



Duties and Tasks	Knowledge	Skills and Abilities	Tools, Equipment, and Resources
A Conducting a Needs Assessment			
1 Identify decision-makers and stakeholders			
	Contractual relationships Client organizational structure	Ability to ask probing questions Ability to differentiate between decision-makers and stakeholders Ability to work as part of a team or lead a team Attention to detail Interpersonal skills Verbal communication skills Written communication skills ability to document findings ability to liaise with clients and end-users Ability to coordinate with project team Ability to create a stakeholder registry	RACi Chart
2 Identify skill level of end users			
	AV components AV terminology AV trends Networking knowledge of AV systems Client Expectations	Ability to ask probing questions Interpersonal skills Listening skills Verbal communication skills Written communication skills Ability to assess user skill levels ability to document findings	Examples of documentation from other projects RACi chart Stakeholder registry
3 Educate AV clients			
	Accessibility AV products AV systems AV trends Building Management Systems (BMS) Networking Regulatory issues knowledge of other disciplines (mechanical, electrical, plumbing, etc.) knowledge of AV design methods	Ability to communicate ideas clearly Computer skills Public speaking Verbal communication skills Written communication skills ability to define system functionality Ability to apply training techniques	Case studies Industry reports Trade shows Vendor demonstrations Vendors White papers



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A Conducting a Needs Assessment			
4 Review client technology master plan			
	AV systems Basic fiscal planning terminology Equipment life cycles Structured cabling systems Sustainability issues Basic networking equipment, connectivity, and terminology	Computer skills Verbal communication skills Written communication skills Ability to interpret symbols and abbreviations Ability to document potential equipment or policy conflicts	Client standards Summary of existing Client AV systems Network topology Codes (e.g., building, electrical, safety, fire, accessibility)
5 Identify client expectations			
	Accessibility Audio components AV control components AV furniture AV market forces and trends AV over IP AV services (e.g., software, conferencing, storage, streaming, digital signage) Basic AV and IT networking Conferencing components Content encryption techniques Digital rights management Display image attributes Interactive technologies Redundancy Sensory communication (e.g., ear, eyes) Video and display components Video formats (e.g., HDTV, 4K, UHD) Visual acuity (e.g., relationship between font size, screen size, and viewing distance)	Ability to ask probing questions Ability to document findings from client meetings Ability to restate client expectations Verbal communication skills Written communication	Architecture models and photographs Computer Examples of other installations Recorder



Duties and Tasks	Knowledge	Skills and Abilities	Tools, Equipment, and Resources
A Conducting a Needs Assessment			
6 Identify scope of work			
	Audio components AV control components Video components	Ability to compile research into a project narrative or proposal Ability to determine what other trades, professions or vendors are needed Ability to provide clients with budget estimates Basic drafting skills Basic math Technical writing skills Written communication skills	Client meeting minutes Client research Computer Cut sheets Program report checklists/templates
B Coordinating with Other Professionals to Develop Project Documentation			
1 Review A/E (architectural and engineering) drawings			
	Architectural details that impact AV Architectural drawing symbols AV architectural impacts (e.g., stage height, size of screen vs. seating arrangements, viewing angles, viewing distances, height of screen, ceiling soffits) Drawing conventions Drawing scale	Ability to calculate room dimensions Ability to document review comments Ability to mentally visualize based on drawings Math skills	CAD software Computer Construction drawings Construction specifications Scale ruler Scientific calculator



Duties and Tasks	Knowledge	Skills and Abilities	Tools, Equipment, and Resources
B Coordinating with Other Professionals to Develop Project Documentation			
Coordinate with 2 architectural/interior design professionals			
	Accessibility AV architectural impacts (e.g., stage height, size of screen vs. seating arrangements, viewing angles, viewing distances, height of screen, ceiling soffits, acoustics) AV equipment capabilities AV maintenance requirements AV systems operational requirements Construction materials Construction practices Equipment space and access requirements Ergonomics Lighting levels Signage requirements	Ability to be diplomatic and flexible Ability to calculate area Ability to visualize spatial relationships from drawings Verbal communication skills Written communication skills	Ability to utilize reference materials Architectural/interior design documentation CAD Software Calculator Computer Review documentation Scale rulers and measuring devices Site survey documentation
Coordinate with mechanical 3 professionals			
	Equipment mounting technologies Mechanical components Proper air flow	Ability to calculate heat loads Ability to identify conflicts between mechanical and AV equipment Ability to identify unwanted sources of mechanical noise	Acoustician Building codes CAD Software Calculator Computer Manufacturer specifications Mechanical drawings Reflected ceiling plan drawings Review documentation Scale rulers and measuring devices Site survey documentation



Duties and Tasks	Knowledge	Skills and Abilities	Tools, Equipment, and Resources
B Coordinating with Other Professionals to Develop Project Documentation			
4 Coordinate with structural professionals			
	Equipment clearance/safety issues Equipment mounting techniques Equipment mounting technologies Structural loads Structural mounts Types of mounting hardware	Ability to calculate AV equipment load Ability to identify conflicts between structural and AV equipment Ability to select appropriate mounting hardware	Building codes CAD Software Calculator Computer Manufacturer specifications Reflected ceiling plan drawings Review documentation Scale rulers and measuring devices Site survey documentation Structural drawings
5 Coordinate with electrical professionals			
	AC power phases Electrical regulatory requirements Electrical safety Electrical terminology Electromagnetic interference Emergency power Grounding/earthing Power management technology	Ability to calculate conduit size Ability to calculate electrical power loads Ability to create a AV conduit riser drawing Ability to identify conflicts between electrical and AV equipment Ability to use Ohm's Law	Calculator Electrical codes Electrical drawings Reference materials Review documentation Site survey documentation
6 Coordinate with lighting professionals			
	Ambient light control Attributes of luminaries Color Rendering Index (CRI) by application Lighting color temperature by application Lighting control protocols Lighting fixture types Maximum allowable light levels at the screen Room lighting levels by application	Ability to calculate contrast ratios Ability to identify conflicts between lighting and AV equipment	CAD software Calculator Computer Lighting cut sheets Lighting drawings Reference manuals Reflected ceiling plan Review documentation Site survey documentation



Duties and Tasks	Knowledge	Skills and Abilities	Tools, Equipment, and Resources
B Coordinating with Other Professionals to Develop Project Documentation			
7 Coordinate with IT and network security professionals			
	Conferencing Encryption standards Fiber optics IT terminology Network addressing Networking terminology Structured cabling Telephone systems Wireless network systems	Ability to calculate bandwidth Ability to communicate requirements to IT professionals Ability to identify AV transport methodology requirements Ability to identify network switch requirements Ability to identify network topology requirements Ability to identify power over Ethernet (PoE) requirements Ability to identify quality of service (QoS) requirements	IP standards IT drawings Networked device spreadsheet Review documentation Site survey documentation
8 Coordinate with acoustical professionals			
	Acoustic isolation from adjacent spaces Ambient noise Audio components Sound masking requirements Speech intelligibility metrics	Ability to apply inverse square law Ability to apply Ohm's Law Ability to calculate speaker coverages Ability to determine speaker placement Basic math and physics of sound (e.g., wavelengths, frequency, logarithms) skills	Acoustical reports Architectural/interior design drawings Noise ordinances Review documentation Site survey documentation Sound masking drawings
9 Coordinate with life safety and security professionals			
	Electronic security systems Equipment network requirements Fire alarm systems Mass notification systems Physical security issues	Ability to communicate requirements to life safety professionals Ability to communicate requirements to security professionals Ability to design systems that integrate with the life safety system Ability to design systems that integrate with the security system	Codes Reference materials Review documentation Site survey documentation



Duties and Tasks	Knowledge	Skills and Abilities	Tools, Equipment, and Resources
C Developing AV Designs			
1 Create draft AV design			
	Accessibility Analog signal properties (frequency, wavelength, amplitude, phase, bandwidth) Audio and video compression Audio components AV control components AV furniture AV market forces and trends AV over IP AV services (e.g., software, conferencing, storage, streaming, digital signage) AV signal types (e.g., control protocols, content, data) AV timing (e.g., Genlock, video sync, audio sync) Basic AV and IT networking Basic principles of RF and IR Cable types and attributes Conferencing components Content encryption techniques Digital rights management Display image attributes EDID management Interactive technologies Loudspeaker coverage patterns Microphone polar patterns PAG/NAG/NOM Properties of sound and light Redundancy Sampling rate Sensory communication (e.g., ear, eyes) Signal bandwidth Signal distance limitations Video and display components Video formats (e.g., HDTV, 4K, UHD) Visual acuity (e.g., relationship between font size, screen size, viewing distance)	Ability to apply Inverse Square Law and logarithmic calculations Ability to apply Ohm's Law Ability to calculate contrast ratio Ability to calculate projector throw distances Ability to calculate required amplifier power Ability to calculate screen brightness/contrast ratio Ability to calculate speaker coverages Ability to calculate video bandwidth Ability to calculate viewing angles and distances Ability to determine image size for application Ability to determine performance criteria Basic drafting skills Basic math and physics skills	Audio design software Cable specifications and guidelines CAD software Computer Manufacturer contacts Reference manuals Scope of work Specification sheets User and installation manuals



Duties and Tasks	Knowledge	Skills and Abilities	Tools, Equipment, and Resources
C Developing AV Designs			
2 Confirm site conditions			
	Accessibility Electrical systems Equipment mounting Image aspect ratios Seismic considerations Signal limitations	Ability to calculate conduit capacity Ability to identify construction restrictions Ability to identify infrastructure requirements Ability to identify sources of potential electrical, visual, structural, mechanical, RF/Wi-Fi, and acoustic interference Ability to read drawings	Building codes Camera Communication device Flash light Floor plans Ladders Light meter Measuring devices Network riser PPE Reflected ceiling plans (RCP) Site map SPL meters
3 Produce AV infrastructure drawings			
	Accessibility Architectural terminology Architectural/engineering drawing symbols AV drawing symbols Construction abbreviations Construction practices Equipment mounting	Ability calculate conduit fill ratio Ability to calculate heat loads Ability to calculate power loads Ability to calculate projector throw distances Ability to calculate viewing angles and distances Ability to calculate weight loads Ability to convert measurements Ability to convert measurements Ability to determine equipment mounting heights Ability to direct the production of CAD drawings Ability to read construction drawings Attention to detail skills	Architectural drawings Building codes CAD software Computer Drafting supplies Electrical drawings Floor plans Furniture plan Reflected ceiling plans (RCP) Scale rulers Structural drawings



Duties and Tasks	Knowledge	Skills and Abilities	Tools, Equipment, and Resources
C Developing AV Designs			
4 Produce AV system drawings			
	Accessibility Analog signal properties (e.g., frequency, wavelength, amplitude, phase, bandwidth) Architectural terminology Architectural/engineering drawing symbols Audio and video compression Audio components AV control components AV drawing symbols AV furniture AV over IP AV services (e.g., software, conferencing, storage, streaming, digital signage) AV signal types (e.g., control protocols, content, data) AV timing (e.g., Genlock, video sync, audio sync) Basic AV and IT networking Basic principles of RF and IR Cable types and attributes Conferencing components Construction abbreviations Construction practices Content encryption techniques Digital rights management Display image attributes EDID management Equipment mounting Ergonomics/human factors Interactive technologies Loudspeaker coverage patterns Microphone polar patterns Redundancy Regulatory requirements Signal distance limitations Video and display components Video formats (e.g., HDTV, 4K, UHD) Visual acuity (e.g., relationship between font size, screen size, and viewing distance)	Ability to apply Ohm's Law Ability to apply Inverse Square Law and logarithmic calculations Ability to calculate contrast ratio Ability to calculate projector throw distances Ability to calculate required amplifier power Ability to calculate screen brightness/contrast ratio Ability to calculate speaker coverages Ability to calculate video bandwidth Ability to calculate viewing angles and distances Ability to create schematic diagrams Ability to determine image size for application Ability to produce custom furniture details Basic math and physics skills	Audio design software Cable specifications and guidelines CAD software Client branding guidelines Client network standards Computer Manufacturer contacts Printer/plotter Reference manuals Scope of work Specification sheets User and installation manuals



Duties and Tasks	Knowledge	Skills and Abilities	Tools, Equipment, and Resources
C Developing AV Designs			
5 Finalize project documentation			
	AV delivery models	Ability complete bill of materials Ability to compile data Ability to conduct quality assurance (QA) Ability to specify performance criteria Ability to write a project narrative Ability to write project specifications Technical writing skills	CAD software Feedback from other responsible parties Project specifications from other professionals Tender documentation
D Conducting Project Implementation Activities			
1 Participate in project implementation communication			
	Construction contractual relationships Construction processes Construction roles and responsibilities Construction terminology	Ability to be diplomatic and flexible Attention to detail Verbal communication skills Written communication skills	Computer Construction drawings Construction forms Construction specifications
2 Conduct system performance verifications			
	Audio and video theory Signal levels	Ability to apply troubleshooting strategies Ability to document AV issues or non-conformances Ability to identify common audio problems Ability to identify common IT/IP problems Ability to identify common video problems Ability to test equipment Ability to verify proper cable management	Audio analyzer Audio generator Colorimeter Computer Distance measuring tools Impedance meter Level (spirit level) Light meter Multimeter Real time analyzer Scope of work SPL meter Standards System performance specification System schematic diagrams Test pattern generator Testing software



Duties and Tasks	Knowledge	Skills and Abilities	Tools, Equipment, and Resources
D Conducting Project Implementation Activities			
3 Conduct project close out activities			
	Customer expectations Design intent of the system System operation	Ability to identify changes that impact scope Ability to obtain client sign-off Ability to provide operational training Ability to provide technical training Attention to detail Conflict resolution skills Verbal communication skills Written communication skills	As-built drawings/drawings of record Contract Project close-out documentation Scope of work