Staging Editor

This functionality is still in development and only available as preview version for testing. Please verify all results and models exported from the planning as usual.

The staging editor can be opened from the Aligner module as a separate window and can be used as a tool together with the planning in the module. In general, the editor allows to control the movement of all teeth, groups of teeth or single teeth over time in order to plan intermediate goals or sequenced movements more easily. The planning can be done on the level of intermediate goal (stages) down to the level of single steps.

The following description explains concepts and interactions on a simple example with a single tooth (expand the items by clicking them):

- Tooth movement limits: Step 1 <-> Step N

A warning is shown when the window is opened with different movements limits for step 1 and all other steps. A specific value for the first step is not relevant for movements which are started later and such a setting would also make some measurement values harder to understand. Open the protocol "Limits of tooth movement" and set the same values for both sides.

- Linearly continuous movements represented as single bars



- Vertical lines correspond to the subdivisions on the timeline in the Aligner module
- All bars show (linear) continuous movements, also over multiple steps
- With limit values, one light/dark pair represents 1 limit (i.e. factor 1 from the fastest movement component)
- If activated with the icon above, the label will show the factor value per subdivision, corresponding to the "Number of Steps" protocol
- The dotted line shows the current timeline position and model situation shown in the Aligner module





- (left) Moving a step in the staging module changes where the step is in the movement, changing also the model situation
- (right) Moving a step on the Aligner timeline keeps the model at that step and stretches/compresses the movement
- (right) Movements which are not longer linear due to this will split into two movements
- Tooth movements in the Aligner (e.g. already collision avoidance) will force the movement to split into two

- Double-click splits or merges movements





- Double-clicking between two movements will combine them
- Individual model situation will be reset to the proportionate situation in the linear movement



- Double-clicking a movement on a step will split the movement there
- A dialog allows to select a different speed / proportion using the limit values (if they are displayed)
- Double-click creates or deletes steps





• Double-clicking an empty part creates a step there





- Double-clicking a step deletes it
- Movements can be repositioned with their start/end points or completely





- Click and drag start or end point
- Use multiselection with Shift/Ctrl
- Deselect by clicking into an empty part



- Click movements in the middle to drag them
- Multiselection with Shift/Ctrl possible
- Components can be visualized and shifted between movements



- Similar to the 3D object list, the checkbox controls the visibility while the selection (multiselect with Ctrl) controls which components are manipulated
- Movements can still be split or merged by double-click







- Component values can be shifted from one movement to another using the arrows from the toolbar
- Holding the Ctrl-key allows to set a specific value remaining on the left side in percent, mm/° or limit factor (50% 1mm 2x)

- Sequential distalization example



• Create an arbitrary step by double-click and divide the movements by dragging







- (left) Subdivide in 3 stages without regarding the limit values
- (middle) Limit values show sub-optimal speeds resulting in 12 steps (3+3+3+3)
- (right) Optimize speed by double-clicking the single parts so that only 10 steps are required (2+3+2+3)

Patch for activation on any computer

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