Digital Video (DV) Timings

The video standards discussed so far have been dealing with Analog TV and the corresponding video timings. Today there are many more different hardware interfaces such as High Definition TV interfaces (HDMI), VGA, DVI connectors etc., that carry video signals and there is a need to extend the API to select the video timings for these interfaces. Since it is not possible to extend the :ref:`v4l2_std_id <v4l2-std-id>` due to the limited bits available, a new set of ioctls was added to set/get video timings at the input and output.

> **System Message: ERROR/3 (`D:\onboarding-resources\sample-onboarding-resources\linux-master\Documentation\userspace-api\media\v4l\[linux-master][Documentation][userspace-api][media][v4l]dv-timings.rst`, line 9);** *backlink*
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These ioctls deal with the detailed digital video timings that define each video format. This includes parameters such as the active video width and height, signal polarities, frontporches, backporches, sync widths etc. The `linux/v4l2-dv-timings.h` header can be used to get the timings of the formats in the :ref:`cea861` and :ref:`vesadmt` standards.

> **System Message: ERROR/3 (`D:\onboarding-resources\sample-onboarding-resources\linux-master\Documentation\userspace-api\media\v4l\[linux-master][Documentation][userspace-api][media][v4l]dv-timings.rst`, line 18);** *backlink*
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To enumerate and query the attributes of the DV timings supported by a device applications use the :ref:`VIDIOC_ENUM_DV_TIMINGS` and :ref:`VIDIOC_DV_TIMINGS_CAP` ioctls. To set DV timings for the device applications use the :ref:`VIDIOC_S_DV_TIMINGS <VIDIOC_G_DV_TIMINGS>` ioctl and to get current DV timings they use the :ref:`VIDIOC_G_DV_TIMINGS <VIDIOC_G_DV_TIMINGS>` ioctl. To detect the DV timings as seen by the video receiver applications use the :ref:`VIDIOC_QUERY_DV_TIMINGS` ioctl.

> **System Message: ERROR/3 (`D:\onboarding-resources\sample-onboarding-resources\linux-master\Documentation\userspace-api\media\v4l\[linux-master][Documentation][userspace-api][media][v4l]dv-timings.rst`, line 25);** *backlink*
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Applications can make use of the :ref:`input-capabilities` and :ref:`output-capabilities` flags to determine whether the digital video ioctls can be used with the given input or output.