Stage Control System

Product Information

The Visual act Stage Control System can do all these things.

But 95% of stage motion still involves quick and simple motions such as:

- Repeatedly moving lighting bridges between access height and performance positions
- Hanging and removing legs and borders daily.
- Changing scenery between acts.
- Moving scenery on and off the stage.

All this quickly and effectively in a hectic and demanding environment.

Tools at the operator’s disposal include:

- **Traditional point-to-point motion.** Select an object, enter a position (or don’t enter a position!) and move the joystick. Call up motions saved earlier by keyboard or select from a list.
- **Path based motion.** Working with the actual path of an object provides full control of the position and speed at any time during the motion. Draw the path or operate by hand and save and edit the results.
- **Scenery based programming.** Attach a scenic object to one or more axes, and program the actual position of the object – including its angle – relative to any point you choose.
- **Start and stop motions while others are running.** Run ques in any order. Links can be triggered by time, position or external events and can include time delays.
The **Visual act Stage Control System** is an effective tool for all stage motion demands. The operator interface provides an open work space for creating and operating motions of all types. The operator desk is designed to provide an ergonomic work area comfortable for many hours of continuous use.

**The Workspace**

The operator interface provides a simple and open work space where the operator creates and accesses motions. All other functions are quickly accessed by context sensitive buttons. The operator can choose to display a 3d representation of the stage, a list of drives with their attributes or both. The 3d display can be rotated and scaled at will. Resulting views can be saved with cues. Graphic objects can be imported by the use of DXF files. A library of objects can be built up and reused.

**Back stage**

The server and positioning system run in the background and provide for quick reaction times and dependable operation. The equipment behind the scenes may be traditional winches, high performance machines with dynamic servo motors, hydraulic podiums or simple chain hoists. Combine all these freely – the system understands the limitations and capabilities of each axis.

**Scalability**

The **Visual act Stage Control System** is suitable for any size installation. Communication with the drives takes place over an industrial bus or network. Large installations can include dedicated servers and positioning computers. Each component can be doubled to produce fully redundant systems. The **Visual act Positioning Controller** connects directly to industrial servo drives. Closing the positioning loop in the drive allows for unparalleled accuracy – position errors to less than 1 mm even at speeds over 10 meters per second. The architecture is based exclusively on standard industrial hardware. The system does not depend on specially designed components that may go out of production. The system is open and easily expanded. Additional drives or machines can be added at any time. Interfaces to other equipment, such as lighting desks or stage management systems, can be accommodated.

**Service and faultfinding**

The **Visual act system** includes a number of functions to allow for effective service and fault finding. All error messages are in clear text and are linked with a database of error causes and user experience. Service by internet connection is available.

The positioning controller checks the status of all axes continuously, whether or not they are active. In the event of an error only those axes related to the error need to stop.

**Safety**

Safety is built into the system at all levels. All drives are monitored by a separate process. Absolute encoders on the output shaft are used together with motor encoders to control each machine’s integrity, as well as to monitor synchronous motion. Important functions are not simply doubled, but are handled by two different methods so that design and system errors will not compromise safety.
Features and functions

Creating, editing and operating motion
- Point to point or path based motion.
- Scenery based programming.
- Copy and import movements from other ques or other productions.
- Program speeds with respect to time.
- Separately programmable accelerations and decelerations.
- Operate several movements or ques simultaneously, starting and stopping them at will.
- Group related objects in container movements.
- Undo changes made to the active que.
- Go immediately to any que in a sequence.
- Link ques based on position, time or external trigger.
- Trigger external events.
- Teach in profiles can be created from any joystick motion and assigned to any que.

Configuration and safety
- Create “Safe limits” that apply both position limits and performance limits to any individual drive.
- Lock productions and or ques to avoid unauthorized changes.
- Safe conditions (for fixed installations).
- Single interface for configuration, programming and operation.
- Attach movements to individual productions or create global movements – accessible to all productions.
- Selection of drive, winch or axis type.

Safety functions
- Diverse axis control.
- Diverse inputs.
- Double and diverse encoders for both position and machine integrity.
- Dead man.
- Emergency stop.
- Signed configuration data.
- Safe communication.

Documentation and quality
- Add descriptive names and texts to any object, movement, que or other system element.
- Archive productions.
- Restore productions deleted in error.
- Define and attach warning messages to drives.
- Print reports.
- Import DXF drawings to attach to objects or productions.

Service and support
- View the detailed status of any drive at any time.
- Search the error log and add your own notes to specific events.
- Off site service connection.
- Read any parameters of the positioning system.
- Read parameters from drives.

Administration
- Change languages at the press of a button.
- Create graphic views for each operator desk or que.
- Units of distance supported include meters, centimeters, millimeters and inches.
- Individual user access logon with levels for operators, advanced operator and administrators.

Modules and licensing
Each Stage Control System includes one or more of the following licenses:
- Fly – point to point motion for traditional single axis or group of axes.
- 3D – path based motion for single axes or 3d objects.
- Wagon – support for up to 16 Visual act Advanced Wagons.
- Scenery – configuration and point to point motion for simple and complex combinations of axes.
A single network supports up to 32 axes. Up to 8 networks can be installed in a system.

Options include:
- Touring cabinets, flexible cables with connectors.
- Redundant servers and controllers.
- Second screen for desk.
- I/O for external functions.
- Firewall and internet connection.
- Output to d3 media server.

Technical specifications
- The number of productions, ques and movements in the database is virtually unlimited.
- Up to 254 axes on a single system + 16 Advanced Wagons.
- Up to 16 playbacks in simultaneous operation.
- Up to 16 axes in a synchronous movement.
- 254 movements can be active simultaneously.
- Positioning accuracy to less than 1 mm.