

Static Pointer Landmarks and Segments

Static Pointer Landmarks and Segments

The Landmark defining the location of the Tip of a Static Pointer is done in three steps.

Segments | Landmarks | Muscles | Subject Data / Metrics

Landmarks | _LMET5 | TEMPTIP

Landmark Name:

Define Orientation Using:

Starting Point: (Reference)

☒ Targets and/or Landmarks:

Ending Point: (On a line)

*Lateral object: (On a plane)

*Project From: (Projection onto a line or plane)

* = Optional

☐ Existing Segment:

Landmark Offset from Start Point (Reference) or Segment Origin:

☐ Offset to Existing Calibration Target or Landmark:

☒ Offset Using the Following ML/AP/AXIAL Offsets:

ML: AP: AXIAL:

☐ Offset by Percent (1.0 = 100%) (Meters when not checked)

☒ Calibration Only Landmark (Not generated for assigned motion file(s))

The first step is to use the data in the Pointer INI File to create a Landmark at the tip of the pointer relative to 3 tracking markers. It is possible to use this Landmark for determining the anatomical landmarks but it is useful to use all 6 tracking markers that are available. Visual3D uses Optimal Tracking for locating a segment in space, and it has been demonstrated in the literature that using 6 markers connected to a rigid body produces more accurate results than three markers. Additionally, Visual3D will compute the orientation of a segment using as many markers as exist in the frame (must be greater than or equal to 3 markers). Thus, if one marker is obscured the TIP Landmark can still be computed.

Segments | Landmarks | Muscles | Subject Data / Metrics

Segments | Segment Properties | Wand

Define Proximal Joint and Radius

Lateral	Joint	Medial	Radius (Meters)
None	UP35	None	0.001000

Define Distal Joint and Radius

Lateral	Joint	Medial	Radius (Meters)
None	UP39	None	0.001000

Extra Target to Define Orientation (if needed)

Location: Lateral | UP36

Select Tracking Targets

☐ Use Calibration Targets for Tracking

UP24	UP25	UP26
UP27	UP28	UP29
UP3	UP30	UP35
UP36	UP37	UP38
UP39	UP4	UP40
UP5	UP6	UP7
UP8		

Depth (Meters):

Build Model Close Tab

The Wand Segment is defined using the three markers associated with the temporary landmark, and tracked using all 6 tracking markers.

Segments | Landmarks | Muscles | Subject Data / Metrics

Landmarks | _LMET5 | TEMPTIP | TIP

Landmark Name: TIP

Define Orientation Using:

Starting Point: (Reference)

Targets and/or Landmarks:

Ending Point: (On a line)

*Lateral object: (On a plane)

*Project From: (Projection onto a line or plane)

* = Optional

Existing Segment: Wand

Landmark Offset from Start Point (Reference) or Segment Origin

Offset to Existing Calibration Target or Landmark: TEMPTIP

Offset Using the Following ML/AP/AXIAL Offsets

ML: 0.047409333 AP: -0.002469992 AXIAL: 0.076210067

☐ Offset by Percent (1.0 = 100%) (Meters when not checked)

☐ Calibration Only Landmark (Not generated for assigned motion file(s))

The TIP Landmark that is used for identifying the anatomical locations is then defined with respect to

the location of the TEMPTIP Landmark in the Wand Segment Coordinate System.

Note: The Segment and Landmarks are created automatically when the Pointer INI file is interpreted. The information is presented here only for completeness.

Static Pointer Event Labels

Event Labels can not be computed automatically for Static Pointer because there is no trigger (e.g. the compression of the spring of the Davis Pointer) to base the Event identification on.

If the user can add a Trigger signal as an A/D channel Visual3D can use this signal to compute the Events

Typically, the user must create the Event Labels manually by looking at the travel of the Tip Landmark and setting an Event (labeled as a ?) at each location that the tip of the wand isn't moving in space. This process is not particularly time consuming and need only be done once; Exporting the Movement Trial that includes the Event Labels.

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<https://has-motion.com/wiki/> - Wiki Documentation Site

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