



APPLICATION SUMMARY

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Using Calypso Solutions to Add Device Control to SMART Board™ and SMART Sympodium™ Products

Smart Technologies interactive whiteboards and Sympodium panels are powerful, easy to use collaboration tools deployed to nearly every corner of the globe. These products have become an integral part of education and business presentation environments. In many cases they are integrated into rooms that have other presentation devices. DVD players, projectors and lighting/audio controls are commonly found in rooms containing SMART Boards. Controlling these devices is an essential part of overall room functionality. While there are many external control options, the most desirable solutions are tightly integrated with SMART products, which have the advantage of providing interactive surfaces.

The information in this Application Summary describes:

- the benefits of Calypso / SMART integration
- examples of typical room configurations
- system integration details

Calypso Control Systems Product Overview

Calypso Control Systems produces versatile, reliable Pro AV control solutions that include both hardware device controllers and user interface software tools. Each controller is built around an embedded "event database", eliminating the need for if-then-else control logic programming. The database, which requires device protocol knowledge for setup, translates any incoming event (e.g., IP target, IR signal) to any outgoing action (e.g., serial string, IR output). In addition, Calypso supports patent-pending **c_Link** control hyperlink protocols. With **c_Link**, hyperlink

controls can be integrated into nearly any software product (e.g., PowerPoint) or onto any platform. Calypso products include:

- Pro I/O - general purpose AV device controller
- ION-e - AV device control for typical classroom settings
- FLIC - Windows and Macintosh button interface development tool requiring no programming
- c_Link Builder - Windows utility that produces desktop icon controls and keyboard "hotkey" controls with no programming

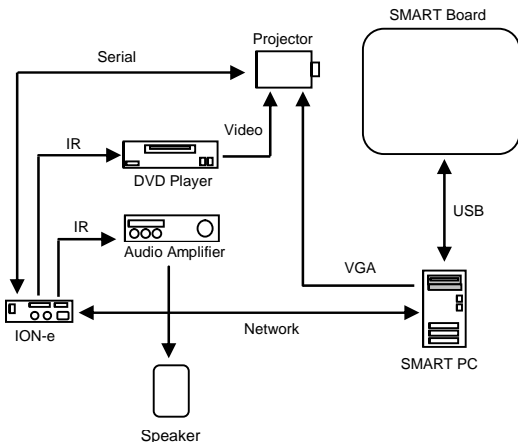
Classroom / SMART Board Example

A typical classroom needing control would likely include a SMART Board with its host PC, a DVD player, a projector and an audio receiver. Accordingly the teacher requires DVD power and transport control, projector power and input controls and audio level control. The DVD player and audio receiver will most likely support IR control while projectors require an RS232 (serial) connection.

The controller is the bridge that physically connects the IR and serial protocols of the DVD player, audio receiver and projector to the SMART Board touch. Once the physical connection is established, a user interface suitable for use on a SMART Board completes the solution.

Physical Connections. Cables that physically connect these devices to one another are hidden "behind-the-scenes", often behind wall, above ceiling tiles or through conduits.

Calypso Controller. Configured with 1 serial connection and 4 IR outputs, the ION-e controller is ideally suited for the typical classroom. Moreover, the combination of the ION's event database and c_Link support greatly simplify the process of creating and integrated SMART Board control interface.



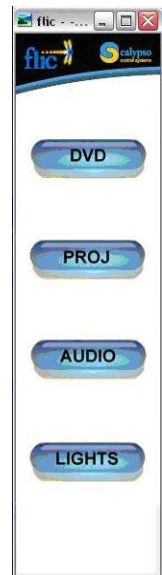
The "trigger" that initiates a control event must travel from the SMART Board to the ION-e upon a button press. The control signal travels from the touch interface to the SMART host PC via a USB connection, as per the SMART architecture. The host PC then forwards the control signal to the ION-e, either through a crossover Ethernet cable or across a LAN. From there, the embedded event database translates the control signal into an appropriate output action (e.g., serial command to the projector to switch from VGA input to video input).

Control Interface. The goal of an integrated solution is to leverage the SMART Board and projector combination to display and use a button control interface. Several software programs allow users to send commands to the ION-e from the SMART Board:

- Flic ABR is a Calypso Macromedia Flash program configurable for control of up to six devices with six functions per device. Formatted as a vertical "strip", it can be launched from within with SMART Notebook software (or externally), positioned on the screen for easy button access by the presenter and minimized when not in use.

In addition, Flic ABR automatically resizes buttons to maximize their size within the interface window. Large buttons solve the problem that arises when users switch the

projector input from "VGA" to "Video" (e.g., from a DVD player). With that switch, the Windows desktop, along with all graphic control buttons, is replaced by video from the DVD, even though the interactive desktop remains active¹.



The key to the solution is that large buttons continue to function as "hidden" buttons, despite the fact that they're not visible. The user simply needs to tap the SMART Board in the vicinity of each large button to trigger pause, play, next, previous and "home" functions. The "home" button would typically be programmed to switch the projector input back to VGA input, causing the desktop to reappear, and to return buttons back to their previous size.

Finally, note that FLIC software can be dragged directly into SMART Notebook software, which supports Flash objects. Moreover, FLIC can be saved as part of a Notebook template, making it easy to recreate a repeatable presentation.

- C Link Builder is a Calypso Windows utility that allows users to add individual control icons to a desktop by taking advantage of the fact that the Calypso products accept direct IP messages as control triggers. Once created, icon names and graphics can be changed to reflect each individual function. In addition, this utility allows users to map control functions to any key on the keyboard for user-defined control "Hot Keys".



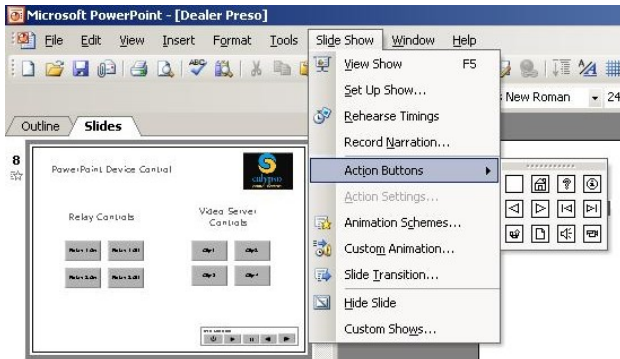
- PowerPoint. Microsoft PowerPoint is commonly used in presentations in classrooms, meeting rooms and auditoriums where control systems reside. Calypso's **c_Link** protocol allows users to take advantage of a built-in PowerPoint feature

¹ This is not applicable when a Symposium is in use.

called "Action Buttons" to add controls directly to any PowerPoint slide. Once added, these buttons, which can be arranged in a small menu at the bottom of the presentation, are triggered by a button click directly from within the presentation. The only information required to configure c_Link action buttons is (a) the IP address of the Calypso controller and (b) the number of the event being triggered for each button, as defined within the onboard event database.

SMART Sympodium

For the purpose of this discussion, the essential difference between SMART Board and Sympodium products is that with Sympodium the interface seen and used by the presenter is separate from the interface seen by the audience. Accordingly, the "hidden button" feature is unnecessary, as switching the projector input from VGA to Video has no impact on the Sympodium desktop. In that context, FLIC Disc and FLIC Strip programs, variations on FLIC ABR that provide similar button interfaces, though without button resizing, offer flexible and easy graphic interface options, as does c_Link Builder.



PowerPoint Action Button Edit Screen



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