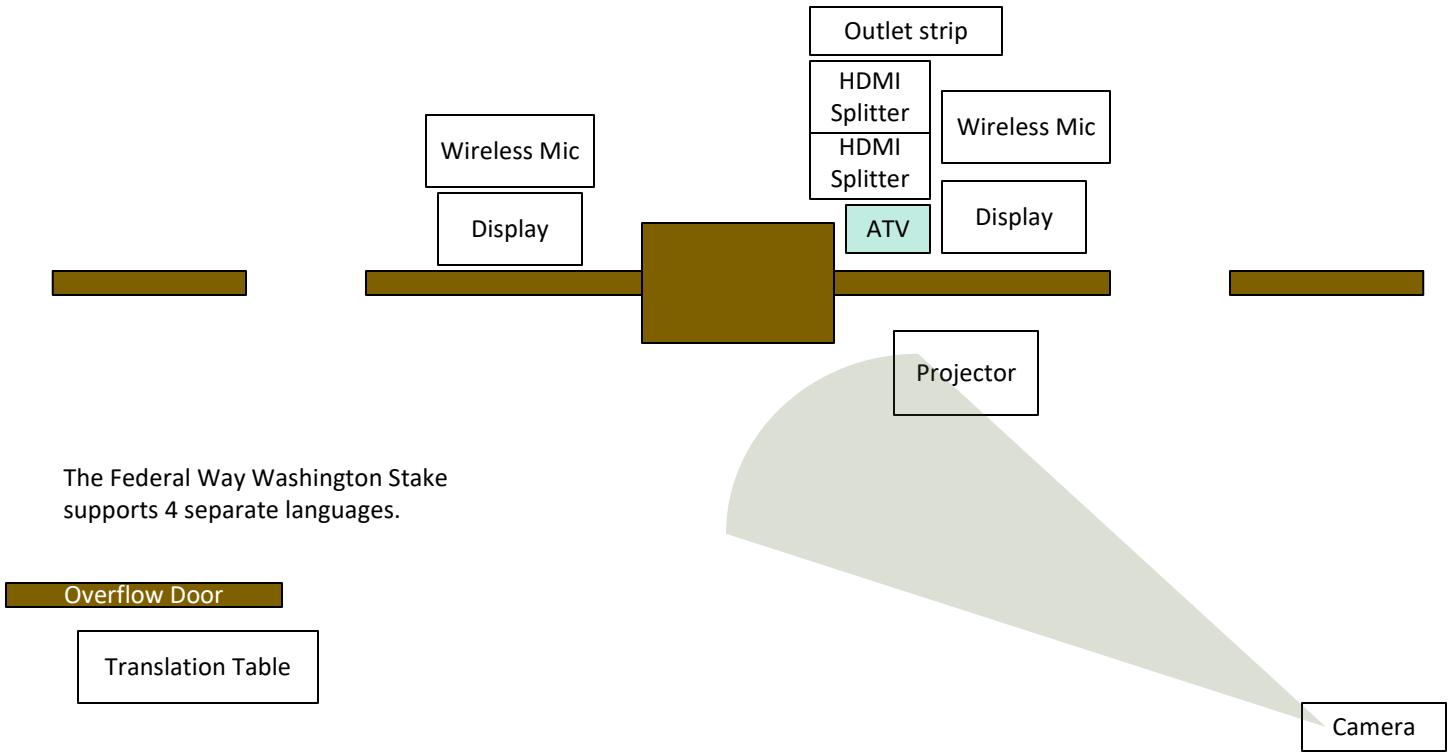
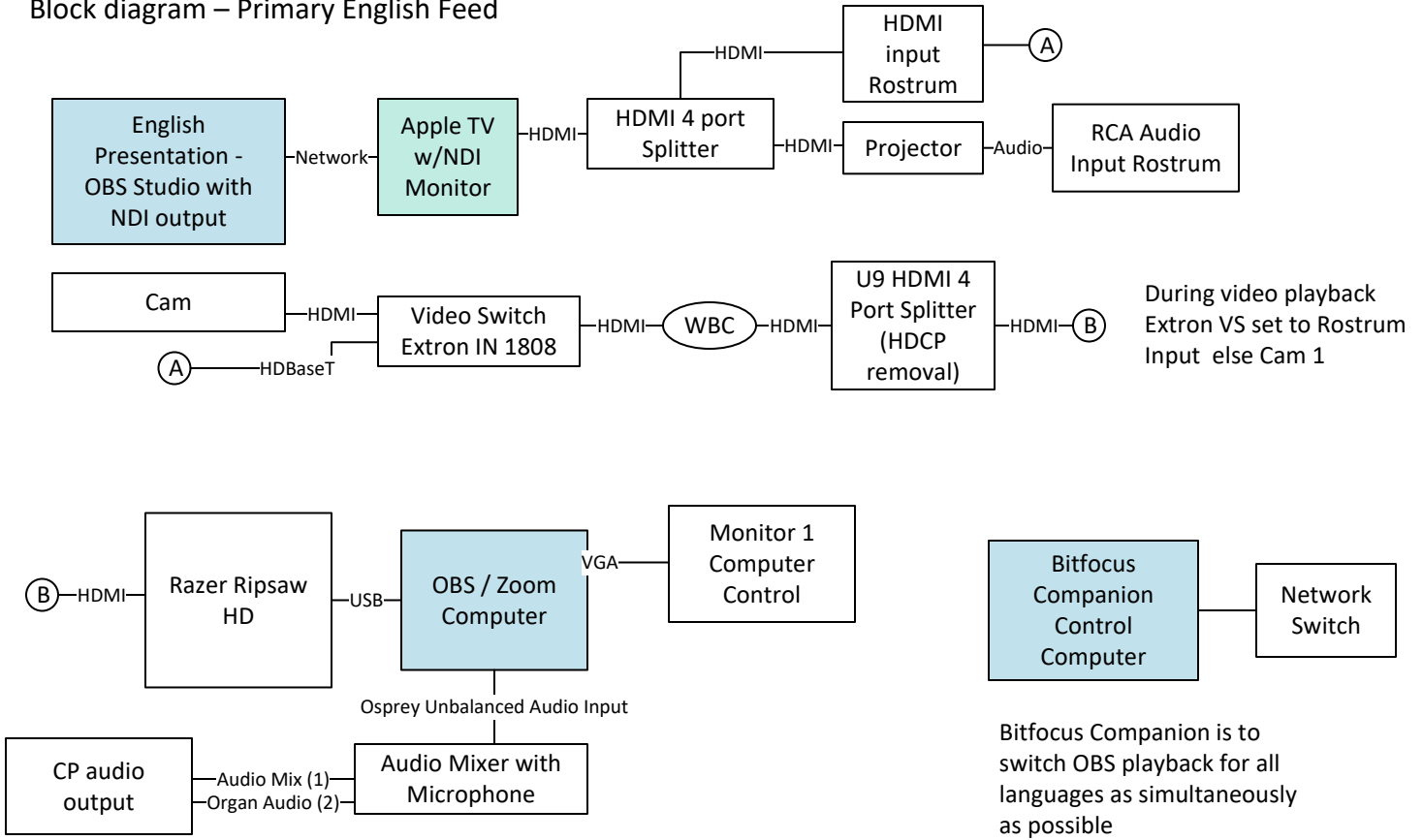


# Worldwide Relief Society Devotional and Testimony Meeting March 17, 2024



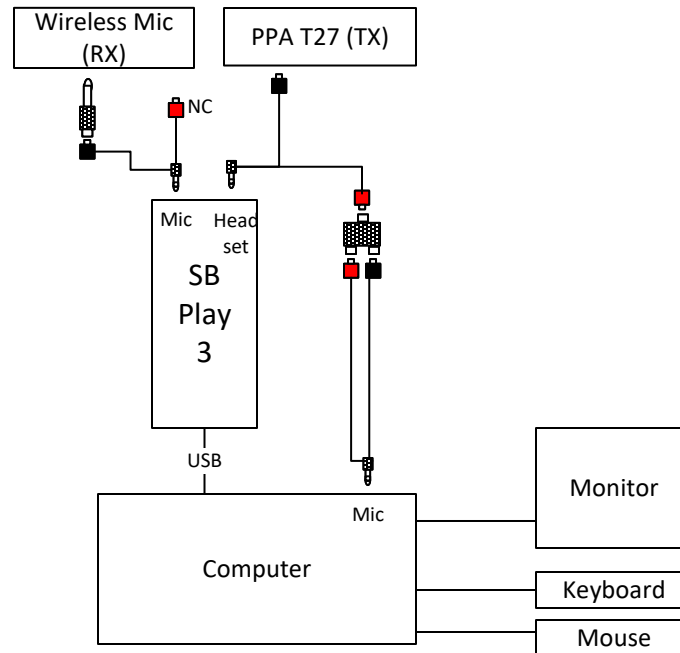
The Federal Way Washington Stake supports 4 separate languages.

## Block diagram – Primary English Feed



Note: Some items are located in AV Room, Translation Table, and on Rostrum

## Translation Station



### Parts

- AudioTechnica System 10 Wireless Microphone or equivalent. For interpreter to use in chapel.
- Williams AV PPA T27 ALS Transmitter. For translation receivers in chapel.
- 1/4" Mono (M) to RCA (F) Adaptor. Unbalanced audio from wireless microphone receiver.
- 3.5 mm stereo (M) to RCA (F) Y cable. Device interconnection. (Qty 3)
- RCA (F) to dual RCA (F) splitter adaptor.
- Creative Soundblaster Play 3 USB audio interface.
- Windows PC with integrated sound card that supports a separate microphone input and headphone output jack.  
Power supply
- Monitor, Keyboard, Mouse
- Cat5 or better network patch cable.

### Software

- Windows 10 or 11
- OBS Studio 30 or better
- Zoom desktop client

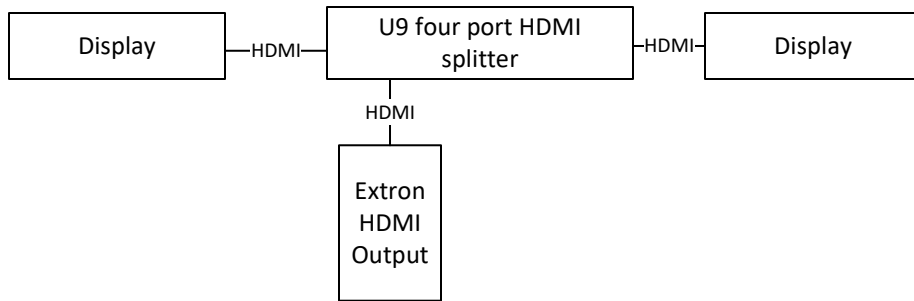
This setup is to be placed on translation table in sufficient quantity to support the number of languages needed.

## Translation Table

Wireless Mic (RX) Korean	6+ port Gigabit Switch		15+ port outlet strip				PPA T27 (TX)
Wireless Mic (RX) Spanish	Computer and Monitor Korean	Computer and Monitor Spanish	Computer and Monitor Samoan	Laptop Bitfocus Companion	Laptop OBS Studio English NDI Feed	PPA T27 (TX)	
Wireless Mic (RX) Samoan						PPA T27 (TX)	

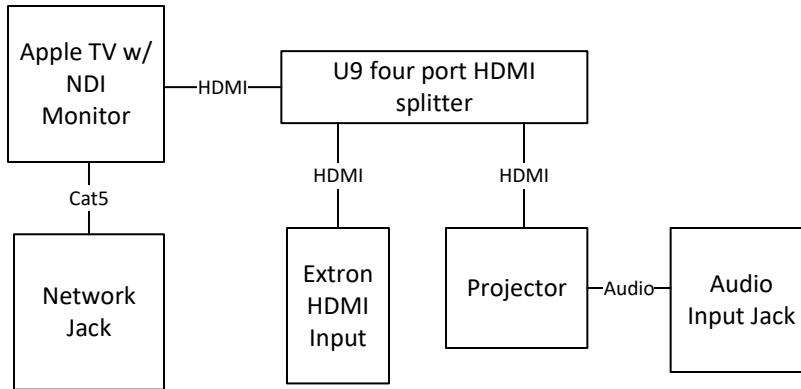
- Maintain as much horizontal separation between transmitters and receivers as practical.
- See Translation Station page for hookup details.
- Laptop OBS Studio English NDI Feed provides a NDI stream to an Apple TV with NDI Monitor software on stand. This is the master program source.
- Laptop Bitfocus Companion connects to four computers running OBS studio to control OBS scene selection. This is to start playback of the various languages as close to simultaneously as possible. A second OBS scene allows local translators to send audio to local transmitters as well as Zoom interpreter channel.
- Table is to be setup in overflow (North side).
- Cover table with black table cloth.
- Provide a wired network cable from AV closet to Chapel overflow.
- Disable Liahona wireless network using CNM.

### Rostrum Display Detail



This is program output for those seated on the stand.

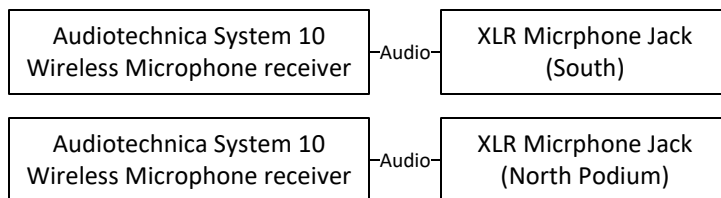
### Rostrum Projection Detail



**Notes:**

- ATV is setup to receive NDI main program feed. This allows main screen to be blank until presentation. This is independent of main program content to participants seated on Rostrum and watching over Zoom.
- Projector audio volume is set to 100%
- Congregation audio is set using knob on audio input jack.

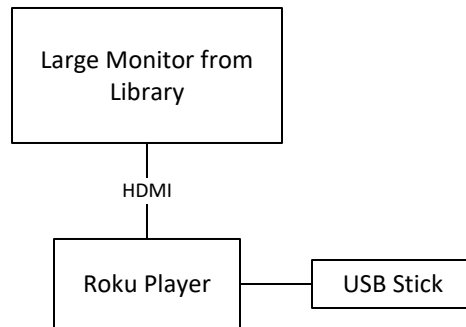
### Rostrum Wireless Microphone Detail



**Notes:**

- Wireless Microphones are for bearing of testimonies from the floor.
- Adjust gain to parity with podium microphone
- If testimony is not in English then second microphone is to be provided to translator.

## Information Kiosk



- Prepare a single image welcoming members to the event. Display that image on the monitor.
- Place the monitor near the principle chapel door.
- Include instructions on special accommodations such as where to checkout ALS receivers, receivers for translation, and where to find event support staff.
- Have ushers assigned ahead of time to assist members so technology staff are not encumbered with that role.

## Learnings from Worldwide RS Devotional and Testimony Meeting

### Opportunities for Improvement

1. Setup of system will take longer than anticipated.
2. Have a check list of software configuration steps will improve reliability.
3. The stake needs to have their own transmitters. A reliance on Wards to bring their portable translation transmitter puts event support for a particular language at risk should they not bring their hardware.
4. The translation station / table should be located in the foyer and not in the chapel. If there are any issues then members will seek help from this table disrupting the worship experience of others. This placement decision was driven by the need to have the transmitters in the chapel because of RF attenuation between the foyer and the chapel. Use of higher gain centrally located antennas may mitigate this requirement. Feeding the transmitters with longer audio cable may also allow the table to be relocated.
5. On site interpreters need to be assigned prior to the event.
6. Stake Technology staff onsite needs to be more than 2.
7. Having a pre-recorded looping audio message prior to the meeting that makes an announcement of "This is the Korean channel" in Korean and English will help translation receiver users have confidence that their receiver is on the correct channel.
8. Lighting needs to be dimmed to view the projector. We need a template card to overlay the light switches to help communicate which switches of the nine available are to be dimmed prior to the presentation.

### Zoom over iPhone has limited success as an alternate translation reception device because of the following challenges

1. Patron may have their phone configured using a non-English language which makes it almost impossible for English speaking support staff to assist them in accessing Zoom feed. There is a verbal language barrier as well as a device interface barrier. You need a member of their unit that speaks both languages to be assigned to assist.
2. While a special website (such as [broadcasts.chuchofjesuschrist.org](http://broadcasts.chuchofjesuschrist.org) or [federalwaystake.net](http://federalwaystake.net)) with published links to connect to Zoom may exist, the normal member may not be aware of the site, and once they access it may be slowed down based on the language it is published in.
3. Phone user may not have their headset with them and are consequently disruptive to other users.
4. For major event we turn off the Liahona network and operate event production equipment using wired networking. User phones may be expecting to connect to Liahona and when their device says that Wi-Fi is not available, they are stymied.
5. Local RF receivers are the most simple and reliable option for one-many transmissions.

### Troubleshooting

1. All computers need to have they power saving mode disabled.
2. We have the AppleTV running the Sienna NDI player software lose the Audio during pre-meeting testing. Reconnecting the stream restored the audio.
3. OBS studio audio sources sometimes reconfigure themselves depending on the hardware present when the program is started up. For our setup we used the SB Play 3 for Microphone audio and monitoring audio. The computer built in microphone jack was used for the Zoom microphone. Ensure that that Monitor and Output is on for all audio input devices. Check and recheck often.

### Successes

- Key new deliverables include
  1. Transmission of interpretation using onsite transmitter and over Zoom interpreter channel. Three different languages simultaneously. No need for external mixer as we have done previously.
  2. Playback of three non-English pre-recorded messages that are synchronized with projected English version. Using Bitfocus Companion to trigger OBS Studio playback across four different computers worked great.
- Use of two sound cards (SoundBlaster Play 3) and built in sound card. Primary card was SoundBlaster Play 3 due to lower latency of driver. Built in computer sound card had greater latency so it was used for outbound Zoom, which also has latency. No need for external audio mixer.
- Using VBAudio cable as the Zoom output on translation computers to suppress hearing the local microphone. There is no need to hear the program audio via the computer for a webinar and it helps keep in chapel audio quieter.
- Sending pre-recorded HD program from a computer in back of house to an apple TV in front of house over NDI worked great.
- Segmentation of roles between translation and broadcast worked great. It let staff focus on their different tasks.
- Build on framework and foundation used previously.

