

SIMULATION EXAM 7 — QUESTIONS

1-100

1. A DSP in a conference room has begun rebooting itself approximately every two hours. The rack is on a tested UPS. Logs show the reboots are not scheduled. The most likely cause is:

- A. The DSP amplifier card has failed
- B. The ceiling microphone has reached end-of-life
- C. Room acoustics have changed significantly
- D. The DSP firmware has a known defect requiring an update

2. A conferencing codec is connected to a 4K display via HDMI. Protected content produces a blank screen while unprotected content displays correctly. The most likely cause is:

- A. The HDMI cable has physical damage
- B. The display power supply is failing
- C. HDCP authentication is failing somewhere in the signal chain
- D. The network has packet loss affecting content delivery

3. Users report that a conference room's wireless microphone cuts out intermittently. The receiver is installed inside a metal equipment rack. The most likely cause is:

- A. The metal rack is attenuating the RF signal to the receiver antennas
- B. The microphone batteries require replacement
- C. The DSP input gain is too low for the receiver output
- D. The frequency band is licensed incorrectly

4. A networked audio system on a managed switch produces intermittent clicks during periods of normal meeting activity. All Dante devices are on the same VLAN. The most likely cause is:

- A. The DSP has a firmware defect
- B. Quality of Service is not configured to prioritize Dante traffic
- C. The microphone array has failed
- D. The room's HVAC is producing acoustic interference

5. A 4K display connected through a video matrix switcher shows only 1080p output despite the source being 4K-capable. No HDCP content is involved. The most likely cause is:

- A. The video cable is damaged
- B. The source power is inadequate
- C. The matrix switcher is reporting a 1080p EDID to the source
- D. The display is set to a non-native resolution

6. A conferencing codec has been unable to register with the cloud meeting service for several hours. Ping tests to the service IP succeed. The most likely cause is:

- A. A firewall is blocking the specific ports required for registration
- B. The codec power supply is failing
- C. The room cabling has degraded
- D. The HDMI cable has failed

7. A projector shows noticeably dimmer output in one corner of the image than the others. All other settings have been verified. The most likely cause is:

- A. The content being displayed has uneven brightness

- B. The HVAC system is casting shadows
- C. The ambient light in the room is uneven
- D. The projector's imaging engine has a partial failure or lens misalignment

8. A conference room audio system produces clear local audio but remote participants describe "muffled" or "distant" speech. Local audio has been verified. The most likely cause is:

- A. The local loudspeaker amplifier is overloaded
- B. The microphone coverage, gain, or EQ sending to the codec is insufficient
- C. The room's reverberation has changed
- D. The network switch is dropping packets locally

9. A rack-mounted amplifier has thermally shut down twice this week during high-volume events. The rack was originally designed with proper cooling. The most likely cause is:

- A. A rack cooling fan has failed or a filter is clogged
- B. The loudspeaker impedance has changed
- C. The DSP is sending incorrect signal levels
- D. The amplifier firmware has developed a software defect

10. A touch panel in a conference room has become progressively slower to respond over the past six months. Other AV systems in the room function normally. The most likely cause is:

- A. The touch panel screen has developed a hardware fault
- B. The control processor has reached end-of-life
- C. The network switch is reaching saturation
- D. Touch panel firmware has accumulated issues requiring a clean reinstall or update

11. A network switch port powering a PoE+ device has been logging intermittent link-flap events. The device works correctly when moved to a different port on the same switch. The most likely cause is:

- A. The powered device's firmware is corrupted
- B. The specific switch port has a hardware fault
- C. The Ethernet cable is incorrectly terminated
- D. The switch has reached its PoE aggregate budget

12. A conferencing codec has been producing excellent audio for two years but has recently developed intermittent "robotic" sounding audio. The cloud platform has rolled out a new audio codec. The most likely cause is:

- A. The conferencing hardware has failed
- B. The network has physically degraded
- C. The new platform audio codec requires DSP or codec configuration adjustment
- D. The microphone array has reached end-of-life

13. A conference room's room-scheduling tablet shows calendar data that is out-of-date by three days. The integration was previously working. The most likely cause is:

- A. Authentication between the tablet and calendar service has expired or been revoked
- B. The tablet display has physically failed
- C. Unauthorized users have changed the calendar
- D. The network switch is dropping packets

14. A rack-mounted equipment has persistent low-frequency hum in the audio output. The hum is consistent regardless of the active source. The most likely cause is:

- A. Insufficient acoustic treatment in the room

- B. DSP sample rate configuration is incorrect
- C. A ground loop exists between interconnected equipment
- D. The HDMI cable is producing noise

15. A video distribution system feeds four displays. Three displays show correct video; one shows "no signal." The other three are working. The most likely cause is:

- A. The source has failed entirely
- B. The network has reached saturation
- C. All displays are affected but only one reports the error
- D. The HDMI cable or distribution amplifier output to the affected display has an issue

16. A classroom audio system uses wireless microphones. During large all-school events, users report interference. The most likely cause is:

- A. The DSP has become overloaded
- B. Other wireless systems in use during the event operate on the same frequencies
- C. The ceiling microphones are interfering
- D. The loudspeaker amplifier is cycling

17. A ceiling-mounted PTZ camera has developed slow response to preset commands. The camera has been installed for two years. The most likely cause is:

- A. The control system has developed programming errors
- B. The network has reached saturation
- C. Camera firmware or pan/tilt motor mechanism has degraded
- D. The camera mount has become loose

18. A conference room audio system produces clicks during normal speech, with audio levels verified as correct and sample rates matching across devices. The most likely cause is:

- A. The amplifier cooling fan has failed
- B. A connected device is producing DC offset or voltage transients at its output
- C. The microphone has reached end-of-life
- D. The room's acoustics have changed

19. An AV-over-IP decoder cannot display video from any source but its management interface responds on the network. The most likely cause is:

- A. The video output cable has failed, or the decoder is not subscribed to the correct multicast stream
- B. The corporate firewall is blocking the decoder's internet access
- C. The decoder power supply is providing insufficient voltage
- D. The network switch has reached end-of-life

20. A beamforming ceiling microphone array has worked for two years but recently produced intermittent audio. The ceiling has shifted slightly due to building settling. The most likely cause is:

- A. The microphone itself has failed
- B. Ceiling settling has blocked or partially obstructed the microphone
- C. The DSP sample rate is now mismatched
- D. Settlement has caused acoustic path changes affecting pickup

21. A new videoconferencing system shows clear video to the far end but the far end's audio is barely audible on local loudspeakers. The far-end participant is confirmed speaking at normal level. The most likely cause is:

- A. The ceiling microphone array is malfunctioning

- B. The DSP gain staging between codec receive and loudspeaker is incorrect
- C. The local amplifier output is insufficient for the room
- D. The display signal is interfering with the audio path

22. A client's conferencing system disconnects from the cloud platform during periods when IT security applies policy updates. The most likely cause is:

- A. The Wi-Fi router is overloaded
- B. Security policy updates are disrupting authentication tokens or blocking ports
- C. The conference room electrical circuit is failing
- D. The display is experiencing HDMI authentication issues

23. A projector flickers when displaying content from a specific laptop but not when displaying the same content from other sources. The most likely cause is:

- A. The source laptop's output refresh rate is mismatched with the projector's native rate
- B. The projector lamp is reaching end-of-life
- C. The HDMI cable is failing
- D. The projector air filter needs cleaning

24. An audio signal chain produces distortion only when the presenter speaks loudly into the microphone. Quiet speech is clear. The most likely cause is:

- A. The loudspeaker has failed
- B. The DSP is processing latency
- C. The microphone cable is damaged
- D. The microphone preamp or DSP input is clipping on peaks

25. A video wall displays black tiles randomly during content playback. The affected tiles change over time. The most likely cause is:

- A. The video wall content is intentionally black in those areas
- B. Individual tile decoders have intermittent network or power issues
- C. The video wall controller has failed
- D. The display backlighting has reached end-of-life

26. A conference room's acoustic echo cancellation produces intermittent artifacts on remote audio. No physical changes have been made. The most likely cause is:

- A. A firmware or configuration update has changed AEC reference or processing behavior
- B. The microphone has reached end-of-life
- C. The room has become more reverberant
- D. The loudspeaker amplifier is failing

27. Users report that a digital signage player shows outdated content on Monday mornings, despite the CMS having newer content. The player connects to an unstable cellular connection. The most likely cause is:

- A. The display panel has failed
- B. The content management platform has malfunctioned
- C. Signage scheduling has bugs
- D. The unstable connection prevents content from updating on schedule

28. A CTS holder is troubleshooting a conference room where only some seating positions have poor microphone pickup. The ceiling microphone array was installed 18 months ago. The most likely cause is:

- A. The DSP matrix routing has been misconfigured

- B. The microphone array beamforming is configured for a different room layout
- C. The ceiling height is beyond the microphone's specification
- D. The microphone capsules in that zone have failed

29. A 70V distributed audio system includes 32 loudspeakers. One loudspeaker has stopped producing audio. Other loudspeakers function normally. The most likely cause is:

- A. The entire amplifier has failed
- B. The 70V line has an open circuit
- C. The DSP output has stopped working
- D. The specific loudspeaker's tap transformer or driver has failed

30. A conferencing codec produces good audio during normal meetings but users report occasional one-way audio where they can hear but not be heard. The most likely cause is:

- A. The microphone path has intermittent connectivity or mute activation
- B. The loudspeakers have reduced output
- C. The codec power supply is failing
- D. The HDMI cable is degraded

31. A power amplifier has developed intermittent pops during program audio. Neither the DSP nor the source is the cause. The most likely cause is:

- A. The amplifier output transistor is failing intermittently
- B. The speaker cables have insulation damage
- C. The amplifier has developed a cold solder joint or failing capacitor
- D. The room's HVAC is introducing vibration

32. A conference room camera has become increasingly slow to respond to pan commands. The camera has been in service for three years. The most likely cause is:

- A. The control system has developed programming errors
- B. The camera mechanical pan/tilt motor is wearing out
- C. The camera network connection is saturated
- D. The control panel has failed

33. An AV-over-IP encoder has become unreliable — it randomly drops out of the multicast stream. Other encoders on the same switch work normally. The most likely cause is:

- A. A hardware defect in the specific encoder
- B. The network switch's multicast configuration is incorrect for this port
- C. The encoder's firmware is universally defective
- D. The entire multicast implementation is broken

34. A newly installed ceiling microphone produces lower pickup levels than the manufacturer's specification suggests. All DSP settings are verified correct. The most likely cause is:

- A. The microphone capsule is defective
- B. The DSP's input impedance is incorrect for the microphone
- C. The room's reverberation is absorbing the signal
- D. The microphone is installed outside its specified operating range (ceiling height, distance from talker)

35. A power amplifier is producing excessive heat even at moderate program levels. The amplifier is rated for this use case. The most likely cause is:

- A. The amplifier has been overloaded continuously

- B. The amplifier cooling is inadequate — fan failure, filter clog, or airflow obstruction
- C. The DSP is sending digitally-clipped signal to the amplifier
- D. The loudspeaker impedance is now below specification

36. A conference room's DSP produces audio with an obvious hiss during quiet moments. The hiss is not present when the DSP is bypassed. The most likely cause is:

- A. The loudspeaker is producing the hiss
- B. The amplifier is clipping
- C. The gain structure through the DSP is improperly set with excessive gain
- D. The network is causing the hiss

37. A video conference has audio latency that is causing speakers to talk over each other. The audio delay appears consistent. The most likely cause is:

- A. Audio is routed through excessive DSP processing or the codec is adding latency
- B. The loudspeaker is producing delay
- C. The microphone has pickup delay
- D. The amplifier has introduced latency

38. A conferencing system reports lost meeting connections when video bitrate spikes on long calls. Audio continues but video fails. The most likely cause is:

- A. The cloud service is limiting session length
- B. The codec has internal memory issues
- C. The display is refusing high bandwidth
- D. Network bandwidth is insufficient or inconsistent for peak video needs

39. A rack-mounted DSP produces occasional loud pops when specific source devices are activated. The most likely cause is:

- A. DC offset or voltage spike from the source triggers the DSP input
- B. The DSP firmware has a universal defect
- C. The power amplifier is introducing the pops
- D. The room has electrical noise

40. An assistive listening system has reduced coverage in the rear of the room compared to the front. The system was recently commissioned. The most likely cause is:

- A. The user's receiver batteries are weak
- B. The loudspeaker output has degraded
- C. The assistive listening transmitter placement or power is inadequate for room coverage
- D. The microphones are producing weak signal

41. A conferencing codec has developed occasional registration failures during the afternoon. Logs show the failures correlate with peak employee traffic on the network. The most likely cause is:

- A. The codec has reached end-of-life
- B. Network congestion during peak hours is affecting codec signaling
- C. The display is malfunctioning
- D. The room cabling has degraded

42. A power amplifier is making fan-like noise even when no audio is playing. The noise is constant. The most likely cause is:

- A. The loudspeaker has developed a mechanical defect

- B. The room has environmental noise
- C. The DSP is outputting noise
- D. The amplifier's cooling fan has developed a bearing issue

43. A conferencing codec has been showing a "device not found" error for the attached camera. The camera has power and its USB cable is intact. The most likely cause is:

- A. The USB cable has developed a fault, or the codec's USB port has an issue
- B. The camera firmware is corrupted
- C. The network switch is dropping USB frames
- D. The control system is interfering

44. A ceiling-mounted loudspeaker is producing audio at reduced volume compared to other loudspeakers in the same zone. The most likely cause is:

- A. The DSP has reduced the gain for that specific channel
- B. The room acoustics have changed
- C. The amplifier channel feeding that loudspeaker has degraded
- D. The loudspeaker tap or the driver in that specific loudspeaker has failed

45. A conference room's video wall shows content that has color-shift artifacts in specific tile areas. The color shift is consistent. The most likely cause is:

- A. The source content is intentionally colored
- B. Specific tiles in the video wall have calibration drift or panel aging
- C. The controller has failed
- D. The content management system has corrupted color profiles

46. A network switch port has been reporting link-flap events for several days. The connected device functions elsewhere. The most likely cause is:

- A. The entire switch needs replacement
- B. The connected device has reached end-of-life
- C. A physical layer issue — damaged cable, oxidized connector, or failing port
- D. The switch firmware is universally defective

47. A 70V distributed audio system has intermittent audio across multiple loudspeakers. The amplifier output is correct. The most likely cause is:

- A. The DSP has developed a fault
- B. The 70V line has a loose or corroded connection causing intermittent continuity
- C. Every loudspeaker has independently failed
- D. The amplifier is overloading intermittently

48. A conferencing system has been experiencing periodic audio loss. Investigation shows the audio path is routed through four different DSPs with internal digital links. The most likely cause is:

- A. The excessive number of digital links is introducing synchronization issues
- B. The conferencing service has issues
- C. The loudspeaker output has degraded
- D. The amplifier power is inadequate

49. A ceiling-recessed loudspeaker is producing distorted audio at moderate volumes. Other loudspeakers in the same circuit are clear. The most likely cause is:

- A. The DSP has distortion in its output

- B. The amplifier is clipping only on that channel
- C. The room has introduced the distortion
- D. The loudspeaker driver has developed a mechanical defect such as a torn cone

50. A client has reported that a particular conference room's touch panel intermittently shows "server not available." Other conference rooms work normally. The most likely cause is:

- A. The entire control system has failed
- B. The client's network has general issues
- C. Network connectivity between the specific panel and its control processor is intermittent
- D. The touch panel hardware has failed

51. A video matrix switcher has begun producing no-signal outputs on specific ports. The source and destinations test correctly elsewhere. The most likely cause is:

- A. The DSP has failed
- B. The network switch is dropping packets
- C. The room cabling has degraded
- D. Specific internal routing or output circuitry in the matrix switcher has failed

52. A newly installed AV-over-IP system has visible banding in the displayed image on all endpoints. The most likely cause is:

- A. Insufficient compression bit depth or color space conversion in the encoding
- B. The displays have calibration issues
- C. The network is dropping packets
- D. The room has ambient light issues

53. A conference room's wireless microphone produces intermittent dropouts when the presenter moves near a specific wall. The most likely cause is:

- A. The receiver is set to the wrong frequency
- B. RF multipath or physical interference from the wall affects signal at that location
- C. The microphone battery is dead
- D. The DSP is muting the signal

54. A ceiling microphone array is producing audio with unusual "robotic" quality during normal speech. No other changes have been made. The most likely cause is:

- A. The microphone capsule has failed
- B. The DSP has a malfunctioning compressor
- C. The DSP's acoustic echo cancellation or noise reduction has been misconfigured
- D. The network is causing artifacts

55. An AV rack has developed a hot spot where specific equipment is overheating. The rack has proper overall cooling. The most likely cause is:

- A. The overall rack ventilation is inadequate
- B. Adjacent equipment is obstructing airflow to or from the hot equipment, or blanking panels are missing
- C. The DSP is generating excessive heat
- D. The amplifier is failing

56. A CTS holder is troubleshooting a video distribution system where all downstream displays show flickering video. The source is not flickering. The most likely cause is:

- A. The cable between source and distribution amplifier has developed a fault or the distribution amplifier has failed

- B. Individual displays have failed simultaneously
- C. The network is congested
- D. The entire system needs replacement

57. A conferencing codec produces good video but has been cutting out audio during some meetings. The cutouts are brief. The most likely cause is:

- A. The codec is rebooting itself
- B. The ceiling microphones have intermittent connectivity
- C. The audio path has brief network issues or DSP processing delays
- D. The display has lost sync

58. A conferencing codec reports intermittent firewall blocks when trying to reach the cloud platform. The network was recently reconfigured by IT. The most likely cause is:

- A. The codec firmware is outdated
- B. Environmental interference is blocking the signal
- C. Recent network changes have altered firewall rules affecting codec traffic
- D. The display has lost sync

59. A video wall shows gradient content with visible banding at specific color transitions. The most likely cause is:

- A. The displays are individually calibrated differently
- B. Insufficient bit depth in the source content or encoding pipeline
- C. The controller has failed
- D. The network has dropped packets

60. An AV system produces audio that is clear at normal volumes but distorts during loud passages. The most likely cause is:

- A. The microphone is producing the distortion
- B. The loudspeakers are damaged
- C. The room has acoustic issues
- D. Gain staging through the signal chain produces clipping during peaks

61. A power amplifier has begun producing lower output power than specified. Testing shows the output voltage is reduced. The most likely cause is:

- A. The amplifier has internally degraded components or failing power supply
- B. The loudspeaker cable is damaged
- C. The DSP is sending a lower signal level
- D. The room has increased in reverberation

62. A conference room has developed reverberation issues since the furniture was changed from soft fabric to hard surface. The most likely cause is:

- A. The microphones have reached end-of-life
- B. The DSP has malfunctioned
- C. Hard-surface furniture produces more reflective acoustic energy than soft
- D. The amplifier is failing

63. An AV-over-IP system has one endpoint that consistently produces higher latency than others. The most likely cause is:

- A. The network has congestion affecting that specific endpoint

- B. The DSP has processing delays
- C. The display on that endpoint is slow to refresh
- D. The endpoint itself has a processing or firmware issue

64. An audio system in a conference room produces feedback when the presenter approaches the front loudspeakers. The most likely cause is:

- A. The amplifier is overdriven
- B. The DSP is malfunctioning
- C. The loudspeaker and microphone positioning creates a feedback loop at specific distances
- D. The microphone has reached end-of-life

65. A conferencing codec has developed an occasional "no video" condition on the display. The display tests correctly elsewhere. The most likely cause is:

- A. The HDMI cable between codec and display is intermittent or the codec's HDMI output is failing
- B. The codec has lost network connectivity
- C. The DSP is interfering with the video path
- D. The room has electrical noise

66. A CTS holder is troubleshooting a DSP that has stopped accepting configuration changes. Other operations work normally. The most likely cause is:

- A. The physical input cables are damaged
- B. The DSP has read-only firmware or a configuration lock has been enabled
- C. The amplifier is rejecting the signal
- D. The network switch has dropped the DSP

67. A cable run between two rooms has developed a short circuit. Testing shows continuity problems on specific conductors. The most likely cause is:

- A. The cable specification is incorrect for the application
- B. Physical damage to the cable, such as abrasion or crushing in the pathway
- C. The cable has reached end-of-life through normal wear
- D. The cable termination is loose

68. A video source has reduced resolution on one specific output. Other outputs from the same source work at full resolution. The most likely cause is:

- A. The source device has universally failed
- B. The network switch is dropping packets
- C. The specific output is capped by EDID, HDCP, or output mode configuration
- D. The display on that output has failed

69. A DSP produces audible clicks only when specific network traffic patterns occur. The most likely cause is:

- A. Network packet loss is affecting audio stream timing
- B. The DSP firmware is generally defective
- C. The loudspeaker is producing the clicks
- D. The amplifier is interfering

70. An AV rack's UPS has started beeping intermittently, indicating it is switching to battery. Utility power appears stable. The most likely cause is:

- A. The UPS has developed a hardware fault

- B. The UPS batteries have aged and capacity has reduced
- C. The rack load has exceeded UPS specifications
- D. The UPS is sensing marginal voltage or other utility anomalies

71. A CTS holder is troubleshooting a conference room where remote participants hear persistent background noise that the local room does not exhibit. The most likely cause is:

- A. The local microphones are malfunctioning
- B. The local room has acoustic issues
- C. The local DSP's noise reduction is disabled or misconfigured, or the signal path to the codec is picking up noise
- D. The local loudspeakers are producing the noise

72. A ceiling loudspeaker has developed a buzzing sound that increases with output level. The most likely cause is:

- A. The DSP is producing the buzz
- B. The loudspeaker enclosure or driver has a mechanical defect such as a loose voice coil or cracked cone
- C. The amplifier is producing noise
- D. The room has environmental noise

73. A CTS holder is troubleshooting a conferencing system where video is jerky but audio is clear. The most likely cause is:

- A. Insufficient network bandwidth or prioritization for video traffic
- B. The codec has internal memory issues
- C. The display is refusing high bandwidth
- D. The HDMI cable is damaged

74. A rack's cooling fans have been running continuously at high speed for the past week. The ambient room temperature is normal. The most likely cause is:

- A. The rack fan speed control has failed
- B. The room's HVAC has been improperly adjusted
- C. The amplifier has increased in idle current draw
- D. Internal rack temperatures are elevated due to obstructed airflow or heat generation

75. A conferencing codec has stopped responding to remote control commands. The codec's local interface still functions. The most likely cause is:

- A. The codec has been power-cycled
- B. The remote control method (network, control system, or mobile app) has lost connectivity to the codec
- C. The HDMI output has failed
- D. The microphone array has stopped working

76. An AV system produces intermittent pops during normal operation. The pops correlate with specific equipment switching on and off. The most likely cause is:

- A. The loudspeaker has mechanical issues
- B. The DSP has software defects
- C. The room has acoustic problems
- D. Power switching transients are affecting the signal chain

77. An AV matrix switcher produces video output only when specific input combinations are selected. Other input-output combinations fail. The most likely cause is:

- A. The entire matrix switcher has failed

- B. Internal routing or specific input or output circuitry has developed a fault
- C. The source devices have failed selectively
- D. The displays have all developed faults simultaneously

78. A conferencing system has developed an intermittent echo that users describe as a "flutter" in the received audio. The most likely cause is:

- A. The local acoustic echo cancellation is having difficulty converging due to changes in the room
- B. The far-end microphone has failed
- C. The far-end loudspeaker has developed distortion
- D. The network is adding artifacts

79. A conference room has developed reverberation issues after a remodeling. Hard surfaces now dominate. The most likely cause is:

- A. The audio system has failed
- B. The microphones have reached end-of-life
- C. The DSP has malfunctioned
- D. The room's acoustic treatment is inadequate for the new configuration

80. A CTS holder is troubleshooting a projector that has become significantly dimmer over the past few months. Lamp hours indicate moderate life used. The most likely cause is:

- A. The lamp has reached end-of-life prematurely
- B. The lens has become soiled
- C. The lamp is naturally dimming as it ages toward specification replacement, or the filter is clogged
- D. The screen has degraded

81. A conferencing codec has begun experiencing delayed audio during meetings. The delay is consistent. The most likely cause is:

- A. Processing through excessive DSP chains or digital network hops is adding latency
- B. The microphone has latency
- C. The loudspeaker is delayed
- D. The codec firmware has universally slowed

82. A DSP's matrix routing has produced unexpected behavior after a recent firmware update. The most likely cause is:

- A. The DSP hardware has failed
- B. The firmware update changed default routing or introduced a defect
- C. The loudspeaker is producing the issue
- D. The room has new acoustic issues

83. A wireless microphone has developed interference that appears only when the presenter uses the stage area. The most likely cause is:

- A. The microphone battery has died
- B. The receiver has failed
- C. The DSP is muting the signal
- D. The stage area has RF-reflective surfaces or sources that interfere with the wireless signal

84. A CTS holder is troubleshooting a conferencing codec that cannot connect to its cloud platform. All local network tests pass. The most likely cause is:

- A. The cloud platform has authentication, DNS, or firewall-related connectivity issues

- B. The codec has failed entirely
- C. The display has lost signal
- D. The network cable is damaged

85. A 4K source connected to a 1080p display shows only 1080p output. The display is confirmed compatible. The most likely cause is:

- A. The source is set to automatic output
- B. The cable has failed
- C. The display's EDID communicates 1080p capability, causing the source to output 1080p
- D. The matrix switcher is downshifting

86. A conference room's user interface for meeting control has become confusing to users. The interface was well-designed originally. The most likely cause is:

- A. The control system has failed
- B. New usage patterns or accumulated feature additions have made the interface cluttered and harder to use
- C. The touch panel has broken
- D. Users are not trained adequately

87. A ceiling-mounted microphone produces audio with a "tinny" quality during normal speech. The most likely cause is:

- A. The microphone is correctly calibrated
- B. The speaker is close to the microphone
- C. The room has become less reverberant
- D. The microphone's EQ or processing has been misconfigured, or the capsule is damaged

88. A conferencing codec has been experiencing occasional dropped calls during use. The codec firmware is current. The most likely cause is:

- A. Network instability or insufficient bandwidth is causing call disconnection
- B. The display cable has failed
- C. The room has become less acoustically treated
- D. The microphone has reached end-of-life

89. A CTS holder is troubleshooting a DSP that occasionally loses communication with a connected amplifier. Both devices have power. The most likely cause is:

- A. The amplifier has failed
- B. The DSP has failed
- C. The control or audio network connection between them is intermittent — cable, port, or switch issue
- D. The room has environmental problems

90. A video wall tile has become permanently dark. Other tiles in the wall continue to function. The most likely cause is:

- A. The entire video wall controller has failed
- B. The individual tile has a hardware failure — LED driver, module, or power supply
- C. The wall is designed to have dark tiles intentionally
- D. The network is dropping data for that tile

91. A conferencing codec has begun producing occasional audio dropouts on meetings. Investigation shows the dropouts correlate with router maintenance windows. The most likely cause is:

- A. The codec has failed

- B. The microphone has reached end-of-life
- C. Network maintenance is briefly disrupting the codec's connectivity
- D. The room cabling has degraded

92. A CTS holder is troubleshooting a conference room that has lost all audio output. The display still shows video. The most likely cause is:

- A. The display has failed
- B. The network has failed entirely
- C. The room has environmental issues
- D. The amplifier, DSP output, or loudspeaker distribution has failed in the audio-only path

93. A conference room audio system produces distorted audio only when multiple people speak simultaneously. The most likely cause is:

- A. The microphone capsules have failed
- B. The amplifier is clipping
- C. The automatic mixer or DSP sum point is being overloaded when multiple sources are active
- D. The loudspeaker has a mechanical defect

94. An AV-over-IP system has encoders that drop out randomly from the multicast stream. The switch configuration appears correct. The most likely cause is:

- A. The encoder power supplies have failed
- B. The network switch is overloaded
- C. The network switch backplane or uplink has bandwidth saturation
- D. The decoders have failed

95. A CTS holder is troubleshooting a conferencing codec where audio works but video is consistently 1 second behind the audio. The most likely cause is:

- A. The codec's video processing is adding latency that is not compensated in the audio path
- B. The network is dropping packets
- C. The display is processing slowly
- D. The microphone has delay

96. A video matrix switcher has begun producing intermittent no-signal on specific outputs. The source and destination test correctly elsewhere. The most likely cause is:

- A. The DSP has failed
- B. The network switch is dropping packets
- C. The room has ambient issues
- D. Specific output circuitry in the matrix switcher is intermittently failing

97. A conference room has developed an increasingly loud equipment noise floor over several months. No equipment has been replaced. The most likely cause is:

- A. The loudspeakers have developed leaks
- B. Equipment cooling fans have aged and increased in noise, or the rack has accumulated dust affecting bearings
- C. The DSP has failed
- D. The amplifier has been damaged

98. A wireless microphone has developed audio that sounds "metallic" or "hollow." The most likely cause is:

- A. The receiver is correctly tuned
- B. The room is less reverberant
- C. The microphone's audio path has interference, frequency response issues, or capsule damage
- D. The DSP has malfunctioned

99. An audio DSP is producing intermittent clicks during normal operation. The clicks occur approximately every 30 seconds consistently. The most likely cause is:

- A. A timing or synchronization issue in the DSP's internal processing or with connected devices
- B. The microphone is producing clicks
- C. The amplifier is producing clicks
- D. The room has timing issues

100. A CTS holder is troubleshooting a conferencing system where outgoing video is consistently lower quality than incoming video. The most likely cause is:

- A. The display is failing to render properly
- B. The network is dropping packets
- C. Network upload bandwidth or camera/encoder processing is inadequate relative to download
- D. The codec cannot decode properly

SIMULATION EXAM 7 — ANSWER

KEY AND FULL EXPLANATIONS

1. D — The DSP firmware has a known defect requiring an update. Periodic, unscheduled reboots of a device on stable power point to a software issue rather than a hardware or environmental fault. DSP firmware defects that cause reboot cycles are well-documented, and applying the manufacturer's update is the primary remedy.
2. C — HDCP authentication is failing somewhere in the signal chain. The signature pattern of protected content producing a blank screen while unprotected content displays is an HDCP handshake failure — typically a device in the chain that doesn't support the required HDCP version (2.2 for most 4K protected content). Physical cable and power issues produce different symptoms.
3. A — The metal rack is attenuating the RF signal to the receiver antennas. Metal enclosures act as Faraday cages that significantly block RF transmission. Professional installations remote the antennas outside the rack using antenna relocation kits to maintain line-of-sight with wireless transmitters.
4. B — Quality of Service is not configured to prioritize Dante traffic. Clicks during normal network activity on a managed switch indicate that time-sensitive audio packets are being delayed by other traffic. QoS configuration (DSCP marking and 802.1p priorities) is essential for reliable networked audio on shared infrastructure.
5. C — The matrix switcher is reporting a 1080p EDID to the source. Sources configure their output based on the EDID reported back from the connected chain. An intermediate matrix switcher with its own EDID management can present capabilities that don't reflect the downstream display, forcing a lower output resolution.
6. A — A firewall is blocking the specific ports required for registration. When basic connectivity works (ping succeeds) but service registration fails, the issue is almost always specific ports blocked by firewall or security policy. Cloud platforms require defined UDP and TCP ports that must be opened for signaling and media.
7. D — The projector's imaging engine has a partial failure or lens misalignment. Uneven brightness localized to one corner indicates an internal optical or imaging-engine problem — a failing DLP micromirror region, LCD panel issue, or lens shift. Content, HVAC shadows, and ambient light produce different symptom patterns.
8. B — The microphone coverage, gain, or EQ sending to the codec is insufficient. When local audio is clear but remote participants hear muffled speech, the issue is in the signal being sent to the far

end — coverage gaps, weak gain, or EQ that removes intelligibility frequencies. Local loudspeakers and amplifier don't affect the outgoing path.

9. A — A rack cooling fan has failed or a filter is clogged. Thermal shutdowns during high-volume events in a rack originally designed with proper cooling indicate degraded cooling — typically fan failure or filter blockage. The other options don't produce the thermal pattern specifically correlated with high program levels.
10. D — Touch panel firmware has accumulated issues requiring a clean reinstall or update. Progressive slowdown of a touch panel while other systems work normally typically indicates software accumulation — cache bloat, pending updates, or firmware defects. Clean reinstall or firmware update resolves this; hardware replacement is premature.
11. B — The specific switch port has a hardware fault. When the same device works on a different port of the same switch, the device is ruled out. Individual port faults — damaged pins, degraded electronics, port-level configuration — are the remaining explanation.
12. C — The new platform audio codec requires DSP or codec configuration adjustment. Platform-side codec changes often require configuration adjustment at the endpoint. Hardware replacement, network degradation, or microphone end-of-life don't produce a symptom tied to platform codec changes.
13. A — Authentication between the tablet and calendar service has expired or been revoked. Calendar integrations use authentication tokens that expire or can be revoked when IT policies change. Out-of-date calendar data while the device appears functional is the classic signature of authentication failure, not hardware or access issues.
14. C — A ground loop exists between interconnected equipment. Persistent low-frequency hum (typically 60 Hz mains frequency) consistent regardless of source is the classic signature of a ground loop where multiple paths to electrical ground allow induced currents to circulate.
15. D — The HDMI cable or distribution amplifier output to the affected display has an issue. When three of four displays work and one shows no signal, the fault is isolated to that display's specific signal path. Source failure would affect all displays equally; network saturation produces different symptoms.
16. B — Other wireless systems in use during the event operate on the same frequencies. Large events attract many wireless devices in the same RF bands. Frequency coordination among these systems is the standard resolution; simultaneous microphone failure or DSP overload are not typical root causes.
17. C — Camera firmware or pan/tilt motor mechanism has degraded. Progressive slowness of a PTZ camera over years typically indicates firmware drift or mechanical wear of the pan/tilt motor. Control programming errors or network saturation would produce different patterns.

18. B — A connected device is producing DC offset or voltage transients at its output. Clicks during normal speech with verified levels and matching sample rates often trace to DC offset or voltage transients from a connected device. Amplifier fan failures, microphone end-of-life, or acoustic changes produce different symptom patterns.
19. A — The video output cable has failed, or the decoder is not subscribed to the correct multicast stream. When a decoder responds on the network but produces no video, the two most likely causes are output-side cable issues or network configuration with multicast subscription. Internet blocks, power supply, and switch end-of-life are unlikely given the management response.
20. D — Settlement has caused acoustic path changes affecting pickup. Physical changes to the room's acoustic environment — including ceiling shifts — can alter how sound reaches the microphone. Capsule failure or DSP mismatches would produce different patterns.
21. B — The DSP gain staging between codec receive and loudspeaker is incorrect. The audio path from codec receive to local amplification has independent gain structure from the outgoing path. When far-end speakers confirm normal level but local volume is low, the gain structure between codec input to the DSP and DSP output to amplifier is the issue.
22. B — Security policy updates are disrupting authentication tokens or blocking ports. Disconnections correlated with IT security policy changes point directly at the policy as the disruption source. Wi-Fi, electrical circuits, and HDMI issues do not correlate with security policy timing.
23. A — The source laptop's output refresh rate is mismatched with the projector's native rate. Flicker from one source but not others indicates source-specific signal incompatibility, typically an output refresh rate the projector cannot sync cleanly. Lamp age, cables, and filters affect all sources equally.
24. D — The microphone preamp or DSP input is clipping on peaks. Distortion only on loud speech indicates input-stage clipping of the microphone preamp or DSP input. Quiet speech doesn't exceed clipping threshold; loudspeaker, latency, and cable issues produce different symptoms.
25. B — Individual tile decoders have intermittent network or power issues. Random black tiles in a video wall indicate per-tile problems — network packet loss to specific decoders, or power supply issues. A failed controller would affect all tiles predictably; content or backlighting don't explain the randomness.
26. A — A firmware or configuration update has changed AEC reference or processing behavior. AEC drift without physical changes most commonly results from software updates that modify echo cancellation algorithms or reference routing. Microphone end-of-life, reverberation, and amplifier issues produce different patterns.
27. D — The unstable connection prevents content from updating on schedule. Display shows old content despite newer content at the CMS, and cellular connection is unstable — the connection

is failing during update windows. Display hardware, CMS malfunction, and scheduling bugs produce different symptoms.

28. B — The microphone array beamforming is configured for a different room layout. Poor pickup in specific seating positions with a working array indicates zone configuration issues — the array's beamforming zones don't include the affected positions. DSP routing, ceiling height, and capsule failure produce different patterns.
29. D — The specific loudspeaker's tap transformer or driver has failed. When one loudspeaker in a 70V system fails while others function, the issue is local to that loudspeaker — failed tap transformer or driver. Amplifier, line, or DSP failures would affect multiple loudspeakers.
30. A — The microphone path has intermittent connectivity or mute activation. Occasional one-way audio with intermittent patterns points to the microphone path — cable connection, mute button activation, or DSP input issue. Loudspeaker, power, and HDMI issues produce different symptom patterns.
31. C — The amplifier has developed a cold solder joint or failing capacitor. Intermittent pops in an amplifier that weren't caused by source or DSP suggest internal electronic issues — cold solder joints or failing capacitors on the amplifier's internal circuits. Output transistors, speaker cables, and HVAC produce different patterns.
32. B — The camera mechanical pan/tilt motor is wearing out. Progressive slowness over three years indicates mechanical wear of moving parts. Control programming, network saturation, and touch panel failure don't match the mechanical aging pattern.
33. A — A hardware defect in the specific encoder. When one encoder drops out of a multicast stream while others work on the same switch and configuration, the fault is isolated to that specific encoder. Switch configuration, universal firmware defects, or network-wide multicast problems would affect multiple encoders.
34. D — The microphone is installed outside its specified operating range. Microphone specifications define the conditions where performance is verified — ceiling height, distance, room acoustics. Installations outside this range produce reduced pickup that DSP adjustment cannot fully compensate.
35. B — The amplifier cooling is inadequate. Amplifiers rated for specific program levels include thermal management designed for that use. Excessive heat at normal program levels points to inadequate cooling — fan failure, filter obstruction, or airflow blockage. Continuous overload or signal clipping produce different symptoms.
36. C — The gain structure through the DSP is improperly set with excessive gain. Hissing during quiet moments in a DSP-driven signal path indicates excessive noise gain — too much internal amplification compounded by input noise floor. Bypass removes the gain stack, confirming the issue.

37. A — Audio is routed through excessive DSP processing or the codec is adding latency. Consistent audio delay during conferencing typically results from accumulated processing latency in DSP stages or codec encoding. Loudspeaker, microphone, and amplifier latency are negligible compared to digital processing.
38. D — Network bandwidth is insufficient or inconsistent for peak video needs. Video failures while audio continues during bitrate spikes indicate bandwidth limits being exceeded. Video requires substantially more bandwidth than audio; bandwidth issues hit video first.
39. A — DC offset or voltage spike from the source triggers the DSP input. Pops correlated with specific source activation point to DC offset or transient voltage at the source's output stage, which the DSP interprets as a signal. Universal firmware defects or amplifier problems would produce different patterns.
40. C — The assistive listening transmitter placement or power is inadequate for room coverage. ALS coverage in the rear of a room is a function of transmitter power and placement. Receiver batteries, loudspeaker output, and microphone signal do not explain differential coverage patterns.
41. B — Network congestion during peak hours is affecting codec signaling. Registration failures correlated with peak employee network usage indicate bandwidth contention or QoS issues affecting the codec. End-of-life, display, and cabling don't correlate with time-of-day patterns.
42. D — The amplifier's cooling fan has developed a bearing issue. Constant fan-like noise with no audio signal points to a mechanical fan problem — worn bearings producing noise. Loudspeaker, environmental, and DSP noise would produce different patterns.
43. A — The USB cable has developed a fault, or the codec's USB port has an issue. "Device not found" for a camera with power and intact cable indicates the connection between camera and codec — specifically the USB link. Firmware, network switching, and control system interference are unlikely given the explicit device-not-found symptom.
44. D — The loudspeaker tap or the driver in that specific loudspeaker has failed. Reduced volume from one loudspeaker among many points to that specific loudspeaker — failed tap transformer, degraded driver, or damaged voice coil. DSP per-channel gain, amplifier channel, or room acoustics affect broader scope.
45. B — Specific tiles in the video wall have calibration drift or panel aging. Color-shift artifacts localized to specific tiles indicate per-tile calibration drift or panel aging. Source content, controller failures, and CMS corruption would affect content uniformly, not tile-specifically.
46. D — The specific switch port has physical layer issues. Link-flap correlated with one specific port, with the connected device working elsewhere, points to physical layer issues at that port — cable damage, oxidation, or failing port electronics. Universal firmware defects would affect multiple ports.

47. B — The 70V line has a loose or corroded connection causing intermittent continuity. Intermittent audio across multiple loudspeakers on the same 70V line, with amplifier output correct, points to a connection issue along the distribution — loose or corroded connection creating intermittent continuity. DSP, amplifier, and per-loudspeaker failures produce different patterns.
48. A — The excessive number of digital links is introducing synchronization issues. Audio routed through multiple DSPs with digital links accumulates synchronization challenges. Periodic audio loss in a system with four DSP hops is typically a synchronization issue, not service, loudspeaker, or amplifier problem.
49. D — The loudspeaker driver has developed a mechanical defect such as a torn cone. Distortion localized to one loudspeaker while others in the same circuit are clear indicates a mechanical problem at that specific loudspeaker — typically a torn cone, damaged voice coil, or failed component. DSP, amplifier, and room issues would affect multiple loudspeakers.
50. C — Network connectivity between the specific panel and its control processor is intermittent. "Server not available" messages from one panel while other rooms work normally indicate a network connection issue between that panel and its control processor. Control system failure, general network issues, or hardware failure would affect multiple rooms.
51. D — Specific internal routing or output circuitry in the matrix switcher has failed. No-signal on specific ports of a matrix switcher, with sources and destinations testing correctly elsewhere, isolates the fault to the switcher's internal circuitry. Network, DSP, and cabling issues produce different patterns.
52. A — Insufficient compression bit depth or color space conversion in the encoding. Banding visible across all endpoints in an AV-over-IP system points to encoding-side issues — insufficient bit depth or poor color space conversion during compression. Display calibration, network loss, and ambient light don't produce uniform banding across all endpoints.
53. B — RF multipath or physical interference from the wall affects signal at that location. Dropouts localized to specific physical locations indicate RF propagation issues — multipath reflection, metal obstructions, or building material absorption at specific zones. Receiver frequency, battery, and DSP muting produce different patterns.
54. C — The DSP's acoustic echo cancellation or noise reduction has been misconfigured, or the capsule is damaged. "Robotic" audio from a microphone array often results from AEC misconfiguration (distorting the reference subtraction) or noise reduction set too aggressively, or damaged capsule processing. Network and compressor issues produce different patterns.
55. B — Adjacent equipment is obstructing airflow to or from the hot equipment, or blanking panels are missing. Localized hot spots in a rack with proper overall cooling point to airflow obstruction at specific locations. Overall ventilation, DSP heat generation, and amplifier failure produce different patterns.

56. A — The cable between source and distribution amplifier has developed a fault or the distribution amplifier has failed. Flickering across all downstream displays from a non-flickering source points to the single upstream component serving all of them — the cable to the distribution amplifier or the amplifier itself. Individual display failures simultaneous across all displays are improbable.
57. D — The audio path has brief network issues or DSP processing delays. Brief audio cutouts in video conferencing typically result from network packet loss or DSP processing interruptions. Codec rebooting, microphone connectivity, and display sync loss don't match brief-cutout patterns.
58. C — Recent network changes have altered firewall rules affecting codec traffic. When firewall blocks coincide with IT-reported network changes, the changes have altered firewall behavior. Codec firmware, environmental interference, and display sync are unlikely given the explicit firewall log evidence.
59. B — Insufficient bit depth in the source content or encoding pipeline. Banding in gradient content indicates insufficient bit depth somewhere in the source-to-display chain. Individual display calibration, controller failure, or packet loss don't produce banding specifically at gradient transitions.
60. D — Gain staging through the signal chain produces clipping during peaks. Distortion on loud passages indicates the signal chain is being driven above the usable dynamic range of some stage. Microphone damage, loudspeaker damage, and room acoustics would affect content uniformly.
61. A — The amplifier has internally degraded components or failing power supply. Reduced output voltage from an amplifier indicates internal power or amplification issues — degraded power supply capacitors, worn output transistors, or failing amplification stages. Loudspeaker cable, DSP level, and room reverberation produce different patterns.
62. C — Hard-surface furniture produces more reflective acoustic energy than soft. Reverberation issues following a change from soft to hard surfaces is a direct acoustic effect. Microphones, DSP, and amplifier failures don't explain the correlation with room furnishings.
63. D — The endpoint itself has a processing or firmware issue. When one endpoint has consistently higher latency than others on the same network, the issue is specific to that endpoint — processing, firmware, or decoding differences. General network congestion affects all endpoints; display and decoder processing vary.
64. C — The loudspeaker and microphone positioning creates a feedback loop at specific distances. Feedback correlated with presenter proximity to loudspeakers indicates a specific positioning relationship creating amplification beyond the system's stability margin. Amplifier, DSP, and microphone failures produce different patterns.
65. A — The HDMI cable between codec and display is intermittent or the codec's HDMI output is failing. "No video" when the display tests correctly elsewhere localizes the fault to the source-to-

display path — HDMI cable integrity or codec output. Network, DSP, and electrical issues don't produce no-video symptoms.

66. B — The DSP has read-only firmware or a configuration lock has been enabled. When a DSP stops accepting configuration changes while other operations work, the cause is usually configuration lock or read-only mode — features intentionally enabled or accidentally triggered. Physical cables, amplifier, and network are not the typical causes.
67. B — Physical damage to the cable, such as abrasion or crushing in the pathway. Short circuits in a cable with continuity problems point to physical damage — crushing, abrasion, puncture, or rodent damage in the pathway. Cable specification, age, and termination produce different patterns.
68. C — The specific output is capped by EDID, HDCP, or output mode configuration. Reduced resolution on one specific output while other outputs work at full resolution indicates output-specific configuration — EDID reported by that specific display, HDCP version, or output mode setting. Universal failure would affect all outputs.
69. A — Network packet loss is affecting audio stream timing. Clicks correlated with network traffic patterns indicate packet loss affecting time-sensitive audio stream delivery. Universal firmware defects, loudspeaker issues, and amplifier problems don't correlate with network patterns.
70. D — The UPS is sensing marginal voltage or other utility anomalies. Intermittent UPS beeping with appearing-stable utility power often means the UPS is detecting conditions it considers marginal — voltage sags, frequency deviation, or harmonic distortion not visible to routine inspection. Hardware fault, battery aging, and load overage produce different patterns.
71. C — The local DSP's noise reduction is disabled or misconfigured, or the signal path to the codec is picking up noise. Remote participants hearing background noise that the local room doesn't hear indicates the issue is in the local-to-far-end signal path — noise reduction not working, or noise being introduced in the codec path. Local audio is clear by definition.
72. B — The loudspeaker enclosure or driver has a mechanical defect. Buzzing that increases with output level is a mechanical resonance — loose voice coil, cracked cone, or enclosure rattle. DSP, amplifier, and environmental sources produce different patterns.
73. A — Insufficient network bandwidth or prioritization for video traffic. Jerky video with clear audio indicates bandwidth limits being hit by video while audio's lower bandwidth continues normally. Video requires much more bandwidth than audio; bandwidth issues hit video first.
74. D — Internal rack temperatures are elevated due to obstructed airflow or heat generation. Fans running continuously at high speed mean the rack's temperature-sensing control detects elevated internal temperatures. Room HVAC, fan control failure, or amplifier idle draw would produce different patterns.

75. B — The remote control method has lost connectivity to the codec. Non-responsive remote control while the local interface works indicates that the remote control path (network, control system, or mobile app) has lost connectivity — not a codec-wide failure.
76. D — Power switching transients are affecting the signal chain. Pops correlated with specific equipment switching are the classic signature of switching transients — voltage spikes and EMI from equipment turning on and off that couple into the audio signal path.
77. B — Internal routing or specific input or output circuitry has developed a fault. Certain input-output combinations working while others fail point to specific internal routing or circuitry problems in the matrix switcher. Universal failure, source failures, or display failures would produce different patterns.
78. A — The local acoustic echo cancellation is having difficulty converging due to changes in the room. "Flutter" echo in received audio indicates AEC not fully canceling — the algorithm struggling with room changes that have made acoustic signatures unstable. Far-end microphone, loudspeaker, and network don't produce flutter patterns.
79. D — The room's acoustic treatment is inadequate for the new configuration. Reverberation issues following a remodel with more hard surfaces reflect an acoustic environment change. Audio system, microphones, and DSP failures don't align with the physical change.
80. C — The lamp is naturally dimming as it ages toward specification replacement, or the filter is clogged. Projector dimming over months with moderate lamp hours is consistent with lamp aging toward its replacement point, or accumulated dust in the air filter reducing light throughput.
81. A — Processing through excessive DSP chains or digital network hops is adding latency. Consistent audio delay during conferencing typically results from accumulated processing latency in DSP stages or network transport. Microphone, loudspeaker, and codec firmware latency are negligible compared to processing accumulation.
82. B — The firmware update changed default routing or introduced a defect. Behavioral changes following a firmware update are directly correlated to the update. DSP hardware failure, loudspeaker issues, and room changes don't correlate with firmware timing.
83. D — The stage area has RF-reflective surfaces or sources that interfere with the wireless signal. Interference localized to specific physical locations indicates RF propagation issues at those locations — reflective surfaces creating multipath, or RF noise sources in that area. Battery, receiver, and DSP issues don't correlate with physical location.
84. A — The cloud platform has authentication, DNS, or firewall-related connectivity issues. When all local network tests pass but cloud platform connection fails, the issue is at the platform or the intermediate connectivity — authentication, DNS resolution, or external firewall rules.

85. C — The display's EDID communicates 1080p capability, causing the source to output 1080p. The source configures its output based on the EDID reported back. A display communicating 1080p capability will cause the source to output 1080p regardless of source capability. Cable failure, matrix issues, and automatic source settings produce different patterns.
86. B — New usage patterns or accumulated feature additions have made the interface cluttered and harder to use. User interfaces that were well-designed originally often become cluttered as usage changes and features accumulate. This is a design evolution issue, not a hardware failure.
87. D — The microphone's EQ or processing has been misconfigured, or the capsule is damaged. "Tinny" audio from a microphone indicates EQ or processing affecting frequency response, or physical capsule damage changing its acoustic characteristics. Calibration, proximity effect, and room changes produce different patterns.
88. A — Network instability or insufficient bandwidth is causing call disconnection. Dropped calls with current firmware point to network issues — connectivity loss, bandwidth drops, or quality degradation. Display cable, room acoustics, and microphone end-of-life don't explain call drops.
89. C — The control or audio network connection between them is intermittent. Intermittent communication between a DSP and amplifier with both having power points to the connection between them — cable, port, or switch fault. Device failures would be more consistent.
90. B — The individual tile has a hardware failure. A permanently dark tile in an otherwise functioning video wall indicates a tile-specific hardware failure — LED driver, module electronics, or power supply. Controller failure, intentional design, or network issues produce different patterns.
91. C — Network maintenance is briefly disrupting the codec's connectivity. Dropouts correlated with router maintenance windows indicate the maintenance is affecting codec connectivity. Codec failure, microphone end-of-life, and cable degradation don't correlate with maintenance timing.
92. D — The amplifier, DSP output, or loudspeaker distribution has failed in the audio-only path. Complete audio loss with working video means the video path is intact but the audio path has failed somewhere. The failure could be in the amplifier, DSP output, or loudspeaker distribution — but the fault is localized to audio.
93. C — The automatic mixer or DSP sum point is being overloaded when multiple sources are active. Distortion specifically with multiple simultaneous speakers indicates a mix-point overload — the automatic mixer's output stage or the sum bus is clipping when multiple sources add together.
94. C — The network switch backplane or uplink has bandwidth saturation. Encoders randomly dropping from a multicast stream with switch configuration appearing correct suggests bandwidth saturation — the switch's backplane or uplink cannot handle the aggregate traffic. Individual encoder power failures or decoder failures produce different patterns.

95. A — The codec's video processing is adding latency that is not compensated in the audio path. Consistent audio-video sync issues in conferencing typically result from video processing latency without matching audio delay compensation. The codec's internal pipeline adds latency that must be matched in the audio path.
96. D — Specific output circuitry in the matrix switcher is intermittently failing. Intermittent no-signal on specific outputs with source and destination testing correctly elsewhere localizes the issue to the matrix switcher's internal output circuitry.
97. B — Equipment cooling fans have aged and increased in noise, or the rack has accumulated dust affecting bearings. Progressive noise floor increase over months without equipment change is typical of aging mechanical components — fan bearings, cooling fans, or accumulated dust affecting airflow. DSP, amplifier, and loudspeaker issues don't produce gradual noise increases.
98. C — The microphone's audio path has interference, frequency response issues, or capsule damage. "Metallic" or "hollow" audio from a wireless microphone indicates issues along its audio path — RF interference, capsule damage, or frequency response problems. Correct tuning, reverberation, and DSP malfunction produce different patterns.
99. A — A timing or synchronization issue in the DSP's internal processing or with connected devices. Periodic clicks at consistent intervals (every ~30 seconds) indicate timing/synchronization issues — clock drift, PLL convergence problems, or sample rate mismatch. Random audio issues or environmental causes don't produce precise periodic patterns.
100. C — Network upload bandwidth or camera/encoder processing is inadequate relative to download. Asymmetric video quality (outgoing worse than incoming) indicates upload bandwidth constraints or encoder processing limitations — typical in consumer internet connections or systems where the camera/encoder path has lower capacity than the decoder path.