



impression of a country with a distinct tradition and culture to reassert, and an infrastructure to rebuild, and that includes broadcasting. And after decades of little change they're in a hurry.

According to the official Bratislava website, the Slovenská Televízia building is the tallest in the city. At around 30 storeys and strategically positioned on a hill in an essentially low-rise town, it's easily visible. Built in 1975, in a very different culture, this 'mini skyscraper' is apparently almost empty following a heavy staff cull by a new management team brought in 18 months ago. Its space may soon find an alternative role but that will not affect the studios and operational areas, which are to the sides and rear.

Slovak Television was set up in 1991 as the national broadcaster for Slovakia to take over from Czechoslovak Television following the splitting of the country. It runs two TV channels that are funded by a mix of government money, a license fee and advertising with regional studios in Kosice and Banská Bystrica. Commercial broadcasting was licensed in 1995 with the privately owned TV Markiza, and a mix of smaller cable and satellite operators. From being the dominant broadcaster, Slovak TV lost significant market share to the commercial TV operators but the new management has instituted a continuing investment that is transforming the technical facilities while programming is becoming more populist. And leading this transition and influencing the technical changes is Slovakia's own version of Pop Idol, known here as 'Superstar'

The facilities are about halfway through the planned upgrade project. First was the construction of a large news studio to allow the creation of virtual sets, where news anchormen wander against a green screen tracked by four robotic cameras, and are then matted into complex 3D environments as required.

STV has used Centron, a Bratislava-based equipment and service company as a partner on many facets of the project. Centron's Richard Varkonda acted as acoustic/audio consultant and was able to optimise the acoustic environments with budgets that were primarily slanted towards equipment rather than the studio fabric. More obvious is his insistence on the positioning of the audio station within the control room perfectly central at the rear of the room with a Sony DMX-R100 digital console. Centron also designed most of the furniture including the video monitor wall and penthouse arrangement with CD players, Minidisc and DK Audio meters over the console.

Most of the audio upgrades are replacing equipment that was originally installed in communist times and although broadcasting was always well funded it normally meant sourcing equipment from local manufacturers. Tesla supplied most of the consoles and other equipment while the monitor speakers were either Tesla or a Bulgarian make. The exceptions to this were Studer for tape machines and AKG/Neumann for mics. The remaining Tesla consoles are now reaching the end of their working life and available support is limited. Studer 900 Series consoles are fitted in some of the OB trucks but future changes are more likely to be along the lines of the new audio control room for Studio 4, the largest of STV's production studios.

Operational since November, the studio is based around an Euphonix Max Air digital console. According to Centron's consultant Varkonda, STV was looking for a console with around 80 inputs that had an analogue feel with knobs, fitted the budget, and was 5.1 capable. The 400sqmetre studio floor is below the control room and used for large scale variety shows with the Pop Idol series being typical of

# Slovak Television

The new European Union States are enjoying the opportunity to update their broadcast infrastructures but they're also leap-frogging technology generations.

**KEITH SPENCER-ALLEN** visits Slovakia to take in the sights and a broadcaster's vision.

**C**ROSSING INTO SLOVAKIA from Austria by road tells you much about this country. The border's treeless open space is a reminder that, until 16 years ago, this was the route of the Iron Curtain and was kept purposefully bare. The cursory passport check proves that after crossing the border you're still in the EU as has been the case for the last year. Almost immediately you're crossing the Danube with historic castles high above bends in the river flanked by hills covered in drab low-rise apartment blocks that date from the communist era. Large

billboards advertise Tesco and almost every car on the road looks new and with motorway construction everywhere, soon even the roads themselves will be.

Bratislava, capital of Slovakia, is right on the border and just 60km from Vienna. It's one of those places that still send most West Europeans looking for an up to date atlas. But to make it easy, Slovakia is the East end of what was Czechoslovakia after the union with the Czech Republic was ended in 1993 shortly after the fall of Communism and decades of relative isolation from western Europe. It gives every





the demands, including an orchestra, singers, groups and audience. The chosen console has 32 faders, 182 inputs with optical cables running the 100m to the studio floor with a choice of four wall boxes patched according to the project in hand, and replaced an old Tesla console.

The wooden wings and penthouse area was designed by Varkonda to provide space for a 360 Systems Instant Replay unit, TC System 6000 Icon remote, and CD and MD machines. A bank of convertors is used to interface all the peripheral gear including the Fostex 2424LV hard disk multitrack to the MADI infrastructure. A freestanding LCD monitor is used to repeat the Max Air screen or display the DK Audio metering with access to analogue, digital and SDI embedded audio levels via the router.

The 5.1 surround capabilities of the new control room together with full Dolby encode/decoder units, are an investment for the future. The room had originally been planned for stereo use but the proximity of digital broadcasting changed the attitude. The all Genelec system — 1032s all round with 7070 subwoofer — is currently being used in stereo and has been cleverly integrated within the video monitor wall.

'The monitors sit upside down on shelves within the wall,' explained Varkonda, 'in a way that it is possible to adjust the vertical angle to put the speaker axis in the right position. They are then surrounded by stiff foam to isolate them from the frame. The rear speakers are ceiling mounted.'

Genelec monitors are used throughout the studios and OB vehicles, whenever a room comes up for refurbishment. Technical director Mračna said that of all the equipment choices, standardising on Genelec had been the easiest.

'The first priority when we started this project was quality; the second was the best monitoring of sound. We'd had some good experience in the past with Genelec monitors and felt that it would be the easiest way to obtain good monitoring conditions for stereo and multichannel formats. And now it would have to be something miraculous to change our minds to another make.'

Budgets precluded significant changes to the acoustics of a room originally designed for mono work while STV had specific requirements that differed from Varkonda's specification.

'STV insisted on rear access to the video wall and acoustically the front speakers are not in the optimum position. A secondary wall was not in the budget. Also the rear speakers are not ideally positioned. However STV and its engineers are very happy with the sound because this is still the best sounding control room they've had.'

The acoustic treatment is a repeating pattern of floor to ceiling resonating panels and wide band absorbers that is most effective in mid to low frequency regions and certainly proved adequate in earlier times. Luckily this is a large control room and with the operator being at the centre, the ratio of reflected sound to direct is fairly low and very workable. Varkonda expects to be back to deal with acoustic modifications when the rear channels come into use and as budgets allow tuning the acoustics will become more of a priority.

The video control area is adjacent with provision for nine-camera operation and all the technology needed for large-scale live programme making. The later stages on Pop Idol had to be moved to a local sports hall when the 1500 audience outstripped the capacity of the studio's versatile space and used one of STV's nine OB trucks.

As with many European broadcasters, STV is moving towards Sony's MPEG IMX video format, which is close to DigiBeta in quality but less costly. Usefully an IMX VTR can still replay all analogue and digital Betacam formats so that production/postproduction is still possible in other formats. It can also handle 8 audio tracks that will be applicable as part of multichannel digital broadcast and a future plan for implementation of Dolby E has been allowed for in the infrastructure. The other advantage of IMX is that there is an identifiable path towards File-based operation, which is important for the following stages of studio upgrades.

'Although we still use a lot of tape, server technology is not new to us,' explained Jozef Mračna. 'We've used a Tektronix Profile server for transmission signals since 1997. The second phase of development

involves full digitisation of the studio infrastructure with heavy use of server technology; and fully digital news production with journalist self operation.

'On the audio side, we plan to build 3 or 4 language dubbing studios that will be connected to one large server. These new studios will be built around the server and machine room where the working copy for dubbing will be prepared and the new language inserted into the programme master. There will not be any tapes and it will be much more efficient. And we do 60% of all STV's dubbing of foreign programming — no subtitles — it's important. This arrangement will then be extended with another postproduction studio also connected to the same network.'

The full digitisation of the studio infrastructure is in progress — the master continuity suites are completed but all the individual servers, including those Avid suites handling picture, are still to be integrated. Such developments will also mean that Studio 4 and the 5.1/Euphonix will be able to take work from other studios that need better facilities.

As mentioned already, the approach of Digital broadcasting has been the driving force behind much of the change at STV and, as with most European broadcasters, the process is in progress. DVB-T test transmission began in 2004 and the results have been encouraging. Slovakia is a small mountainous country that shares its borders with five other States and their own broadcasting systems. Coverage and frequency co-ordination has always been difficult and solving this is a major interest. The digital terrestrial transmissions enabled good reception in areas that analogue hasn't, and with smaller aerials. The population is keen as well with over 1200 set-top boxes purchased just to receive unpublicised test transmissions. With an unwillingness to fund analogue and digital transmission, a domestic equipment subsidy is under consideration with STV keen to see a switchover within just 12 months of implementing DVB-T transmission, possibly completed by 2007 rather than 2015 originally given to the EBU!

During my visit I was told a tale that I assume to be true but shows Slovakian spirit even if it is not. In the 1950s and 60s when television services were being started in the then communist countries, the powers that be selected the SECAM broadcast format rather than PAL. On the fall of communism, most of the broadcasters, stuck with complete Secam production chains, had the cost and difficulty of migrating to PAL. In Slovakia, they had optimistically chosen to work in PAL with just a SECAM convertor before transmission. The cost of changing to PAL for them was simply the time taken to unplug the convertor! ■