REDNET®

SpaceCrate

A studio in a shipping container is revolutionising
ADR recording — and helping to get pandemic-struck
productions across the finishing line

> "SpaceCrate enables productions to be wrapped faster, better and more affordably."
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> **Ben Nemes**
> Managing Director — SpaceCrate

Your studio — anywhere

SpaceCrate and RedNet — available to work at any time

"It seems like every farm and every disused aircraft hangar is now a studio," says Ben Nemes. **"More and more places are being converted for film-making. Demand outstrips supply, and most of those places don't have dressing rooms, make-up, hair, catering or anything. So, everything comes to the set."**

Thanks to Ben's brainchild, 'everything' now includes automated dialogue replacement (ADR). SpaceCrate is a top-quality vocal studio in a shipping container. Based around Pro Tools and Focusrite's RedNet interfaces, it can be trucked to film sets anywhere in the UK, as easily as a mobile kitchen or dressing room.

Acting Up

The benefits of having temporary ADR facilities on set can be enormous. SpaceCrate enables productions to be wrapped faster, better and more affordably, as Ben explains: "We solve the problem of actor availability in post, and we get the best performance on screen.

"Generally speaking, actors are on set for a production until a date. Then things run late, things get hectic, schedules go crazy, and they go off to do something else. Then it's really, really, hard and/or expensive to schedule them for ADR. Some actors love doing ADR, but others really don't, so will resist if it's at all possible. And you can understand that if you've spent three months immersed in the character of a German prison guard in 1914 and then your next role is an intergalactic space warrior in the year 3000, it's hard to get a phone call months later saying, 'Hey, would you mind nipping into a studio on Wednesday and going back into character and accent?'

"The last TV show we did on set was The Great, which is now on Channel 4. We were there for the last few weeks of their shoot. The first few episodes were picture-locked, so ADR needs were known and the cast were still around. When they wrapped in late February, there was hardly any ADR left to do… which was really lucky, because what happened a couple of weeks later was national lockdown in the UK."

Space Travel

The pandemic changed working practices overnight. SpaceCrate would no longer be travelling to a non-existent shoot — but actors could still come to SpaceCrate, swiftly repurposed as a COVID-secure remote recording facility. "Rather than being out on set, we inverted the model 180 degrees," says Ben. "We were back in our car park in North London, and actors could park up next door, get out of their car, step inside SpaceCrate, and then be connected remotely to their crew. We can guarantee their safety, because they won't see anybody at this end, they won't touch anything at this end.

"Everyone in the process is somewhere completely separate. The director is on a link, and the Pro Tools operator is somewhere else, remotely operating everything up to and including artist headphone levels. There are directors in Los Angeles who've had ADR mixers driving the Pro Tools in Sweden, in Suffolk, in Los Angeles, in Brighton. Everyone just stays put, stays safe, and no one is in the same space as anybody else, but the wheels keep turning."

Even when further COVID restrictions paused TV and film production, SpaceCrate was still busy. "We did a lot of work for games developers over the course of 2020, because video games don't have the same problem as TV and film. There's no shoot. Everyone's asked to work from home, so they're still creating games. The only spanner in the works is that you still need actors to deliver thousands of lines of dialogue!

"What you can't do with a video game is get actors to do it on their phone or in their home setup, because the quality requirement on game dialogue is that bit higher: really, really pristine. Often, we're recording at 96kHz, and it has to be really dry and very surgical. With games, you don't always know what's going to happen next to a line of dialogue, or which lines will come before and after, and they'll need to match sonically. Also, the recorded performance might be pitched down two octaves because that actor isn't actually portraying a human, but some mythical being. So it gets heavily sound-designed, which is why they want to record at 96kHz and why it has to be perfect."

Seeing RedNet

What made the seamless adaptation to remote working possible was the choice of RedNet as a recording platform. "For us, there's a reason why audio over IP is necessary, and there's a further layer of why RedNet specifically is necessary," explains Ben. "With SpaceCrate in a car park, and no one else in that room apart from the talent, we have to have eyes and ears on that space from the safe distance of an adjacent building. We don't necessarily know what we're going to need to send in either direction.

"The key to quickly coming up with Covid-safe ways of working — particularly in the early days, when it wasn't scientifically certain what Covid was, let alone what Covid-safe would be — is flexibility. It's all about how to establish reliable, high-quality lines between everyone involved, with SpaceCrate hosting the isolated talent and a Red 4Pre at the hub of that wheel. Dante gives you instant infrastructure and plenty of channels even at 96kHz."

One aspect of this flexibility is the ability to add or swap out Dante® peripherals, both within and without SpaceCrate. As well as the Red 4Pre that forms the heart of the system, Focusrite's RedNet AM2 and X2P units provide versatile monitoring and talkback capabilities for everyone who needs them. "Early experiments in the workflow had me sitting in a car nearby on the end of a long Cat6 cable with an AM2!" says Ben. "It was invaluable in figuring out how to set up camp safely away from others. Simply connect it to any network socket, and a second or two later you're hearing everything you need, per your Custom Mix settings from the Red 4Pre.

"That established, I just swapped AM2 out for X2P, giving me talkback to the artist, and/or the crew down-the-line if needed, leaving my AM2 available either for any third party who needed to be in isolation elsewhere and attend the session on site, or for me to move to other areas of the building without losing my feed from the session."

Safe solo performances – the talent and RedNet
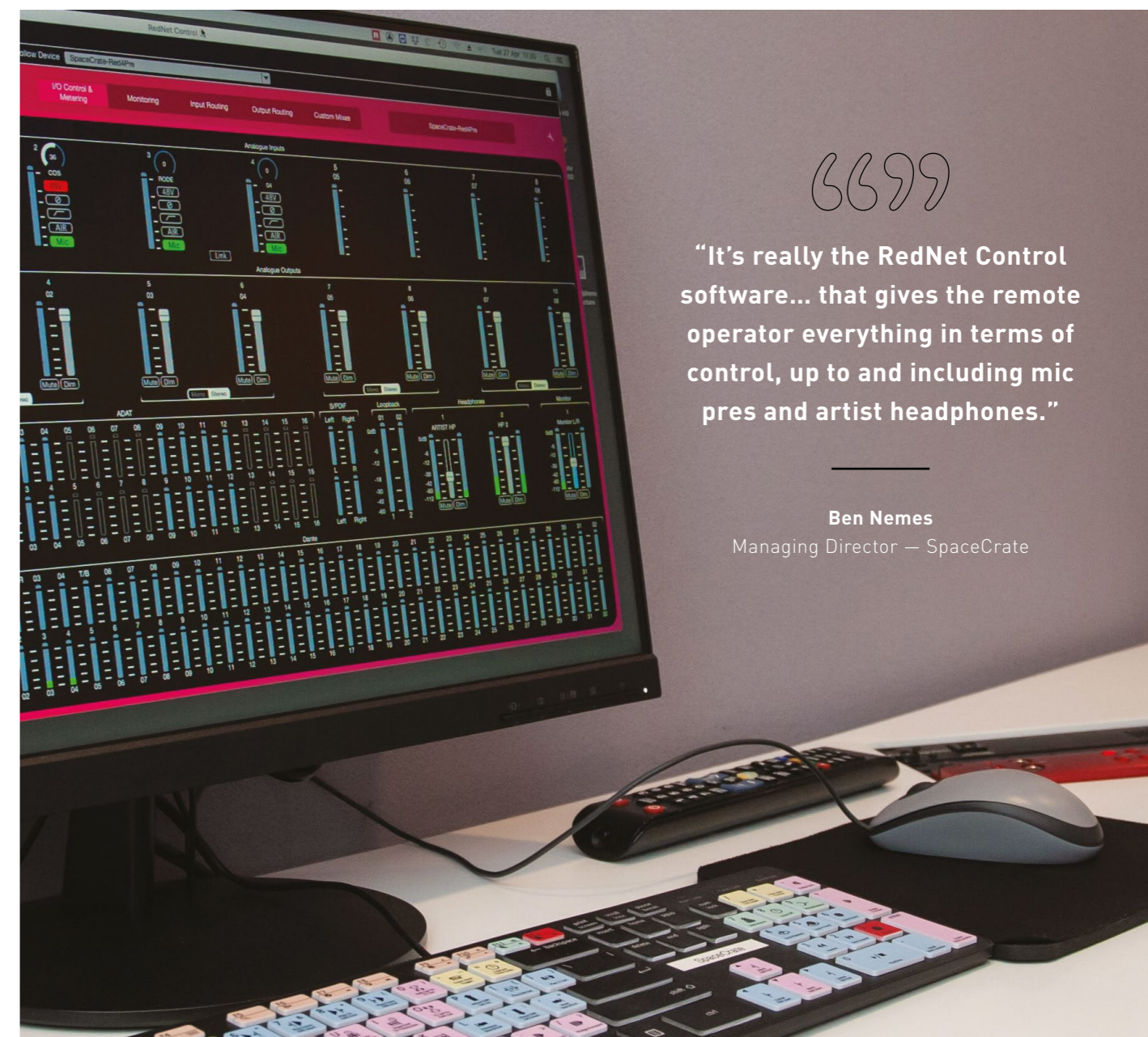
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Redmote Control

Flexibility is an attribute of most audio-over-IP systems, but Covid-safe SpaceCrate operation also requires full remote control over every aspect of the signal chain, from mic preamp gain to headphone level. This is only possible thanks to the Red 4Pre and its RedNet Control software, which can be manipulated along with the rest of the system from anywhere in the world by an engineer running TeamViewer.

"We're asking the audio engineer to run the entire session remotely. They have control over the Pro Tools system as if it were their own, but they're not there. We're relying on the Custom Mix functionality in the RedNet Control software. If the artist would like some more level in their headphones, you can dial that in from where you are. You can control their mic pre levels from where you are, and with a Custom Mix, you can give their headphones something different to what you have coming down

Source-Connect or Zoom or Skype or whatever. It just adds a layer of control to something that otherwise is a bit out of control; because you're not there and you can't dial up and dial down those controls as you would do in a studio environment. It's really the RedNet Control software that unlocks it; because that gives the remote operator everything in terms of control, up to and including mic pres and artist headphones.

"Anticipating and riding gain in real time is a big part of the ADR recordist's skill set. We helped a feature film in December where the character is being set on fire. They start off in a very conversational way trying to reason with this person and then they're yelling and cursing. They're going to act that and you're going to have to be on that as a mixer to ride that fader. And a good ADR mixer will see it coming. They'll know what the cue is, and they'll see their actor ready to shout." In SpaceCrate, everyone can hear you scream...

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Red & RedNet – the beating heart of SpaceCrate's ADR studio

Space Exploration

With the SpaceCrate concept well and truly proven, the next step for Ben Nemes is obvious: build more SpaceCrates. "We are talking to people in other territories about how to operate a SpaceCrate business where they are. A lot of the early adopters to SpaceCrate are here in the UK for a feature film or a TV show. Then they go back to Los Angeles or wherever, and they're lifelong fans, but kind of lost to us as clients until they come back again. So, we'd like to think, having done it, when they're at home they could do it there, too."

Asked if he will do things differently next time, Ben replies: "I think we'd simplify a few things that we overcomplicated, but fundamentally no." There may be changes to colour schemes and wiring arrangements, but one thing is certain: future SpaceCrates will feature RedNet at their heart, just like the original.

"Wherever you can, simplify and remove unknowns," insists Ben. "We've been saying to people, 'Look, so your actor's going to drive to a shipping container in a car park in North London, OK? And you're going to operate it from wherever you are — and your client in LA is going to dial in.' What you don't want to do then is start adding more and more things that aren't familiar. Conversely, when you can say, 'It's Pro Tools and it's a Schoeps boom and a DPA lavelier mic and it's Focusrite preamps throughout,' they go, 'OK, that's the stuff we know.

We can cross those variables off the list as not really variables, because we know and trust the sound of this stuff.' We're asking people to do stuff that's really unfamiliar, and everyone knows and trusts the Focusrite Red 4Pre as a piece of kit that's up to the task and it's familiar."

Converting a Container

"You don't have to have been inside a shipping container to imagine what a shipping container sounds like!" says Ben Nemes. "They are not soundproofed and they are an horrendous acoustic environment. So, in the year we spent building this first SpaceCrate, I would say six to nine months of that was immersed in the challenges of... First, soundproofing, which is relatively easy: that's physics, that's maths. You have to decouple and add mass. When you do that, though, what you actually end up doing is making your underlying acoustic problems worse, because the minute you do a really good job of isolation, you've trapped all the problematic energy in a confined space. So, then you have to figure out what it is, in terms of the issues, and then figure out how to wrestle it to the ground and make it behave.

"That was a trial and error process, with some amazing acousticians who helped us. The benchmark was always from industry standards; we've used the EBU Tech 3276 paper, which gives you the optimal RT30 reverb time spec across the frequency spectrum for a critical audio operating environment. Our RT30 spec is right in that zone, which means you get a good-sounding room."

Why is ADR Needed?

"There are different categories of ADR," explains Ben Nemes. "On a big action movie there'll often be wind machines, for example. There'll be stuff on mic that's incongruous, where a period piece in the flightpath to Heathrow is spoiled by an A380 landing on runway 27 right. That's a kind of technical ADR.

"There's exposition ADR, where there'll be a script change or an edit and you'll need to record a line of dialogue to explain something that the edit no longer covers. It could be as subtle as a change of emphasis.

"Then there's things like airline cover, so if you're planning to distribute your TV show or your film for use on planes, for example, you'll have to remove the expletives, you'll have to go through and find alternatives for various bits of language. So, all those things need to be covered, and it's easier to do that when you have your cast in character, in accent, on set, under contract, where you can see them."
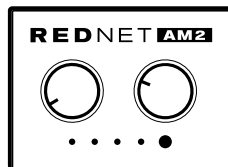
The studio in a box that out-manoeuvres COVID

SpaceCrate uses:

1 x Red 4Pre
58x64 all-in-one interface
32x32 Dante I/O

1 x RedNet AM2
Stereo headphone and line output
PoE supplied

About Focusrite Pro

Focusrite Audio Engineering has pioneered professional audio recording technology spanning almost three decades. Focusrite Pro, the company's professional and commercial division, meets the demands of recording, post-production, live sound and broadcast professionals. It consists of RedNet, a fully modular audio-over-IP solution, and the Red range, Focusrite's flagship multi-format interfaces, along with the heritage ISA range of microphone preamplifiers and analogue signal processors. The solutions have been developed to meet the needs of the most demanding applications through a relentless focus on ease of use, quality and reliability. Focusrite is based in High Wycombe, Buckinghamshire, with offices in Los Angeles and Hong Kong.

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