



Routing Switcher Control Systems Make All the Difference

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Nearly all modern television facilities are built around a central routing switcher. Features that should be considered essential in today's routing systems include: 3G operation; high density packaging; a wide selection of hard and soft panels for fast application-specific switching; and full control, crosspoint, and power supply redundancy along with low power consumption for heat dissipation.



With the requirement to substantially reconfigure the routing system on a regular basis as new equipment is added and old equipment is removed from service, a facility's technical crew is faced with the daunting task of keeping the system in operation while making changes – a lot like the pit crew in a NASCAR race. The routing switcher's control system is put through a major stress test with each configuration change as sources and destinations may need to be relabeled or reconfigured, and control panels in all areas of the system – including those located at remote positions – must be reprogrammed to reflect the revised system details.

The design of the routing switcher's control system can make a huge difference in the amount of work involved in carrying out these changes. A good system design will provide a great deal of assistance, and error-checking, automating the repetitive steps and preventing an inadvertent typing error from causing wasted effort and rework. The following are some especially important features that can make production setups go much more smoothly:

Off-Line Configuration Editing

In most cases, it is possible for the technical crew to receive advance notice of the changes that are to be made to the system. If the router control system allows for off-line editing of configuration files, the entire system configuration can be prepared in advance and installed at the time of the change-over. This will not, of course, prevent the last-minute changes that will always occur, but it will give the technical crew a basis for testing the new configuration.

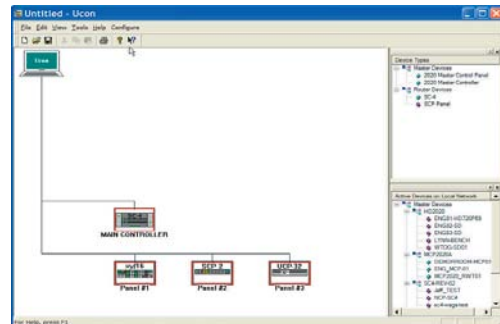
Fast, Reliable Uploads and Downloads

In every router control system there is an interruption to normal operation when the system must be reprogrammed. In some systems, this process is quick enough that operators are not inconvenienced by the interruption. In other systems, a full reprogramming cycle can take the entire system out of operation for several minutes. These minutes are crucial during many parts of the day, and the complaints can come quickly; or the work must be carried-out in the wee hours of the morning – no one's favorite assignment.

A crucial part of reducing system downtime is to remove control panel reprogramming for the system configuration process. In the best systems it is possible to reprogram individual panels, or groups of panels, without affecting the operation of the rest of the system. This is a big plus in reducing complaints from the production crew.

Panel Configuration Tools

The most time-consuming part of the setup process is reprogramming dozens of control panels to reflect the new system configuration. This is where the router control system can make a big contribution. Most systems offer a Graphical User Interface (GUI) for panel programming. The best systems allow the GUI to be customized, for example, to allow separate “views” to be created of certain parts of the system to reduce the on-screen clutter and allow the operator to focus on specific devices.



Another useful feature is the ability to “clone” panels. This allows the operator to create a master panel of each type, with all programming changes automatically reflected in each panel that is copied from this master. In this way, all panels in the group can be updated automatically with the changes that are made to the master.

In some cases, it is not practical to use the cloning feature but it is still desirable to “cut and paste” all or part of a panel's configuration to use as a starting point for configuring other panels of the same type. This can be a tremendous help when the system has a number of panels that require specific configuration for that operator's position.

Configuration File Management

It is not uncommon during the set up for a complex production such as a major sports event to have dozens of iterations of the control system configuration. A good control system must provide the user with a full set of tools for reliably saving and recalling the various configurations and for providing a fail-safe system for backing up the configurations as changes are made.

A significant side-benefit of a good file management system is that the final configuration for a particular show can be saved for future productions and can become the basis for new productions with the same production crew at the same venue – or at a different venue.

Router systems face their most demanding test in mobile production systems. Where a TV station's router may be reconfigured or updated a few times per year, the mobile systems are completely reprogrammed for every show. This provides plenty of challenges for the designers of these systems, but the improvements and enhancements that come out of the mobile system applications have proven very useful to all routing switcher customers.

At Utah Scientific, our engineers have ensured that our SC-4 control system has what it takes to stand up to the rigors of remote operation. As a result, the SC-4 controller is a good example of a reliable control system with features like those outlined above to support easy, flexible, and almost foolproof operation.

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