60 MINUTES OR 60 HOURS?
PROGRAMMING VS. CONFIGURATION IN AV EQUIPMENT

Many CIOs and AV professionals are shocked when they learn how much of their AV budget is spent on programming. These costs can be so high as to deter organizations from installing effective control and automation equipment, especially in their smaller conference rooms. Even more, programming costs don't end with the initial installation – they can also be sky high when making even a minor modification or addition to an existing conference room.

WHAT IS PROGRAMMING?

A conference room AV solution's primary function is to ensure that a wide variety of equipment and devices are able to communicate with one another and deliver high-quality audio and video to every output device. This might sound easy, but imagine the complexity involved when there are literally thousands of models and brands of displays, video players, projectors and other devices that must seamlessly work together. That's where programming comes into play – It's writing detailed code that instructs the system to process and control these disparate devices. For a typical commercial conference room, programming takes something like 40 to 60 hours. It's a complex process that can lead to coding errors that result in unreliable systems. Furthermore, it isn't a one-time process. When you upgrade or extend your AV system with new devices or capabilities, it's time to program the system once again.

WHAT IS CONFIGURATION?

The difference between programming and configuring an AV system is striking. Where a programmer composes long lines of code to instruct the system to perform each task, a person using a configuration tool (like AMX's Rapid Project Maker, or RPM) follows a simple process to perform the entire configuration in an hour or so:

AMX's Rapid Project Maker with device selection icons.

1. Select the icons for the input and output devices you're using in the conference room.
2. Tell the system which I/O ports are being used by which device.
3. Automatically generate the project code.
4. Download the code to the controller and touch panel.
5. Start using the system!

In terms of efficiency it's analogous to taking a plane versus a bicycle on a thousand mile journey.

AN EXAMPLE

Let's use a couple of simple examples to compare the two. In our first example we need to program a very simple conference room AV system with a display, DVD player and room PC. First, the programmer needs to write code to tell the controller how to interface with each device. Then, for each device, he needs to program each step involved in the device's operation on the touch panel. For the DVD player, he needs to program how to emulate "Play," "Stop," "Pause," and other actions that the touch panel will manage. For the room PC, he needs to program how to turn it on and off, and where to send the output. For the display, he needs to ensure that each device sends properly scaled video. And so on for the entire system.

Now let's look at the same scenario using a configuration tool like RPM. To begin with, the tool already contains all the device drivers for the display, DVD player and PC. So, the process entails nothing more than selecting the right icons, telling the system which I/O ports are being used for each device, confirming the macros the touch panel will use to control the DVD player, then sending the code to the controller and touch panel. It's literally that easy.
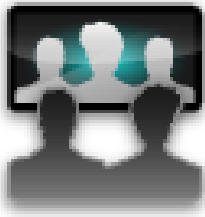
For our second example let's come back to the same system a year later and add a videoconferencing system to the mix. With the RPM configuration tool, it's as simple as opening the initial project, selecting the right videoconferencing device and reloading the code to the controller and touch panel. It's not so simple with traditional programming, because we need to bring a programmer on site to write more code to accommodate the additional capability. This can be another time-consuming and expensive process that can lead to unstable installations and budget overruns.

LIMITATIONS OF CONFIGURATION

Configuration software like RPM can sufficiently manage most typical conference room installations. However, some conference rooms feature highly specialized configurations that must be custom-programmed. These are typically complex systems that require unique features and/or devices, multiple user interfaces or complex physical installations. In many cases it's worthwhile to analyze the trade-offs: Is it worth the extra expense to customize the room, or is there a way to provide the same level of capability within a customizable framework?

SUMMARY

Programming	Configuration
Difficult. Requires extensive programming skills.	**Simple.** No programming or sophisticated technical knowledge required.
Time Consuming. Takes days or weeks to program a system.	**Fast.** Configure a system in hours vs. days.
Expensive. Programming costs can consume a budget.	**Affordable.** Configuration slashes the time to set up AV systems.
Unreliable. Complex programming can lead to unreliable installations.	**Rock-Solid.** Widget-based configuration produces error-free code.

Conference room automation systems have evolved to the point where they have achieved a quantum leap in both functionality and simplicity. Before today, every conference room AV installation entailed considerable programming, cabling and troubleshooting. With the advent of new technologies like all-in-one presentation switchers that integrate several functions in one chassis, it's easier than ever to get a room up and running by using a software configuration tool like AMX's Rapid Project Maker.

To learn more about AV systems and how they are deployed in different room types, check out our interactive Building Explorer on the PLAN page of amx.com, or engage with one of our Solutions Advisors by clicking on the CONTACT SOLUTIONS ADVISOR link at the top of any page on the website.