



SUPERIOR COURT OF CALIFORNIA COUNTY OF FRESNO



Minimum Technology Guidelines for VRI in Spoken Language

This document outlines the minimum technology guidelines for the configuration of the Video Remote Interpreter setup. This system will allow an interpreter to be used from any location for court trials.

1. Video Endpoint (at Interpreter)
 - a. CAMERA: A USB webcam that supports a minimum resolution of 720p.
 - b. DISPLAY: Tablet (8" and above), or 15" minimum for external laptop display or monitor display. Mobile devices should be motionless during VRI session
 - c. COMPUTER/LAPTOP: Should be less than 4 years old.

2. Video Endpoint (in Courtroom)
 - a. LOCATIONS: A camera shall be in place, aimed directly at the defendant, from either a computer or tablet device. In addition, a USB camera can be connected to the bench computer allowing the interpreter to see the judge. Cameras (or Tablets) covering the Public Defender, District Attorney and courtroom can be used to give a better VRI experience.
 - b. CAMERA: A USB webcam that supports a minimum resolution of 720p if using a desktop computer or laptop. If a tablet is being used (e.g. iPad, Android or Windows based tablet such as a surface), an integrated camera that supports a minimum resolution of 720p.
 - c. DISPLAY FOR DEFENDENT: An LCD display connected to a computer, laptop display or tablet can be used for viewing, depending on technology available at the court.
 - d. DISPLAY FOR COURTROOM: The display shall be an LCD TV of an appropriate size, as determined by the judge in the courtroom. It should be setup as a duplicated display from either the desktop computer, laptop or tablet. Wired or wireless video transmissions can be arranged from the endpoint to the large LCD using technologies such as (wireless VGA transmission, Apple TV, Miracast, etc.)
 - e. COMPUTER/LAPTOP: Should be less than 4 years old.
 - f. TABLET: Should be either an Apple iPad, Android OS, or Windows based tablet less than 4 years old.

3. Endpoint Bandwidth

Each connecting device shall be provisioned or have access to a minimum amount of bandwidth to the Internet to support 720p video and allow for multiple video participants to be aggregated and shown on each endpoint in a "Hollywood squares" arrangement.



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4. Network Connectivity

It is recommended that QoS be implemented/enabled on each court's network to prioritize video traffic, helping to prevent video jitter and pixilation. Similarly, if VoIP is being used rather than older PBX, CENTREX or PSTN direct lines, audio traffic shall be prioritized as the most critical network packets due to the importance of audio clarity. The size of a court's network connection should provide enough sustainable bandwidth to facilitate an active VRI session, in addition to general day-to-day Internet traffic consumed by the court.

5. Security

All participants within a VRI session shall use SSL encryption for initial video connectivity to the head-end conferencing system. This is accomplished and enforced by the head-end system using the HTTPS protocol and a 2048-bit SSL certificate provided via a valid certificate authority (CA). Additionally, audio connections must be authenticated through a meeting code, ensuring that "barge-ins" do not occur and that each VRI session has a unique access code.

6. Audio

- a. Wired or wireless phones can be used for both the interpreter and courtroom participants
- b. Phones should at a minimum be provided with PSTN or PBX dial-tone. VoIP is preferred and adds reliability and preservation of clear audio.
- c. Standard G.711 and G.729 CODECS are acceptable. G.722 wideband CODEC is not required and is converted automatically to narrowband (e.g. G.711 and G.729) by VoIP systems for "off-net" calls traversing the PSTN. [This standard has been a common practice for decades and works well for numerous calls made around the globe each day.](#)
- d. Wired and wireless phones must have the ability to allow for the use of a good quality headset with an adjustable mic for optimum voice clarity



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Fresno Superior Court's Cart Solution

Fresno Superior Court's cart solution was primarily based on using equipment that the court currently possessed. The LCD TV/DVR was repurposed from upgrading the Jury area with larger TV's. The mobile cart is a fully contained system that requires a single power outlet.

Qty	Equipment	Description
6	Cisco Wireless phone (7921 or newer)	Judge, DA, PD, Def, CSR, Public
5	Plantronics headsets	excluding public
5	Plantronics to 2.5mm adapter	
1	LCD TV/DVD combo (26")	For courtroom to view active speaker
1	Cart w/powerstrip	Holds all equipment - portable
1	Tablet (Surface Pro 3)	Courtroom Camera / Displays active speaker
3	Ipad Tablets	Def, DA and PD
3	Ipad Keyboard Case	Def, DA and PD
1	HD camera	Camera for Judges PC
1	HDMI cable	Surface-Pro 3 to TV
1	Mini Display to HDMI	Surface-Pro 3 to TV
2	Power strips	

Assumptions:

- Court has a wireless infrastructure solution in place
- Court is using a Cisco VoIP phone system
- Using a conferencing solution that supports webcams and tablets
- Interpreter has sufficient internet bandwidth at their location for Audio and video conferencing



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Pictures of Fresno Superior Court's VRI solution

Cart with all components



View of Judges PC



View of Judges Bench



View of the Defendants Bench with tablet

