Notes on Sentinel Protocol
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The comments and questions contained herein refer to draft version 2b of the Sentinel Protocol.

Query Command: This command can interrogate devices based on UUID and/or NetID. Is it correct to assume that a device should not respond to a Query with both UUID and NetID specified if either one does not match?

Further, if a device does not have a NetID assigned and receives a Query referring to its UUID, how should it respond, if at all?

Bye Bye Command: Is this message to be sent if the device does not have a NetID? That is, if it has not connected to the system?

Description: Is it correct to assume that the values for the properties (except for the UUID) are decimal numbers?

Configuration: As noted in the document, specifications are needed for the camera sensor properties. Is the aspect ration of the camera assumed for this document? A value for the pixel (sel) width of the camera is included, but not the height. Given the potential for different aspect ratios in the future, should not provision be made for pixel height?

Diagnostics: A bit flag array is specified as one of the properties. No bits are defined. Are these open to manufacturer definition? There is no mask bit specified to access the flags. Is this expected to be part of the next revision?

Reset Diagnostics: No specification for this command is included.

Telemetry

Goto Preset: This command specifies preset and speed. Spectra 3 has a fixed preset acquisition speed. This speed is selected for quickest acquisition of preset position. since the speed cannot be controlled externally, a Spectra 3 must ignore the speed specification. It must also be noted that a number of presets in Spectra 3 have special purpose designations. For example, preset 34 moves the camera to the pan home position (absolute 0º.)

Presets: The range of presets possible in a Sentinel command is larger than that of a Spectra 3. Should a unit respond with a General Error result code in the event it receives an out of range preset request?

Pan/Tilt Speed: Spectra 3 is capable of 64 speeds for pan and tilt operation and pan speed has a "Turbo" speed option. How shall the small range of speeds in Sentinel commands be mapped into Spectra 3 speeds? Also, should the values used to specify speeds be spread over the possible range (00 to FF rather than 00 to 04) in order to more effectively accommodate future enhancements to available speeds? This would make the change transparent and not require a future software revision. Then the Sentinel system may use as few speeds as desired while having all possible speeds available. A Spectra 3 (and for that matter, any similar PTZ camera) would simply map the speed request into its own range, assuming that FF is maximum and 00 is stop.

Auto-pan: The command for auto-pan specifies a speed. Spectra 3 has an adjustable scan speed, but it is not an "on the fly" setting. Is it necessary to specify a speed for each command? Can there be a value that means, "scan at the current speed setting"?

Pan Tilt Zoom Focus: For pan and tilt, the commands are similar in operation (save for the range of values as discussed above) to the current method in Spectra 3. Zoom speed is not an "on the fly" setting, however. A menu command is available to select a speed for zoom operations but it is not dynamically variable. This is as for the auto-pan command. Thus, a speed value that indicates, "use current setting" would be very effective. The range of zoom speeds is very limited on Spectra 3 and this would make it more effective. The alternative is a "Set Dynamics" command to set properties such as this.

Extended

The extended commands specify motion in terms of microsteps. It is recommended that this term not be used, as it confuses the issue with actual motor control. Spectra 3 accepts position commands specified as actual angles in 0.01º increments. Thus, a pan position can be specified with an integer value of 0 – 35999 to specify 0º – 359.99º. If the proposed range in the Sentinel document were mapped to this range, it is possible that small positional inaccuracies would creep into the operation. This also keeps pan and tilt positions in the same units.

Zoom position is also described in microsteps. Again, it is suggested that this term not be used to prevent confusion with motor control requirements. Spectra 3 is now capable of controlling the zoom position in hundredths of a unit. That is, a value of 500 results in a 5X zoom setting. Alternatively, a scaled value may be used to specify settings within the available range. It is recommended that the absolute magnification setting be accommodated as part of the Sentinel protocol.

Focus position is not externally available from Spectra 3. Focus settings are retained as part of presets, however. Thus, the focus setting is guaranteed for preset operation but cannot be specifically controlled otherwise.