

Shift Frames

In some cases, [EMG](#) data and [motion capture](#) data may be out of sync with each other. This can occur because of a physiological issue known as electromechanical delay (EMD), or because of technical issues with data collection, e.g. the saved EMG signal might be delayed because the EMG system is wireless. The command **Shift_Frames** shifts a signal forward/backward in time by a number of frames to accommodate this issue.

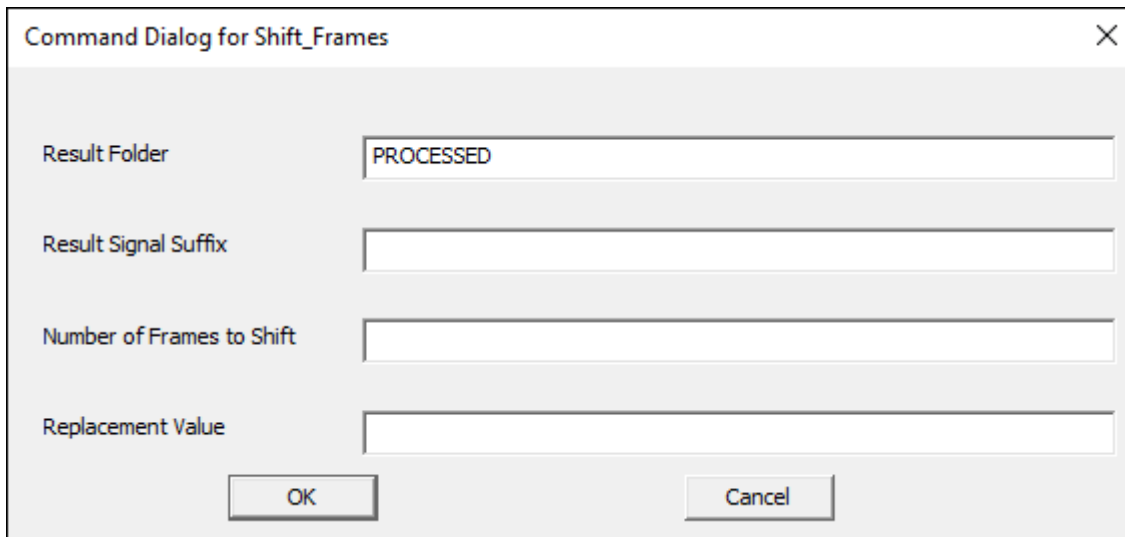
```
Shift_Frames
/SIGNAL_TYPES=TARGET
! /SIGNAL_NAMES=
! /SIGNAL_FOLDER=ORIGINAL
! /RESULT_SUFFIX=
! /RESULT_FOLDER=PROCESSED
/FRAME_SHIFT= 5
/REPLACEMENT_VALUE=DATA_NOT_FOUND
;
```

Parameters

Parameter	Description
SIGNAL_TYPES	The Type(s) of the signal to be shifted.
SIGNAL_NAMES	The Name(s) of the signal to be shifted.
SIGNAL_FOLDER	The Folder(s) of the signal to be shifted.
RESULT_SUFFIX	The suffix to append to the signal's name after it has been shifted.
RESULT_FOLDER	The folder in which to store the shifted signal.
FRAME_SHIFT	The number of frames to shift. Can be an expression .
REPLACEMENT_VALUE	The value to replace any unknown values caused by the shift. The default value is 0, except when the Signal_Type parameter is a TARGET in which case DATA_NOT_FOUND (e.g. unreliable value) is used.

Dialog

The Shift_Frames command can be edited interactively using the following dialog.



A screenshot of a 'Command Dialog for Shift_Frames' window. The dialog has a title bar with a close button (X). It contains four input fields: 'Result Folder' with the text 'PROCESSED', 'Result Signal Suffix' (empty), 'Number of Frames to Shift' (empty), and 'Replacement Value' (empty). At the bottom are 'OK' and 'Cancel' buttons.

Notes

- When a signal is shifted forward in time, the frames at the beginning of the file have unknown values.
- When a signal is shifted backward in time, the frames at the end of the file have unknown values.
- These unknown values can be specified by the **/Replacement_Value** parameter.
- If no **/Replacement_Value** is specified Visual 3D uses a value of 0 except when the **Signal_Type** parameter is a **TARGET** and value of **DATA_NOT_FOUND** (e.g. unreliable value) is used.

Examples

With Visual3D's flexible signal specification syntax and the power of expressions, it is possible to precisely specify how any signals should be shifted.

Example 1: Shift a single signal

Shift the signal 1FX by one analog frame and to replace the first frame with the value -99

```
Shift_Frames
/SIGNAL_TYPES=ANALOG
/SIGNAL_NAMES=1FX
! /SIGNAL_FOLDER=ORIGINAL
! /RESULT_SUFFIX=
! /RESULT_FOLDER=PROCESSED
/FRAME_SHIFT=1
/REPLACEMENT_VALUE=-99
;
```

Example 2: Shift all analog signals using an expression

Shift all analog signals in time based on the value of a Metric signal and replace the unknown values with **DATA_NOT_FOUND** (e.g. no value).

```
! Shift Frames - the shift value METRIC::PROCESSED::SHIFT was calculated previously
Shift_Frames
/SIGNAL_TYPES=ANALOG
! /SIGNAL_NAMES=
! /SIGNAL_FOLDER=ORIGINAL
! /RESULT_SUFFIX=
! /RESULT_FOLDER=PROCESSED
/FRAME_SHIFT= METRIC::PROCESSED::SHIFT
/REPLACEMENT_VALUE= DATA_NOT_FOUND
;
```

NOTE: **FORCE**, **COFP**, and **FREEMOMENT** signals are derived from **ANALOG** signals, so these values cannot be shifted; the ANALOG signals should be shifted, and the option to use PROCESSED analog signals for computing forces should be set to true.

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