Hi. I'm Kyle with In Session Audio. I am the designer of the instruments here and am pleased to be making a video about Deep Pool's accessibility features for the visually impaired.

I am posting this as a video, however, there is only one moment that will have a visual component to what I say. That will be around the time that I describe the keyboard layout as it relates to the triggering of sounds and the control set. But please know I will be describing everything.

And just to future proof this a bit, the engine created for Deep Pool will be used for several other libraries currently in development. So please know that if you've been directed to this for a different title the information will still largely apply.

If you're listening to this, you will likely be familiar with a lot of terminology I will be using, but let's go over it briefly just to be sure.

The Native Kontrol Standard, commonly referred to as "NKS" has been developed by the company Native Instruments and is available across their range of Komplete Kontrol MIDI keyboards, Maschine drum controller and within their plugin and virtual instrument host program (which is also called Komplete Kontrol).

Native Instruments also makes the sampler program Kontakt, and the free version known as Kontakt Player. This is the program we develop our instruments for and which Deep Pool runs within.

When the NKS protocol is implemented within a piece of software (like Deep Pool) the developer (us) has the ability to connect the on-screen menus, buttons, sliders and knobs to the physical controls found on the Komplete Kontrol MIDI keyboard. Voice Assist can also report these controls to the user, along with the parameters' values.

A small side note here:

As we developed Deep Pool we used a mark two version of the Komplete Kontrol keyboard. But we recently upgraded to the mark three and donated the mark two. Quite annoyingly, we just learned that the mark three does not yet have voice assist capabilities.

So unfortunately we will not be able to share the sound of the voice assistant in this video. But Native Instruments states that it will be available within the mark three model later in the year. I am making this in mid August of 2024.

But I am happy to say that every control on Deep Pool's interface is accessible via the controls on a Komplete Kontrol MIDI keyboard, including sound menus.

Because it's possible to have different parameter settings for any of the 36 loop keys *and* 24 one shot sample keys we developed a model we're calling "the last played key" control set. Put simply: the controls on the Komplete Kontrol MIDI keyboard are always updating to control the sound that was last triggered. Here's an example:

Let's say you play a single key to trigger a loop and you use the pan control on the Komplete Kontrol MIDI keyboard to make an adjustment. After that you play a different loop on a different

key: the same physical knob on the Komplete Kontrol MIDI keyboard now adjusts the pan for this second loop - *and:* it no longer affects the first loop, unless or until you press that loop's key again.

The benefit to this "last played key" control set is that you need to make minimal physical movements to access the most commonly desireable controls you'd want to modify.

This allows us to offer users four pages of eight knobs for commonly used controls.

There is a small drawback to this: you will not want to use automation for the controls on these four pages. Because these controls are shared and adapt to the last played part, automation would not work in the typical way.

For example: you can't hold a loop for 16 measures while bringing in other samples on top while automating the volume for *only* the loop. If you try this, the volume would be modified for every part as they became "the last played" key.

The tradeoff here is this:

Four pages of eight knobs for commonly used controls - shared across all parts. *Or*: 240 pages (four times eight times sixty parts) to accommodate the same controls for automation. We chose the former!

Here are the controls on the first four pages accessible on the Komplete Kontrol MIDI keyboard:

Page 1: Sound Bank Menu, Part Menu, Volume, Pan, Stereo Width, Tuning, Loop Speed and One Shot Sample Start Offset.

Page 2: Tone Controls: Low Cut, Low Cut Slope, High Cut, High Cut Slope, Part Sends: Delay, Verb 1, Verb 2, and a One Shot Sample Reverse.

Page 3: Three Band EQ: On/Off, Freq 1, Gain 1 Bandwidth 1, Freq 2, Gain 2, Bandwidth 2,

Page 4: Freq 3, Gain 3, Bandwidth 3 and a One Shot Amp Envelope with On/Off, Attack, Decay & Release.

So to repeat: these controls will change the sound of the loop or sample loaded on the key that you last played.

There are 13 more pages of controls that affect the entire instrument. These *can be* automated without the issue I explained a moment ago about the first four pages of controls.

Page five feature controls related to how the instrument responds to MIDI input:

Latch & Quantize, Velocity to Volume controls for the loop keys and One Shot keys, Velocity to Filter On/Off for Loops with an on/off for Poly aftertouch. Velocity to Filter for One Shots and Loop Stack On/Off.

Page six feature controls for a Global EQ and page seven a Global compressor.

Page eight has controls for the Send Delay, and Pages nine and ten have controls for Send Reverb 1 and 2, respectively.

Each of the final seven pages from 11 to 17 cover controls for the seven playable effects: Panner, Filter, Crush, Phaser, Lofi, Delay and Reverb.

Now despite NKS being a fairly robust protocol for the visually impaired, there remain a few challenges that exist within its execution in Deep Pool. These largely revolve around the menus offered to select which bank, loops, one shots samples and reverb type you'd like to use.

Controls for menus via a knob on the Komplete Kontrol MIDI keyboard are *extremely* touchy. Meaning that it's possible to move from the first item in a menu to the last item with a very small physical movement of the knob.

Thus, moving from one item in a menu to the next can be very challenging since the knob requires such little movement. But it is possible. It typically takes a few attempts to achieve. But this can be annoying, particularly when the voice assistant is calling out new menu names at the slightest touch of the knob.

Native Instruments is improving the NKS standard with accommodations to improve upon this specific behavior, however, it's not currently available to developers.

Two other things to go over before I wrap this up:

The notes from C1-B1 are what we call Stack keys. Pressing one of them, for example G1 accomplishes the same thing as pressing G2, G3 and G4 simultaneously. And in fact, that's what the engine is doing behind the scenes.

Parts in the second octave, C2-B2 contain the kick drum parts of the loops, parts in the third octave C3-B3 are the mid range parts, and parts in the fourth octave C4-B4 contain the top parts. I'll play a bit of G2, followed by G3 and G4 so you can hear how they're all separate.

And here's the G1 stack key again.

Allow me to put a finer point on this as it relates to the first four pages of controls on the Komplete Kontrol MIDI keyboard (as a reminder: these are the controls including volume, pan, eq, etc.)

When you play a Stack key you might think: I'm going to turn the volume down of this entire mix by making a change on the volume knob. However, this will only be adjusting the volume for one part within the mix.

Depending on what you've played prior to pressing a stack key, it might not be obvious if you're adjusting the volume for the part on G2, G3 or G4.

In this example, since I last played the top part on G4 prior to playing the stack key, the volume would be adjusted for the top part on G4; not the volume of everything. Check it out.

The easiest way to get around this is to find the part on the keyboard you want to adjust a parameter for - outside of the C1-B1 stack keys, and then make the adjustment. This way, you'll always know what part the knobs will be affecting.

While this sounds a bit abstract without having Deep Pool under your fingers, I hope and believe it will become intuitive within a few minutes of play.

And finally: we have a video manual that I would advise you to listen to. It's linked within the above text found on this page of this video.

It should help further the understanding of which keys trigger which sounds and effects, as well as the overall concepts of the instrument.

In closing: please feel free to reach out to us at contact@insessionaudio.com if we can help in any way or if you have feedback about ways we can improve the NKS implementation within Deep Pool.

Thank you so much!