

IOR Gait Shoulder Orientation and Translation

This tutorial is a continuation of the [IOR Gait Full Body Tutorial](#). This tutorial goes through computing the orientation and the translation of the shoulder targets relative to the trunk segment.

Shoulder LB

Below defines the orientation of the line between the shoulder targets (LCAJ/RCAJ) relative to the trunk segment

Shoulder LB & AR Landmarks

31. Create RTA_OR:

1. Click **Landmarks** button
2. Click **Add New Landmark** button
3. Create Landmark: RTA_OR
 - **Landmark Name:** RTA_OR
 - **Existing Segment:** Thorax/Ab
4. Offset Using the Following **ML/AP/AXIAL** Offsets:
 - **X:** 0.0 **Y:** 0.0 **Z:** 0.0
5. **Check:** Offset by Percent (1.0 = 100%) (Meters when not checked)
6. **Do NOT Check:** Calibration Only Landmark (Not generated for assigned motion file(s))

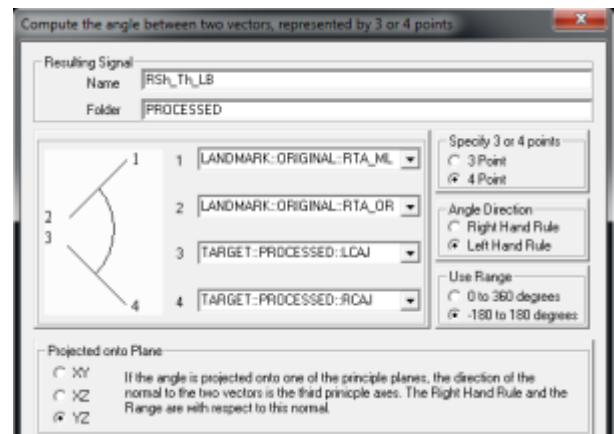
32. Create RTA_ML:

The screenshot shows the 'RTA_ML' dialog box in the Visual3D software. The 'Landmarks' tab is active. The 'Landmark Name' is set to 'RTA_ML'. Under 'Define Orientation Using:', 'Starting Point' is set to '(Reference)'. 'Targets end/or Landmark:' is set to '(On a line)'. '*Lateral object' is set to '(On a plane)'. '*Project From' is set to '(Projection onto a line or plane)'. 'Existing Segment' is set to 'Thorax/Ab'. Under 'Landmark Offset from Start Point (Reference) or Segment Origin', 'Offset to Existing Calibration Target or Landmark' is set to '(Reference)'. 'Offset Using the Following ML/AP/AXIAL Offsets' are: ML: 0.5, AP: 0.0, AXIAL: 0.0. The checkbox 'Offset by Percent (1.0 = 100%) (Meters when not checked)' is checked. The checkbox 'Calibration Only Landmark (Not generated for assigned motion file(s))' is unchecked. Buttons at the bottom include 'Undo Changes', 'Apply', 'Build Model', and 'Close Tab'.

1. Click **Landmarks** button
2. Click **Add New Landmark** button
3. Create Landmark: RTA_ML
 - **Landmark Name:** RTA_ML
 - **Existing Segment:** THORAX/Ab
4. Offset Using the Following **ML/AP/AXIAL** Offsets:
 - **X:** 0.5 **Y:** 0.0 **Z:** 0.0
5. **Check:** Offset by Percent (1.0 = 100%) (Meters when not checked)
6. **Do NOT Check:** Calibration Only Landmark (Not generated for assigned motion file(s))

Shoulder LB & AR Definitions

33. Create RSh_Th_LB planar angle:

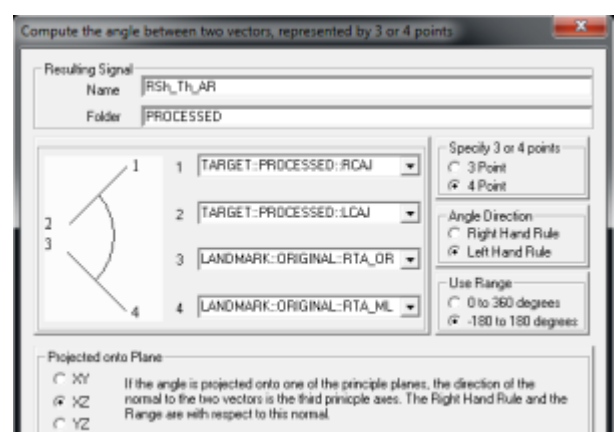


1. Define **Resulting Signal** Name: RSh_Th_LB
2. Calculate a **4 point angle** between the following targets:
 1. LANDMARK::ORIGINAL::RTA_ML
 2. LANDMARK::ORIGINAL::RTA_OR
 3. TARGET::PROCESSED::LCAJ
 4. TARGET::PROCESSED::RCAJ
 - **Angle Direction:** Left Hand Rule
 - **3D Space:** Always 0 to 180 degrees
 - **Projected onto Plan:** YZ
 - **NOTE:** The reference segment will need to be changed to RTA within the text options.

34. Create LSh_Th_LB planar angle:

- When defining the left signal, use same definitions **except** set:
 - **Angle Direction:** Right Hand Rule

35. Create RSh_Th_AR planar angle:



1. Define **Resulting Signal** Name: RSh_Th_AR
2. Calculate a **4 point angle** between the following targets:
 1. TARGET::PROCESSED::RCAJ
 2. TARGET::PROCESSED::LCAJ
 3. LANDMARK::ORIGINAL::RTA_OR
 4. LANDMARK::ORIGINAL::RTA_ML
 - **Angle Direction:** Left Hand Rule
 - **3D Space:** Always 0 to 180 degrees
 - **Projected onto Plane:** XZ
 - **Note:** The reference segment will need to be changed to RTA within the text option

36. Create LSh_Th_AR planar angle:

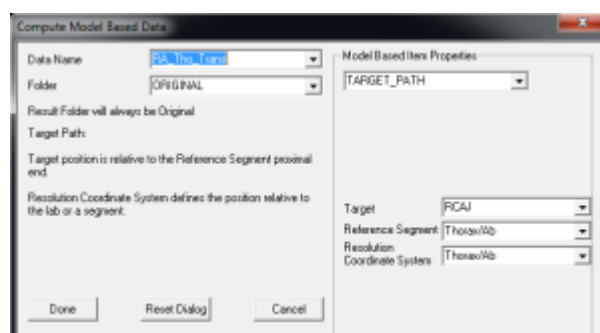
- When defining the left signal, use same definitions **except** set:
 - **Angle Direction:** Right Hand Rule

Translation

Below defines the translation of the shoulder targets (LCAJ/RCAJ) in the trunk coordinate system

Shoulder Translation Definitions

37. Define RA_Tho_Transl:



1. Open the **Compute Model Based** dialog
2. Select **TARGET_PATH** from drop down list
 - **Date Name:** RA_Tho_Transl
 - **Target:** RCAJ
 - **Reference Segment:** Thorax/Ab
 - **Resolution Coordinate System:** Thorax/Ab

38. Define LA_Tho_Transl:

- When defining the left signal, use the same definitions **except** set:
 - **Target:** LCAJ

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