Florian Camerer

As close to a multichannel audio evangelist as we get in broadcast, yet he is just an ordinary chap who spends his days in sessions and on projects. ZENON SCHOEPE talks with ORF's surround meister.

FLORIAN CAMERER PLAYED an important part in his own broadcaster's adoption of multichannel sound and, because his employer is Austria's ORF and was the 'significant leap' in worldwide multichannel broadcast, by definition he has played an important part in starting the movement worldwide. Despite this achievement, he's not some high ranking management type but still spends his days in studios, on session, planning and training in his native Vienna. With the recent creation of two Lawo-equipped multichannel studios ORF has two fabulous rooms to create surround in and Florian remains in the thick of it all.

His education included courses in electrical and sound engineering and coming from a musical and engineering household it was always on the cards that he would combine the two in some way as a career. After sending his CV around all the major broadcasters in Europe he got a temporary break at ORF as a paternity leave stand-in. Predictably, he shone, was hired permanently, was mixing before long and set himself the goal of making principal sound engineer in five years, which he achieved.

He was handed a leaflet on ProLogic in what he describes as a significant moment and says his path was then set. He is seen as a champion for multichannel in broadcast and continues to travel and spread the word. 'Europe is gearing up for 5.1 in broadcasting and I travel around to help convince management,' he says. 'It's usually easier for somebody from outside to come in and play some stuff — they take you more seriously… the in-house engineers are the crazy bunch, just like I used to be regarded here!'

Yet his attitude to his work remains as thorough and enthusiastic as ever and he'll tell you that he always speaks up on sessions and that even as an assistant he couldn't help himself from correcting the grammar of the voiceover script. Audio engineering in broadcasting carries enormous responsibility and he believes engineers should speak up and contribute because in many instances they are the first 'outsiders' able to appraise a project once all the diverse elements of a programme have finally been brought together.

You identify that first encounter with the ProLogic leaflet as pivotal for you but how did multichannel develop at ORF?

It started with this huge Arctic project [1993-1994 Arctic North East documentary that traced an Austrian expedition of the 1870s] that I started as an assistant on and I mixed as an assistant. The director was the first to get permission to shoot up there after the break up of the Soviet Union. It was the major project of my documentary life and I was only three years with the company. Through that director I also got into documentary film making and became responsible for every sound job in the course of the workflow. After that project I was also made a staff engineer.

I remember going into the director's office as a nobody — as an assistant — and saying that I was interested in getting involved with the project when they were recruiting.

It's also how surround started here because the director was doing mono and because it was such a big project and an environmental project I said we should do something different. I mixed the principal series in Dolby Surround in 1995 and that was our first ProLogic transmission. From then on, I started to remix a part of it in 5.1 in 1996 on the SSL Scenaria [modified to Omnimix]. Once I realised the freedom that you have with 5.1 compared to ProLogic then I really got into it and started to remix programmes we had done, documentaries, to get experience.

I started showing this to creative people, like directors, and to my peers and started to try to promote it internationally especially in documentary

film making because in 5.1 everything started in music — pop music in the States and classical in Europe — and feature films, of course. There was nothing in the regular TV business; no shows and no documentaries and it is so worthwhile to do documentaries in 5.1.

For years I was the only one travelling around internationally with 5.1 documentaries and it got to the point where it was: 'Oh no, here comes bloody Camerer again with his stuff!' But I got very proficient at it and I was very sure it was a good thing to do in broadcasting and I started to promote it in management but at the time they were very reluctant to go into it — it was new technology and the immediate benefit was questionable.

I always thought that when we do 5.1 we should be at the forefront and use it as PR to the public — ORF is modern, ORF does new things, uses new technology, we are not lagging behind. They didn't really agree with me for years and I think they were happy when I left the room again — 'We'll let him do his stuff!' — they sort of tolerated what I did but they didn't really use it.

There was a change in management and I was already heavily promoting it inside the company — doing all the in-house training in 5.1, being in contact with the Dolby guys. When all the Dolby gear became a really closed system with all the gear and expertise you could need for the broadcast market in place, then it really started to get hot. The solution was there and it was clear that we would go the Dolby route because of the metadata and Dolby E, etc. Once all that was clear, a change in management here immediately understood what such a move would mean in PR value. We met in Munich at the AES Convention in 2002 at the Dolby booth, talked for 15 minutes, shook hands and said 'let's do it.'

It had to be a really big first production and we were asked if we could do the New Year's Concert — we had half a year — we spoke to all the people responsible and we did it.

And from then on 5.1 has been rolling at ORF?

It's been good. There have not been too many 'official' 5.1 jobs and a lot of stuff was done after the stereo transmission for DVD release and 5.1 for documentary is much more expensive because you need much more time. The easy thing is live programmes because to rig up a few more mics and your control room is a one-time thing and then it goes out live and that's it. In documentary you have to do a lot more in terms of track laying, location sound, mixing and it takes a lot more time.

Do you think that's why the take up in broadcast will always be slow?

For documentaries yes, because when it comes down to it it's a money issue. Nowadays the production departments won't give you a penny more — the amount of additional time involved must be very low and the additional expense has to be below 10%. That is very tough to do for documentary. So, what we do is live programming because the increased cost for doing 5.1 is almost negligible.

I was surprised to discover that ORF's switch to 5.1 didn't cost that much yet the cost of infrastructure changes is frequently quoted as an objection to going 5.1.

There is one thing to bear in mind, we couldn't route the multichannel signal through our regular master control infrastructure because we didn't have that second bit-transparent route. So when we started we had to route the Dolby E signal around master control. We are now rebuilding that and integrating it in a very nice concept that we didn't have when we started. But basically it's a bunch of Dolby equipment, installation costs, infrastructure adaptations and training and we equipped two complete transmission chains for around UK£250,000.

What adaptations can be made to make 5.1 documentary work more efficient?

It depends very much on how the director is editing and story telling. The director I was working with was always looking for a fresh perspective, so he was giving space to creativity audio-wise. With a regular natural history 'struggle for survival' type of documentary it's rather easy because all you would do is expand the atmosphere track to four or five channels and if you don't record 5-channel atmospheres then you'd just lay your stereo atmospheres back and front and that's it — that's your additional work. You could easily expand those type of programmes to 5.1 and you'd have your mono effects and Foley anyway to the centre or 3-channel front. From then on you could get composers more interested in it and delivering 4 or 5-channel music tracks to you.

Are there ways of optimising workflow for 5.1 in TV drama?

5.1 recording in sync on location will never be done because what's in the surrounds? The crew standing around chewing gum! There's usually nothing significant going on in the surrounds when you're shooting dialogue but you could have multichannel atmospheres recorded the next day, for example. I think it would be worthwhile; we once did a complete feature drama in M/S stereo for location sound,

which is unusual, and we piped it through a whole postproduction chain in M/S and you get all the natural acoustics from the dialogue recording on-set. The thing is that your programme has to allow for the possibilities you have in surround. What's the point of doing news in 5.1 when there is no use for the surround channels? Programme makers have to appreciate that there is some additional value in doing a programme in 5.1.

So you're saying either factor in surround at the beginning of a production or don't bother at all?

Expanding a stereo atmos to 4-channel is nicer to listen to than just the stereo, if only because you have the narration in the centre. Similarly 3-channel is better than two because you have a larger sweet area and that would be advantageous for news, particularly to how it connects the sound to the video. But if you think about story telling issues in surround sound then the programme and the story has to lend itself to it. Otherwise don't bother; otherwise it's too gimmicky.

I've listened to programmes where they've had the surround channels and they've panicked and had to put something in them. It takes time to accept that if something's mono you can leave it in mono and if it's stereo you can leave it as stereo without spreading it around — you don't get punished for not doing that and there are no Surround Sound Police. On the contrary, the contrast between all the different expansions of your sound field — mono, stereo, etc — and the cut/dissolve between all these things makes your programme interesting.

What are you happiest doing?

I was very happy when I was responsible for the whole audio chain from acquisition to final mixing and mastering. It's not very usual in the drama and feature film world and it has advantages and disadvantages. The advantage is that you know exactly what you need on location and you can only blame yourself if you forget something. You also know what you need for the mixing stage and for the track lay and you also know exactly what you've got. It can be a nice smooth process and I like the complete control.

On the downside, the danger is that you get too narrow-minded and don't have that broad view of the dubbing mixer in the States or UK who gets fresh material and judges it for whether it works or not and is independent of whether you are personally attached to the sound.

I've always liked the creative side of track laying — I love to work with atmospheres. My first stem mixes are always atmospheres and they are my most elaborate. If you do that well with a lot of variation it

so quickly draws you into the story and sets the mood. It's what I've always found fascinating is that you can set the pace and mood with a nicely crafted 5-channel atmos track. Then everything else goes on top of that.

When you're working on atmos tracks, what's your workstation of choice?

When it comes down to tools I'm not so specific that I have to have a particular product. Tools are very often overrated — they have to have certain level of quality, of course, and it's nice if you have certain features because that facilitates things, but you know in the old days of analogue and mono they made nice documentaries then too with nice atmos tracks. So it's much more down to the craft.

I was lucky that I did most of my early stuff on the Omnimix and Scenaria systems from SSL, which were way ahead of their time, and we were lucky to get that system very early on. We began on the Scenaria and because it wasn't able to do the surround stuff we upgraded it to Omnimix and that was one of the first installations. I really liked the Screensound editor because it was purpose-built for audio for video; it was perfect. It was my workstation of preference because it was the only one we had!

We now have Pro Tools and Nuendo and for projects now I would work on Pro Tools.

Do you have a preference for desks?

Again, not really. In broadcast it'll be a digital desk now. The difference in sound between analogue and digital, if both are done right, in broadcasting is not of primary importance because your transmission channel usually disguises any differences anyway and the problems you are usually faced with are much more severe than the difference between the sound of a digital and analogue desk. I need automation; elaborate automation in a desk for documentaries is very important because it's a feature film type mix.

I also like desks with complete DSP on every channel — I don't want to be assigning EQ and how many bands of EQ I'll need before I start. I'm very happy with the Lawo [mc²82] consoles because the modular concept is very appealing to us. You can do the bigger mixes and the smaller everyday mixes easily, you have the cues for the voice talent, the automation. It's a versatile desk that you can tailor to your needs.

What are the attitudes at ORF towards miking in 5.1 for concerts?

The music engineers pretty much use a system based on the omnipresent Decca Tree for classical recording. Some 80% of all recordings are made with a pair of spaced omnis and a Decca tree arrangement for stereo and the arrangement is very easily adapted to 5.1. It has advantages in terms of downmix properties and they all know how to work a Decca Tree with spot mics because they have been using it for such a long time.

The downmix is very important, the stereo of the New Year's Concert is a downmix of the 5.1 so what 90% of the viewers listen to is a downmix. It's a good transitional system and the omnis are nice for the low end and you have that artificial spaciousness of the spaced omni.

We changed our surround pickup following a big microphone comparison a couple of years ago where we recorded our ORF Radio Symphony Orchestra with seven different surround systems on a 48-track Sony. We mixed it down and made an immediate comparison and the big discovery for the surround pickup system was the Hamasaki Square [after Kimio Hamasaki of the NHK Science and Research Laboratory]. It's four fig-8s in a square arrangement quite far behind the orchestra — you can use it quite high up in the hall — and the fig-8s are oriented so their nulls are pointing at the orchestra and you pick up only side reflections depending on how you orientate them.

The way they can be mixed is with the fig-8s nearest the orchestra into the front left and right and those at the back are mixed left and right surround so you have ambient signals in all four channels. If you have them very far back in the room, away from the main system, you have to time compensate them in postproduction. For live we use a modified Hamasaki square. We're a little bit closer and below the echo limit of about 30ms, so that's about 9-10m away from the principal system and we've also replaced the front fig-8s with cardioids facing slightly downwards but back from the orchestra to get more direct pickup from the applause but still to have that cancellation of the direct sound.

What are the things everyone has to understand about multichannel?

There are technical aspects and practical aspects to it. Technically when you go to microphone setups you have to understand the basic rules about the speed of sound and how you derive your stereo system from that and then you expand that to surround sound. You have to understand surround sound microphony — that there is voodoo, there is taste and there is science and that's the basis for what you need on location. Then there's room setup and these are practical things.

When you are actually working in surround there are maybe only two things to concentrate on. One is that you should use the additional channels in surround with clear intent and motivation. Just because you have two surround channels and speakers is no reason to use them all the time. You use the surround channels, you use the centre because you want to achieve this effect, that impression. If it's black and white footage you put it in the centre in mono because you choose to do that. Some people panic and say 'but we've only got a mono track, put it in all five channels!' You can expand it out again when the black and white footage ends and you have a 5-channel signal again and it makes it more interesting.

The other thing is that we have to evolve from using surround as an effect to the point where it is an overall impression. We don't want to be pointing with a sledgehammer to 'Here is the surround channel, here is the centre,' — ping ponging between all the channels. I always have a 5-channel atmosphere going, low in level or high in level, so you are constantly being drawn into it and not being drawn to the separate channels. You can also use phantom imaging between the channels — many multichannel music mixes are five times mono.

With good classical music you're not aware that it is surround until you switch the surrounds off — people tend to exaggerate when they start off just like everyone does with a new technology.