Input/Output

The V4L2 API defines several different methods to read from or write to a device. All drivers exchanging data with applications must support at least one of them.

The classic I/O method using the :c:func:`read()` and :c:func:`write()` function is automatically selected after opening a V4L2 device. When the driver does not support this method attempts to read or write will fail at any time.

Other methods must be negotiated. To select the streaming I/O method with memory mapped or user buffers applications call the :ref:`VIDIOC_REQBUFS` ioctl. The asynchronous I/O method is not defined yet.

Video overlay can be considered another I/O method, although the application does not directly receive the image data. It is selected by initiating video overlay with the :ref:`VIDIOC_S_FMT <VIDIOC_G_FMT>` ioctl. For more information see :ref:`overlay`.

Generally exactly one I/O method, including overlay, is associated with each file descriptor. The only exceptions are applications not exchanging data with a driver ("panel applications", see :ref:`open`) and drivers permitting simultaneous video capturing and overlay using the same file descriptor, for compatibility with V4L and earlier versions of V4L2.

:ref:`VIDIOC_S_FMT <VIDIOC_G_FMT>` and :ref:`VIDIOC_REQBUFS` would permit this to some degree, but for simplicity drivers need not support switching the I/O method (after first switching away from read/write) other than by closing and reopening the

device.

The following sections describe the various I/O methods in more detail.