Multilingual Hybrid Meetings
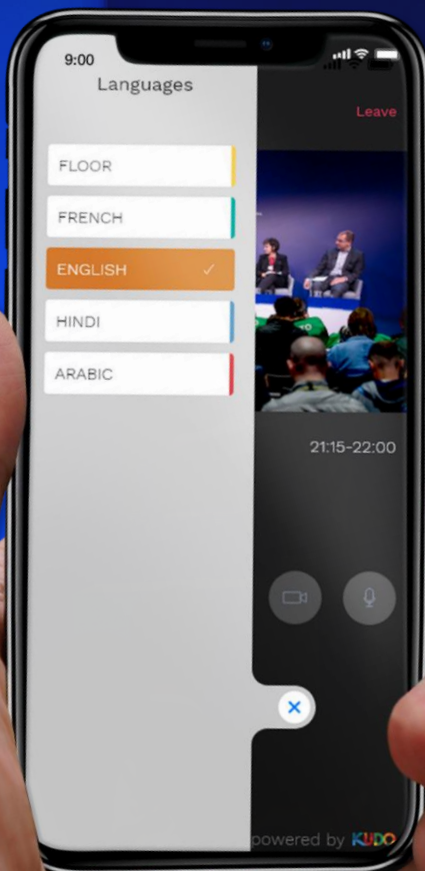
Live Multilingual Support for Decentralized Meetings & Disaster Recovery Plans

Executive Summary

KUDO is designed to enable remote participation with multilingual live interpretation. We understand the technology and service elements required for successful delivery of live language interpretation during decentralized meetings, to seamlessly integrate into the disaster recovery plan of organizations around the globe.

Our solution is based on:

- Provision of a cloud-based Live Streaming with simultaneous interpretation technology that is easy to use, scalable, and reliable with a 99.9% guaranteed uptime
- Strategic thinking, and a partnership orientation based on the appropriate technological support, for the staffing and delivery of the following resources:
    a. Onsite coordination with AV team, IT and interpretation providers
    b. Planning and coordination with the event team on list of requirements, workflow and execution
    c. Working with the IT and web team for host, automation and user flows
    d. Extensive training, rehearsal and onboarding support

Our system's design and technology also provide the following advanced functionalities and performance:

1. High availability: 99.9% uptime of KUDO platform with built-in redundancy
2. Scalable platform accommodating unlimited languages and high number of participants
3. Compliance with ISO standard PAS 24019 -- Simultaneous Interpreting Delivery Platforms
4. High quality audio with built-in echo cancellation, adjustable audio bitrate, adjustable video framerate, and constant audio channel monitoring.
5. Audio-only Fallback for limited bandwidth environments, audio Fallback automatically triggered
6. Fully compliant with EU and USA and other local regulations
7. China-ready platform, available to participants in mainland China through authorized and legal in-land proxies.
9. Comprehensive reporting functionalities
10. Accessibility: sign language features
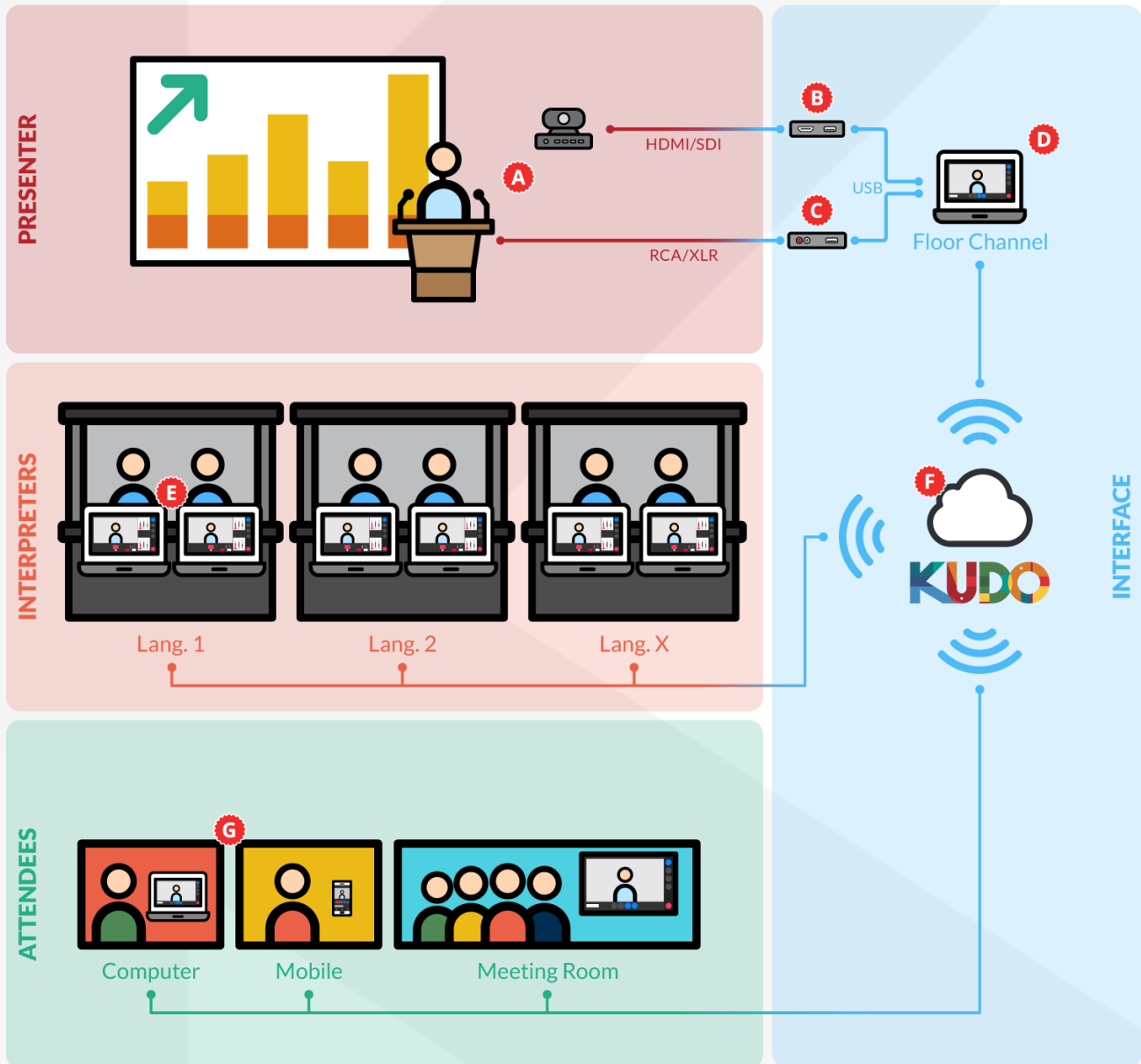12. Performance: instant language switching

The Technology

KUDO is a powerful cloud-based platform that enables full multilingual support, in real-time, for meetings and conferences onsite or online, allowing business continuity to ensure you can continue to meet and interact with your partners, clients and staff globally, in a manner that does not threaten anybody's health and safety.
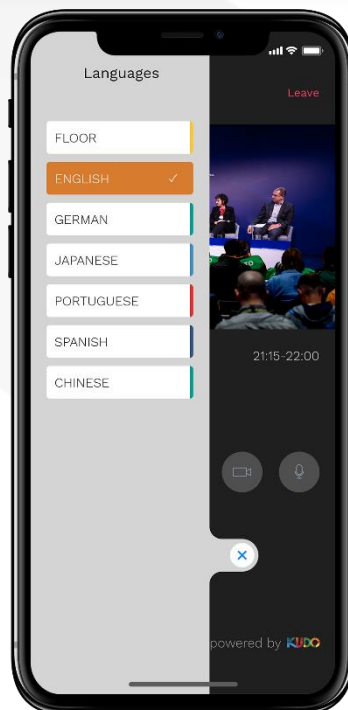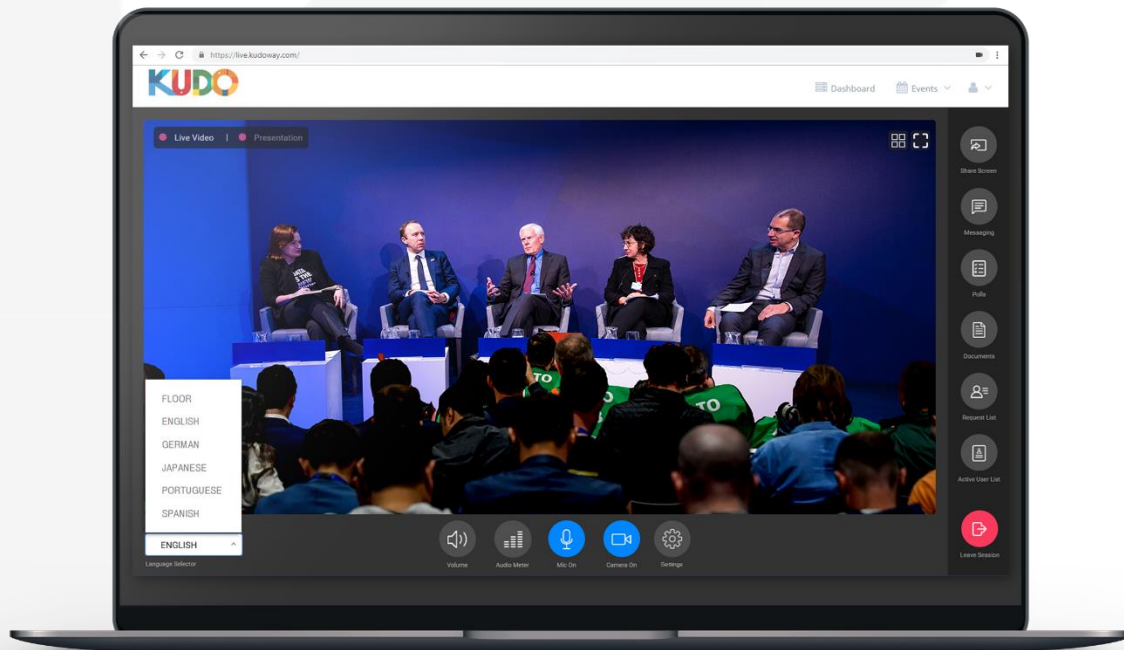
KUDO offers accessibility from anywhere, on any device.

Simple Integration
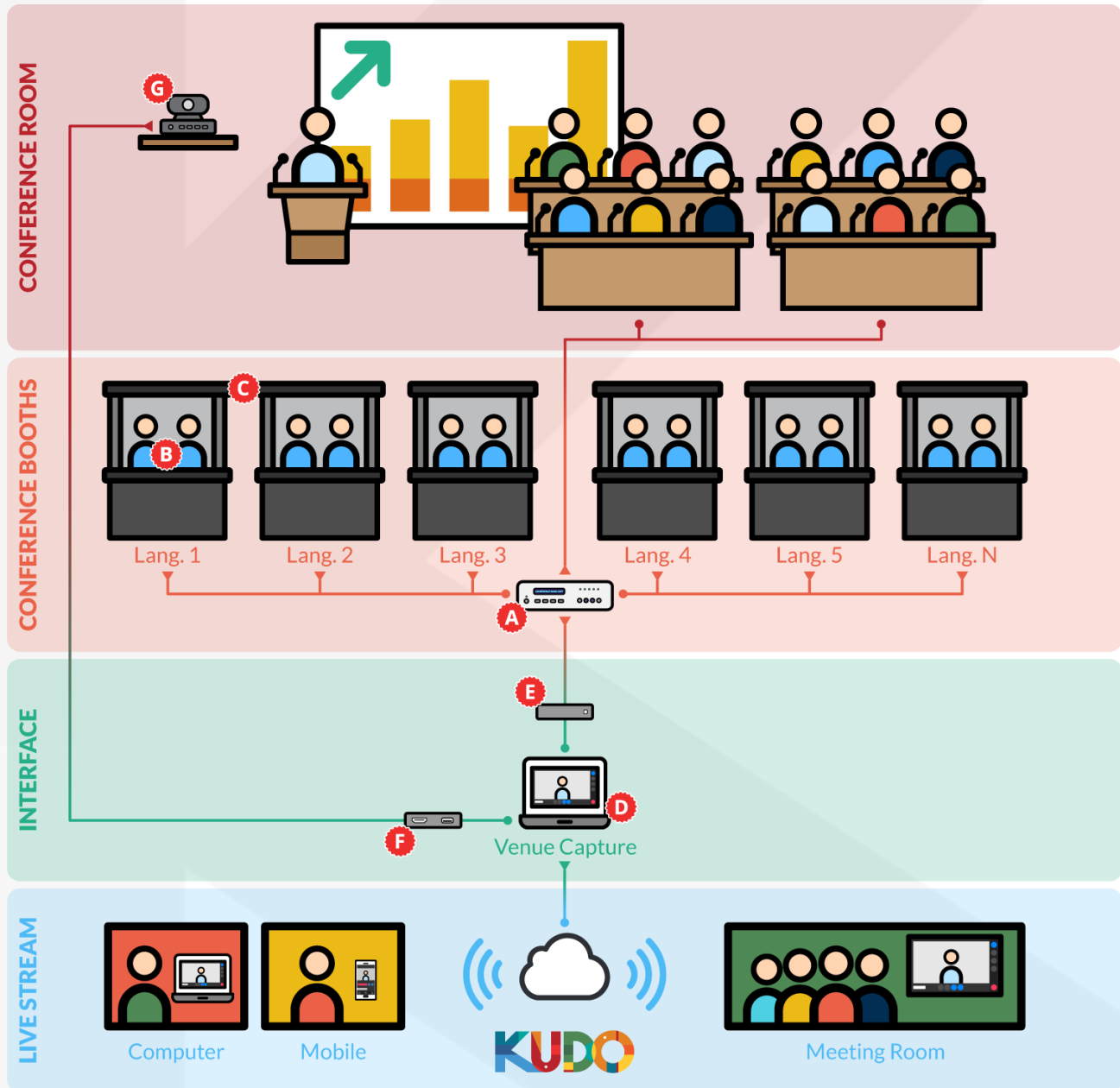
KUDO can easily and seamlessly integrate into a video enabled meeting room by adding an intermediary layer between your current setup and the cloud.

PRESENTER

HDMI/SDI

RCA/XLR

USB

Floor Channel

INTERPRETERS

Lang. 1   Lang. 2   Lang. X

INTERFACE

ATTENDEES

Computer   Mobile   Meeting Room

A   A/V Equipment

B   Video Capture Device
     Mokose USH3001

C   Audio Capture Device
     Shure X2U, Senal XU-1648

D   Venue Capture Computer

E   Interpreter Booth

F   KUDO cloud-based solution

G   Attendees

Hybrid Integration

KUDO can easily and seamlessly integrate with conventional conferencing systems by adding an intermediary layer between your current setup and the cloud.

CONFERENCE ROOM

CONFERENCE BOOTHS

Lang. 1   Lang. 2   Lang. 3   Lang. 4   Lang. 5   Lang. N

INTERFACE

Venue Capture

LIVE STREAM

Computer   Mobile   KUDO   Meeting Room

A **Digital Conference System**
TAIDEN DCS / Televic Confidea / Bosch CCS / Shure DDS / Brahler CDSVAN

B **Interpreter Console**
TAIDEN HCS-8385 / Televic Lingua / Bosch DCN-IDESK / Shure IS 6132 P / Brahler CDSVAN DOLV

C **Interpreter Isolated Booth**
Multi-Caisses Whisper Cube / Audipack Silent / Tages-Audio iBooth

D **Venue Capture Computer**
16Gb RAM, Core i7 processor, SSD Hard Drive, 512Mb Dedicated Graphics Card, 1Gbps Network Card

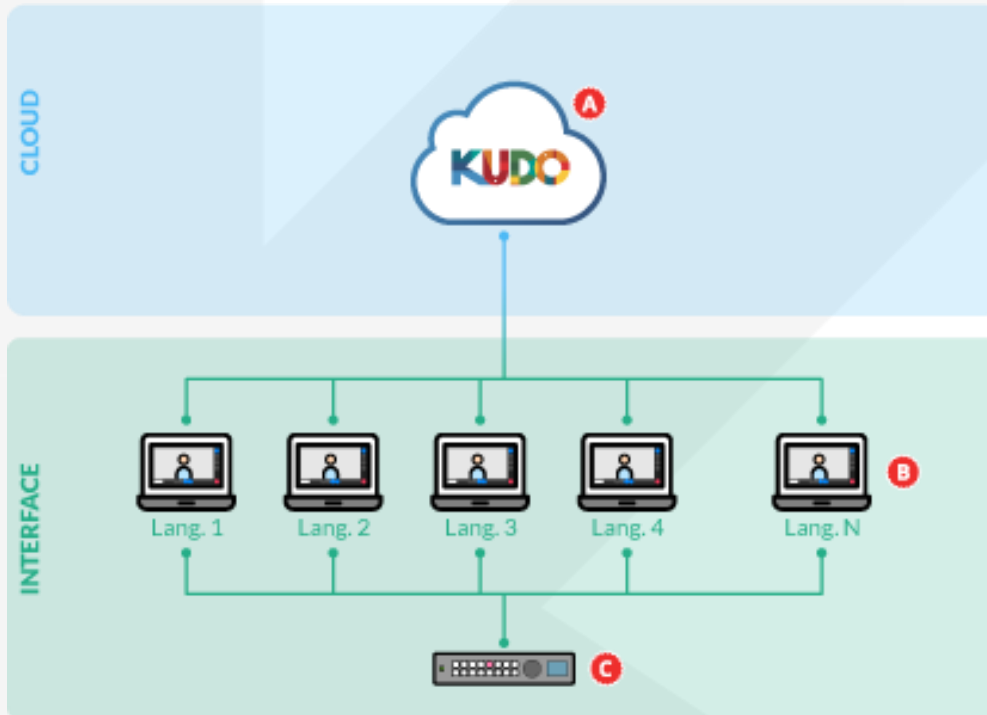**E** **Audio Capture Device**
Dante Interface card / adapter

F **Video Capture Interface**
Magewell USB Capture / AJA U-TAP USB / Blackmagic UltraStudio Mini / INOGENI USB

**G** **Pan-Tilt-Zoom Tracking Camera**

Integration with Media Asset Manager (MAMS)

KUDO can easily and seamlessly integrate with external audio language distribution system, multi-channel recorders and Media Asset Management Systems by adding an intermediary layer between KUDO cloud and your current setup.

CLOUD

INTERFACE

KUDO

Lang. 1   Lang. 2   Lang. 3   Lang. 4   Lang. N

A — KUDO Cloud-based solution

B — Language computers

C — Recorder / AV capture device

Example Setup with Analog Interface

CLOUD

INTERFACE

KUDO

Venue Capture

A — KUDO Cloud-based solution

B — Venue capture computer

C — Audio Capture device

D — Recorder / AV capture device
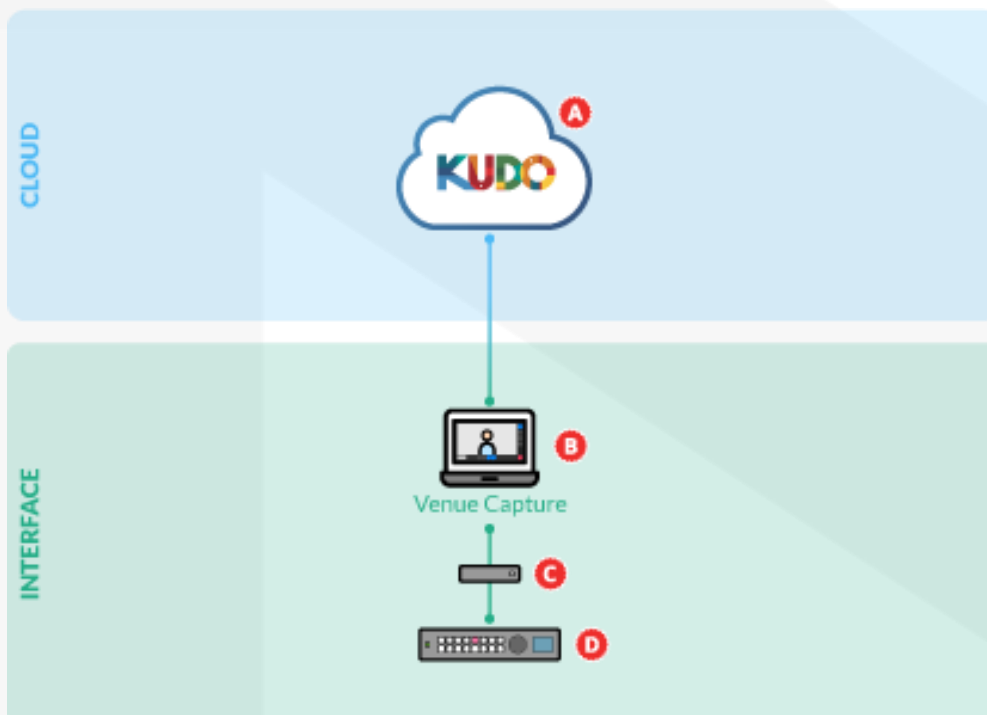
Example Setup with Dante Interface (coming soon)

KUDO Venue Capture Computer with Dante

This guide will help you with your audio settings with KUDO in a multi-channel audio input setting. There are many methods to provide audio into a computer; however, currently KUDO supports WDM audio only. WDM audio is a Microsoft Windows standard and there are just a few ways to provide WDM audio to the computer. Our engineers are currently working on ASIO and MacOS core audio.

## What are my options to get multi-channel audio inputs to KUDO?

a. Option 1: Dante Audio

    i. Dante Digital Audio is the worldwide standard in digital audio networking. There is significant information on Audinate's site (the makers of Dante) if you are not familiar with Dante or digital audio networking. We recommend checking out these key links to begin your journey.

        1. https://www.audinate.com/meet-dante/what-is-dante

        2. https://www.audinate.com/meet-dante

    ii. Dante Training & Learning

        1. https://www.audinate.com/learning

        2. https://www.audinate.com/learning/training-certification/video-tutorials/video-series-getting-started-with-dante-audio-networking-training

b. Option 2: Multi-Channel Sound Card

    i. Although this option will work if you find a sound card that supports WDM audio, it is cumbersome, relies on additional expensive hardware.

    ii. KUDO recommends Option 1 - Dante Audio

How do I get WDM audio with Dante into my computer?

a. Dante Virtual Sound Card (DVS) is a virtual driver that converts Dante audio into WDM audio that the PC will recognize as individual audio inputs. It is these individual inputs that KUDO recognized in your browser acting as incoming audio.

b. https://my.audinate.com/sites/default/files/datasheets/Dante_Virtual_Soundcard_09-Sep-2019_1.pdf

c. DVS is only $30 and is a per-computer license. The licenses are not transferrable; but at $30 it is very affordable to purchase for multiple computers as needed.

d. See the above link for minimum PC requirements.

How do I install DVS on my computer?

a. First follow the DVS installation guide to install DVS on your computer, it can be found here. Please note that you have to be local administrator of that PC in order to install DVS. https://www.audinate.com/support/dante-virtual-soundcard

b. Now that you have installed DVS, here are the steps to set up DVS and your Computer:

c. Launch DVS and you will see a screen like this:

   i. C:\Program Files\Audinate\Dante Virtual Soundcard\

   ii. In 64-bit Windows, it will appear under C:\Program Files (x86)

d. Select WDM from the Audio Interface Drop Down

e. WDM will automatically select 16x16 Audio Channels

f. Next select your Network Interface, this is the network connection that has the Dante audio on it.
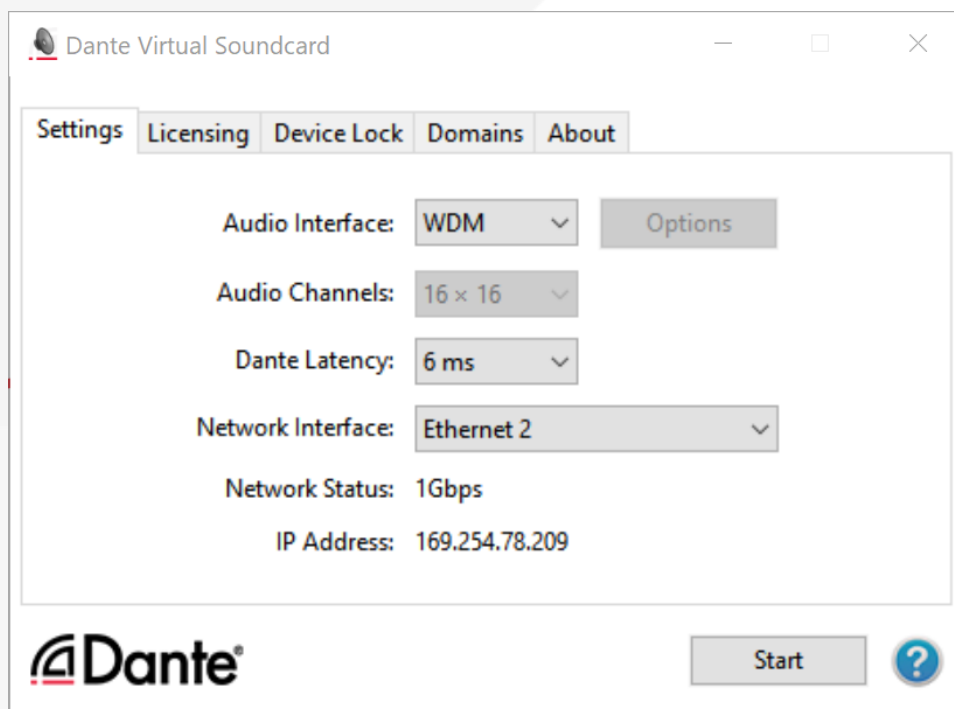
g. Note that you will need 2 Networks on this PC.

   i. Network 1 for the KUDO Venue PC to have Internet Access

   ii. Network 2 for Dante closed network access. Select the Dante connected network here.

h. Select Latency of the Dante Virtual Soundcard (6ms or 10ms recommended)

i. Press Start to enable DVS

j. Verify DVS is running and that Windows is seeing the audio:

   i. (Windows 10) Right Click on the sound icon in the taskbar and select "Open Volume Mixer"

   ii. This opens up the Mixer panel:
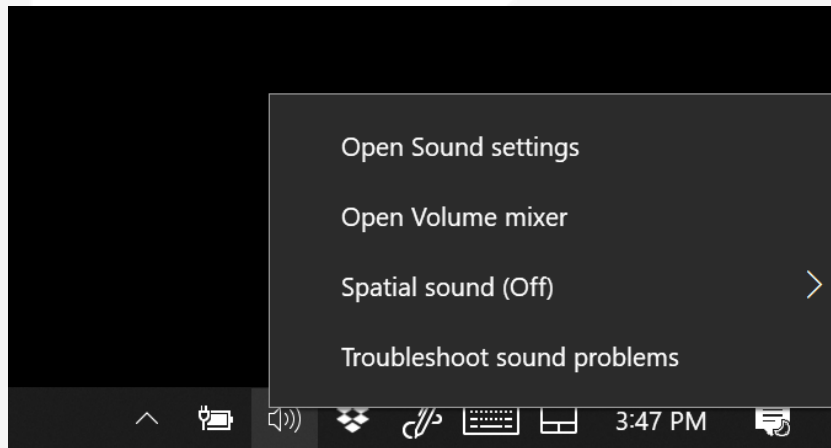
k. Double click on "system sounds" to open the Sound Control Panel
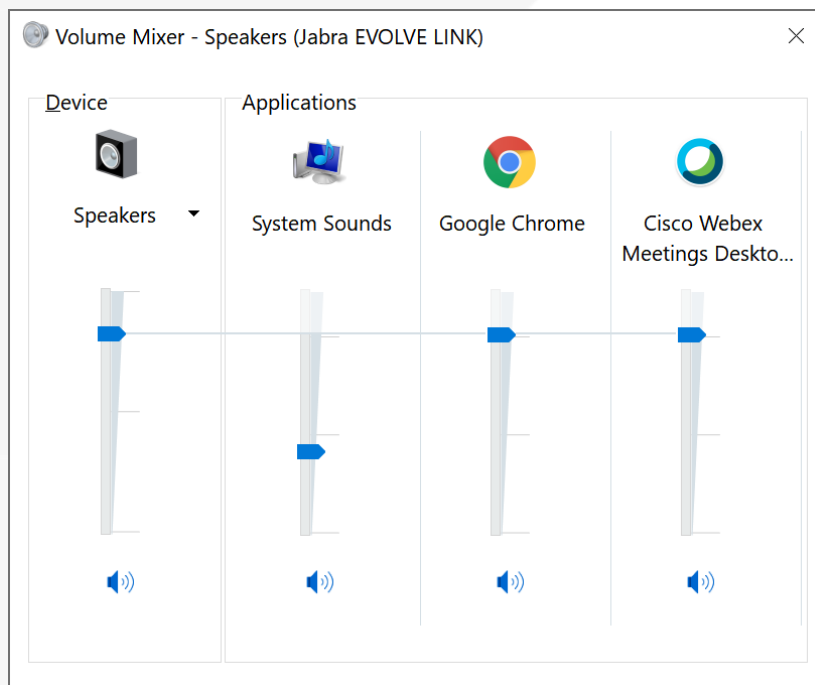
l. Once the Sound Control Panel open up, select the "Recording Tab"

    i.   You should see 8 new Recording Devices DVS Receive 1-2, 3-4....15-16

    ii.   You now have Dante audio available to the WDM driver in Windows.
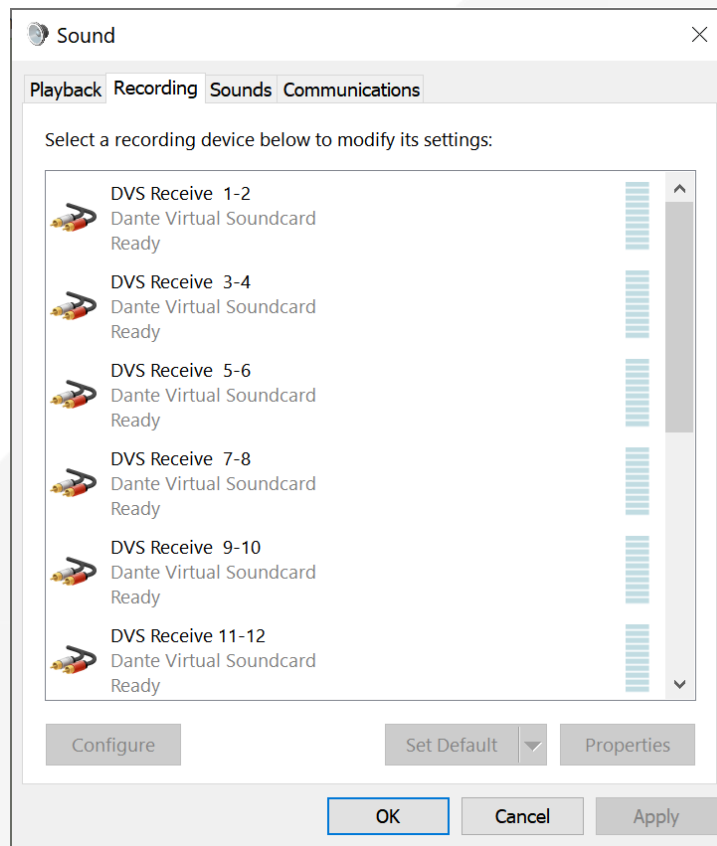
How do I get my audio in my room to it?"

a. This is the genius, flexibility, and power of a Dante network. You can use ANY Dante enabled device! Audinate has an entire portion of the website dedicated to showing all the manufacturer's devices supporting Dante. You may already have Dante network, you just need to plug the PC running DVS into it and use Dante Controller to route/map the channels.

b. Here is an example of a small Dante Network which has a few Analog and USB based Dante devices on it.

c. 8 Channels of audio are mapped to the DVS-KUDO-PC of the local computer. Notice also, a number of the same audio sources are mapped to other destinations. Dante is

d. one to many, not one to one, making the ability to pull audio from anywhere on your network into DVS and KUDO unlimited.

Before Joining | Preparing for a Meeting

We are excited to have you taking part of a meeting on KUDO. Please refer to the items below to help you prepare and make the most of the presentation.

A Good Headset

- Ideally, a USB Headset.
  (Professional-grade is highly recommended)

- Avoid using earbuds type unless you are following from your phone.

- Place the microphone close to your mouth but avoid breathing into it.

A Webcam

- An HD webcam is preferred to get a high quality video.

- Point the camera directly at yourself.

- When you seat in front of your computer, leave enough distance between you and the camera, so your face is entirely visible.

Internet Connectivity

- Use Google Chrome as your browser.

- Use a wired connection.
  (Preferred)

- If wired connection is not available, use high-speed Wi-Fi instead.
  (Ideally 20 and 5 Mbps, for download and upload respectively. 5Ghz / 802.11ac is highly recommended)

Professional Environment

- Choose a private and quiet room to speak from.

- Make sure the lighting in the room is adequate.

- Place yourself so that there is a blank or plain background.

Stay Updated

Make sure you have the latest version of the KUDO app and your browser before joining a meeting. Click on the links bellow to download them:

KUDO

Download on the App Store

GET IT ON Google Play

*Preferred

Download Chrome

Download Firefox

Download Edge

Not sure you meet the requirements?

Run a test and record yourself

If you need help contact support@kudoway.com

KUDO

🖥 Computer (x1) *(for upstream to KUDO)*

Minimum specifications:

- Windows 7+ or MacOS 10.11+
- Wired Internet connection
- 16GB+ memory
- Intel Core i7+ processor
- Chrome (preferred) or Firefox, Safari, Edge browser

Note: An additional computer and Internet connection are highly recommended for redundancy.

Wired Internet connection (x1)

- 20 mbps down / 10 mbps up (min.)
- High-priority bandwidth
- Open TCP port 443 for SSL
- Open UDP Port 3478 for A/V stream
- Firewall or Endpoint Security software to allow above ports

🎤 Audio Input (x1)

- One analog audio feed, feeding program audio to the computer (RCA jack preferred, XLR optional)
- One RCA to USB / XLR to USB adapter to input audio feed to the computer
- Suggested adapters: RCA-USB / XLR-USB

📹 Video Input (x1)

- One digital video feed providing program video to the computer (HDMI preferred)
- One HDMI to USB adapter to input video feed to the computer
- Suggested adapters: HDMI-USB

📶 WiFi Coverage *(for on-site attendees)*

- 802.11ac/ax with isolated 5Ghz
- 1 mbps downstream
- AC1750 to AC3200 with Wave 2 or better
- 3x3 MU-MIMO I/O Antennas or better
- UDP port open

Note: attendees will follow the meeting on the KUDO app in their smartphones with their own headphones.
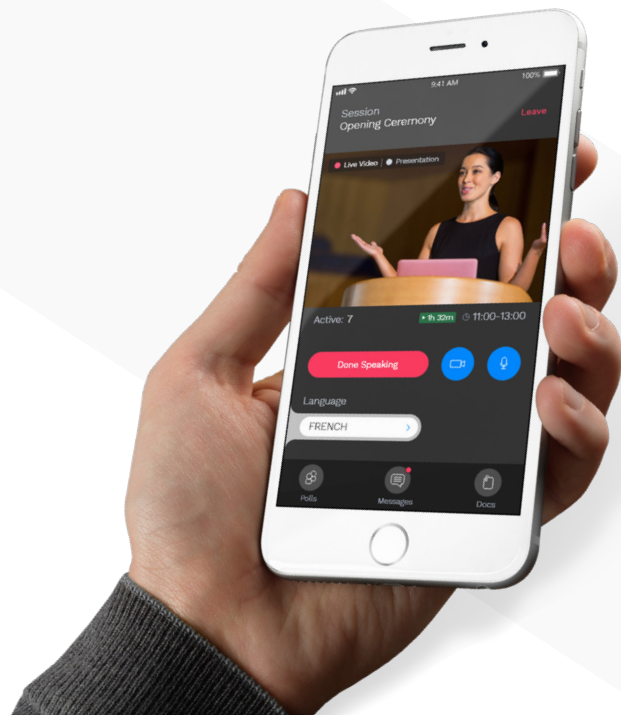
Security | Features

Key Features

- Encrypted media and signaling.
- Customer data always private and secure.
- User data anonymized for total privacy.
- Sensitive user information remains secure.
- WebRTC-compatible.

- 128-bit peer-to-peer encryption on audio and video.
- HTTPS support, Secure RTP and HTTP authentication.
- Safe Harbor certified.

KUDO approaches safety and security from multiple angles:

Code-Level Security

KUDO periodically submits its core code repository to internal audit for code-level exploits.

Application-Level Security

- Core application subject to internal audits for application level exploits, attacks, and penetration to Elastic Computing Cloud (EC2) services.
- IP or user blocking after multiple failed access attempts.

Cloud-Level Security

- Ecosystem is hosted in Amazon Web Services (AWS).
- Access continuously monitored and restricted through Identity and Access Management (IAM) policies, AWS CloudTrail, and AWS CoudWatch.
- AWS VPC (Virtual Private Cloud) encapsulates all servers in a secure and private environment.
- AWS Multi-Factor Authentication (MFA) and AWS Cognito.
- AWS Route 53 and AWS CloudFront to mitigate DDoS attacks.

Compliance

Currently working to make KUDO an Enterprise Compliant application.

Encryption

- All transits/communications done through SSL.
- Communication between KUDO's platform and the clients' apps or browsers encrypted with forced SSL.
- Relational Database Service (RDS), with all stored data being encrypted.

Miscellaneous

- No collection of PII (Personally identifiable information).
- Underlying platform is Safe Harbor Compliant and TRUSTe Certified Privacy member.
- All archived files encrypted, including audio, video and data.
- Audio and video encrypted by AES cipher with 128-bit keys plus HMAC-SHA1 for data integrity.
- Virtual Private Cloud (VPC) for server protection.
- URLs not serially numbered.
- API secret keys not saved in public source code or libraries on the client's end.