonic's P2 solutions bring reliable, tapeless, high-capacity and high-speed data transfer to broadcast news acquisition. Adding Telestream's Launch™ IP media delivery software application to the mix, gives news organisations an efficient IP-based transmission solution. The end result eliminates the need to transport physical media, and provides an automated file-based workflow from news acquisition to remote laptop editing and ingest to newsroom systems at the central facility.

THOMSON GRASS VALLEY

Thomson and its full range of Grass Valley products offer the most comprehensive, multi-format solutions for acquisition, production, storage and playback. As part of this broad capability, the Grass Valley Digital News Production solution encompasses the entire news production process. This includes; field and studio editing, including capture from the P2 card and playback and trimming to local disk at the journalist's laptop or desktop, through low resolution edit decision list creation, to flexible and reliable server playout of finished material. Newsrooms are using this functionality right now: editing directly from P2 cards using NewsEdit version 5.1.

Panasonic
ideas for life

PROGRESSIVE CENTER

European Partnership for progressive production

Panasonic has formed a Europe-wide partnership to educate and promote the use of progressive production both in HD and SD. Known as Progressive Center, the partnership brings together production personnel, specialist camera rental companies and Panasonic companies.

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