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P3.049 New data acquisition control software developments for the simultaneous control of ten intelligent overview video cameras at W7-X

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In the past two campaigns of Wendelstein 7-X stellarator the overview video diagnostics played an important role in the daily experiments. The current software implementations went through numerous improvements and changes according to the continuously changing requirements. However, while the control software could handle all the needs, the changes reached a point where the redesign and re-implementation became necessary to ensure high reliability. In the next campaign of W7-X real-time data streaming will be implemented to W7-X's Archive, which can be practically a limitless real-time data backup. Other improvements involve high-level interaction with the Trigger Time Event (TTE) network, intense Graphical User Interface (GUI) improvements such as the grouping of cameras, visual display of measurement settings (eg. exposure and readout timing). This new software package is arranged into two standalone pieces, similarly as in the previous version. One of the main upgrades is that the software will be able to send so-called event descriptions over the network during the measurement to a central event display, where events from several diagnostics will be visualized. This feature can be very important in physics measurements because users can visually see what is happening inside the machine in real-time.
This paper will present the detailed experiences, new requirements and detailed design, implementation and testing of this new software package.

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