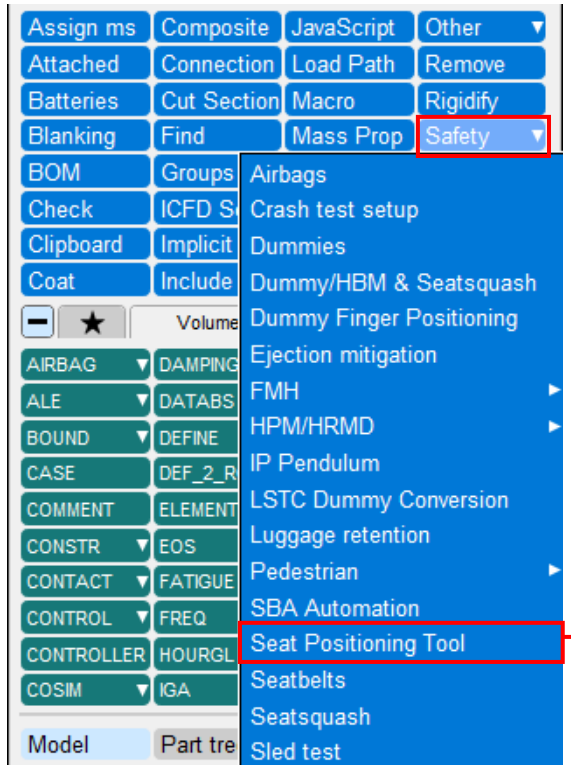
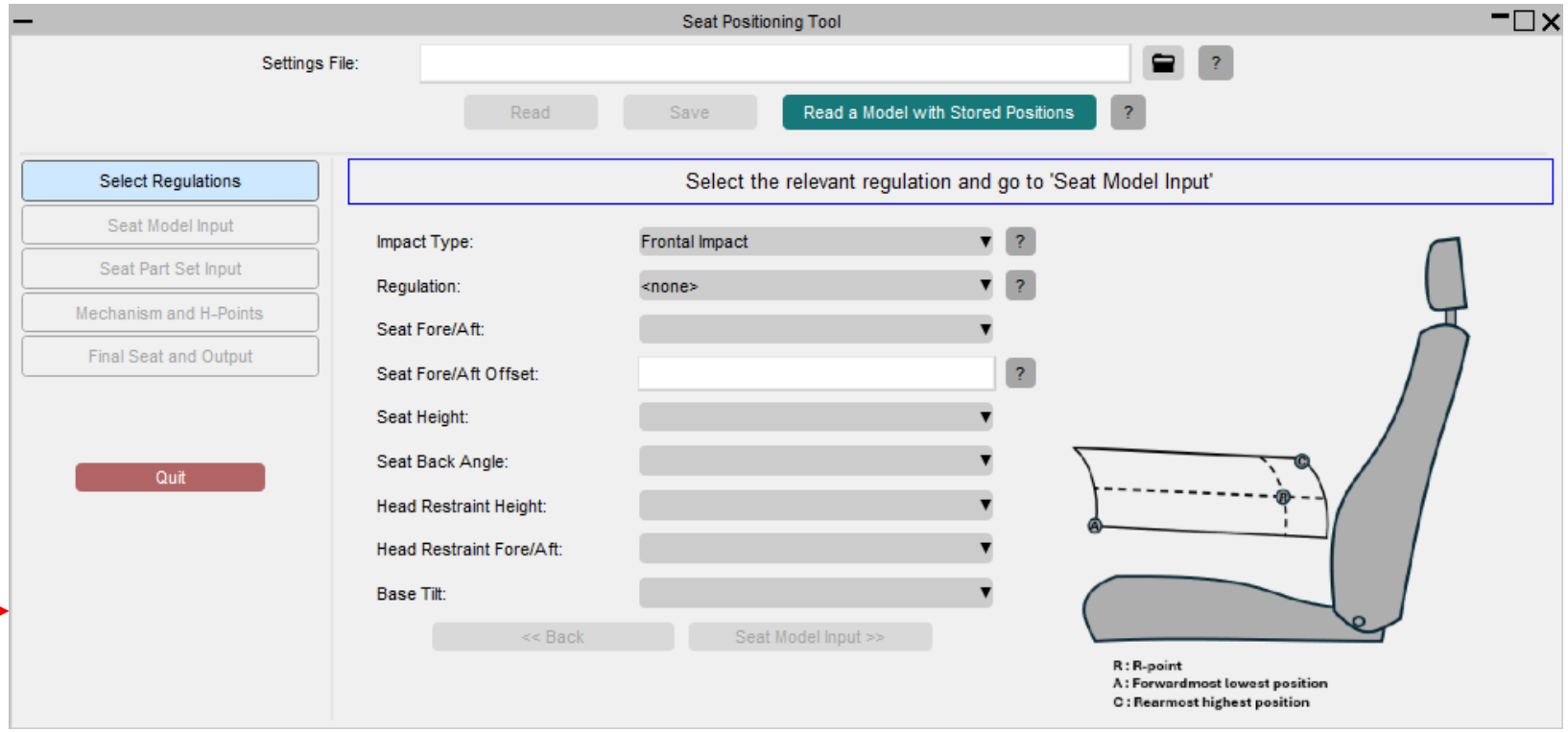
Seat Positioning Tool

Introduction

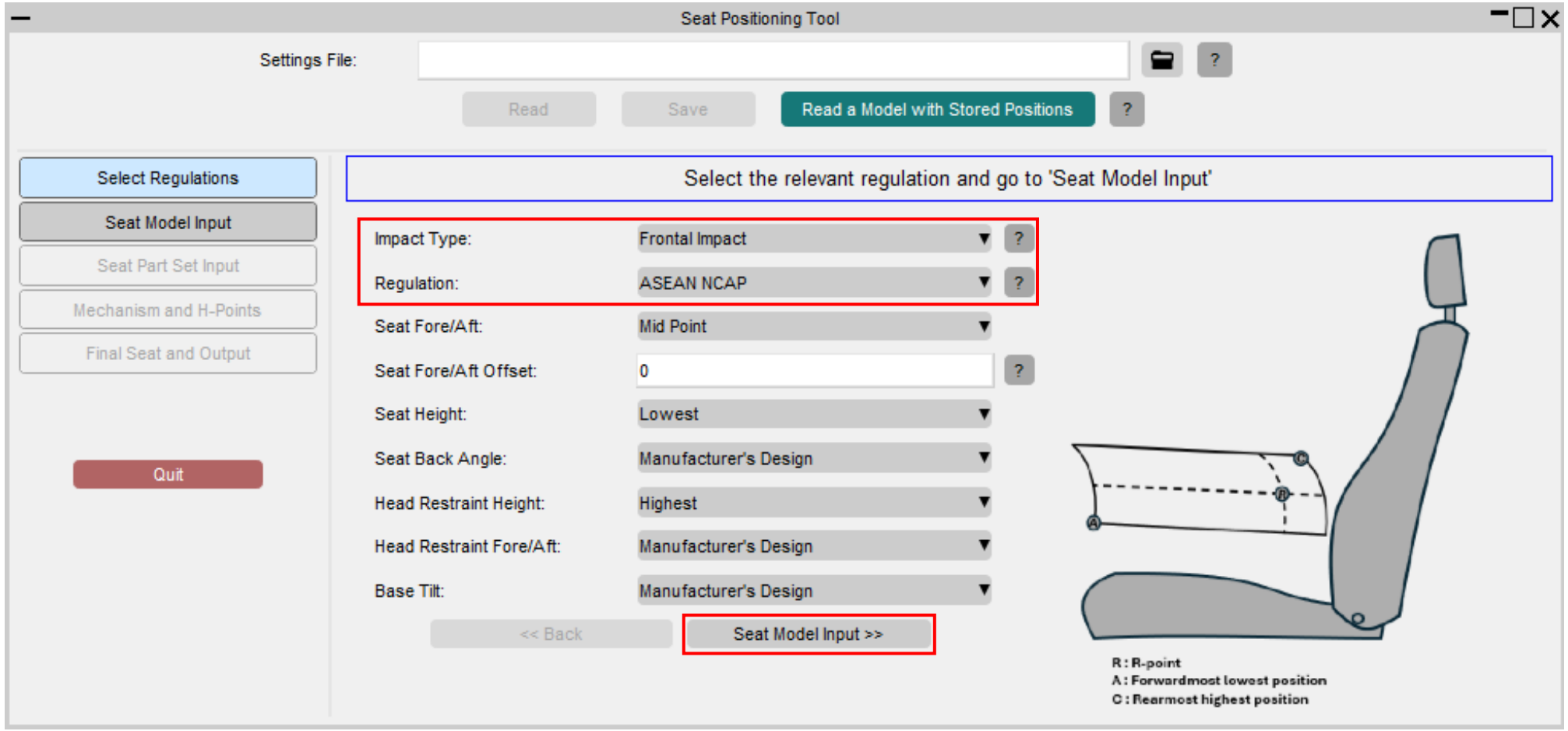
- The tool allows you to create seat mechanism definitions for a given seat model and position the seat according to the various testing protocols.
- You can define the seat track curve points by using a .iges file, a CSV file, or by selecting nodes within the model.





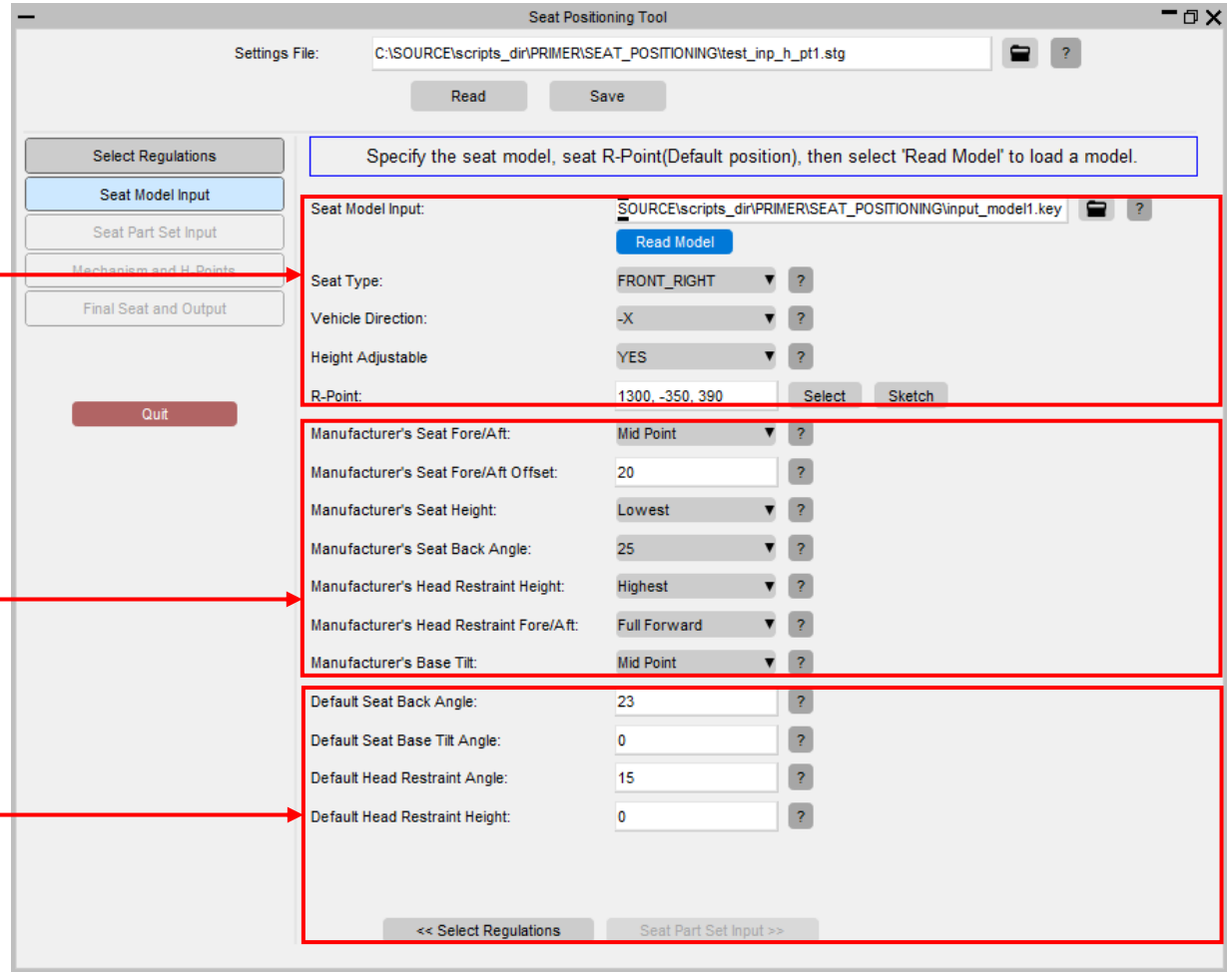
Step 1: Specify a regulation

- Select “Impact Type” and select relevant regulation to load the required seating position.
- Press “Seat Model Input >>” to go to Seat Model Input panel.



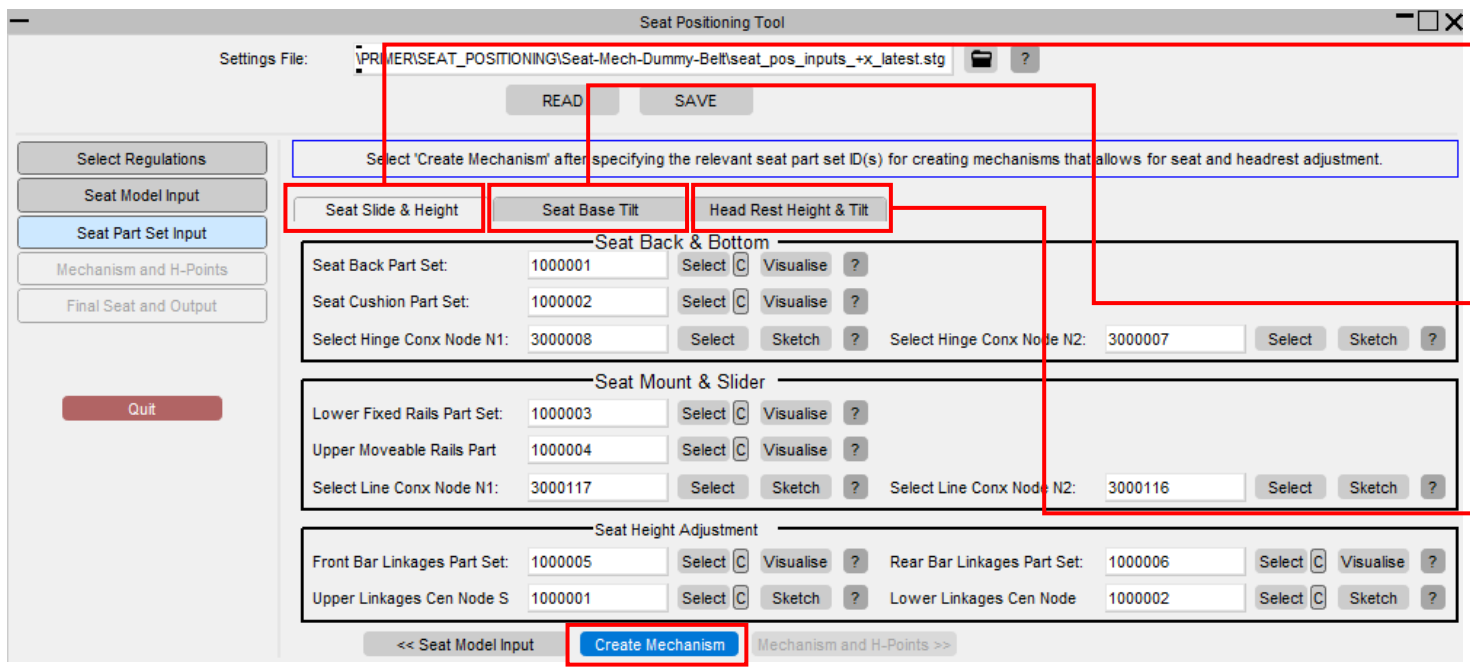
Step 2: Seat Model Input

- Please specify the "Seat Model," "Seat Type," "SGRP-Point (R-point)," and the default seating positions. Then, select "Read Model" and navigate to "Seat Part Set Input."
- The tool assumes that the seat will be positioned at default SGRP-point when it is read.
- Next, select the manufacturer's design position for the various assemblies required by the regulation.
- Select the default initial position for seat back angle, seat base tilt angle, head restraint angle, and head restraint height when the model is read.



Step 3: Seat Part/Node Set Input

- Please specify the seat part sets, node sets for creating the mechanisms for Seat Translation/Height Adjustment, Seat Base Tilt, and Headrest Height and Tilt.
- Click the "?" help button to learn more about the part sets that need to be selected.
- Once all the parts are selected, click "Create Mechanism" to define the mechanisms in the seat. This will redirect you to the "Mechanism and H-Points" section.



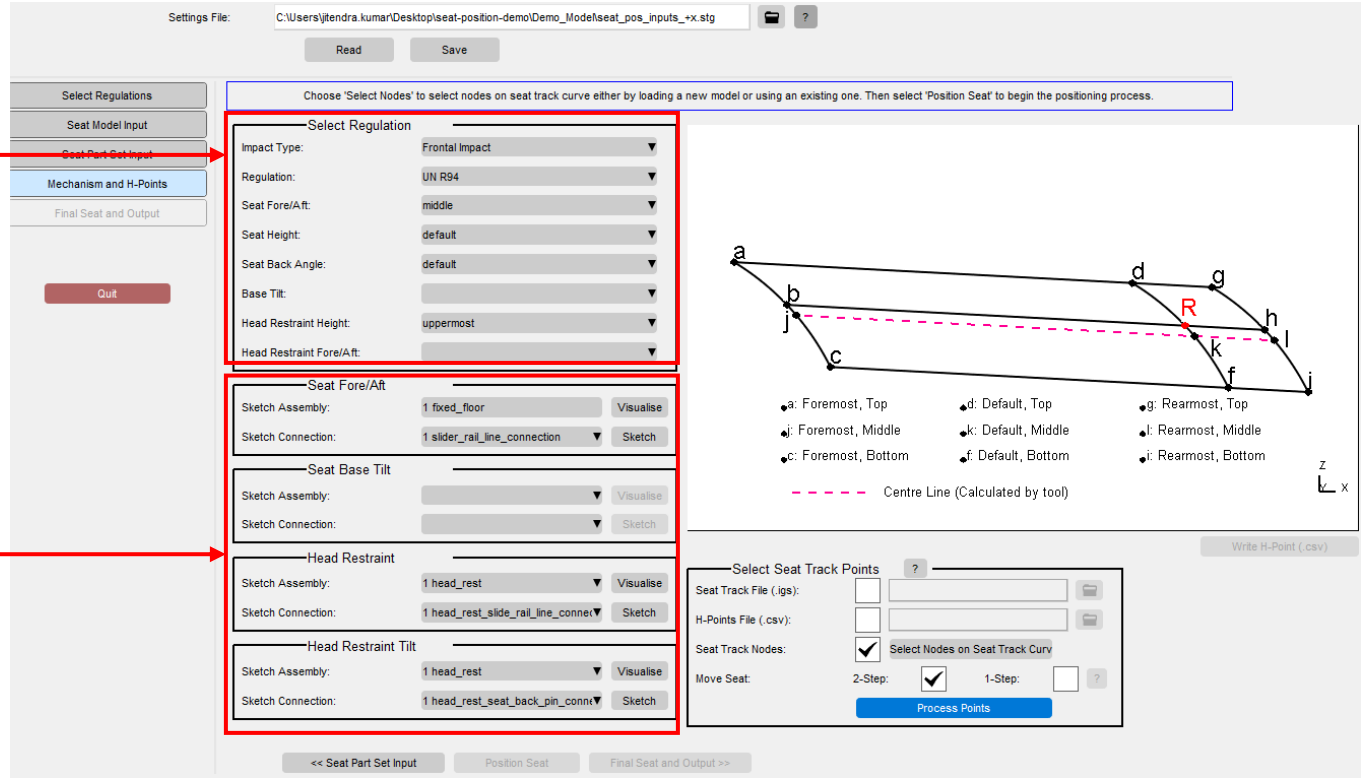
Part sets required for seat slide and height adjustment

Part sets required for the seat base tilt

Part sets required for the head restraint height and tilt adjustments

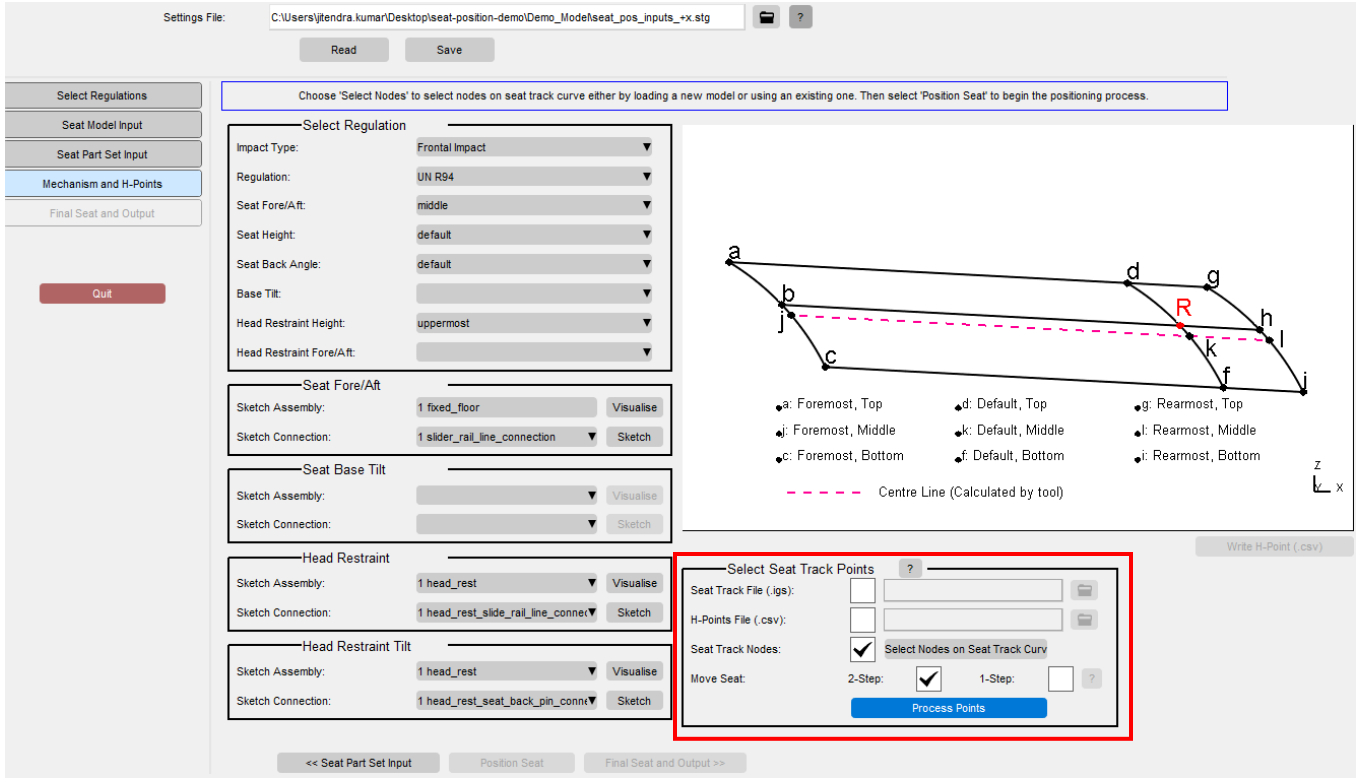
Step 4: Mechanism and H-Points

- You can also select a different regulation for performing multiple seat positioning.
- You can sketch assemblies and connections. Select the relevant assemblies/connections from the drop-down to Sketch/Visualise.



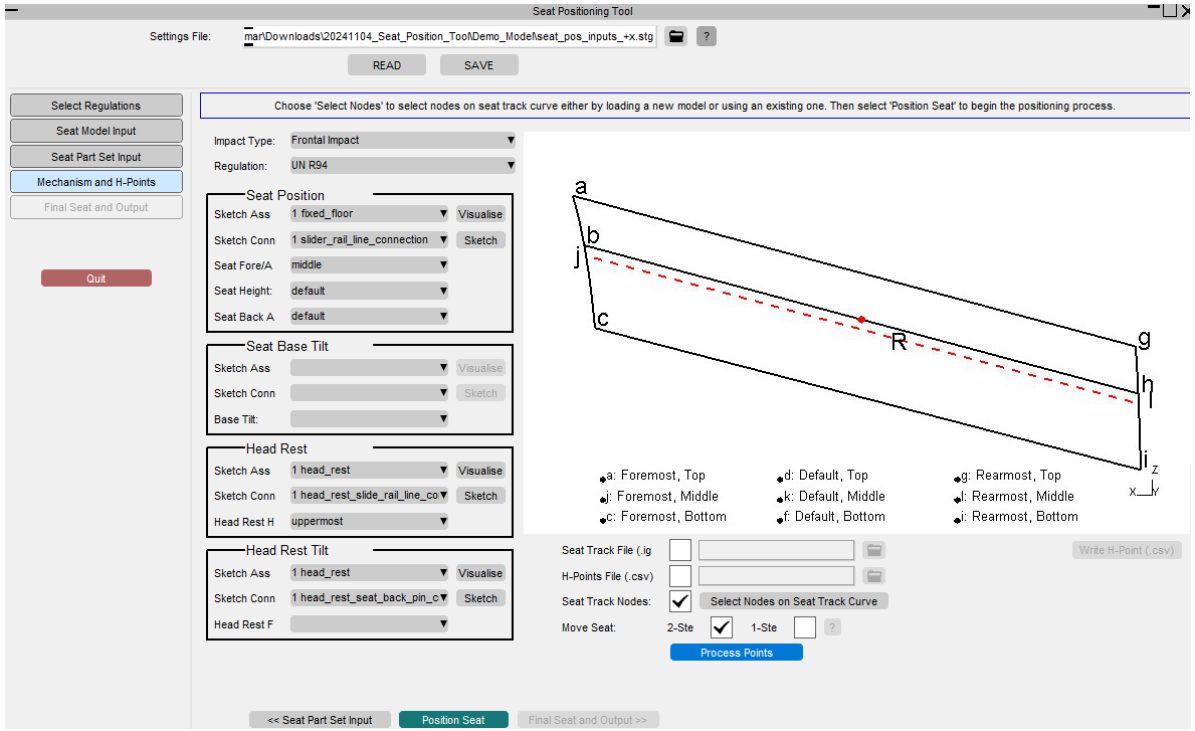
Step 5: Select Seat Track Points

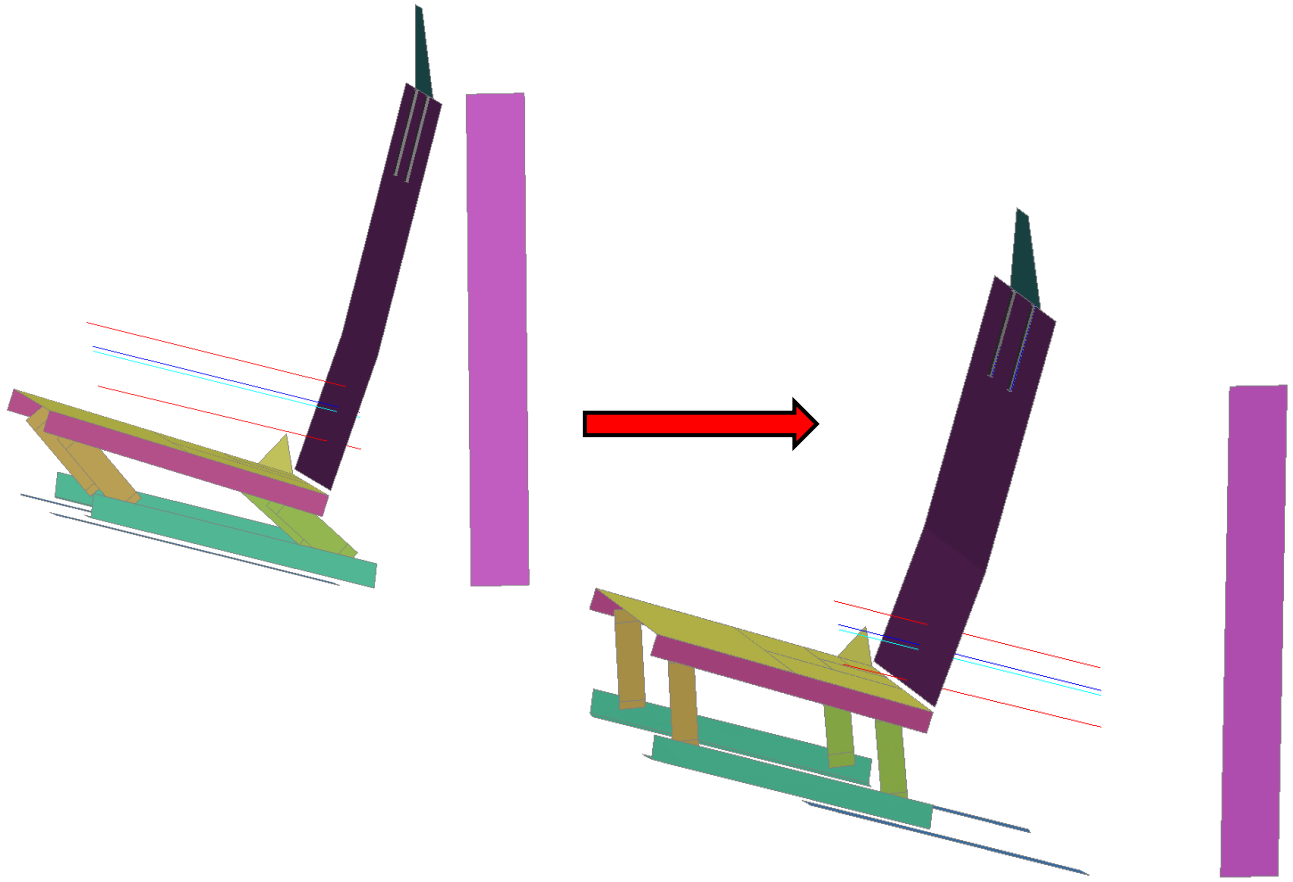
- You can specify the seat track curve points by using an .iges file, a CSV file, or by selecting nodes directly within the model. After selecting the points, click "Process Points" to extract the seating positions and “Position Seat” will be activated.



Step 6:Position Seat

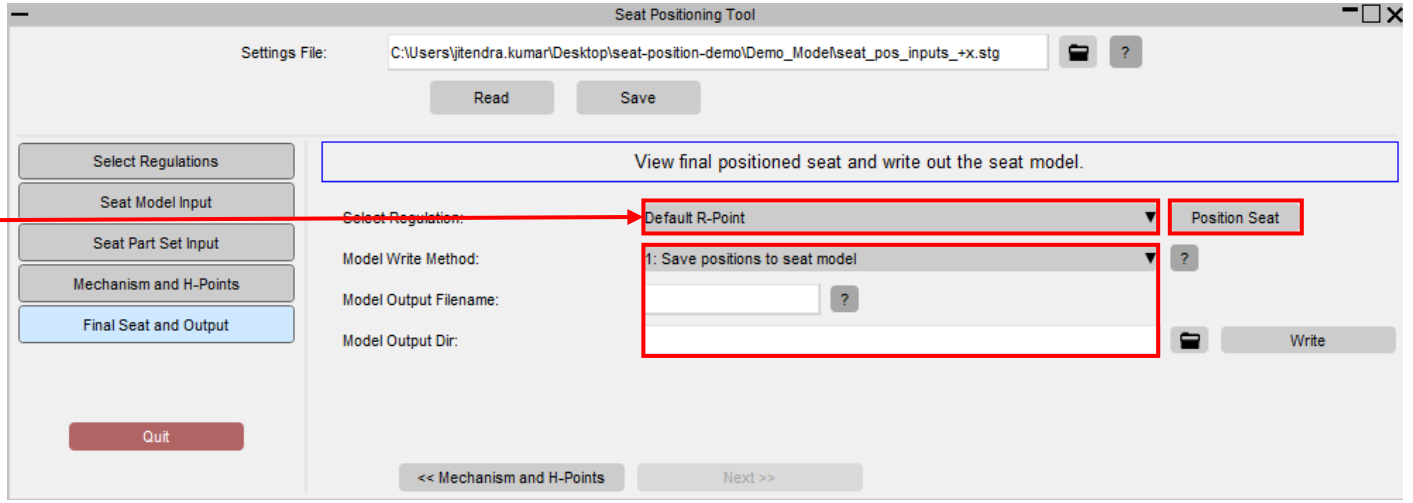
- Click "Position Seat" to begin positioning the seat. To select a new position, choose a different regulation within the "Mechanism and H-Points" section.

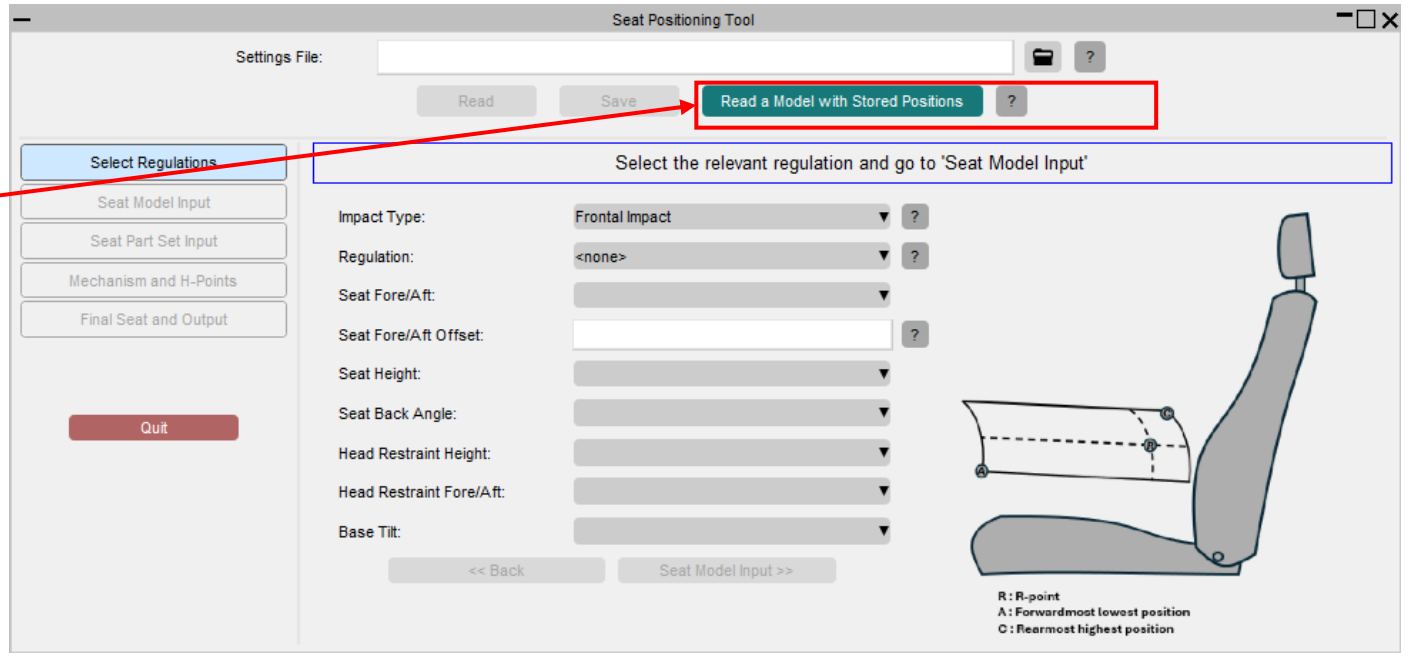




Step 7:Final Seat and Output

- After performing multiple seat positionings, you can visualize them by selecting the regulation next to “Select Regulation” and choosing the relevant position from the dropdown. Click **Position Seat** to view the positioned seat.
- Select the appropriate model write method **“1: Save positions to seat model”** or **“2: Write separate models for each position”**,
- Select method -1 to store all positions in the seat model and use **“Read a Model with Stored Positions”** available on the main input panel to visualize the positioned seat
- Select method-2 to write out individual models for each seat position.





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