Martin Kloiber

He's a classic example of a poacher turned gamekeeper — a customer who ends up working for the manufacturer. As executive VP of technology at Euphonix he talks about the interface issue, the acceptance of assignability, the back-end and relationships with other manufacturers

WITH A DEGREE IN Music and Electronics, Martin Kloiber has been working as an independent music producer and engineer since 1984 and has had a stint at Austrian broadcaster ORF as an engineer from 1989 to 1991. He has worked with Terence Trent D'Arby, Baka Boyz, 98 Degrees, Yello and Norman Brown and has also been involved in film scoring, sound design and dubbing. In 1992, Martin co-founded, designed and acted as studio manager and chief engineer for Soundproof Studios in Los Angeles — home to the European music duo, Yello (one half of which is Euphonix chairman Dieter Meier).

The studio now includes a Euphonix System 5 and R-1 recorder but Martin first became familiar with Euphonix in 1991 when the studio installed a CSII. 'This was during the early days of the company, but I was totally blown away by the power and sound of the digitally controlled analogue mixer. Since then, I have been a big fan. As a client, I spent a lot of time working with their product development and sales team helping to refine the systems, so it was natural for me to move to a full-time role.

'I think it is very important for product development to have connections to the real world, and that is my main goal, to provide a link between what we do in development, the client and other companies that have complementary technology,' he says. As executive vice president of technology, and a member of the Euphonix board of directors, Martin oversees technical development inside Euphonix for its current and future products.

What is special about Euphonix technology?
We have focused on perfecting digital control surfaces ever since we introduced the CS series in the early 1990s and followed up with the all-digital System 5 in 1999 and the Max Air in 2002. We are passionate about producing the best professional console designs in the world and providing unrivalled personal customer support. Ask any of our users. If you look at our client lists they include some of the top audio facilities in the world in all markets. We have worked very hard over the years to get to this position and we feel we are at the cutting edge of the technology that includes the option to integrate with third party applications and the art of console design. Euphonix deployed non-proprietary computer technology from Silicon Valley, and has architected a scalable and very flexible hardware platform. To communicate within this networked computer environment, we had to develop a control protocol — EuCon. We have now expanded this protocol, so we are able to control and integrate third party DAWs into our environment, therefore offering an end-to-end production solution from a workstation up to a full-featured production console.

How has the dynamic of manufacturing cost and R&D effort changed over the transitions from all analogue to digitally controlled analogue to all digital desks?
When we introduced the CS Series digitally controlled analogue console in 1991, we basically halved the price of a 96-channel console by separating the digital surface from the analogue processing racks. The System 5 range introduced a digital surface with a fully digital back-end. Obviously the surface design uses completely different technology from analogue but still is constrained by the physical hardware necessary to provide a superior surface. Now we have a great surface, and we will stick with it in various forms in the future to maintain operational compatibility.

The big changes are happening in the back-end where costs are being reduced and new technology allows us to provide more for less and to connect with DAWs, for example. The big challenge now for us is to form relationships with the DAW manufactures such as Steinberg and Merging Technologies as their products will form an integral part of our new System 5-MC console range. I have always felt that as digital products can communicate with each other the time has come for manufacturers to start working together to allow their products to integrate with each other over networks. Just look at what's happening in the computer market. The big buzz is networking. A lot of people use networks in their home, so it is a logical step for us to apply this technology also in our products. We made a substantial effort in engineering for interconnectivity in the digital domain. For us, the move to all digital has improved manufacturability and reliability.

If the proliferation of digital workstations has taught us anything, it is the importance of the analogue end. Against such a backdrop it would seem that a digitally controlled analogue desk represents the practical ideal, why then has Euphonix gone all digital?
One of the things that has emerged over the last 10 years is that there is a place for analogue mixers, all-digital mixers, digitally controlled analogue mixers and workstation control surfaces. Each has its place and is ideal for a specific application. We don't build analogue consoles because we feel that this is a specialised declining market, well covered by companies such as SSL and AMS/Neve. However, we do address the other three mixer product areas and also manufacture high-quality analogue convertors.

I think it's best to look at this from a market perspective, as the requirements are different for each market. The last few years we have concentrated on the broadcast and long-form audio post markets as there is a growing demand for high-quality digital consoles that we can satisfy with the System 5 and Max Air products. In music and short-form post, all projects involve workstations and there is a need for integration between the workstation and console. That is why we are introducing the MC DAW controller and the System 5-MC mixing control surface that directly integrates with DAWs such as Steinberg's Nuendo and Merging's Pyramix via our high-speed EuCon protocol. Therefore we can offer the user best of class products in an integrated environment.

How have end-user attitudes to 'assignability' altered and are there still operational principles in which desk designers still have to play safe?
Early digital consoles took the analogue route, laying out channels in a linear fashion — 1-48, 49-96 — and paging between them. Engineers initially felt comfortable with that but soon found that it is not the best way for an operator to mix. It's clumsy, slow, requires a large surface, and does not take advantage of one of the most exiting operational improvements you get with an assignable console: freedom to put any channel anywhere on the surface.

Euphonix took this a stage further with System 5, allowing any source to be placed in any position on the console and saving that as a 'layout' for easy recall. It is possible to do standard 1-48 linear 'layouts' with a System 5 for beginners but anyone

who works on a System 5 soon figures out how easy it is to lay out the channels you need in logical positions close to the sweet spot and swap between 'layouts' when moving from mixing one set of sources to another. Early designs also forced the operator to do many channel functions from a central assignable set of channel controls. We know now that it is much better if the engineer can have control from the channel strip as well as from the centre — that's why System 5 has 8 knobs per channel that can be switched to control all channel functions.

Are console users really as conservative as modern console designs would suggest they are or could they embrace far more radical control technologies? What could the desks of 20 years' time look like?

Consoles have evolved over the years constantly improving the way an engineer can control and mix sources. In some ways a modern design like System 5 is conservative as it has faders, channel strips, knobs and meters but in many ways it is a radical change from an analogue console that is confined and constrained by the mechanics of the electronics. Separating the control surface from the 'engine', analogue or digital, has profound implications in size, layout and flexibility of the mixing surface, plus everything can be automated and recalled.

This separation also allows a surface such as System 5 to directly control a DAW such as Nuendo as its engine with the bonus of recording and editing integration. So, in some respects, it is conservative but at the same time quite radical. I think in a professional environment it is important to provide a practical solution that really does speed up operation and allow for more creative flexibility, and basing some of the design on proven mixing principles is a good thing. Since cars still have a steering wheel, despite some experiments, I believe that in 20 years there will still be a pro mixing surface with faders and knobs, there will be more touchscreens but definitely there will be one or more PCs at the back end. In order to create a good product, you have to solve a problem for the customer. In our case, we provide a tactile, ergonomic and comfortable tool to get the work done.

Would you agree that with computer processing power continuing to increase, as an industry we are shifting our attentions away from harnessing that power to the business of controlling it — it's now all about the interface again, just as it was in analogue's heyday, and it's what differentiates different manufacturers' approaches because the processing is now largely similar?

I definitely agree that computer processing power will continue to increase. Everybody now accepts the fact that you can cut and edit a movie on your laptop computer, something that would have been impossible a couple of years ago. The same revolution is now starting in the audio business and the border between audio and video production is very blurred. As a manufacturer we have to harness the power of commercial computer development, since we simply can't keep up with technical progress if we have to reinvent the wheel constantly and also try to accommodate the need of users in video production.

On the other hand, DAW developers have long acknowledged the limitations of a point-and-click mouse interface for sound mixing. Therefore I believe

that the most important and difficult aspect of the design is the surface — its what the engineer sees and feels and connects with to produce an artistically stunning mix. The best analogue consoles always had the most ergonomically effective surface and that is still true today for all-digital consoles. The back-end has changed from analogue to digital processing core to DAW, but the art of designing the surface always remains the ultimate challenge and separates the men from the boys. At Euphonix our design philosophy with digital is to concentrate on designing the best surface and to allow it to control any back end via our EuCon protocol, which even supports a single surface controlling a combination of DAWs and our own DSP processing core.

What do you see as the main differences between the worksurface requirements in music recording, post and broadcast?

There are a lot of similarities between music and post requirements and both these markets are DAW-based so integration of DAWs is important. The high-end post console requires a more sophisticated monitor matrix and panel and there is the issue of multiple operator film consoles, but other than that they can have very similar surfaces especially now that surround is important in each market. The broadcast console is different in that reliability is critical and there is no DAW integration. There are also many applications where the surface can be much smaller and simpler with fewer controls such as in a local news environment — hence the Euphonix Max Air surface designed specifically for this type of market.

However, there are many broadcast applications where the console has to handle hundreds of sources that include music as well as dialogue — such as a variety show, or a complex sports event — and in this case a surface such as System 5, with the redundancy options, is perfectly suitable for on-air broadcast.

Would the adoption and standardisation of a particular 'digital interconnect' make your life and that of end-users simpler?

Yes, of course, standardisation helps in a big way but it is important to remember that no one digital standard can work for all applications, especially in the high-end professional market where the requirements are totally different from the consumer or project studio. In many cases there is no standard to solve some of the problems we face as console designers. There are many open standards that console manufactures can adopt, such as AES10 MADI, AES31, etc. Also I can see the industry going down a path using a protocol like Sony's Super-Mac and Hyper-Mac, which solves the problem of combining a high-channel count of digital audio signals with control and sync information.

However, there are also instances, such as console connectivity to DAWs, that are so cutting edge and complex, for which no standard exists yet. In this case a company like Euphonix, with a great deal of experience in surface networking, has to further develop a protocol such as EuCon to bridge this gap.

What are the popular misconceptions about digital desks?

That they are difficult to operate, unreliable and don't sound very good. Its 20 years since pro digital consoles came on the market and back in those early days these fears were justified. However, I think in the past five years all those issues have been addressed, certainly in the case of System 5, and any engineer who has spent time on a good digital console knows that it can match what analogue has to offer with the bonus of assignability, full automation, recallability, greater flexibility and integration with DAWs.

The pressure to be price competitive in large-scale desk design is apparent, but where can compromises be made to accommodate this and where can they not be tolerated? What frustrates you as a designer?

To produce a good console surface design that looks and feels professional and that speeds up operation and allows the engineer effortless creative control costs money — it's simply a matter of the cost of components that go into the design. The back-end is obviously getting cheaper and we have embraced that with our integration of the System 5-MC with DAWs, such as Nuendo, which greatly brings down the cost of a system.

For some markets, such as broadcast, reliability and modularity are more important than cost so these systems will continue to be more expensive than a surface/DAW solution. At Euphonix we actually offer two different surface designs for broadcast to match control surface needs of different areas such as live production (System 5) and local news (Max Air). I think that right now is an extremely exciting time to be in the console business especially with the integration of console and DAW.

One big caveat I see in the above-presented concepts is that we want and need collaboration with other manufacturers. We have to work together and not against each other. But not all manufacturers believe in this concept. Some more than others would like to keep their users in a proprietary and very controlled environment. It is hard for some companies to understand and support an open architecture, but Euphonix can and will lead the way. ◼