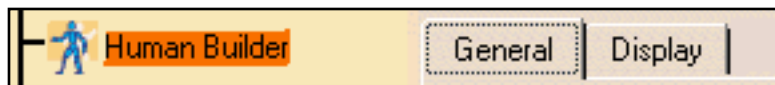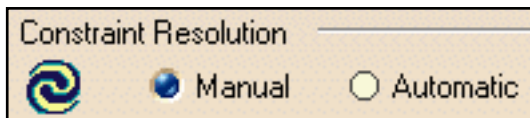# Human Builder

This page deals with **General** options.
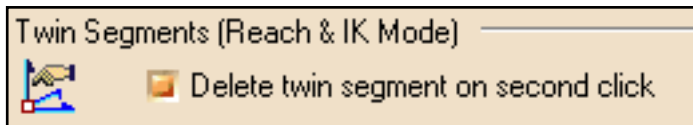
- Constraint Resolution
- Twin Segments (Reach & IK Mode)
- Angle Reference
- Reports
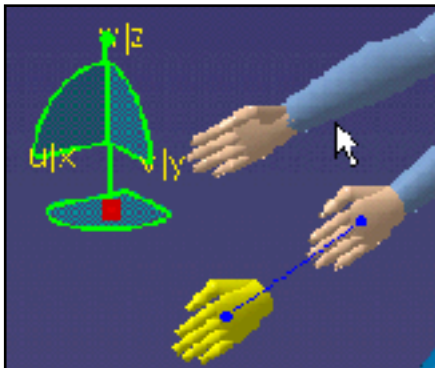- Hand Grasp
- Save Options

Constraint Resolution

Either have the constraints update Automatically, or Manually.
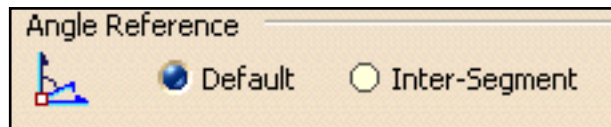
Twin Segments (Reach and IK Mode)

This option modifies the user interface behavior of the 3D Reach Mode and the IK Mode. When enabled, the option makes it possible to delete the twin segment when clicking a segment twice in a row. The twin segment is the visual representation of the segment at its target position, that is, the visual representation of the segment at the compass location. When you activate the IK Mode or the 3D Reach Mode and selects a segment, a twin segment is automatically created and displayed at the compass location (it appears in yellow by default, and this is governed by the option); if you select the segment twice in a row, the twin is deleted (assuming the option is on); when clicking on the segment again, the twin is redisplayed, and so on. This option thus makes the selection of a segment act as a **toggle** for the creation/deletion of the twin.
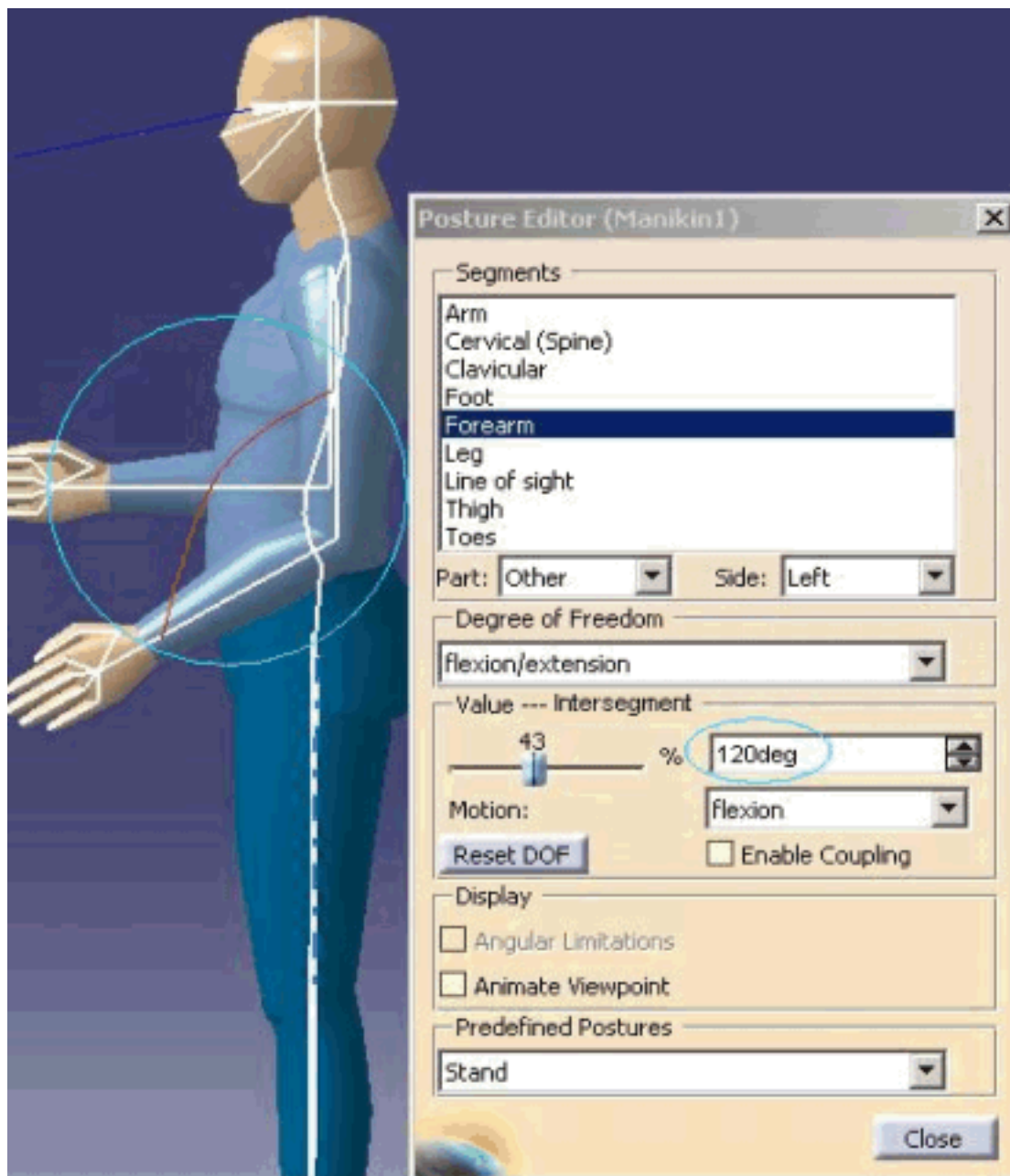
Angle Reference

This Human Builder option allows changing the way the value of certain angles are displayed in:
the Posture Editor;
the Angular Limitations command;
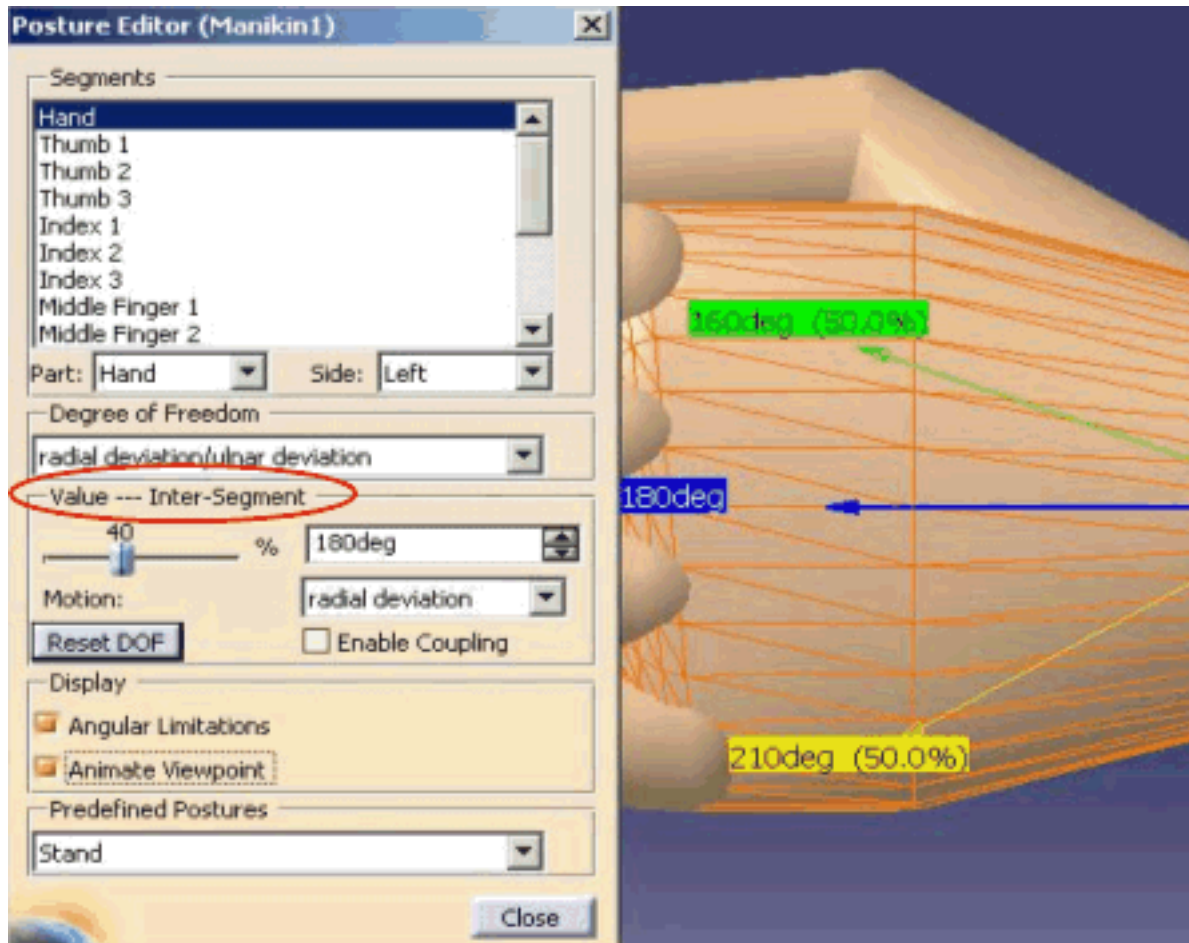the Postural Score Analysis panel.

By default, the **option is off**, that is, the **Angle Reference** is set to **Default**. In this (normal) mode, the angle values are displayed in such a way that the neutral position (0deg) of a segment corresponds to its standard anatomic posture.

When the option is enabled, that is, when the **Angle Reference** is set to **Inter-Segment**, the angle values that are presented are the values between a segment and its **parent segment** (as circled below). In this **Inter-Segment** mode, only the **first DOF** (e.g. flexion/extension) of a segment is affected or modified, except for the hand (wrist), for which the modification is applicable on DOF2 (radial deviation/lunar deviation) as well.
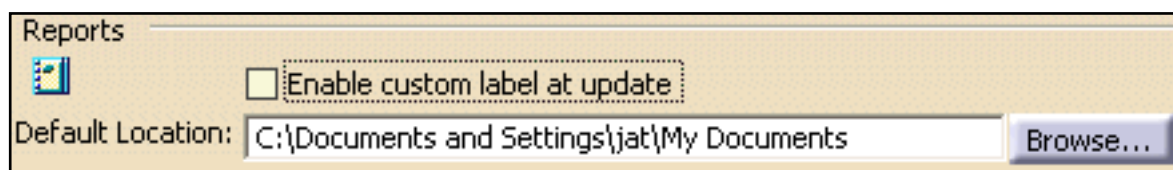
It is important to note that this option does not change the way the angles are calculated. When the Inter-segment option is enabled, the only difference is that, instead of displaying the value of a DOF itself, the software rather displays the Inter-segment value for that DOF; the Inter-segment value being the angle value between a segment and its parent segment as depicted above.
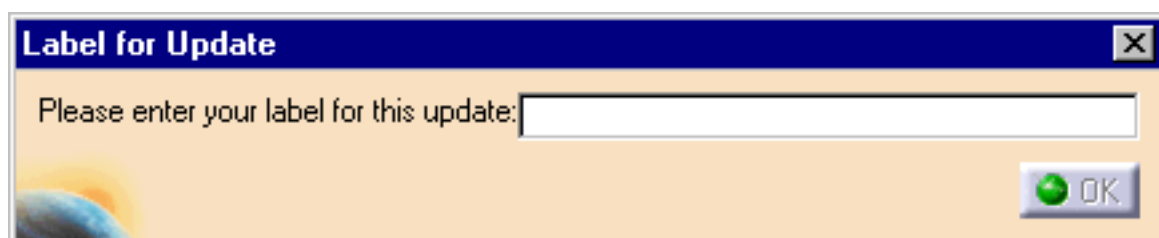
The images below are an example of output from the Posture Editor when the Inter-Segment option is enabled. Note that the Value frame now reads **Value --- Inter-Segment**.

Reports

It is possible to override the default report ID (second column of the text report) and to insert your own.
Enabling this option causes the custom report ID dialog box to pop at every update. The custom user string (as entered in the text field) then replaces the default ID in the generated report.

Hand Grasp

This stores the latest Grasping posture angle specified in the Standard Pose dialog box for each posture type: spherical, cylindrical and pinch. These values will be then use as the default posture of the Hand Grasp command. In order to facilitate still more the hand positioning on an object, we also apply an appropriate offset for each posture type of the Hand Grasp. This will ease the hand positioning on an object while using the Reach command.

This provides the following capabilities:
Ability to set and retrieve an initial grasping posture.
Ability to reach an object not only with the palm of the hand but with a dedicated and optimal offset associated to each type of grasping posture.
Ability to enable/disable these 2 options.
It is possible to Lock the segments when they are highlighted.

To add a new hand grasp offset, click on the Edit Offset... button.

You can then start editing and creating custom offsets in the new window that appear.
To get the values of an offset, you need to select it from the list box.

You can modify the values and the name of the offset by typing in the editable fields and then choose to overwrite the original offset (save button) or save it as a new offset (add button).

You can also delete an offset by selecting it in the list box and using the delete button. The default offset for each grasping posture cannot be overwritten or deleted. The grasping posture can be changed by using the Grasping Posture combo box.

Save Options

Selecting the **Save the manikin attributes on a instance** check box enables you to save the following manikin attributes for an instance:

- Angular Limitations
- Anthropometry (including gender and percentile)
- Coupling (enabled/disabled)
- IK Behaviors
- Population
- Posture
- Preferred Angles
- Vision parameters

Note that a catalog classifies references, and does not support overloads on instances.