# EBU Village

## — at IBC 2001

**Roger Miles**
*EBU Technical Department*

It was an almost perfect silence, it was extremely eerie, and it seemed to go on for much longer than the allotted three minutes. At 12:00 noon on Friday 14th September 2001, the whole of the RAI Exhibition and Congress Centre in Amsterdam paid its respects to the victims of the terrorism inflicted on North America earlier in the week. At 12:03 p.m., the doors opened, the tannoy announced that IBC 2001 was open for business and the first of a steady (if somewhat reduced) stream of visitors entered the halls.

The 2001 EBU Village occupied the same spot in Hall 10 (Deltahal) as the previous year, except that it was much larger, at 230 square metres: it was generally agreed that the stand layout was much better than in 2000. The stand builder was again Global Dimensions Inc. of California, the satellite dishes on the roof were installed by Mainstream-dss of the Netherlands, and the DLP large-screen TV prototype was very kindly furnished by Texas Instruments UK.

The residents were, clockwise from the SE corner: BBC R&D, Eurovision Network Services, YLE, RAI CRIT, DigiTAG, P/Meta and the IRT. At the centre of the stand was the EBU's Communications Service, representing the corporate Union and EBU Publications.

An absentee from the Village this time around was TDF which had originally booked space. Unfortunately, they had to withdraw at a fairly advanced stage of planning, when nothing better than some potted *Ficus* and a table with chairs could be set up to replace them.
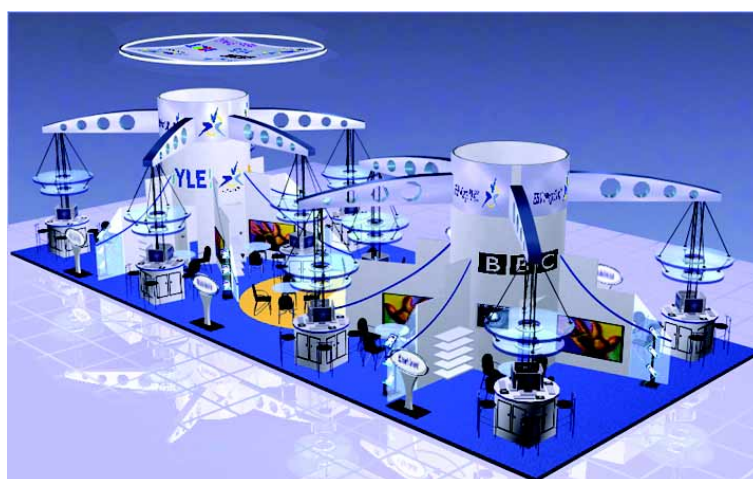


**As the computer saw it ...**



**... and the reality**

## BBC R&D

Those frightfully clever chaps (and at least one lady, I noticed) from Kingswood Warren were back, perambulating through Deltahal with their new and greatly improved Low Delay DVCPRO Digital Radio Camera – showing complete immunity to interference and picture loss.

This year's model was, as its name suggests, based around DV compression, rather than last year's MPEG model. The COFDM circuitry had been further integrated and made lighter (but I promise you that carrying it around on the same shoulder non-stop for 40 minutes does make you aware that there must be more scope for weight saving – helium-filled lens packages for instance).



**Partially-undressed COFDM camera**



**That's business!**

## EBU Network Services

Paolo Pusterla, Claude Stoffel and Manon Piers de Rave-schoot were on hand to handle the marketing of commercially-available Eurovision capacity. Many an intense but friendly-looking conversation took place around the marketing table and, being business people, they had the thoroughly enjoyable idea of hosting a drinks and finger-food event one evening. An excellent time was had by all – and it also provided an opportunity for more business to be discussed. They even ran out of Eurovision-coverage wall maps!

## YLE

At 3 pm on 27th August 2001, YLE started up five national digital DVB-T channels with coverage of about 70% of the country. By the end of 2006, this coverage will increase to serve 99% of the Finnish audience. Finland is the first country in the world to support the open programming DVB MHP (DVB Multimedia Home Platform) at a national level. As the national broadcaster in Finland, YLE has been at the forefront of developing MHP applications and testing MHP receivers.

Several of YLE's MHP applications have been translated into English for wider testing in Europe, and some of these were on show at the EBU Village. Whilst the Pacman® game was definitely for old time's sake, and testified to the



**The YLE team**

mis-spent youth of YLE's developers, the programme-related information that could be called up over video was a far more serious affair.

As an example, Finnish Parliamentary coverage could be enhanced by calling up biographical information on the Members, their political backgrounds, voting histories etc., and as if that weren't enough to excite interest in democracy, political trivia competitions were just a remote-click away.  Instead of Parliament, think of news, motor racing, cookery, golf, natural history and advertising – in reality, any genre that could be enhanced with a bit of timely background information, available when the viewer needs it – and you can see the ready utility of the application.
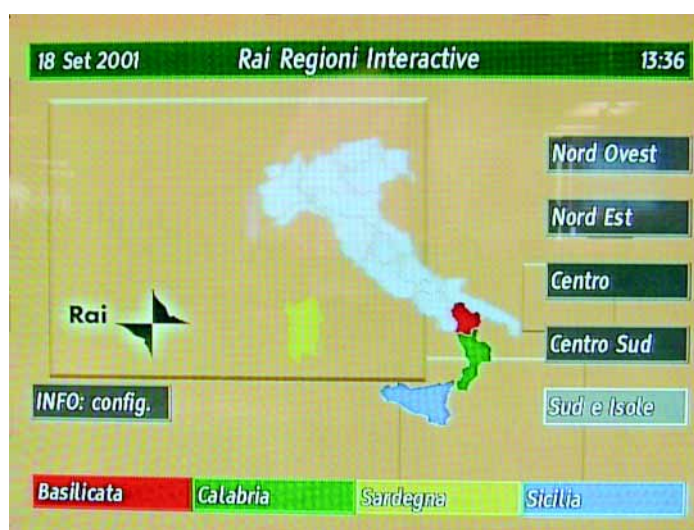
Hand in glove with serving up multimedia and interactivity comes the need to make and manage the stuff in the first place.  YLE had on display a tool called Delta, which is an integrated content-authoring and publication application, targeted at MHP SuperTeletext, Teletext and the Web.  Delta can be used to author simultaneously for each publication channel, and it can accommodate secure use over Internet Virtual Private Networks.  Hence, the work can be done from the location of whatever event is being covered, from anywhere in the connected world, not to mention *home teleworking*.  Where do I sign up to become an MHP author?

## RAI CRIT

The real RAI – Radiotelevisione Italiana, Centro Ricerche e Innovazione Tecnologica (even technical words turn out musical in Italian!) – had four different exhibits at the Village.  All of them worked this year, thanks to only having 50m or so of satellite feed cable in the circuit (rather than the 170m we had to contend with last year).

The first demo, a system called ANTS (Automatic Newscast Transcription System) automatically documents news programmes using speech transcription, shot detection and key-frame extraction as some of the mechanisms used in the metadata generation.  In a busy news environment, the first thing you need to do is to identify and classify the content of all news clips entering the newsroom.  If this can be reliably automated, a very large overhead is removed from journalists' workloads.

RAI's second demo was the prototype of a Carousel Manager, which had nothing whatever to do with fairground rides.  The object was to generate a local "macro-regional" news programme, derived from RAI's regional news satellite channel which itself contains 20 regional TG3-R news programmes.  This news channel consists of five regional carousels (each comprising four local news channels) statistically multiplexed into a 10 Mbit/s DVB-S channel on the Eutelsat Hotbird satellite.  The Amsterdam demo showed how an automated workstation in Turin could manage the carousels, and could be made to grab one (or more)



**Interactive macro-regional TV programming**

of the regional news segments in the carousel, encode it in MPEG-2 and deliver it (to Amsterdam) using satellite file transfer.

Metadata and MHP reared their heads in RAI's third demo.  A sample MHP application enabled control of a PVR (a set-top box with integrated hard-disk video recorder) so that it was possible to view captured content on the hard-disk in any user-preferred sequence, operating on the metadata contained in the recorded content.

Last but not least, and certainly the easiest demonstration to set up, was a DVD presentation of the results of tests carried out on four video watermarking systems by the EBU's N/WTM project group.  The tests investigated the systems subjectively, objectively and from a robustness viewpoint.

## DigiTAG

The Digital Television Action Group (DigiTAG) had the bit of the EBU Village overlooking the coffee and sandwich bar. People waiting for refreshment consequently had plenty of time to notice not only the fascinating array of DVB equipment on the stand, but also the goldfish bowl (??) filled with DigiTAG ballpoint pens. Between them, Ed Wilson and Nicole Frey managed to keep a firm grip on all of the DVB equipment, but the pens disappeared as fast as the goldfish bowl could be replenished – until the supply ran out on day three.

That apart, the stand hosted the first commercially-available integrated DVB-S MHP-equipped widescreen TV, courtesy of Sony, and a couple of utterly desirable DVB-T toys. The first of these was the TechnoTrend DVB-T PC adapter which plugs into the USB socket of a PC to allow reception of terrestrial digital channels. The second was the HiTop prototype DVB-T portable widescreen TV.



**Ed Wilson guarding his goldfish bowl**



**TechnoTrend DVB-T PC adapter**



**HiTop DVB-T portable TV**

## P/Meta



**P/Meta chairperson, Carol Owens, driving the demo**

P/Meta is an EBU project group whose plain and simple credo is "P/Meta enables metadata exchange". At first sight this appears childishly facile. At second sight you realize what an incredible task they have succeeded in addressing. The demo consisted of four PCs connected across a LAN; each PC had video clips, metadata and screen styles in one of the following languages – Dutch, English, German and Italian. Users of the demo could search, select and view the clips and metadata within one organization and simulate the delivery to another. The clips and metadata could also be personalised for subsequent transfer.

The demonstration had three distinct parts showing different aspects of the P/Meta scheme. The first part allowed the user to search for a clip, personalise the metadata and deliver the clip to the other organization. It demonstrated the concept of system and language independence through the use of language codes to enable different systems to "translate" the values. As an example, a person might be called a "producer" in English but, in French, he (she) would be a "réalisateur" ("réalisatrice"). The P/Meta scheme can handle these sorts of differences, for any language.

The second part of the demo simulated the transfer of transmission details from the organization that used the clip to the organization that owns the clip. The owner organization has an updated transmission log showing all use of the clip in question, and it can then clear all rights payments, artists' fees etc. and, if appropriate, bill the user organization for the use of the clip.

The third part of the demo showed how the P/Meta scheme has been designed to handle more complex recurring structures that might exist. A particular example of this might be the inclusion of contributor details where multiple roles can be defined and multiple individuals can fill the same role type. The rights might specify that these persons are credited each time the clip is used, and in the P/Meta environment these names would be credited to their role in the local language of the user organization. The metadata that broadcasters use is often very complex, and the P/Meta scheme has been designed to accommodate this in almost any format that may be encountered.

The P/Meta demonstrator ran in the MS Windows browsing environment and made use of XML syntax and all the usual multimedia bells and whistles that are available in Windows. Dave Seditas (BBC), Richard Chalmers (EBU Technical Department) and David Schluter (EBU IT Department) must take the credit for getting the demo up and running.

## *IRT*

The Institut Für Rundfunktechnik is based in Munich and it is the research department for German language public service broadcasters in Germany, Switzerland and Austria.

The IRT had two stands in Hall 10, and I'm pleased to say that their EBU Village site was by far the grander of the two. At the Village, the IRT had masses of equipment and category 5 data cables were the order of the day. The main demonstration was of professional video services over an optical WAN (wide area network). The extrapolation of this is that, using a single network, the digital studio environment can easily be extended across national borders, making use of remote processing facilities and taking advantage of spare post-production capacity wherever it might be located.

Both IRT stands were linked by fibre to Munich to demonstrate different qualities of real-time video transmission, including uncompressed SDI (270 Mbit/s) MPEG-2 DVB/ASI over IP and high quality PC-based video streaming. TV cameras on both IRT stands sent pictures to Munich where a third TV camera showed the local equipment there, and a mixed signal was sent back to Amsterdam. The net result of this was that, if you stood in front of the stand camera and waved, you could watch yourself waving back – delayed by the latency inherent in the digital coding system being used on the video signal. On the SDI feed, this was negligible but on the PC streaming demo, you had time to wave, walk the two metres or so to the PC screen and take a couple of sips of whatever was in your glass before witnessing the (inevitably unedifying) sight of yourself making a spectacle of yourself.



**IP multimedia streaming on a PC**

An important point of the demonstration was to illustrate the coexistence of the uncompressed digital video and the video/audio streaming over IP (Internet Protocol), for contribution and distribution applications at various (lower) bit-rates on the same network.

Not only was all that being carried on the fibre circuit, but the IRT was also simultaneously providing itself and all the EBU computers on the EBU Village stand with a 100 Mbit/s LAN, connected to the Internet through a firewall situated in Munich.

As well as showing IP multimedia streaming on PCs, there was a stand-alone demo of the relative performances of a variety of low bit-rate video and audio codecs for the PC.

The IRT is very definitely invited to join the EBU Village for IBC 2002 – the good humoured industrious team spirit they brought with them, not to mention a large number of bottles of very good German beer, was a distinct bonus to everyone in the Village.

## *EBU Communications Service*

These were the people at the centre of the EBU Village, both literally and figuratively. Mona Wroy is the organizer and fixer *par excellence* – without her wholehearted efforts, there just wouldn't be an EBU Village at IBC. David Lewis (Head of EBU Communications Service), Rida Atta-rashany (Media Officer), Eric Piraux (French Editor) and Mike Meyer (Editor) were our resident "hacks" (journalists to their fingertips) around the conference sessions, but they also helped us lesser mortals to replenish the EBU document shelves.

Now back to that large screen DLP™ (Digital Light Processing) retroprojector that I mentioned earlier. Texas Instruments very kindly loaned the EBU their prototype model – and their engineer, Chris Wright, was its babysitter for the duration of the show. Apart from turning it on and off at appropriate ends of the day, Chris didn't have any babysitting to do – it performed flawlessly, and produced stunning pictures at all times.

So stunning was the quality, in fact, that it provided a very valuable lesson to all content providers the world over. Just as CD provided a quantum leap in the achievable audio quality available to the domestic consumer, DVD and DLP™ retroprojector technology is going to provide a quality yardstick that all other means of content delivery and display will be measured against. If these other means are going to have a future, they had better be very good and as cheap as DLP™ promises to be. In the final wrap-up session of the conference, Phil Laven (Director of the EBU Technical Department) referred to it as " *a stunning back projection TV from Texas Instruments, using DLP technology – the TV set of the future, on the EBU Village stand* ". That certainly caused a late flurry of visitors, I promise you.



**Rida Attarashany and David Lewis**



**Eric Piraux, Mona Wroy and Roger Miles**

Whatever else happens, please don't go rushing out to buy a large-screen television set until you've seen what a DLP™ retroprojector can do. They are expected to become commercially available in the summer of 2002.



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