



The Complete AV Professional Development Guide



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The work of AV professionals is embedded in almost every industry. If you love to constantly learn new things, are always feeding your inner tech geek, and like hands-on work that makes a difference for your clients, AV might be the right career path for you.

There are all kinds of jobs in the AV sector and, in such an innovative industry, new jobs are created every day. According to AVIXA's 2017 AV Industry Outlook and Trends Analysis, the AV industry is growing and expected to exceed \$200 billion by 2020. Now is the perfect time to find your niche in the AV world.

A career in the AV industry can begin in various ways. AV professionals study everything from engineering to media and design to communications, but there are specific industry-recognized credentials you will need before you start your job search. In this guide, we will look at what it takes to gain the certifications you need, what an AV career path looks like, and how you can use additional training to stand out from the crowd.



While a career in AV can take you in many different directions, most AV professionals find themselves falling into a few main categories. We will be highlighting the three most common industry areas:

- > AV Installation Technician
- > Live Events Professional
- > AV Programmer

AV Installation Technician

An AV installation technician is on the frontlines of every AV project. Generally, people entering the field begin their careers as installation technicians or installation engineers. They specialize in systems integrations for both residential and commercial markets—they bring together component subsystems into a whole and ensure those subsystems function together.

Technicians can have varying job duties depending on the employer and project, but they are commonly responsible for the installation, setup, and maintenance of electronic equipment. In some cases, when necessary, they may also operate equipment as well.

To begin working in this field, some positions only require a high school diploma, but most AV companies will favour candidates with additional certifications, post-secondary education, and relevant work experience.

A Day in the Life

AV technicians can work in a huge range of sectors, both in the commercial space and residential space. In today's interconnected world, almost every company needs an AV professional to set up, operate, and maintain its audio and video systems. During a typical engagement, a technician or AV engineer will be responsible for installing and configuring equipment, including sound and video

broadcast equipment, recording devices, sound systems, mixers, speakers, projectors, video screens, interactive displays, video walls, digital signage, video conferencing systems, lighting, and more. Whether these installations are needed at a large organization or at a home in the suburbs, they require an AV professional's involvement.

During installation, an AV technician's duties often include activities such as pulling and terminating cable, mounting equipment, configuring hardware via software and physical adjusters, testing connectivity, rack building and cable management, digital signage integration, and bench testing and repair.

Commercial jobs range from a couple days to a few weeks to several months. AV technicians typically work within a team and, like in any team, they are responsible for certain tasks depending on their skills and the tasks delegated to them by the project manager. In the residential sector, jobs are typically smaller in size and scope and may only last a couple of days to a few weeks. Typically, residential jobs can be managed with two technicians but, depending on the size and scope, they may be completed individually or with a larger team.

While a high school diploma may be the only requirement in a job posting, to stand out and show your skills, there are some crucial industry certifications and manufacturer training every installation tech should have.

Types of Projects Installation Technicians May Find Themselves Working On

TYPICAL COMMERCIAL PROJECTS

- › Corporate Boardroom
- › Video Conferencing Room
- › Retail Digital Signage
- › Mission Control Rooms
- › Reception Video Walls
- › Government Council Chambers
- › K-12 & Higher Education Classrooms
- › House of Worship
- › Broadcast Studio

TYPICAL RESIDENTIAL PROJECTS

- › Complex Home Automation
- › Home Theatre Installation
- › Entertainment Centre
- › Security Systems

Commercial Installation Certifications

1. AVIXA

If you are interested in entering the world of commercial AV installation, you have most certainly already heard of AVIXA. Previously known as InfoComm International, AVIXA is the trade association that represents the audiovisual industry worldwide.

AVIXA has made it simple to gain certifications while continuing to work. They offer online courses that are flexible to the varying schedules of the industry and allow you to take courses on your own or by attending classes either virtually or in person. More traditional classroom lessons are also available in 3-day chunks for hands-on learning with an instructor present. AVIXA has created these training pathways to help AV professionals chart their own career paths on their own schedules.

Certified Technology Specialist (CTS) Credential

Recognized worldwide as the leading AV professional credential, the Certified Technology Specialist™ (CTS®) program is the first step to a successful AV career. Run by AVIXA for over 30 years, the CTS program is ANSI accredited and shows employers you want to be one of the best in your field. No matter where your career takes you, your CTS certification stays with you. It is evidence of your proficiency and credibility and gives you more value as an AV professional.

You can be certified as a general CTS or take the recently developed specialized programs focused in design (CTS-D) and installation (CTS-I). If you have been working in the industry for many years, you may be able to take the exam right away. But most people take AVIXA microcredential courses or training to gain confidence and experience before taking the CTS exam.

By completing the CTS course, you will boost your credibility not only with your employers but also with your co-workers and clients. This standardized course makes industry standards very clear and allows you to feel confident and secure you are up to date on the newest industry practices. A CTS certification must be renewed every three years by completing continuing education during that three-year period and recommitting to the CTS Code of Ethics and Conduct.



The Path to Your CTS Certification

Microcredentials

AVIXA offers three digital badges, or microcredentials, which show you have experience in specific categories. Courses in pulling cable, terminating cable, and mounting equipment are used to walk students through industry practice and verify their skills.

As someone new to the AV industry, these microcredentials allow you to signal to hiring managers that you have the foundational installation skills to do the job. These courses involve proven hands-on experience with approximately four hours of class in order to complete the course.

AV Technologist Certificate

Seen as a stepping stone to the CTS credential, the AV Technologist certificate is a way for those new to the industry to prove their knowledge. Free for AVIXA members, the AV Technologist certificate is offered after taking the Essentials of AV Technology online course. This certificate is a great way to gauge your current industry knowledge, get an introduction to the AV sector, understand the overlap with IT, and learn the common vocabulary used in the CTS certification.



Training

At any time, AVIXA offers additional training in the various areas of AV. Courses (both online and in person) are offered in:

General Knowledge

For anyone who wants a better understanding of the industry

Installation

In-depth technical instruction for technicians, field engineers, project managers, and integrators

Design

The art of AV facility and system design. Teaches core concepts of AV systems design and the development of a design plan in preparation for the CTS-D test

Live Events

Planning, implementation, and troubleshooting for professional technicians and managers, as well as event planners and account executives who want to increase their knowledge

Networking and Technology

An exploration of networks and how AV operates within them. Customized to gain the IT perspective

Technology Management

Training for the people who provide AV services and technical support

Project Management & Business

Best practices for project managers, technicians, and engineers who develop proposals and estimates, lead teams, and implement new processes

2. DIGITAL SIGNAGE EXPERT GROUP

The Digital Signage Expert Group (DESG) is a vendor-neutral organization that provides professional industry certifications for the digital signage industry. It is the only globally recognized educational organization specifically created for the fast-growing AV segment of digital signage. Created to differentiate certifications within the AV industry, the DSEG aimed to create a certification program that was impartial and recognized the need for recognition of professional development in the area of digital signage.

The DSEG offers year-round online courses and certification, as well as onsite training and events. There are four different digital signage certification programs but the two most relevant for installation techs are:



Digital Signage Certified Expert (DSCE)

The DSCE course is designed for AV, IT, advertising, and content creation professionals who want to learn more about the advancements in the digital signage industry. The course allows participants to learn how to master digital signage rollouts, including design, hardware and software selection, deployment, content creation, and ROI.

The course takes you through the 7 Key Elements of Digital Signage and walks through the business, content, design, software, hardware, connectivity, and operational requirements of a successful digital signage project.

Digital Signage Display Expert (DSDE)

Everyone knows when they see a poorly calibrated display, but only the best AV professionals know how to fix it. This course is focused on understanding the details of display technology and how to calibrate displays to always have the clearest picture. DSDE is the industry's only training program designed specifically for the display and calibration of digital signage.

This program recognizes the need for accuracy and expertise for a digital signage project to meet the high expectations of our increasingly digital world. After completing the course, participants can expect to understand each display technology and the key elements that work together to make what we see on digital displays possible. The course includes projection, front and rear screens, optical screens, edge blending, viewing angles, hot spotting, and more.

Residential Installation Certifications

In the ever-growing world of residential AV installation, there are two associations that specialize in this area: CEDIA and the newly-formed Home Technology Association (HTA).

1. CEDIA

CEDIA is a globally known association that offers home technology training and continuing education courses designed to help both AV professionals and adjacent trades increase their comfort with residential technology systems.

CEDIA offers both in-person training by a CEDIA Outreach Instructor on a regional basis and online courses. Along with on-site boot camps and workshops, online training is available to fit any schedule and includes live and pre-recorded webinars, interactive e-courses, and online lessons.

The certification program is a set of four credentials in defined areas of home technology. In order to gain a credential, you must demonstrate both knowledge and field experience necessary to master each skill. Once you receive your certification, it carries with you throughout your entire career.

Certifications include:

CEDIA Electronic Systems Certified (ESC)

This certification is the foundation for all three other certifications. If you have several years of experience in the industry, you may be able to skip this certification and move on to the more specialized courses below.

The ESC is built for students, career changers, and current professionals who want a certification that covers the residential spectrum. It is recognized internationally and aims to enhance your knowledge of the home technology industry no matter your job title or experience level.

CEDIA Certified Technician (ESC-T)

Most technicians with the skills ready to take this exam have between one and three years of electronic systems training. If the terms rough-in, trim-out, integrated control systems, and retrofit speak to you, then this certification is the right choice. The course covers installation tasks, troubleshooting, data communications, and system verification and testing.

CEDIA Certified Networking Specialist (ESC-N)

Formally known as the Residential Networking Specialist credential, the ESC-N shares a mastery of design, infrastructure, installation, and configuration of home networks. Technicians with experience in wireless home networking, including advanced techniques such as VLANs, QoS, and remote access should consider taking the ESC-N exam. CEDIA recommends at least two years of networking experience in the residential field.

CEDIA Certified Designer (ESC-D)

With a focus on the system design and implementation of residential technology, a certified designer can bridge the gap between clients and installation professionals. Working on everything from the budget, drawings, and schematics to the development of the programming, designers are an important piece of the home technology puzzle. Before taking the ESC-D exam, designers should have experience with design documentation, project design, needs analysis, and design management, plus a minimum of five years' experience.

2. HTA

The Home Technology Association (HTA) was recently created to fill the need for an industry standard for home technology installation companies. The HTA has created a set of standards to help consumers and professionals find the most reputable professionals in the home technology industry.

The HTA has partnered with industry insiders, manufacturers, and veteran professionals to come up with a rigid set of more than 60 standards necessary to identify and classify companies that are doing high-quality work with strong reputations.

While this is not a certification necessary for individuals, it is important those entering the AV industry know to watch for companies that are HTA certified. This will ensure you are working for and with a company that values high technical competency, customer service, and honest work. You can also be sure you will be trained properly and your personal certifications will be valued.

Manufacturer Training

While gaining your experience, building your resume, and gaining certifications, it can be important to have specific manufacturing training depending on systems you

work with most often. There are dozens of manufacturer-specific training courses available, but we thought we would mention some of the most common.

Milestones (AV University)

Home to Chief, Da-lite, Projecta, Sanus, and Vaddio training courses, AV University is a one-stop shop for product certifications, installation tips and tricks, and application specifics for these five manufacturers. As well, these courses can be used for AVIXA CTS renewal credit.

Biamp

Free online training for certifications in TesiraFORTÉ, Tesira SERVER/SERVER-IO, TesiraLUX, Vocia, VoIP, and Audia. Instructor-led classes are also available through the Biamp AV LAB at its Oregon headquarters.

BrightSign

Training videos, webinars, and tutorials are all available on the BrightSign website.

Cisco

Cisco offers five levels of network certification: Entry, Associate, Professional, Expert, and Architect. It offers certifications specializing in cloud, collaboration, cybersecurity operations, data centres, data and analytics, digital transformation, Internet of Things, network programmability, routing and switching, security, service provider, and wireless. Both instructor-led and online courses are available.

ClearOne

Offerings include online training and regional hands-on training for integrators, system designers, and programmers interested in ClearOne's audio, media collaboration, and network streaming products. Courses are approved for AVIXA CTS certification renewal units.

ELAN

Online certification is run by Core Brands University and includes courses on ELAN fundamentals, software, and video distribution.





Live Events Professional

AV professionals are forever intertwined with the experience and entertainment business. Working to combine content with technology to bring stunning messages to the public, the AV profession brings something new every day. When people think of spectacular audio-visual productions, they tend to think of live events like the Super Bowl or a music festival. Live events are where AV professionals shine by putting on otherworldly experiences that audiences cheer for.

More than ever before, AV technology is regularly integrated with live events. Training as a live event professional is now necessary to differentiate yourself as a specialist in the area. Knowledge and experience in the critical areas essential to live event production will set you apart from other job candidates.

A Day in the Life

Live event AV technicians work every day to bring events to life. They set up, operate, maintain, and repair equipment used to amplify, record, and display sound and images at live events. They are the ones who make sure everything sounds clear and looks great for the main attraction.

Working with microphones, video recorders, projectors, sound mixing equipment, and lighting, live event technicians must be creative and flexible to bring to life a client's vision. They must have strong communication skills and the ability to work with new people on short deadlines under increased pressure. They also tend to work unusual hours to meet the demands of the event timeline and may need to sit or stand for long periods of time.

Live event professionals tend to have backgrounds and experience in design engineering, video engineering, lighting design, audio engineering, editing, and AV programming. Those in the AV industry looking to expand into live events can complete various certifications and training to help them gain the skills they need.

Certifications for the Live Events Professional

1. AVIXA/IATSE TTF LIVE EVENT TECHNICIAN CERTIFICATE

Along with the previously mentioned CTS certification, AVIXA offers specific courses and training with a focus on live events. Online courses such as Networking Technology and Event Setup for AV Techs are great places to start learning more about live events. Those who may have already completed their CTS certification may also decide to complete the CTS-D and CTS-I specialized credentials to stand out and broaden their knowledge of the industry.

AVIXA has also partnered with the International Alliance of Theatrical Stage Employees (IATSE) to gain special access to AV-specific training and programs designed for the IATSE workforce.

The IATSE Education Program includes the following online courses:

- Quick Start to the AV Industry
- Essentials of AV Technology
- AV Math
- Event Setup
- Project Management
- Audiovisual Fundamentals for Stagehands

After completing these online courses as well as the AV Essentials instructor-led course, participants can receive their AVIXA/IATSE TTF Live Event Technician Certificate.



2. OTHER ASSOCIATION CERTIFICATIONS

There are other groups and associations worth mentioning that offer specific training—they are listed below.

- › Evolve Media Group*
- › Entertainment Technician Certification Program
- › High-End Systems

3. MANUFACTURER TRAINING

When trying to build your resume to stand out as a live event professional, having experience and education with the systems typically found in the field is crucial. Many manufacturers offer online and in-person training.

Some of the major manufacturer certifications to consider are as follows:

- | | | |
|-----------|---------------|--------------------|
| › Q-Sys* | › Harman | › L-Acoustics |
| › AVID | › GrandMA | › ETC |
| › Yamaha | › Barco | › Vectorworks |
| › Shure | › Absen LED | › JBL Professional |
| › SMAART* | › Christie* | › Bose |
| › Extron* | › Analog Way* | |

*manufacturing training courses that count towards AVIXA CTS referral credit

AV Programmer

Where would we be without programmers? They are the ones who make it possible for users to actually interact with their audiovisual equipment from a simple interface, usually a touch panel or tablet. AV programmers can sometimes be confused with software developers or just “someone who writes code,” but in the AV world, the programmer has some distinct differences.

Programmers use either proprietary or manufacturer-driven languages to develop programs that run and control AV equipment. Typically, an AV programmer will be a specialist in a given language or area of expertise, such as AMX NetLinx or Crestron SIMPL. While software developers focus on creating custom solutions or products, programmers tend to create more fundamental programs to support user interaction with AV technology.

A Day in the Life

Programmers are typically involved throughout the entire lifecycle of a project. They are consulted on during the estimation and proposal stage, they review the bill of material to ensure that all the components can “talk” to each other when the project is won, and they provide the programming during the project.

On any given day, an AV programmer can be working in almost any sector of the industry while helping in the development of control systems to simplify user interactions. They may be working with software developers to create tools to simplify manufacturers’ equipment integration or developing custom applications, but, generally, programmers spend their time helping to bridge the gap between the end users and their technology.

AV programmers tend to be involved in the flow of the entire system. They not only take care of the functionality of the AV system but also troubleshoot errors and develop the user interaction with the technology. One of the most important duties of a programmer, apart from writing the code, is testing and commissioning a system.

With the rise of “plug and play” solutions, the role of the programmer has moved to more complex and interconnected AV systems that require the experience and expertise of a great AV programmer.

Programmers are typically the last ones onsite and they get sign off from the end customer (with the project manager). Many programmers also provide the initial training with the customer on a quick “how-to” to use their new system. Oftentimes, the programmer is the most experienced and senior person on a technician team. They can work remotely or on location. Most great programmers are patient, detail-oriented problem solvers. They enjoy tackling new problems and coming up with creative and user-friendly solutions.

Many programmers have a background in installation and AV testing as they need to know what connects where and how everything should be functioning. Some programmers start with a computer science and software development background before focusing on the AV industry, but as with many in the field, there are a variety of ways you can start your career.



AV Programmer Certification

As previously stated, many programmers start out installing, repairing, and troubleshooting AV systems. Due to this, many programmers complete their AVIXA CTS certification and many of the manufacturer training courses we mentioned earlier in this guide. Below is a list of the programming-specific courses, training, and certifications any aspiring AV programmer should know about.

Crestron

Known for developing some of the most cutting-edge AV integration and digital display products in the industry, Crestron is one of the major players any programmer will have to be familiar with. AV programmers that are Crestron certified are some of the most sought after in the industry.

Their online training begins with the fundamentals, including details on Crestron technology, its programming languages (SIMPL, SIMPL+, SIMPL#), and the differences between them and other technologies. Once Crestron 101 is completed, you move on to more specialized courses at Crestron Technical Institute (located worldwide).

In order to complete your Crestron certification, you will need to attend and complete five courses that explore more advanced programming techniques and smart graphics knowledge. By achieving a Silver, Gold, Platinum, or Diamond Master Programmer Certification Level, you will separate yourself from the rest of the field. This is a highly sought-after certification in the AV industry.

Not only will you get the skills you need but, by working with a Crestron expert, you will have a direct relationship with the company. Once your courses are complete, all that's left is a take-home exam. Once you pass, you are a Crestron-certified programmer. You'll also receive a future invite to the annual master class, \$500 off any product, and a certification logo to use as you wish.

AMX

Training for AMX products is run by Harman and its Harman Professional University Certification program. These certifications are broken into two tiers: the Associate level and the Professional level. Associate training gives participants online training and is intended to give immediate information in order to get a hang of the basics. In the Professional course, instructor-led classes are offered and a deeper understanding of the programming language is required.

Using the Harman University portal, you can enroll in classes and view all the training offered on a wide variety of products and brands. Some courses have requirements to enter, such as the completion of another course, and the Professional track can only be achieved after completing the Associate level. As prerequisites are completed, you are able to continue through the classes until you are ready to attend the instructor-led course or feel comfortable enough to complete the exam.



Extron

With over 5,000 products on the market, Extron is one of the most renowned AV brands. Extron is dedicated to developing open-source platforms using Python, so programmers need specialized training in this language. Extron training involves courses on the control and configuration of systems, as well as information on new 4K technology.

Courses are offered online and in person, and include four different certification specialties. Along with the introductory AV Associate certification, other courses include:

- › Control Specialist and Professional certification - Detailing the Extron ProSeries control systems
- › ProDSP Specialist certification – Knowledge of the configuration and management of Audio DSP Processors and AV Switchers
- › XTP Systems Engineer and Technician certification

Along with these courses, you also gain continuing education credit for your AVIXA certification renewal.

Control4

For those interested in the residential boom of smart home programming, Control4 is the leading provider you should be certified by. The Packedge® Certified Network Administrator (PCNA) program is a comprehensive blend of online coursework and hands-on practical training. The PCNA course combines the coursework with online instructional office hours and an online exam to ensure competency for Control4 products.

The entire course can be completed entirely online and enrolment also includes the networking equipment you will need to be familiar with. Through the guided tutorials and the direct experience with the materials, the course is very well-designed and gives a detailed view of designing networks for reliable performance. Currently, the course costs \$1,250 USD with a \$600 rebate upon passing the PCNA exam.

Brush up on Your Skills: Tradeshows and Conferences

Don't forget that one of the best ways for installation technicians, live event professionals, and AV programmers alike to sharpen their skills and gain industry-applicable training is by attending AV conferences and tradeshows. Although they can come with an expensive price tag, the opportunities for training and networking are unmatched.

The larger conferences offer networking receptions, training classes, certification prep courses, technology tours, product demonstrations, and industry insights that can't be found anywhere else. In addition, some tradeshows are tailored to specific industry sectors, such as broadcast or digital signage, which can help you choose which ones to attend.

While it may not be necessary for you to attend these types of tradeshows every year, visiting every two or three years is a great way to make sure you are keeping up with your certifications renewal requirements as well as gaining valuable networking experience.

Whether you are looking for ad hoc training, formal in-class courses or manufacturer certifications, you can find them all at one of the AV conferences throughout the year.

Some of the major annual shows you should be aware of are:

HELPFUL TIP:

Many tradeshows do offer exhibitors invite codes for free admission. Speak to a familiar manufacturer or AV company to get the code. Then, you only have to cover the cost of travel and accommodations to attend.

Event	Location	Month
NAMM	Anaheim, California, USA	January
Consumer Electronics Show (CES)	Las Vegas, Nevada, USA	January
ISE 2018	Amsterdam, Netherlands	February
Digital Signage Expo	Las Vegas, Nevada, USA	March
NAB	Las Vegas, Nevada, USA	April
InfoComm 2018	Las Vegas, Nevada, USA	June
NAMM (summer)	Nashville, Tennessee, USA	June
Integrate	Sydney, NSW, Australia	August
CEDIA	San Diego, California, USA	September
Plasa Show	London, United Kingdom	September
LDI	Las Vegas, Nevada, USA	October

Chart Your AV Career Path

There is no right or wrong way to chart your career path in the AV industry. The AV world is constantly changing, and no one knows what skills and experience will come into play on a project-to-project basis. Whether you are finishing school with a computer science degree or a fine arts diploma, or you have been working in an associated field for years and want to make the switch, training is available to get you on the right path to an exciting career in AV. So try it out, take as many free courses as you can, earn certifications, and start building your own vision of what a true AV professional looks like. Good luck!

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