**NAME**

     XGetDeviceMotionEvents, XDeviceTimeCoord - get device motion history

**SYNOPSIS**

     #include <X11/extensions/XInput.h>

     XDeviceTimeCoord *XGetDeviceMotionEvents( Display *display,
                              XDevice *device,
                              Time start,
                              Time stop,
                              int *nevents_return,
                              int *mode_return,
                              int *axis_count_return);

     display
          Specifies the connection to the X server.

     device
          Specifies the device whose motion history is to be
          queried.

     start, stop
          Specify the time interval in which the events are
          returned from the motion history buffer. You can pass a
          timestamp or CurrentTime.

     nevents_return
          Returns the number of events from the motion history
          buffer.

     mode_return
          Returns the mode of the device (Absolute or Relative).

     axis_count_return
          Returns the count of axes being reported.

**DESCRIPTION**

          The server may retain the recent history of the device motion
          and do so to a finer granularity than is reported by
          DeviceMotionNotify events. The XGetDeviceMotionEvents request

makes this history available.

The XGetDeviceMotionEvents request returns all events in the
motion history buffer that fall between the specified start and
stop times, inclusive. If the start time is later than the stop
time or if the start time is in the future, no events are
returned. If the stop time is in the future, it is equivalent
to specifying CurrentTime.

The mode indicates whether the device is reporting absolute
positional data (mode = Absolute ) or relative motion data
(mode = Relative ). Some devices allow their mode to be changed
via the XSetDeviceMode request. These constants are defined in
the file XI.h. The axis_count returns the number of axes or
valuators being reported by the device.

XGetDeviceMotionEvents can generate a BadDevice, or BadMatch
error.

Structures

The XDeviceTimeCoord structure contains:

```
typedef struct {
    Time time;
    int *data;
} XDeviceTimeCoord;
```

The time member is set to the time, in milliseconds. The data
member is a pointer to an array of integers. These integers are
set to the values of each valuator or axis reported by the
device. There is one element in the array per axis of motion
reported by the device. The value of the array elements depends
on the mode of the device. If the mode is Absolute, the values
are the raw values generated by the device. These may be scaled
by client programs using the maximum values that the device can
generate. The maximum value for each axis of the device is
reported in the max_val field of the XAxisInfo returned by the
XListInputDevices request. If the mode is Relative, the data
values are the relative values generated by the device.

You should use XFreeDeviceMotionEvents to free the data returned by this request.

Errors returned by this request: BadDevice, BadMatch.

## DIAGNOSTICS

BadDevice

An invalid device was specified. The specified device does not exist or has not been opened by this client via XOpenInputDevice. This error may also occur if the specified device is the X keyboard or X pointer device.

BadMatch

This error may occur if an XGetDeviceMotionEvents request is made specifying a device that has no valuators and reports no axes of motion.