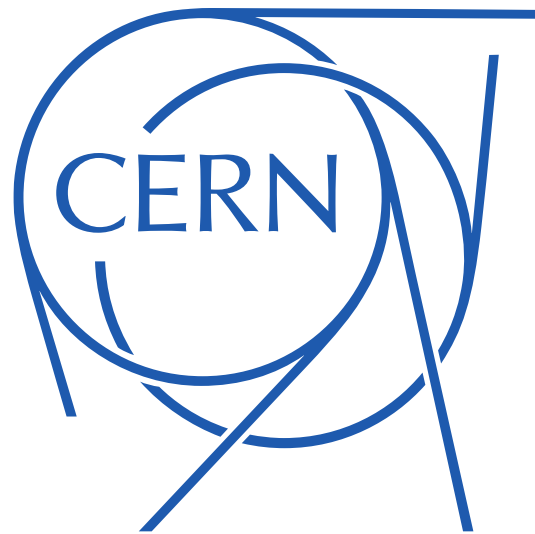


1st CERN CAD Forum



Tips and tricks

08.11.2023 – E.Urrutia for Kraftanlagen / Assystem

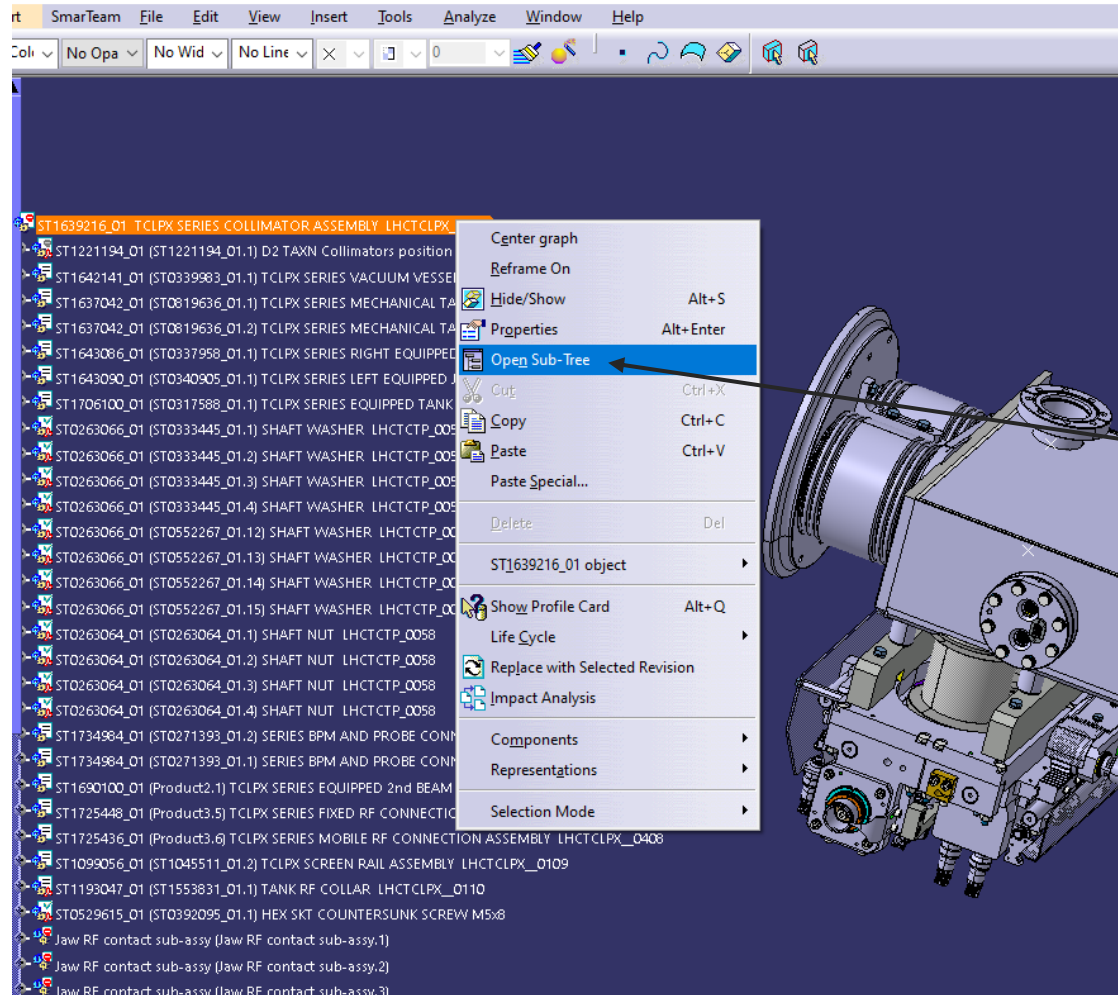
Table of content :

- Sub-tree window
- Intersection radius
- Quick parametrization
- Edit multi-constraints
- Dimensions re-routing
- Advanced replication tool (for geometrical sets)

Sub-tree window

Additional window can be opened to ease navigation in construction tree

IA V5 R27 64 - CERN : SAeu202103 : started 01.11.2023 at 12:30:05 on PCCAG4068 - [ST1639216_01 a.02 TCLPX SERIES COLLIMATOR ASSEMBLY Checked (ReadOnly)]

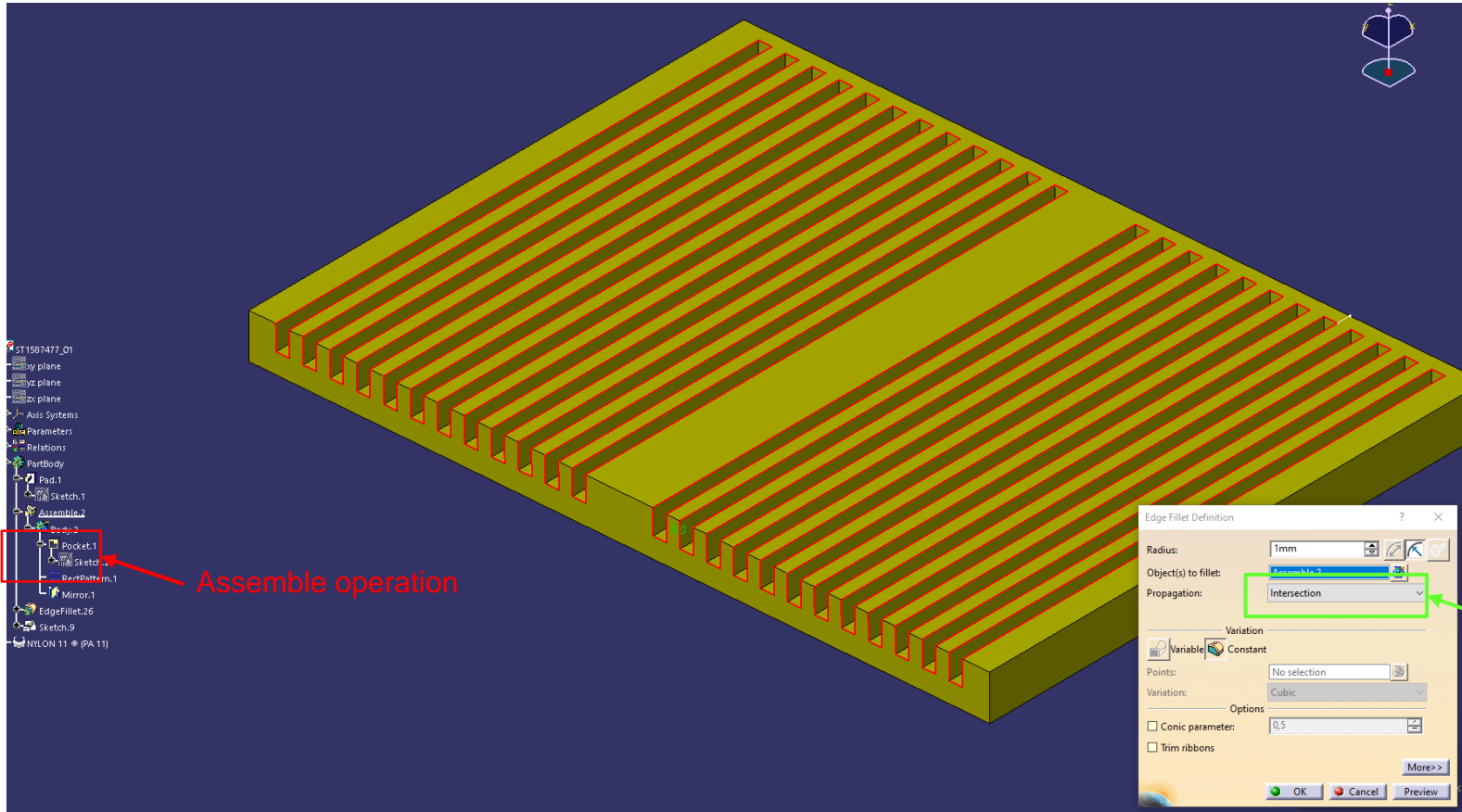


2nd window can be opened by right-clicking on construction tree

Can be very useful for big assemblies and 2 screens configuration

Intersection radius

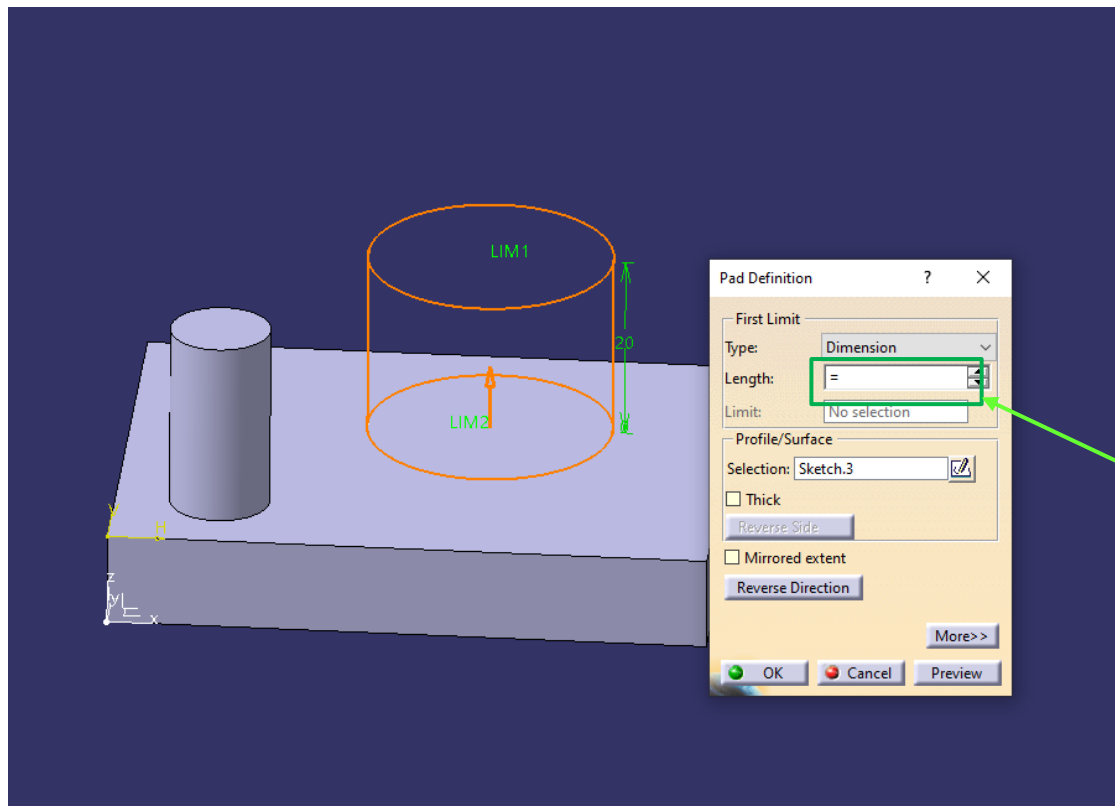
Edge selection in radius function can be done by selection intersection between 2 operations



In fillet creation *Intersection* option allows to select quickly all the edges created between 2 or more operations

Quick parametrization

A method can be used to parametrize dimensions quickly during construction



By using « = » symbol, dimensions can be linked quickly to parametrize construction (instead of right-click + edit formula + selection + ok)

Edit multi-constraints

Multi-constraint function allows to edit dimensions in a sketch before comitting them

The image shows a CAD software interface with a sketch of a stepped shaft. Dimensions are shown in green and orange. A dialog box titled 'Edit Multi-Constraint' is open, showing a table of constraints and their values. The dialog box has a green border and contains the following table:

Constraints	Initial Values	Current Values	Max Tolerance	Min Tolerance
Offset.25	83,518mm	83,518mm		
Offset.23	133,24mm	133,24mm		
Length.21	31,307mm	31,307mm		
Length.20	54,633mm	54,633mm		
Length.19	48,495mm	48,495mm		
Length.18	59,544mm	59,544mm		
Length.17	86,71mm	86,71mm		

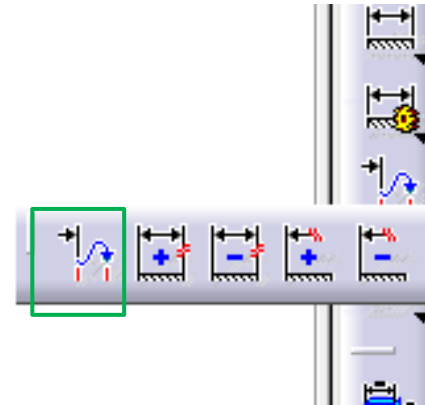
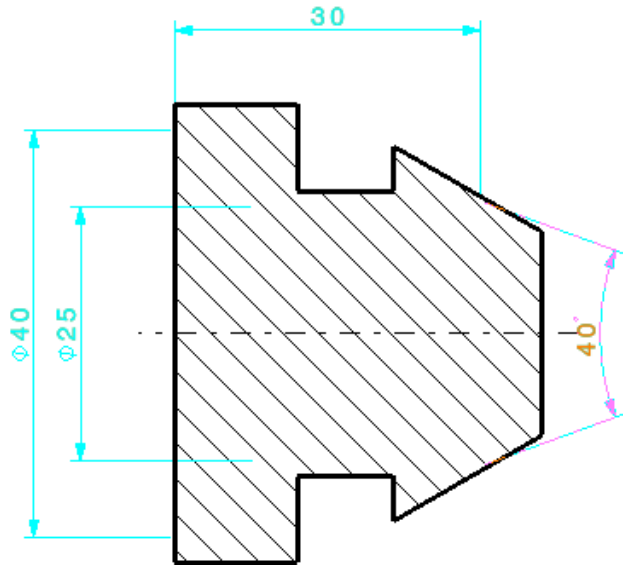
Below the table, there are input fields for 'Current value' (83,518mm), 'Maximum tolerance' (0mm), and 'Minimum tolerance' (0mm). There are also buttons for 'Restore Initial Value', 'Restore Initial Tolerances', 'OK', 'Cancel', and 'Preview'. An arrow points from the text 'The dimensions box appears and allows the modification of values without a direct update of the geometry' to the dialog box.

Useful when the geometry has a tendency to «flip» when dimension are changed (like tangent arcs for instance)
Allows to avoid dezooming operation when the sclae is not the good one at the begining

Dimensions re-routing

Re-route dimension tool allows to reconnect broken or hidden dimensions after a geometry update in drawing

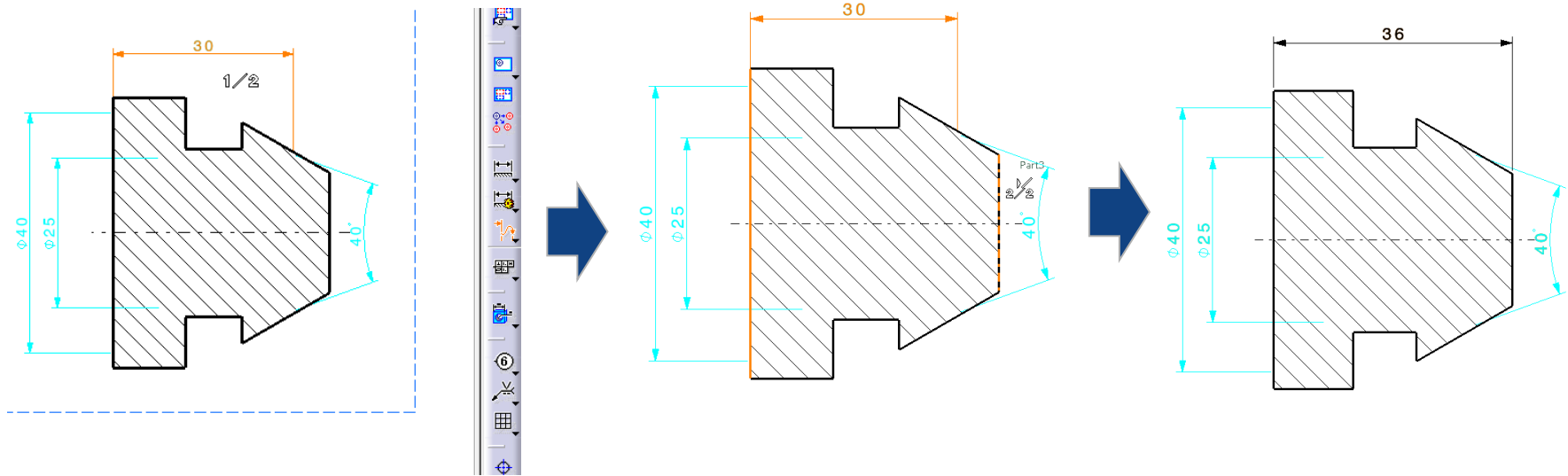
In case of broken or hidden dimensions it's possible to «repair» thanks to the Re-Route Dimension tool



Re-Route Dimension tool

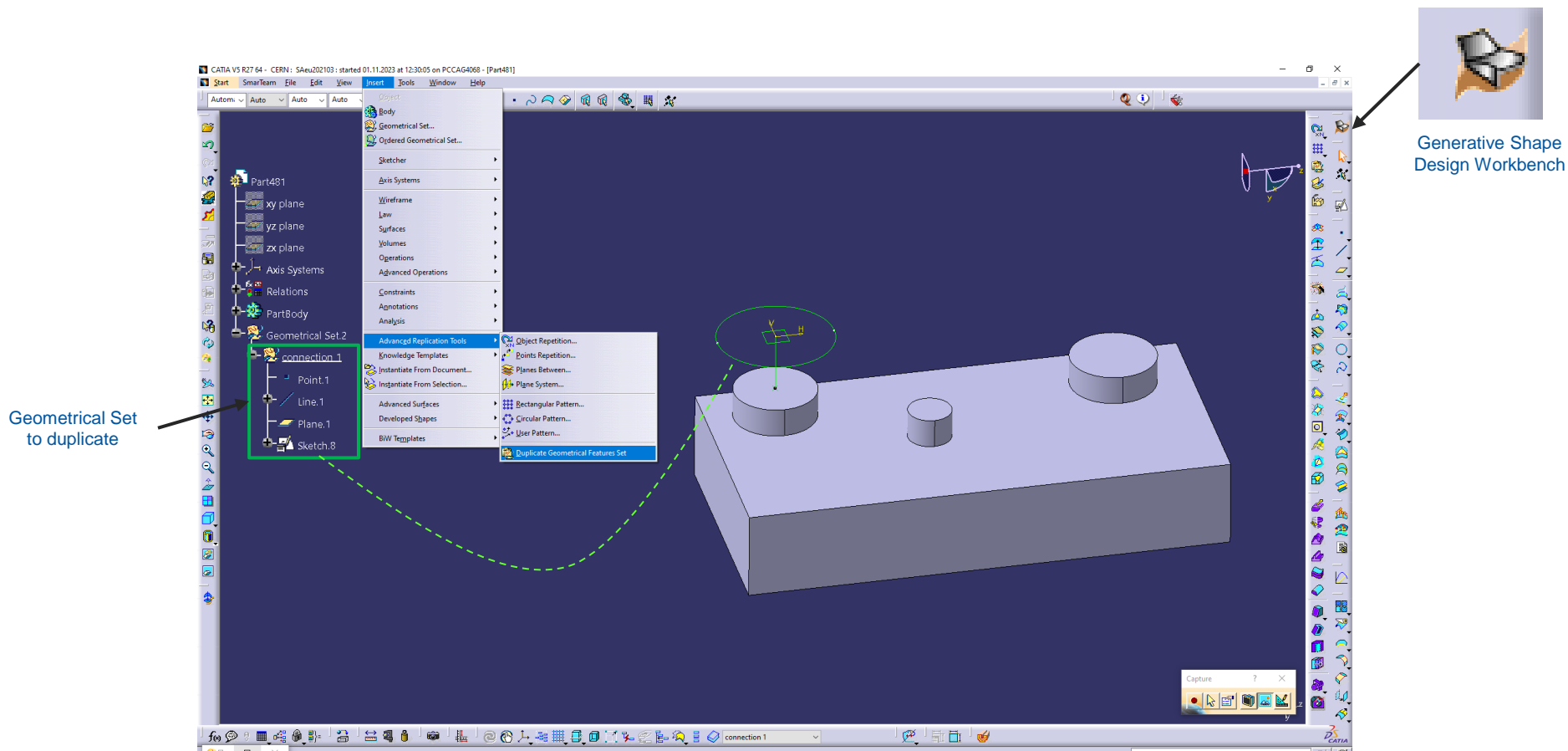
Re-route dimension tool allows to reconnect broken or hidden dimensions after a geometry update in drawing

Once Re-Route Dimension tool selected > click on the broken dimension > select the new inputs (one or several)



Advanced replication tool (for geometrical sets)

Duplicate Geometrical Features Set tool allows to repeat a number of features inside a geometrical set by selecting some inputs to create them



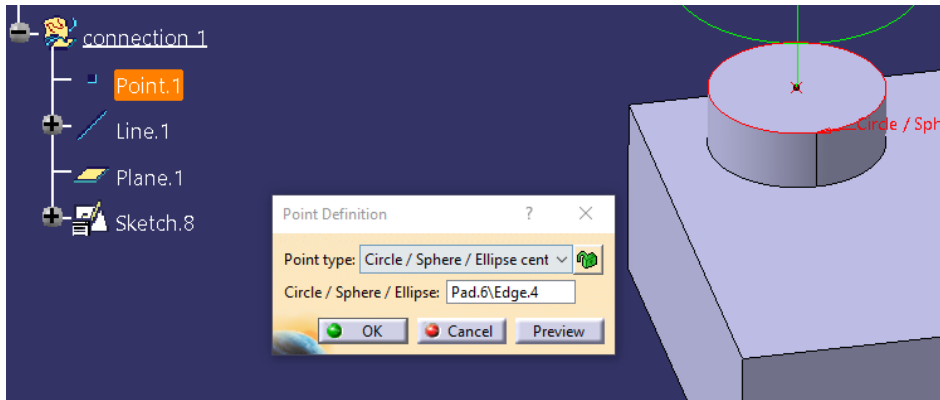
Insert > Advanced Replication Tools > *Duplicate Geometrical Features Set*

Duplicate Geometrical Features Set tool allows to repeat a number of features inside a geometrical set by selecting some inputs to create them

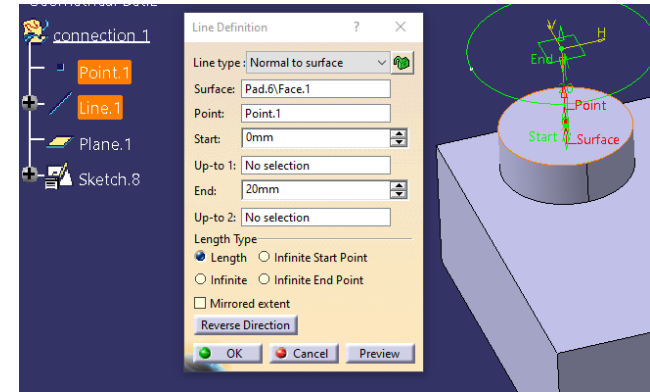
Example :

Connection 1 Geometrical set inputs :

- Point.1 = circle edge



- Line.1 = Point.1 + Surface



Plan.1 & Sketch.8 are built from Point.1 + Line.1 (no external references)

Duplicate Geometrical Features Set tool allows to repeat a number of features inside a geometrical set by selecting some inputs to create them

By clicking *Duplicate Geometrical Features Set* + the Geometrical Set to duplicate (here *connection 1*), a window appears to select to select inputs for the new Set

The screenshot displays the 'Insert Object' dialog box in a CAD application. The dialog is titled 'Insert Object' and has a 'Reference' field set to 'connection 1'. The 'Instantiation mode' is 'Irrelevant'. The 'Destination' is 'Inside' and the 'Location' is 'connection 1'. The 'Name' field is set to 'Connection 2'. The 'Inputs' list contains 'Pad.6/Edge.4' and 'Pad.6/Face.1'. The dialog has buttons for 'Use identical name', 'Parameters', 'Documents', and 'Repeat'. The background shows a 3D model of a part with a coordinate system and a tree view on the left.

New set name

Inputs to reconnect

Duplicate Geometrical Features Set tool allows to repeat a number of features inside a geometrical set by selecting some inputs to create them

Once inputs are selected, the Geometrical set is duplicated with the new parameters, click OK to validate

