

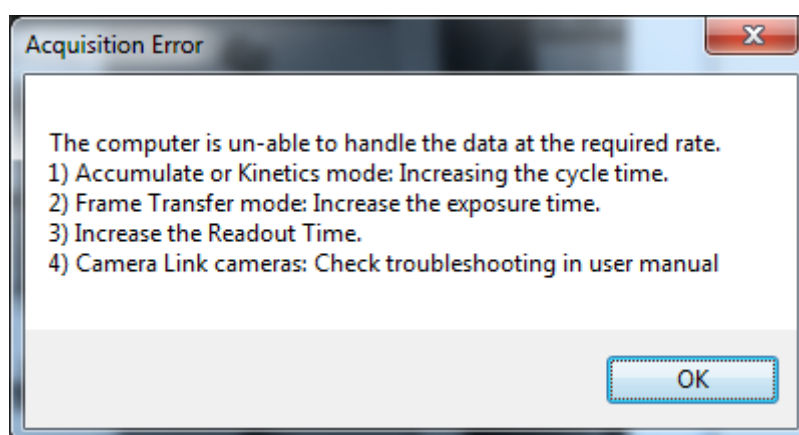
Technical Solutions

Upgrade of Neo to Release 3 – Change in AOI Functionality from Release 2

Products Affected – Neo

Software Affected – SOLIS / SDK / iQ

Description of Error: After the firmware upgrade of the Neo camera to Release 3, the camera is no longer able to acquire area of interests (AOIs) that it was previously capable of acquiring. Please see the error message below.



Note: This is assuming that the frame grabber card has not been moved to a different PCIe slot (the Neo frame grabber requires a minimum x8 slot). If the PCIe slot has not changed and if a full resolution image is not able to be acquired, check that your PC meets the required specification for operating the Neo. Please refer to the Andor Neo Specification Sheet for the recommended PC specification.

The change in functionality is due to the firmware change of the camera which allows the Neo to perform on-head binning in Release 3 rather than limiting it to software binning as in Release 2.

During operation of the Release 2 camera when acquiring an AOI, even though a smaller width has been selected, the entire row is read out of the camera to the frame grabber card. The part which is not required is then dumped by the software. In contrast, on the Release 3 camera, the on head FPGA only transfers the active AOI area pixels to the frame grabber.

As such, although the amount of data being transferred from the frame grabber to the memory of the PC is essentially the same; the rate at which the data arrives at the frame grabber is now increased. Therefore, there is essentially less 'dead' processing time on the card.

If the PC is not able to accept the transferred data at a greater (or at least at the same) rate at which the rate of data is arriving to the frame grabber, this would cause such an error to occur as the 'first in first out' (FIFO) on the card would not be able to complete the data transfer from such an acquisition.

As such, the software will generate an error message to indicate this. The upgrade of the Neo therefore increases the efficiency at which the data is transferred by the camera firmware and as such, if the control PC does not meet the recommended specification, a higher specification control PC will be required.