



# SMARTElectrode 12.1.2.0

*What's New*



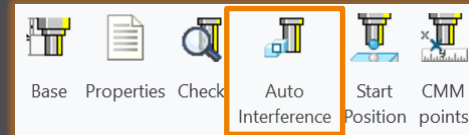
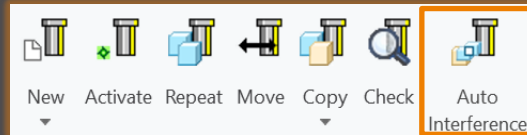
# Enhancement

## What

- Add automatic interference check as options to ribbon.
- <https://redmine.buw-soft.de/issues/7330>
- <https://redmine.buw-soft.de/issues/7733>

## Why

- Offer instant feedback on changes in assembly or active component mode.



## How

- Enable mode to start evaluation automatically on regenerate, feature creation/suppress/resume/delete.
- Activation in assembly mode also activates check in component mode.
- Activation in component mode only check active electrode and displays results for the same. Results from other components are hidden.
- Use option `AUTO_INTERFERENCE_CHECK` to preset behavior in assembly mode.
- Use option `AUTO_INTERFERENCE_COMP_CHECK` to preset behavior in active component mode.

# Enhancement

## What

- Ingersoll MultiProg/PowerSparkEditor: Introduce new parameter to write burn-depth.
- <https://redmine.buw-soft.de/issues/14573>

## Why

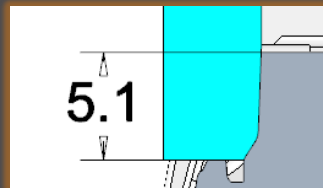
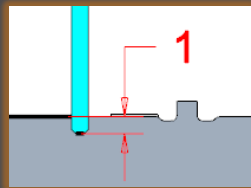
- Manufacturing depth is useful for edm program creation.

## How

- Add parameter with rule '&burndepth' to configuration.

```
BURN_DEPTH COMP DOUBLE Y N 8.3 N Y &burndepth
```

- It's recommended to add parameter as COMPONENT parameter to allow a different value for each electrode position.
- Value can be unlocked and overwritten.
- Default value will be calculated based on copied burn-faces (copy-geoms).



# Enhancement

## What

- New parameter owner 'PROJECT'.
- <https://redmine.buw-soft.de/issues/15169>

## Why

- In some cases, its necessary to transfer a parameter value from assembly to electrode while maintaining the default rule for identification.
- Default rule '&inherit' not useable in these cases.

## How

- Add parameter with owner 'PROJECT' in parameter configuration.
- Project parameters are automatically saved to assembly and electrode parts.
- Values can be unlocked and overwritten on assembly level or electrode part level.
- Value in assembly is the leading for locked part parameters.

```
PROJECTNR    PROJECT STRING N N 12 N Y &projectid  
ORDERNR     PROJECT STRING N N 12 N Y &order
```

# Improvement

## What

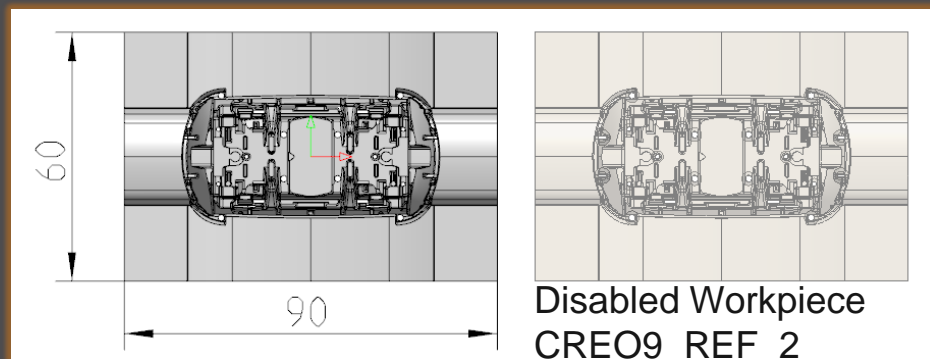
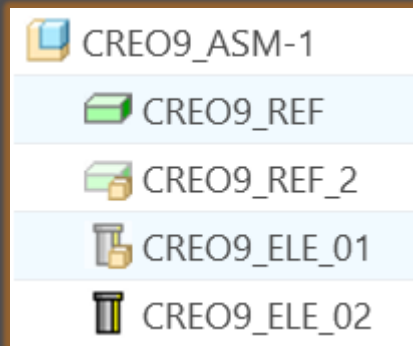
- Update simplified representations for enabled/disabled workpieces.  
<https://redmine.buw-soft.de/issues/10294>

## Why

- Disabled workpieces should be hidden on drawing.
- Disabled workpieces shouldn't affect workpiece outline/dimensions

## How

- Open Burnsheet UI and use context menu to enable/disable workpieces.



# Improvement

## What

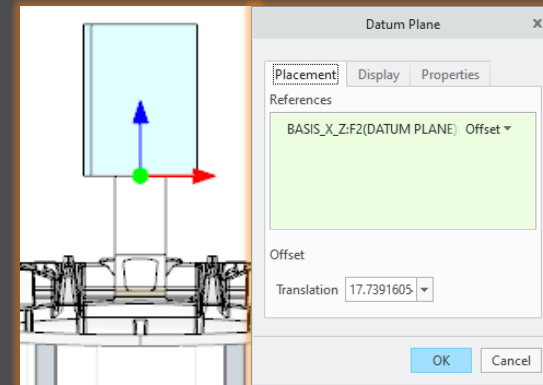
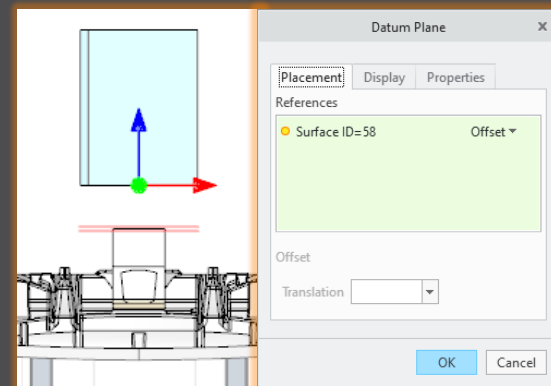
- Unlink FREE\_FACE from default plane in assembly.  
<https://redmine.buw-soft.de/issues/15655>

## Why

- FREE\_FACE is currently an offset datum plane from operation's default plane.
- This leads to problems if the electrode is reused in a different assembly.
- FREE\_FACE is frozen and can't be changed if original assembly is not in session.

## How

- FREE\_FACE is now an offset from a local datum plane removing the external reference.
- Modification also works in assemblies reusing the electrode.



# Improvement

## What

- Allow usage of multiple placeholders for drawing tables on templates.  
<https://redmine.buw-soft.de/issues/7306>

## Why

- Requirement to display electrode information in different tables.
- For example, position and technology information should be displayed in separate tables:

X	Y	Z	C
-15,800	3,375	5,000	0,000
15,800	3,375	5,000	0,000
15,800	-3,375	5,000	180,000
-11,800	-3,375	5,000	180,000

▼	▼▼	ORBIT	DEPTH
0.5	0.4	Kugel	1,000
0.5	0.4	Kugel	1,000
0.5	0.4	Kugel	1,000
0.5	0.4	Kugel	1,000

## How

- Add placeholder tables to template with at least two rows and one column.
- Cell 1/1: table name (without extension .tbl).
- Cell 2/1: YES/NO (YES: use display from parameter configuration column 4).
- Only one table should be updated by software (=YES); the other tables should be used as saved (=NO).

ASM_EDM
YES

ADDITIONAL_TABLE
NO

# Improvement

## What

- Allow usage of multiple placeholders for drawing tables on templates.  
<https://redmine.buw-soft.de/issues/7306>

## How

### Additional information

Used simplified representation by drawing template:

- **asm\_bom**: Master.
- **asm\_edm**: simplified representation of electrode (groups all positions of electrode).
- **asm\_operation**: all electrodes belonging to operation.
- **asm\_wp**: simplified representation “SE\_WORKPIECES”.
- **edm\_default**: simplified representation of electrode (groups all positions of electrode).



# Improvement

## What

- Provide a custom template with free size in Base UI.
- <https://redmine.buw-soft.de/issues/7209>

## Why

- Available template sizes are provided in a data file located in:  
`<configuration>/electrode/<supplier>/<type>.dat`
- Until now the last size in list is selected and changed if no matching size is found
- The name of the last size is still shown in Burnsheat UI and in drawing tables.
- The new release automatically adds a size “Custom” to the list.

## How

- This size is used if no matching size is found, rounding base size (red) and reusing all other settings (blue) from last entry.
- Add your own custom size by adding A\_BASE = -1 and B\_BASE = -1 as last entry to data file. This skips automatic “Custom”.

**Blank**

Type	RECTANGULAR_BASE		▼
Size	CUSTOM		▼
Locked	<input type="checkbox"/> Blank	<input type="checkbox"/> Free Dim	
A_BASE	91.000	D1	5.000
B_BASE	9.000	D2	20.000
Length	39.000	D3	0.631

INSTANCE	A_BASE	B_BASE	LENGTH	D1	D2	D3
...						
Sondergrösse	-1	-1	50	5	20	0

# Improvement

## Description

- Interface ZK Alphamoduli: allow usage of custom order number.
- <https://redmine.buw-soft.de/issues/14989>

## Cause

- By default, selected operation is used as order in output.
- Order number can be purely commercial information, therefore the need to overwrite the value arises.

## Solution

- Introduction of new parameter rule '&order'.
- Can be used to set a custom order number.
- Selected operation will be used if custom parameter is empty.

```
ORDERNR      PROJECT  STRING  N   N   12   N   Y   &order
```

# Fixed error

## Description

- Interface ZK Alphamoduli: wrong recognition of blank shape for measure program type (MeasProgType).
- <https://redmine.buw-soft.de/issues/14990>

## Cause

- In some cases, SE fails to recognize the shape of electrode frame leading to a wrong measure program type.

```
<!-- <MeasProgType>type of frame 0: Unknown; 1: Circle; 2: Rectangle -->  
<MeasProgType>1</MeasProgType>
```

## Solution

- Improve process to recognize correct shape.
- Use custom parameter for output.
  - Parameter default &measureprogtype.
  - Add values to sel\_list.txt.
- Use either automatic recognition or value from parameter.

### parameter.cfg

```
PROGTYPE PART STRING N N 6 N Y &measureprogtype
```

### sel\_list.txt

```
#MEASUREPROGTYPE  
2  
1  
0
```

# Fixed error

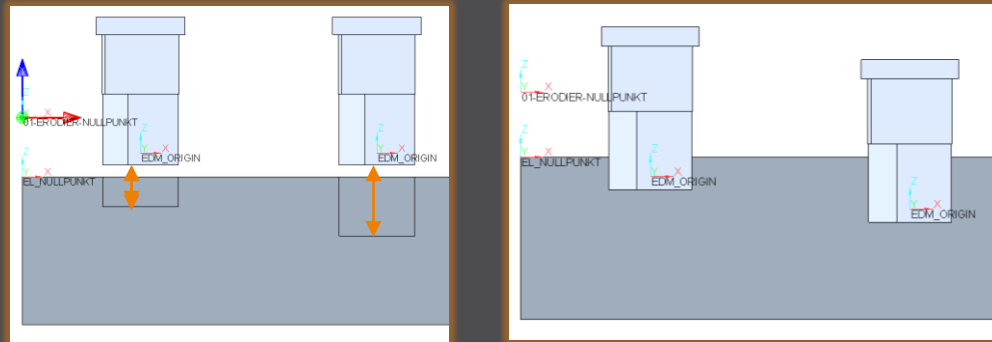
## Description

- Interface AC Form: possible wrong output of path from start to end position (PrepDepth).
- <https://redmine.buw-soft.de/issues/14918>

## Cause

Problem appears if:

- electrode with more than one position.
- one or more electrode positions differ in start or end position.



## Solution

Each electrode position is exported as a new shape to avoid this problem.



# SMARTElectrode 12.1.1.0

*What's New*

software  
**B&W**

# Enhancement

## What

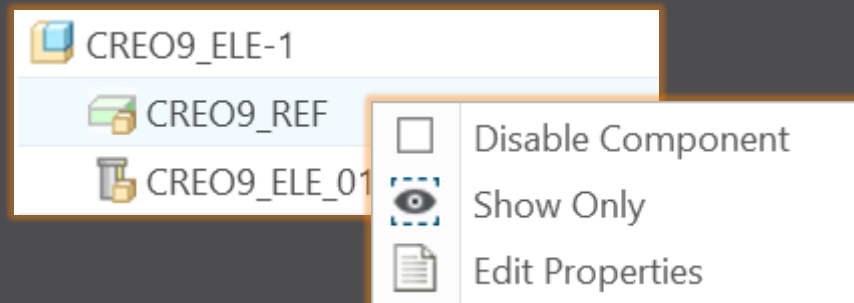
- Disable workpieces or electrodes in Burnsheat UI.
- <https://redmine.buw-soft.de/issues/4595>

## Why

- Disable a design dummy. Especially when using electrode merge or mirror.
- Original position of an electrode should not be used in export.
- Use disabled auxiliary model to display a start-position.
- Disable outdated version of workpiece.

## How

- Disabled components are ignored in export, collision check and touching surface analysis.
- Open Burnsheat UI and use right mouse button context menu to disable component.
- Disabled components are displayed with specific icons.



# Enhancement

## What

- Allow usage of layer settings file during export of 3d data.
- <https://redmine.buw-soft.de/issues/14469>

## Why

- More control over the result of the export.

## How

- The file has to be named “layer\_settings.txt” and has to be located in export or post-processor configuration. Examples can be found in configurations that create 3d exports. Customize content and rename “example\_layer\_settings.txt” to “layer\_settings.txt” to activate.

Model Name	Export Status	Display Status	Layer Name
SE_EXPORT_TEMP	Exclude Content	Blank	SE_EXPORT_TEMP

# Improvement

## What

- Provide export profiles for some processors with installation.
- <https://redmine.buw-soft.de/issues/14257>

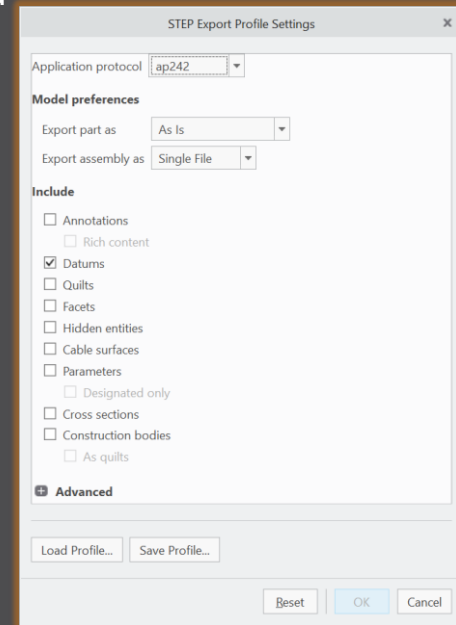
## Why

- Some interfaces include export of electrodes as STEP, IGES or PARASOLID.
- Export profile is necessary to include datum points used as CMM points.

## How

Added profiles to:

- processor/ZK/pp/def\_profile.dep\_step
- processor/MAKINO/pp/def\_profile.dep\_para





# Improvement

## What

- Automatically add all axes to layer “SE\_EXPORT\_TEMP” before 3d export file (IGES, STEP, ...) is created.
- <https://redmine.buw-soft.de/issues/14469>

## Why

- Not needed datums like points, axes and planes are obstructive in downstream processes.

## How

- Embedded axes in Extrude or Hole features are also considered.

# Improvement

## What

- Remove enforced regeneration of assembly to avoid continuous update of model data.
- <https://redmine.buw-soft.de/issues/14267>

## Why

- SE automatically regenerates models with status “modified/outdated”. That is displayed by regeneration flag in status-bar.



- In some cases, Creo does not remove regen flag after successful regeneration.
- This leads to repeated regeneration of whole assembly if workpiece is affected.
- In such a case further processing is difficult, because of waiting times.
- Remove automatic regeneration.
- Users are now responsible to update design data when necessary.

## How

# Fixed error

## Description

- Fix usage of wrong simplified representation in drawing repeat region after another drawing is merged.
- <https://redmine.buw-soft.de/issues/7504>

## Cause

Problem appears if:

- user already created a drawing with repeat region
- adds a new electrode
- runs drawing creation again to add new sheet to drawing
- first repeat region may be changed to show data of merged drawing

## Solution

SMARTElectrode automatically updates first occurrence of tables on drawing loaded from “asm\_edm.tbl” and “asm\_operation.tbl” after drawing creation.



# SMARTElectrode 12.1.0.0

*What's New*



# Fixed error

## Description

- Allow renaming of manufacturing assembly and workpiece in Manufacturing UI and Rename UI.

- <https://redmine.buw-soft.de/issues/13988>

## Cause

- A renamed electrode may not meet the naming format anymore
- Allow edit of default MFG and workpiece name in Manufacturing UI.
- Allow adjusting of names of existing MFG and workpiece during rename.

## Solution

- Double click Mfg or Workpiece name in Manufacturing UI to edit names for objects to create (📄). Existing assemblies and parts (✅) can't be renamed Manufacturing UI.
- Rename UI shows input panels for MFG and workpiece if available.

ID	Electrode	Size	Status	Mfg Name	Workpiece Name	Template
1	SE_CREO8_EDM_01	15.0x15.0x28.0	✅	SE_CREO8_MFG_01	SE_CREO8_WP_01	mfg_default.asm
2	SE_CREO8_EDM_02	15.0x15.0x28.0	📄	SE_MFG_02	SE_CREO8_WP_02	

Rename

Electrode SE\_CREO8\_EDM\_01

New Name SE\_CREO8\_EDM\_01

Manufacturing SE\_CREO8\_MFG\_01

Workpiece SE\_CREO8\_WP\_01

OK Cancel

# Improvement

What

- Prefer template without rotation ( $C=0^\circ$ ) if several templates with same blank dimensions are available.

Why

- <https://redmine.buw-soft.de/issues/13672>
- Order of templates in .dat decided which template - with or without rotation - was assigned. This is improved by defined behavior.

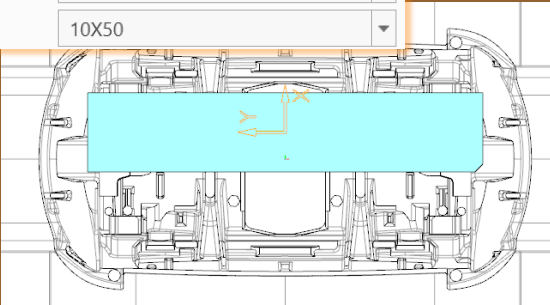
How

**Current Behavior**

A	0.00
B	0.00
C	90.00

Z 5.0000

Blank  
Type RECTANGULAR\_BASE  
Size 10X50

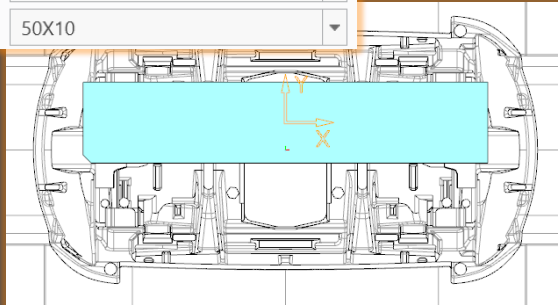


**New Behavior**

A	0.00
B	0.00
C	0.00

Z 5.0000

Blank  
Type RECTANGULAR\_BASE  
Size 50X10



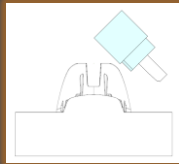
# Fixed error

## Description

- Ignore rotation of EDM\_ORIGIN for default start and secure position
- <https://redmine.buw-soft.de/issues/13878>

## Cause

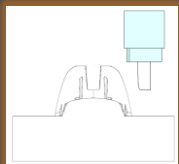
- In some cases a rotated EDM\_ORIGIN is useful
  - Easier definition of start position
  - EDM\_ORIGIN is rotated for later NC setup
- In both cases either the calculated angles or the display are wrong



SX	SY	SZ	SA
0.000	18.887	1.571	-45.000

## Solution

- Applied rotation to EDM\_ORIGIN is ignored for calculation of angles.
- SE\_EDM\_BASE is used for electrodes created in current releases.
- EDM\_ORIGIN is used for electrodes created in versions prior 8.0.



SX	SY	SZ	SA
0.000	18.887	1.571	0.000

# Enhancement

What

- BREAKING CHANGE
- Consider contour height on calculation of default start- and secure-position.  
<https://redmine.buw-soft.de/issues/13762>

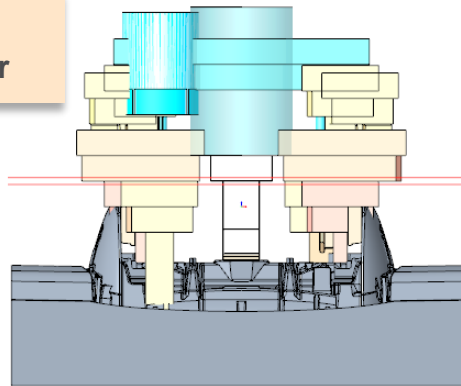
Why

- Calculation of default start and secure position using EDM\_ORIGIN led to disadvantageous or wrong values.
- Reduce effort to set start and secure positions.

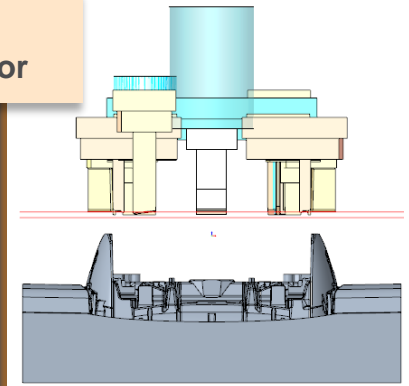
How

- **NOTE:** Adjustment of operation default planes may be necessary to respond appropriately to the new behavior.
- New behavior is available for all assemblies from current versions.

Current Behavior



New Behavior





# Enhancement

## What

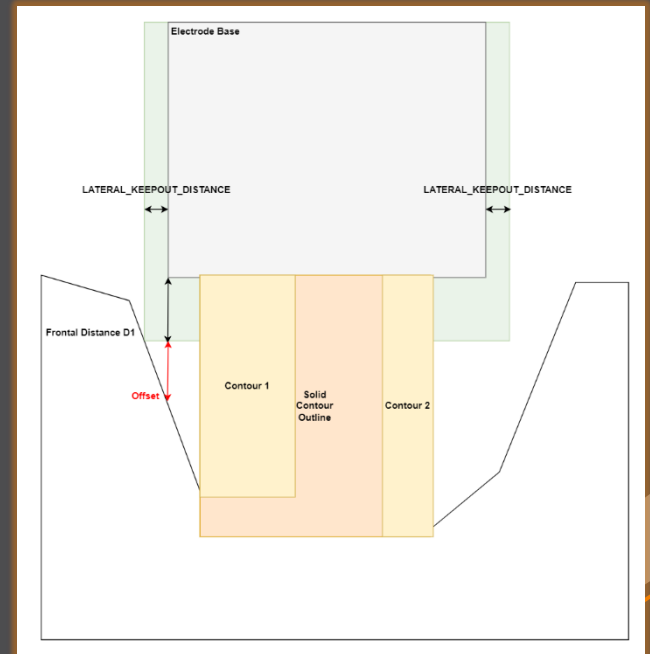
- Introduce new option #Electrode #LATERAL\_KEEPOUT\_DISTANCE  
<https://redmine.buw-soft.de/issues/13766>

## Why

- Defines the minimum distance in XY direction from the base that must not be disturbed by workpiece geometry.

## How

- Default value '0'
- When adding a new base, position will be adjusted to...
  - ...meet normal distance D1 and
  - ...to fulfill lateral offset defined in LATERAL\_KEEPOUT\_DISTANCE



# Enhancement

## What

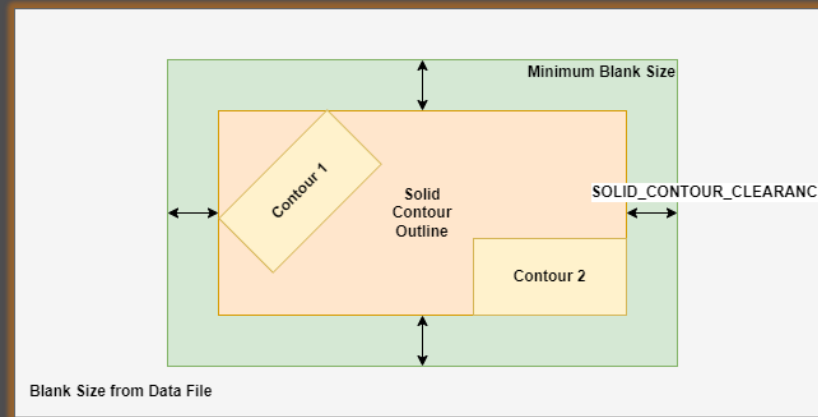
- Introduce new option #Electrode #SOLID\_CONTOUR\_CLEARANCE  
<https://redmine.buw-soft.de/issues/13765>

## Why

- Necessary to specify the minimum clearance in XY direction between the contour and blank outline

## How

- Option value SOLID\_CONTOUR\_CLEARANCE defines the clearance added to electrode's solid contour before blank size selection.
- Default value '0'



# Improvement

## What

- Allow enabling or disabling automatic calculation of a variable measure in the Base UI. <https://redmine.buw-soft.de/issues/13672>
- (related to: <https://redmine.buw-soft.de/issues/12517>)
- Allows users to switch between both behaviors

## Why

## How

1. **Variable dimension used (-1)**  
Variable dimension will be disabled and calculated automatically based on other inputs.
2. **Blank unlocked**  
Z position of blank length should stay fixed on input.  
Change of D2 changes D2 and D3.  
Change of Z position changes LENGTH and D3 accordingly.  
Change of LENGTH changes LENGTH and D3 accordingly.
3. **Blank locked**  
Blank (A\_BASE, B\_BASE, LENGTH and D2) are disabled and can't be changed. Changes to D1, D3 or Z position change the other two dependent values accordingly.

**Blank**

Type: RECTANGULAR\_BASE\_FRAME

Size: 15X15

Locked:  Blank  Free Dim

A\_BASE: 15.000 D1: 5.128

B\_BASE: 15.000 D2: 22.000

Length: 30.000 D3: 0.022

Chamfers:  1.000  0.200

Frame:  5.000  1.000

**Blank**

Type: RECTANGULAR\_BASE\_FRAME

Size: 15X15

Locked:  Blank  Free Dim

A\_BASE: 15.000 D1: 5.128

B\_BASE: 15.000 D2: 22.000

Length: 30.000 D3: 0.022

Chamfers:  1.000  0.200

Frame:  5.000  1.000

**Blank**

Type: RECTANGULAR\_BASE\_FRAME

Size: 15X15

Locked:  Blank  Free Dim

A\_BASE: 15.000 D1: 5.128

B\_BASE: 15.000 D2: 22.000

Length: 30.000 D3: 0.022

Chamfers:  1.000  0.200

Frame:  5.000  1.000

# Enhancement

## What

- Allow export of files for Creo View  
<https://redmine.buw-soft.de/issues/13699>

## Why

- Provide data for downstream processes

## How

- Use keywords “SE\_EDM\_BACKUP\_PVS” or “SE\_EDM\_BACKUP\_PVZ” in export template to create a file structure for Creo View (PVS) or a zipped archive of the files (PVZ). PVS creates a \*.pvs for the file structure and numerated \*.ol files containing viewable geometry.
- Example: export PVS/PVZ of assembly

```
Assembly PVS: #SE_EDM_BACKUP_DIR#\#partname#. #SE_EDM_BACKUP_PVS#  
Assembly PVZ: #SE_EDM_BACKUP_DIR#\#partname#. #SE_EDM_BACKUP_PVZ#
```

- Example: export PVS/PVZ for each electrode

```
ELECTRODE_START  
PVS: #SE_EDM_BACKUP_DIR#\#partname#. #SE_EDM_BACKUP_PVS#  
PVZ: #SE_EDM_BACKUP_DIR#\#partname#. #SE_EDM_BACKUP_PVZ#  
ELECTRODE_END
```



# SMARTElectrode 12.0.9.0

*What's New*



# Fixed error

## Description

- Burnsheel UI does not reflect structure of modeltree. Models are only grouped by name not considering assembly level
- <https://redmine.buw-soft.de/issues/13514>

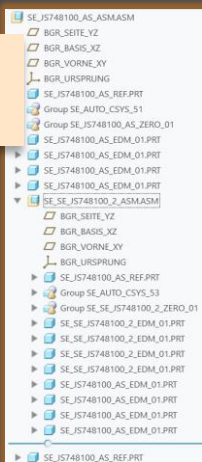
## Cause

- Most electrode assemblies include only one workpiece or reference model
- Grouping models by name seemed to be sufficient

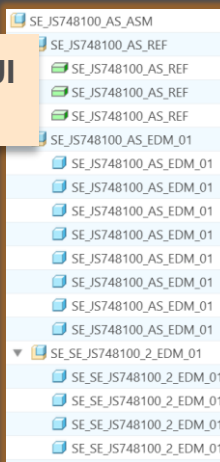
## Solution

- Burnsheel UI now shows complete assembly structure and groups models by name on same assembly level:

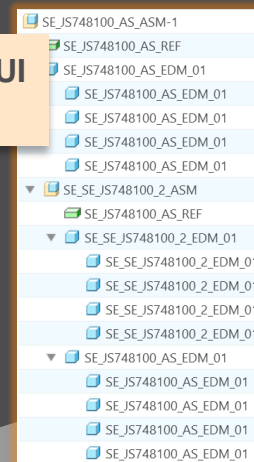
### Modeltree



### Burnsheel UI until now



### Burnsheel UI new



# Enhancement

## What

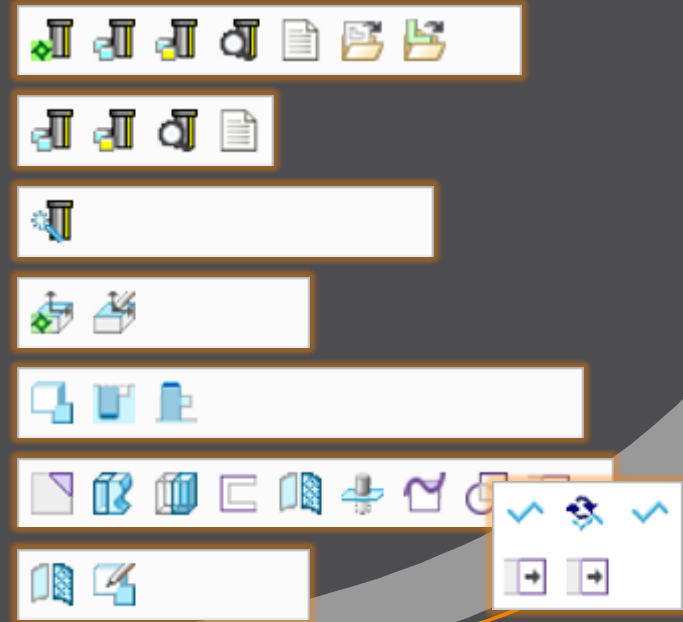
- Introduce SMARTElectrode commands in mini toolbar
- <https://redmine.buw-soft.de/issues/13293>

## Why

- Faster and more intuitive access to commands

## How

- Assembly mode
  - Object window or modeltree / single selection
  - Object window or modeltree / Multiple selections
  - Object window / workpiece faces
  - Operation in modeltree
- Active component
  - Workpiece faces
  - Electrode faces/quilts/one-sided edges
  - Feature in modeltree





# SMARTElectrode 12.0.8.0

*What's New*





# Enhancement

## What

- Edit properties of multiple objects in user interface
- <https://redmine.buw-soft.de/issues/12842>



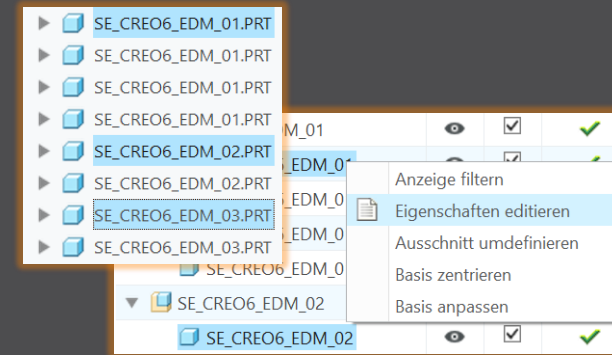
Eigenschaften

## Why

- Helpful if especially technology settings have to be updated

## How

- Access Properties UI with several selected objects from modeltree or Burnsheat UI.
- Only parameters available in all objects are are.
- Parameters with different values will be displayed as **<Status quo>**.
- Edited values will be updated for all selected objects.
- Make sure to select all relevant objects before editing.



	PRIORITAET	<Status quo>	Very low wear
	BRENNFLAECH	<Status quo>	<Status quo>
	ANZAHL	3	3
	▼	<Status quo>	0.5
	ANZ_UNTERMAS	2	-

# Enhancement

## What

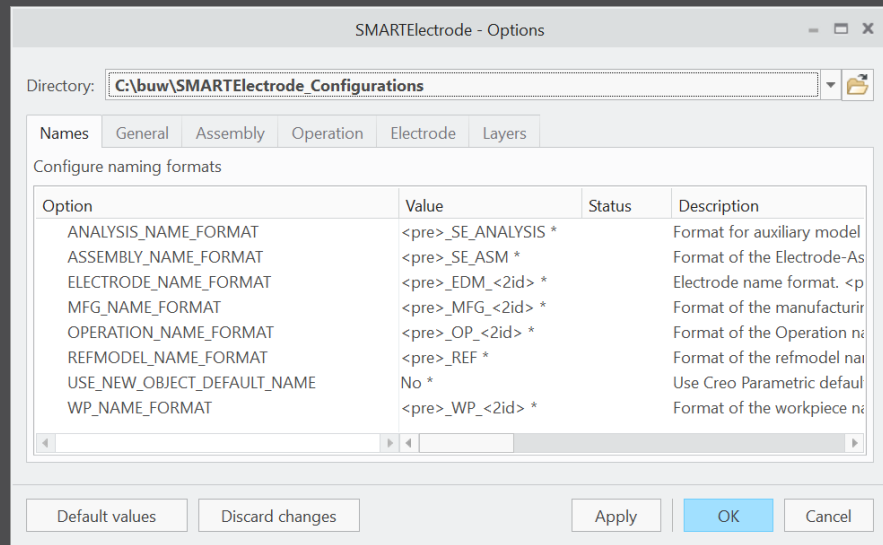
- Overhauled Options UI
- <https://redmine.buw-soft.de/issues/12059>

## Why

- Appearance adjusted to PTC options look & feel

## How

- Only changed values are saved
- Option file includes option value descriptions
- Easier discard and reset to defaults



# Improvement

## What

- Base UI - allow overwriting of calculated values.
- <https://redmine.buw-soft.de/issues/12517>

## Why

- Until now base dimensions calculated by SMARTElectrode have been disabled
- In some cases, users still need access to values after SMARTElectrode initially calculated them

## How

All base dimensions are now accessible after SE placed the base group


### 1. Blank unlocked

Keep absolute Z position of blank length. Change of D2 changes LENGTH accordingly to keep position. Change of Z position changes LENGTH accordingly to keep position. Change of LENGTH changes D3 (top offset) accordingly.

### 2. Blank locked

Blank (A\_BASE, B\_BASE, LENGTH and D2) are disabled and can't be changed. Changes to D1, D3 or Z position change the other two dependent values accordingly

**Blank**


LOCKED 

TYPE: RECTANGULAR\_BASE

SIZE: D2\_VARIABEL

A_BASE	15.000	D1	5.150
B_BASE	15.000	D2	42.000
LENGTH	50.000	D3	0.000

**Blank**

LOCKED 

TYPE: RECTANGULAR\_BASE

SIZE: LAENGE\_VARIABEL

A_BASE	15.000	D1	5.150
B_BASE	15.000	D2	20.000
LENGTH	28.000	D3	0.000

# Enhancement

## What

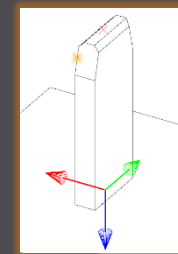
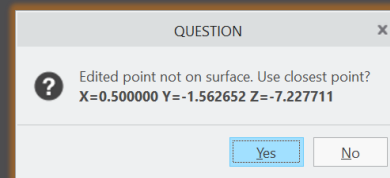
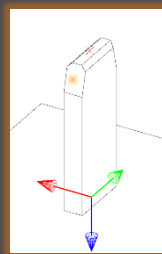
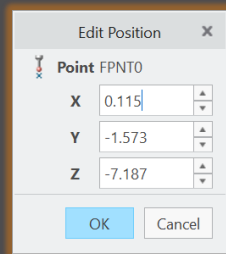
- Edit CMM points in user interface
- <https://redmine.buw-soft.de/issues/12392>

## Why

- Move measuring points to even value

## How

- Open “CMM points”
- Select point to edit in table
- Start edit on double-click or press “Edit”
- Point will be automatically moved to new position or reachable coordinates are suggested if point is out of bounds
- Original coordinates are restored on cancel



# Enhancement

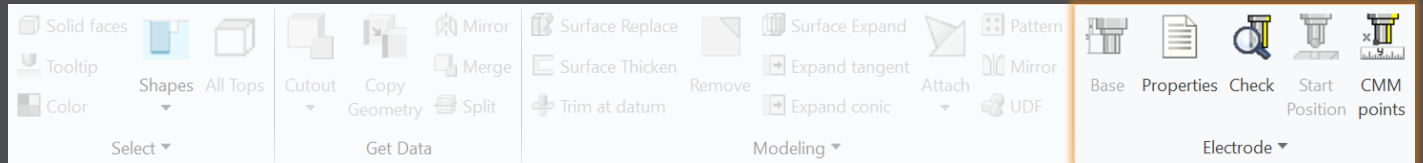
## What

- Allow CMM points in workpiece models
- <https://redmine.buw-soft.de/issues/12327>

## Why

- Enable definition and output of measuring points for CMM in workpieces

## How

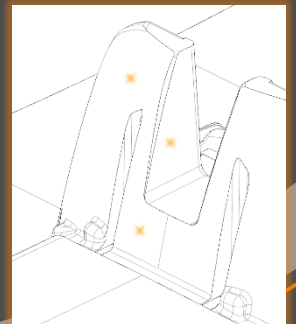


Workflow and functionality is the same as for electrodes

- Activate component
- Open “CMM points”
- “Add” measuring points on pick position till loop is cancelled with MMB
- Confirm or discard points

The screenshot shows a dialog box titled 'Measuring Points' with a table of coordinates. The table has columns for ID, X, Y, Z, I, J, and K. The data is as follows:

ID	X	Y	Z	I	J	K
1	26.17	5.98	2.57	0.81	0.26	0.95
2	29.11	2.26	83.16	0.97	0.99	0.24
3	26.32	2.11	5.24	0.80	1.00	0.85



# Improvement

## What

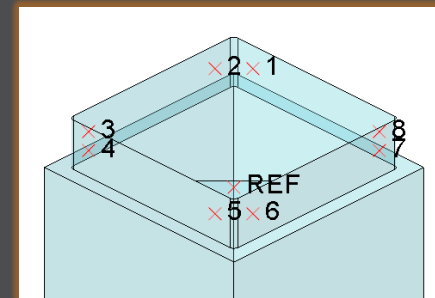
- Measuring points can be added to template.
- <https://redmine.buw-soft.de/issues/11335>

## Why

- For easier measuring of preset

## How

- Each point feature has to carry a parameter "SE\_QMM\_POINTS" for identification.
- Use field points or general datum points.
- General datum point features may include multiple points.
- General datum points can't be edited in UI and are highlighted with a yellow background.
- **Note:** deletion of point in UI always deletes the whole feature.
- Use command "Save custom base" to update templates.



Name	Type	Value
SE_QMM_POINTS	Integer	1

Measuring Points

+ Add Edit X Delete Save

ID	X	Y	Z	I	J	K
1	5.00	6.50	1.50	-0.00	1.00	-0.00
2	6.50	5.00	1.50	1.00	0.00	0.00
3	6.50	-5.00	1.50	1.00	0.00	0.00
4	5.00	6.50	1.50	0.00	1.00	0.00

# Improvement

## What

- Export additional information for quality measuring to Z&K Alphamoduli.
- <https://redmine.buw-soft.de/issues/12839>

## Why

- Enables an easier setup of CMM.

## How

Name	Type	Description	Parameter Rule
TolMin	Float	Allowed lower tolerance for quality measuring	&qm_tol_min
TolMax	Float	Allowed upper tolerance for quality measuring	&qm_tol_max
PresetStylus	Char(32)	Stylus name for preset	&qm_preset_stylus
PresetTip	Char(32)	Tip name for preset	&qm_preset_tip
PresetPrehitDistance	Float	Prehit distance during preset	&qm_preset_prehit
PresetRetractDistance	Float	Retract distance during preset	&qm_preset_retract
QMStylus	Char(32)	Stylus name for measuring	&qm_stylus
QMTip	Char(32)	Tip name for measuring	&qm_tip
QMPrehitDistance	Float	Prehit distance during measuring	&qm_prehit
QMRetractDistance	Float	Retract distance during measuring	&qm_retract

# Improvement

## What

- Introduced workpiece naming format for Z&K Alphamoduli.
- <https://redmine.buw-soft.de/issues/12324>

## Why

- Valid Creo name length of 31 characters may not available depending on EDM setup.
- Allow generation of short workpiece names.

## How

- Use option SE\_CORE\_NAME\_FORMAT to define a format for short names.
- CAD model name is used if options is undefined or empty.
- Any workpiece parameter from configuration can be used in format.
- Example setting in export.cfg:

```
! naming format for workpiece models in XML file  
SE_CORE_NAME_FORMAT WP_<ID>
```

- Result in XML:

```
<LogWrk>  
  <Name>WP_1</Name>  
  <CadModel>.\WORKPIECE\JS748100_AS.STP</CadModel>  
  <Remark>JS748100_AS</Remark>  
</LogWrk>
```



# Improvement

## What

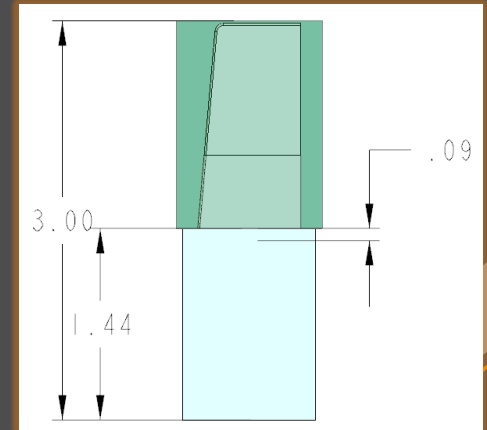
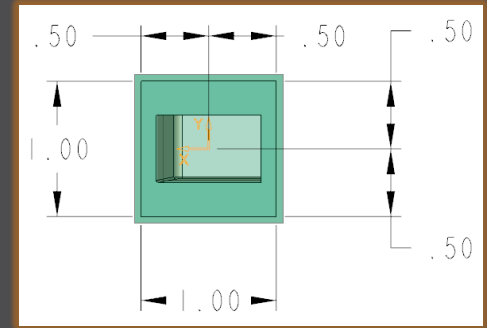
- Automatic creation of dimensions on manufacturing drawing.
- <https://redmine.buw-soft.de/issues/12475>

## Why

- Create a more complete NC drawing.

## How

- Automatically add dimensions on NC drawing sheet similar how it works for electrode part drawings.
- Dimensions are created when drawing is copied from template.
- Edit configuration file `my_drawing_format.cfg` to add dimensions in list.
- Use MFG template name in 1<sup>st</sup> column.
- Refer to <https://www.buw-soft.de/en/news/add-workiece-dimensions-automatically/> for more information.



# Improvement

## What

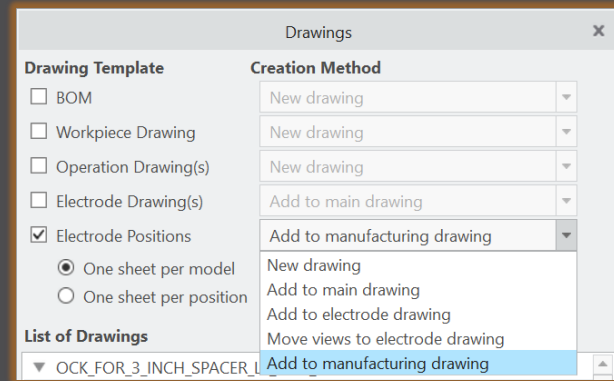
- Drawing UI: new option to add positioning sheet to NC drawing sheet.  
<https://redmine.buw-soft.de/issues/11270>

## Why

- Add electrode position sheet to existing NC drawing sheet similar how it works for electrode part drawings.

## How

- Info: NC drawing sheet can be part of manufacturing template which is assigned in Manufacturing UI and copied during creation of new manufacturing assembly.
- Set option  
MERGE\_EDM\_POSITION\_SHEETS = 5  
to enable this behavior.



# Fixed error

## Description

- Different behavior for interference check in Creo 4 vs. 6, 7, 8 in active component mode.

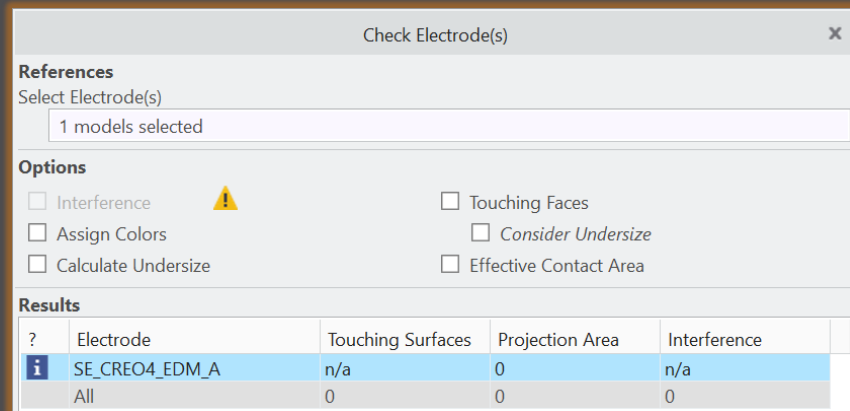
- <https://redmine.buw-soft.de/issues/12837>

## Cause

- Current releases of Creo Parametric 6, 7 and 8 **don't** support computation of interferences in active component mode.
- Behavior should be fixed in Creo 7.0.8.0, Creo 8.0.4.0 and Creo 9.0.0.0.
- Error won't be fixed in Creo 6.0.

## Solution

- Interference check will be disabled in active component mode in affected Creo Parametric versions till fix is available.





# SMARTElectrode 12.0.7.0

*What's New*



# Enhancement

## What

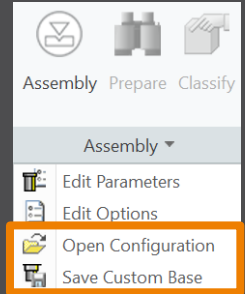
- Added new command to “Save Custom Base” to save userdefined feature (UDF) and data file for electrode blank.
- <https://redmine.buw-soft.de/issues/12001>

## Why

- New command simplifies creation of customized base and saves a valid data file for it.

## How

- Use command "Open Configuration" to browse to "electrode\*<supplier>*\base\_templates“ and select part to customize.
- Incorporate changes.
- Select "Save Base Template" to create UDF and data file.
- Customize data file.
- Copy UDF and DAT to supplier directory to activate template
- **NOTE:** All variable dimensions to be controlled in data file require a custom symbol name.
- **NOTE:** Open “Getting-Started” document for more information.



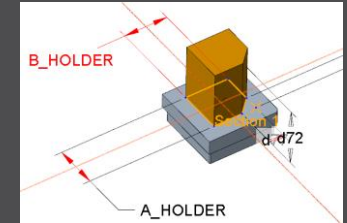
# Enhancement

## What

- Allow additional variable dimensions and parameters in blank data file (\*.dat)
- <https://redmine.buw-soft.de/issues/9953>

## Why

- Customer specific templates sometimes need to control additional dimensions or parameters – for example if holder or order number are part of electrode blank



## How

- To use additional parameters with data file an additional line “VALUETYPE” has to be added between “INSTANCE” and blank sizes.

INSTANCE	A_BASE	B_BASE	FRAME_WIDTH	FRAME_HEIGHT	A_HOLDER	B_HOLDER	PARAMINT	PARAMSTRING	PARAMDOUBLE
VALUETYPE	DIM	DIM	DIM	DIM	DIM	DIM	INTEGER	STRING	DOUBLE
E-15-15	15	15	1	3.2	15	15	1515	E-15-15	15.15

- Available types:
  - DIM → Creo dimensions like A\_BASE, B\_BASE, LENGTH, base height D2 and additional dimensions
  - INTERN → internal values used for calculation and advanced settings like D1, D3, MATERIAL, MFG\_TEMPLATE, HOLDER, ...
  - INTEGER → integer parameter
  - STRING → string parameter
  - DOUBLE → double parameter
- **NOTE:** more information can be found in “Getting-Started” presentation

# Improvement

## What

- Adjusted behavior for default values from parameter configuration.
- <https://redmine.buw-soft.de/issues/12025>

## Why

- Until now there have been two different behaviors for default values if...
  - defined in sel\_list.txt or

```
SPARK_MODE ... &priority
```

```
#PRIORITY  
Normal wear  
Low wear  
Normal wear  
High removal
```

- defined in parameter.cfg directly

```
SPARK_MODE ... Normal wear
```

## How

Now in both cases...

- default value defined in parameter.cfg and
- default value defined in sel\_list.txt

...the value from SMARTElectrode configuration will be used now. The value will be set regardless whether the parameter already exists in template for new electrodes or not.

# Improvement

## What

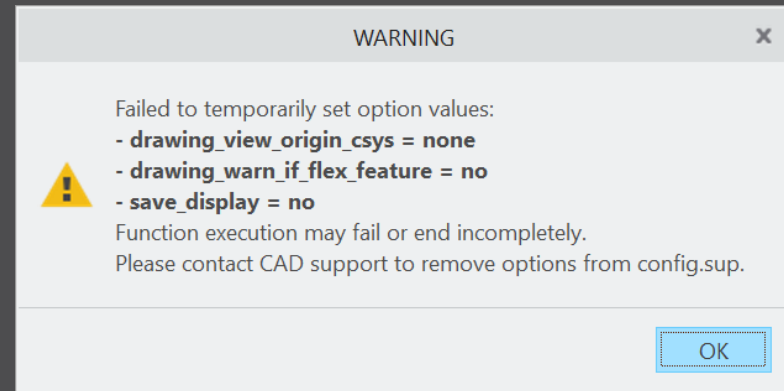
- Check and update mandatory options before drawings are created.

## Why

- Drawing creation may fail if following options can't be set temporarily by SMARTElectrode
  - start\_model\_dir
  - drawing\_view\_origin\_csys
  - drawing\_warn\_if\_flex\_feature
  - save\_display

## How

A warning will be displayed.





# Fixed error

## Description

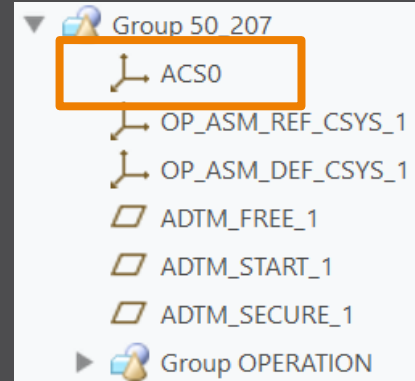
- Operations/origins unreadable if group changed.
- <https://redmine.buw-soft.de/issues/12010>

## Cause

- SMARTElectrode expects a fixed sequence order in operation groups:
  - Reference Csys (this is the selected csys)
  - Default Csys (orientation like selected csys on assembly default; used to assemble new electrodes on)
  - Freeface datum plane (default position of electrode base)
  - Default start datum plane (default start position of electrode if not defined otherwise)
  - Default secure datum plane (default secure position of electrode if not defined otherwise)
  - Operation cosmetic for drawing (optional)

## Solution

- SMARTElectrode tries now to identify features in group, but it's still recommended to keep the group unchanged.





# SMARTElectrode 12.0.6.0

*What's New*



# Enhancement

## What

- Allow surface models as workpieces
- <https://redmine.buw-soft.de/issues/11584>

## Why

- Workpieces are sometimes only available as surface models and can't be repaired via Import Data Doctor (IDD)

## How

- Use method "original models" to create assembly from surface models
- SMARTElectrode offers support for:
  - Workpiece: outline calculation of workpieces
  - Operation: offset calculation in operation definition
  - Design: cutout creates a solid and a solidify feature if referenced workpiece is a surface model. Solidify may fail if quilt includes gaps.
  - Analysis: touching surface analysis for effective contact area
- **NOTE** computation of interference is unavailable for surface models. A warning will be displayed in Check UI

### Interference

⚠ Workpiece TUTORIAL3\_OFFEN is surface model. No calculation possible!

⚠ Workpiece TUTORIAL3\_OFFEN is surface model. No calculation possible!

# Enhancement

## What

- Introduced layer definition in my\_drawing\_format.cfg to control display status
- <https://redmine.buw-soft.de/issues/10575>

## Why

- It's a tedious task to set correct layer display on electrode drawings

## How

- Add section enclosed with .BEGIN\_LAYERS and .END\_LAYERS to my\_drawing\_format.cfg
- Define drawing template name, view, layer and display status in a tab separated table
- Drawing name from configuration\templates: asm\_bom, asm\_wp, asm\_operation, asm\_edm, edm\_default
- View to assign layer setting to. Use VIEW name to set display of layer in a specific view. Use TOP\_MODEL to set display of layer on drawing sheet.
- Layer name whose display status is to be set
- Display status: Set YES to show layer; Set NO to hide layer

# Enhancement

## What

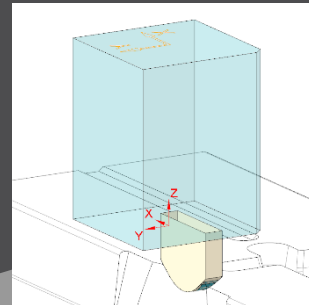
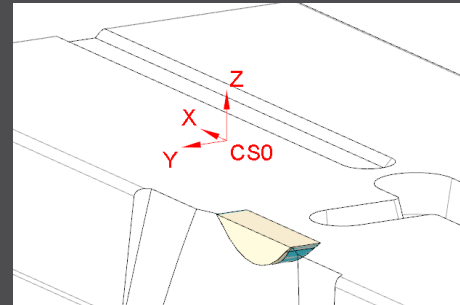
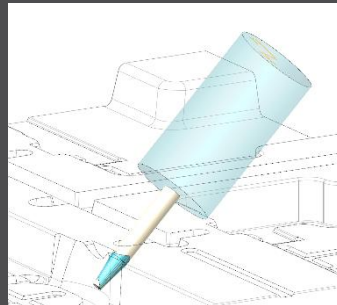
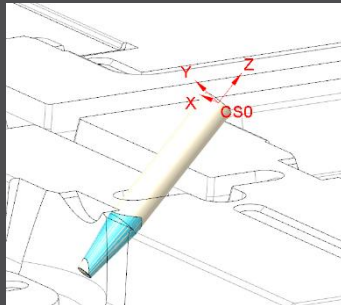
- Electrode base can now also be added on a user-defined coordinate system
- <https://redmine.buw-soft.de/issues/8704>

## Why

- To lock the position of the base on an axis
- To prepare a geometry pattern of the contour

## How

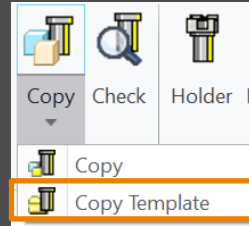
- Define coordinate system in electrode
- Select coordinate system and open Base UI
  - Base will be added to coordinate system
  - Position of coordinate system is taken into account to calculate required blank size
- Base is locked to coordinate system. Delete base to use different option



# Enhancement

## What

- Copy electrodes from existing electrodes or prepared templates
- <https://redmine.buw-soft.de/issues/11700>

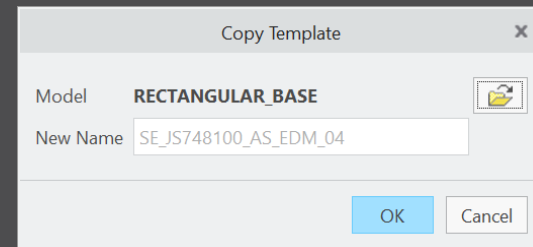


## Why

- Allow reuse of...
  - incomplete electrode models to be completed inside assembly (for gate electrodes)
  - complete electrode models created without SMARTElectrode (for electrodes from stock)
  - complete electrode created with SMARTElectrode (for electrodes from different assembly)

## How

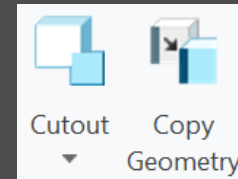
- Csys defined in option SE\_EDM\_ORGIN\_NAME is mandatory
- "configuration\electrode\templates" is used as default path to select templates
- Associated data (drawing, manufacturing) will be copied to new name also
- Controls in Base UI will be disabled if template is detected



# Improvement

## What

- Electrode design mode:  
Maintain definition of surface collections when creating copy-geoms
- <https://redmine.buw-soft.de/issues/11765>

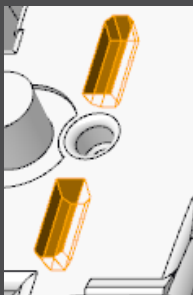


## Why

- So far, a new copy-geom was created for each surface set on >Get Data >Cutout and >Get Data >Copy Geometry

## How

- Surface sets in selection buffer are now automatically sorted by reference model
- All surface sets from same reference model will be added to same copy-geom feature



Set	Count	Add
Individual Surfaces	0	Remove
Seed and Boundary Surfaces	9	
Seed and Boundary Surfaces	9	
Excluded Surfaces	0	

# Improvement

## What

- Base UI - keep predefined holder offset if different holder is selected on details page
- <https://redmine.buw-soft.de/issues/10943>

## Why



- Adapts behavior of Base UI to Holder UI. Offset / rotation will be retained if a different holder is selected

## How

- Selection of new blank type or size updates holder and position

	25X85X60_025MM
B_BASE	25X85X60_100MM
	35X35X60
LENGTH	35X35X60_025MM_1
	35X35X60_025MM_2
CHAMFER	35X35X60_025MM_2

- Current position will be retained if a new model is selected on details page

Holder	
Supplier	EROWA
Type	F60000
	 Edit Position
	 Reset Position

- A new popup menu allows edit and reset of holder position



# Interface to Ingersoll MultiProg

## What

- Suppress output of generator types to ING file
- <https://redmine.buw-soft.de/issues/10943>

## Why

- Set undersize values are mapped on generator types in output
- Some customers prefer output without generator types

	Undersize	Quantity
▼	0.5	2
▼▼	0.4	1
▼▼▼	0.30	1
▼▼▼▼	0.20	1

## How

- Add option WRITE\_GENTYPEL NO to export.cfg to suppress output  
`WRITE_GENTYPEL · NO`
- File is located in configuration\processor\INGERSOLL\pp\export.cfg
- Generator types based on undersize values
  - RO: roughing
  - PF: prefinish
  - FI: finish
  - FF: fine finish

# Interface to ZK Alphamoduli

## What

- Calculate <SafetyDistance> based on electrode contour height and position of MEASZPOINT

- <https://redmine.buw-soft.de/issues/11881>

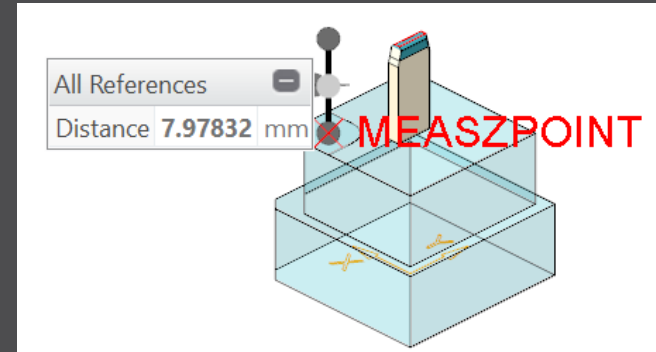
## Why

- <SafetyDistance> uses a fixed value from export.cfg currently
- A calculation based on contour height is necessary

## How

- Two options in export.cfg control behavior for <SafetyDistance>
  - SafetyDistance ... → fixed to be considered at the CMM.
  - SafetyDistanceOffset ... → offset for safety distance added to measured distance from blank length to MeasZPoint

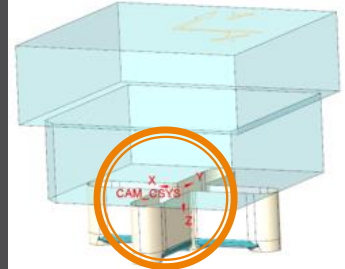
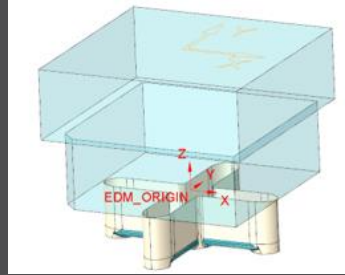
- **Note**  
Only use SafetyDistance or SafetyDistanceOffset!



# Interface to ZK Alphamoduli

## What

- Allow alternative csys for output of measure information
- <https://redmine.buw-soft.de/issues/11585>



## Why

- All measuring information like

```
<MeasSizeX>38.0000</MeasSizeX>
<MeasSizeY>38.0000</MeasSizeY>
<MeasSizeZ>0.0000</MeasSizeZ>
<MeasZPointX>-16.5000</MeasZPointX>
<MeasZPointY>-16.5000</MeasZPointY>
<MeasZPointZ>0.0000</MeasZPointZ>
<QMPoint>
...
</QMPoint>
```

- ... need to be output for csys with correct orientation
- Use setting “SE\_EDM\_BACKUP\_CSYS” in export.cfg to set csys names
- Several alternative csys can separated by ;
- Option names will automatically be replaced by value

## How

```
SE_EDM_BACKUP_CSYS · EL_CSYS; · CSYS_DEFAULT; · ANY_CSYS;
SE_EDM_BACKUP_CSYS · CAM_CSYS_NAME; · EDM_ORIGIN_NAME;
```

# Interface to ZK Alphamoduli

## What

- Add <MeasureProg> to XML output
- <https://redmine.buw-soft.de/issues/11659>

## Why

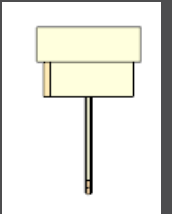
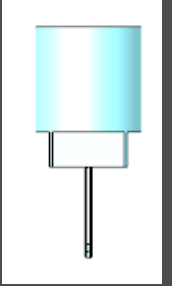
- MeasureProg is the name of the learning/measuring program for the automatic presetting at the CMM

## How

- A measure frame needs to be available to output <MeasureProg>
- Default values are:

```
<!-- default for rectangular frame: ESVierkant -->  
<MeasureProg>ESVierkant </MeasureProg>  
<!-- default for round frame: ESMitteKreis -->  
<MeasureProg>ESMitteKreis</MeasureProg>
```

- Custom names for <MeasureProg> can be defined in parameters
  - Parameter configuration  
MEASUREPROG PART STRING N N 10 N Y &measureprog
  - Selection list in sel\_list.txt  
#MEASUREPROG  
...



# Interface to ZK Alphamoduli

What

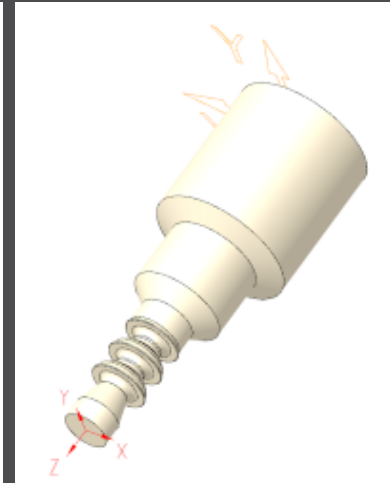
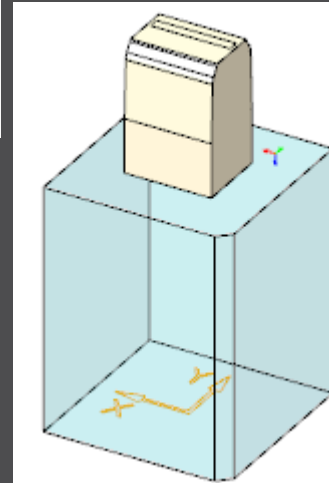
- Suppress `<MeasProgType>` and `<MeasSize...>` if no frame available
- <https://redmine.buw-soft.de/issues/11537>
- <https://redmine.buw-soft.de/issues/11587>

Why

- `<MeasProgType>` and `<MeasSize...>` are only valid if a measuring frame is available in blank
- Output is suppressed if frame is not found

```
<MeasProgType></MeasProgType> > empty  
<MeasSizeX></MeasSizeX> > skipped  
<MeasSizeY></MeasSizeY> > skipped  
<MeasSizeZ></MeasSizeZ> > skipped
```

- Example electrodes without frames:



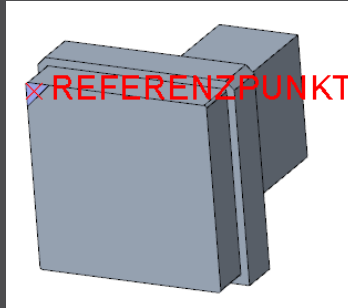
# Interface to ZK Alphamoduli

## What

- Allow custom name for MeasZPoint in export settings
- <https://redmine.buw-soft.de/issues/11586>

## Why

- MeasZPoint is the datum point where Z-height should be measured
- Datum point may be available in customer templates with different name



## How

- Add option MeasZPoint <name> to export.cfg
  - An existing datum point named “MEASZPOINT” will be renamed on export
- ```
! · name · of · datum · point · feature · to · use · for · MeasZPoint  
MeasZPoint · MEASZREF
```
- **NOTE** Datum point needs to be reachable!

# Interface to ZK Alphamoduli

## What

- Name format options to shorten names in XML output
- <https://redmine.buw-soft.de/issues/11855>

## Why

- Depending on EDM machine setup length of 32 characters may **not** be available for electrode names in XML
- Creation of shorter names is required

## How

- Naming options SE\_EDM\_NAME\_FORMAT and SE\_2<sup>ND</sup>\_EDM\_NAME\_FORMAT introduced. Examples:
  - SE\_EDM\_NAME\_FORMAT EDM\_<ID>
  - SE\_2<sup>ND</sup>\_EDM\_NAME\_FORMAT <partname><any known parameter>

```
<LogEle LogGroup=„SE_EDM_NAME_FORMAT“>
  <Name>SE_EDM_NAME_FORMAT</Name>
  <Remark>SE_2ND_EDM_NAME_FORMAT</Remark>
  <DocList>
    <Document>
      <Name>SE_2ND_EDM_NAME_FORMAT</Name>
      <File>SE_2ND_EDM_NAME_FORMAT</File>
    </Document>
  </DocList>
</CadModel>SE_2ND_EDM_NAME_FORMAT</CadModel>
```

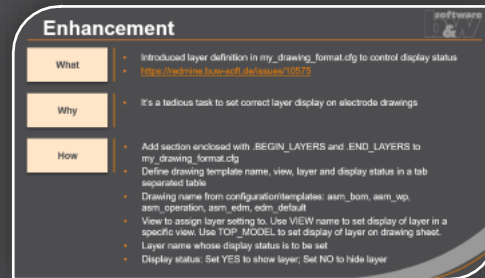
# Fixed Error

## What

- Assignment of combined states to drawing views fails sometimes
- <https://redmine.buw-soft.de/issues/10772>

## Resolution

- Replaced combined states with a list of layer definitions which can be controlled independently from 3d model
- Details [here](#)



The screenshot shows a document titled "Enhancement" with a small "software b&w" logo in the top right corner. The document is structured with three sections: "What", "Why", and "How", each with a list of bullet points.

Section	Content
What	<ul style="list-style-type: none"><li>• Introduced layer definition in <code>my_drawing_format.dwg</code> to control display status</li><li>• <a href="https://redmine.buw-soft.de/issues/10772">https://redmine.buw-soft.de/issues/10772</a></li></ul>
Why	<ul style="list-style-type: none"><li>• It's a tedious task to set correct layer display on electrode drawings</li></ul>
How	<ul style="list-style-type: none"><li>• Add section enclosed with <code>BEGIN_LAYERS</code> and <code>END_LAYERS</code> to <code>my_drawing_format.dwg</code></li><li>• Define drawing template name, view, layer and display status in a tab separated table</li><li>• Drawing name from configuration/templates: <code>asm_bom</code>, <code>asm_up</code>, <code>asm_operation</code>, <code>asm_edm</code>, <code>edm_default</code></li><li>• View to assign layer setting to. Use VIEW name to set display of layer in a specific view. Use <code>TOP_MODEL</code> to set display of layer on drawing sheet.</li><li>• Layer name whose display status to be set</li><li>• Display status: Set YES to show layer; Set NO to hide layer</li></ul>



# Fixed Error

## What

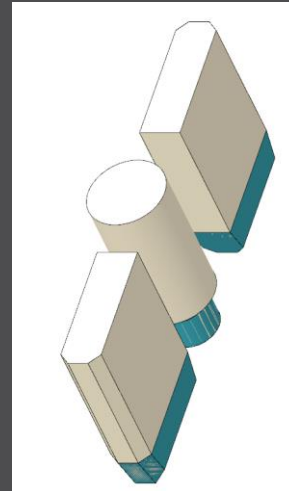
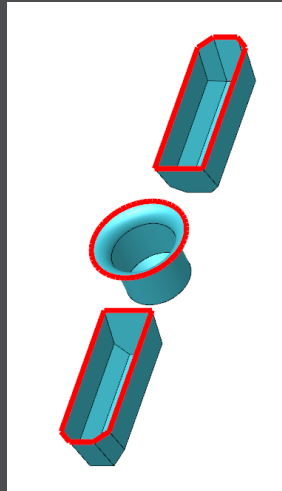
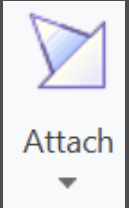
- Command “Attach” fails for quilts with multiple contours
- <https://redmine.buw-soft.de/issues/11708>

## Why

- Starting edges of the boundary loops are not found correctly

## Resolution

- Issue is fixed



# Fixed Error

## What

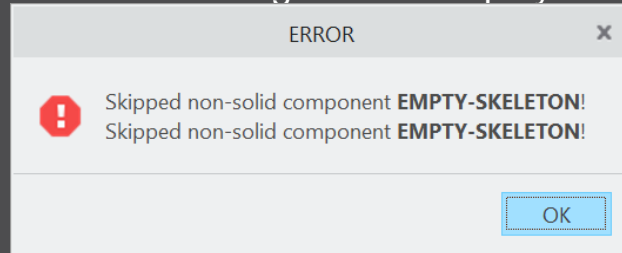
- Project UI - skip models without solids during project creation
- <https://redmine.buw-soft.de/issues/11548>

## Why

- Regeneration error occurs if copy-geom, inheritance or merge feature is created for a model without solid geometry

## Resolution

- Models without solid will be skipped during creation of reference part
- An error message will be displayed





# SMARTElectrode 12.0.5.0

*What's New*



# Improvement

## What

- All configuration files are now considered as encoded in UTF-8
- <https://redmine.buw-soft.de/issues/10943>

## Why

- Necessary for updated interfaces to EDM

## How

- Please use a tool like Notepad++ to convert if necessary
- Files using ASCII standard characters don't need any special handling

# Improvement

## What

- Introduced 'Getting started' document
- <https://redmine.buw-soft.de/issues/10749>

## Why

- This document explains briefly how to start working with SMARTElectrode

## How

- Open 'Getting started' from
  - Installation directory
  - Download server:  
<https://dl.buw-soft.de/smartelectrode/guides/getting-started.pdf>
- Some of the topics covered
  - Configure license / Register and start SE
  - Setting up a configuration / How to use setup wizard
  - Creo options / SMARTElectrode Options
  - Workflow in SMARTElectrode
  - Parameters
  - Base UI
  - Customizing electrode templates
  - Drawing Creation

# Enhancement

## What

- Sort electrodes by parameter value before export
- <https://redmine.buw-soft.de/issues/10575>

## Why

- Some customers need to output electrodes in a specific sort order

## How

- Two new keywords can be used in any export configuration (export.cfg)
  - SE\_ORDER\_BY  
Define parameter by parameter name (1<sup>st</sup> column) or parameter default (last column; include &)
  - SE\_SORT\_ORDER  
Defines sort order: ASC, ASCENDING, DESC, DESCENDING
- Sorting works for strings, doubles and integers
- Only sort by part parameters!

```
SE_ORDER_BY · &BURNAREA_XY  
SE_SORT_ORDER · DESCENDING
```

```
SE_ORDER_BY · BRENNFLAECHE  
SE_SORT_ORDER · DESCENDING
```

```
BURNAREA · ID · NAME  
361.980 · 11 · JS748100_AS_EDM_11  
157.062 · 12 · JS748100_AS_EDM_12  
156.671 · 12 · JS748100_AS_EDM_12  
28.102 · 10 · JS748100_AS_EDM_10  
28.102 · 10 · JS748100_AS_EDM_10  
25.607 · 3 · JS748100_AS_EDM_03
```

# Improvement

## What

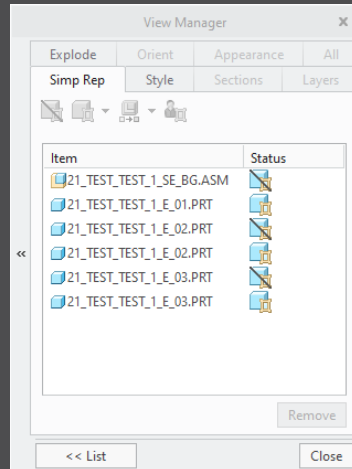
- Consider default action (include/exclude) of simplified representation when valid components for export are collected
- <https://redmine.buw-soft.de/issues/11020>

## Why

- Allow usage of master representation for example

## How

- All valid items in simprep are collected automatically by SMARTElectrode



# Improvement

## What

- Updated advanced interface for Zimmer&Kreim Alphamoduli
- <https://redmine.buw-soft.de/issues/7864>

## How

- Processor files include upated list of orbits
- Additional supported XML tags in export
  - MeasDim
  - MeasProgType
  - MeasSizeX
  - MeasSizeY
  - MeasSizeZ
  - MeasZPointX
  - MeasZPointY
  - MeasZPointZ
  - EdgeDistance
  - SafetyDistance
- Please contact us for detailed information and setup!



ZK\_Deutsch.zip



ZK\_English.zip



# Improvement

## What

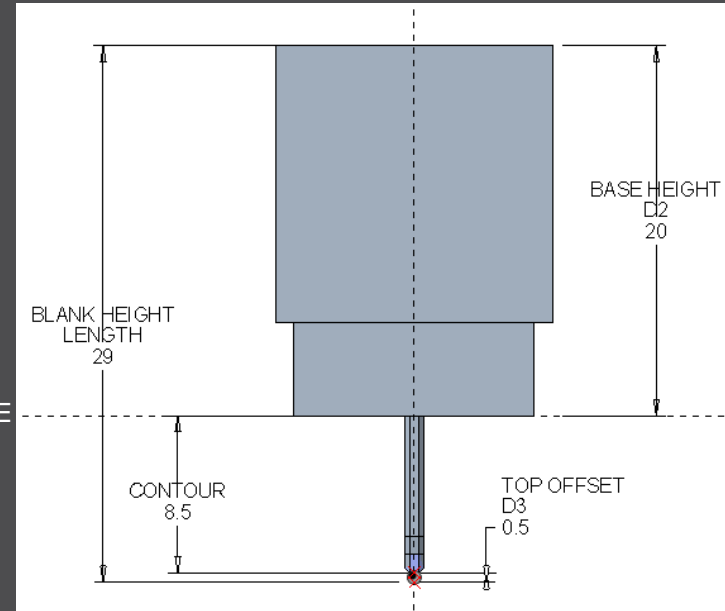
- Round contour height to even value in Base UI
- <https://redmine.buw-soft.de/issues/5550>

## Why

- For users more interested in an even contour height than in a rounded position

## How

- Mandatory settings:
  - INCREMENT\_POS = 0
  - INCREMENT\_SIZE > 0
- Height of contour will be rounded to a value, where
  - D1 corresponds at least to value in data file
  - D3 corresponds exactly to value in data file
  - Contour height is rounded to INCREMENT\_SIZE
- Should be combined with a free value
  - blank length (LENGTH = -1) or
  - base height (D2 = -1)



# Improvement

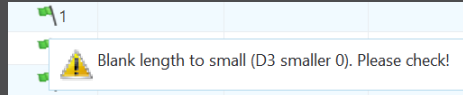
## What

- Show warning in Burnsheat UI if blank length is too small
- <https://redmine.buw-soft.de/issues/8494>

## Why

- Base is **NOT** changed by SMARTElectrode after creation
  - Position of base is retained
  - Size of base is retained
- User is in control whether the base must be revised
- Open Base UI to update values interactively
- Suppress base before Base UI is opened  
→ this starts automatic check and adjustment again

## How



A_BASE	15.000		D1	1.000
B_BASE	15.000		D2	34.000
LENGTH	37.155		D3	-0.700
CHAMFER	<input type="checkbox"/>	Blank length to small (D3 smaller 0). Please check!		
FRAME	<input checked="" type="checkbox"/>	3.200		1.000

# Improvement

## What

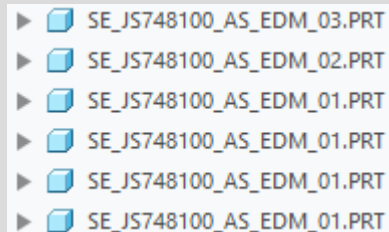
- Burnsheet UI / Output UI: electrodes are ordered by feature number per default
- <https://redmine.buw-soft.de/issues/10409>

## Why

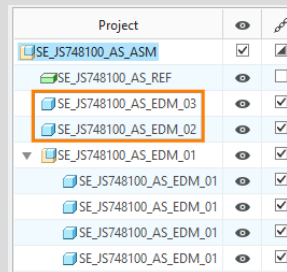
- A distinctive electrode sequence is necessary for the output occasionally

## How

- Change order of electrodes in modeltree using drag and drop
- The first appearance of an electrode determines the order for the output



Order in modeltree



Order in Burnsheet UI

# Improvement

## What









- Show notifications for Burnsheat UI node on mouse-over
- <https://redmine.buw-soft.de/issues/10421>


## Why

- As a quick information for the user

## How

- Move mouse cursor over node if notifications available
- Click on notification to open detailed description in separate window and filter display

Project			Status
 38177-20_SE_BG	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
 38177-20_SE_REF	<input type="checkbox"/>	<input type="checkbox"/>	
 38177-20-061	<input type="checkbox"/>	<input type="checkbox"/>	 1

 Base not centered on solid.

# Improvement

## What

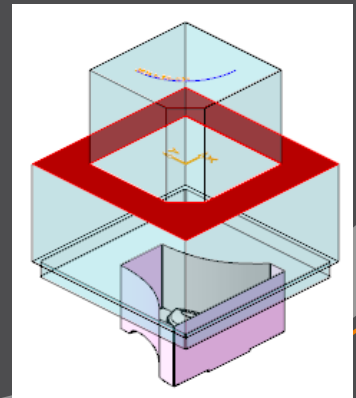
- Use blank dimensions A\_BASE and B\_BASE for coverage check
- <https://redmine.buw-soft.de/issues/10622>

## Why

- CONTACT\_AREA\_MAX\_COVERAGE defines valid percentage of coverage
- SMARTElectrode used area of 'BASE\_TOP' leading to too small areas if clamp is part of electrode

## How

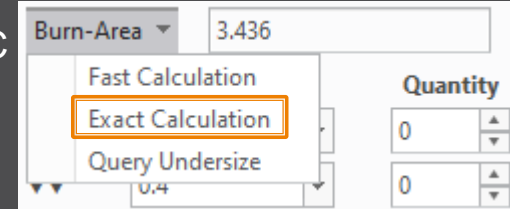
- SMARTElectrode evaluates blank area by base dimensions if available
- 'BASE\_TOP' surface may be used for imported electrodes
- More information about check of calculated burnarea projection:  
<https://redmine.buw-soft.de/issues/10622>



# Improvement

## What

- Allow cancelation of exact burnarea analysis on ESC
- <https://redmine.buw-soft.de/issues/10504>

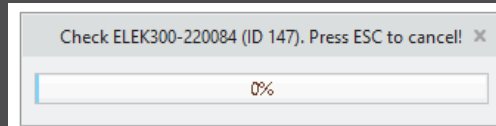


## Why

- Some surface types lead to lengthy analyzes

## How

- Press **ESC** during analysis in Base or Check UI to cancel calculation



Options				
<input type="checkbox"/>	Interference	<input checked="" type="checkbox"/>	Touching Faces	
<input type="checkbox"/>	Assign Colors	<input type="checkbox"/>	Consider Undersize	
<input type="checkbox"/>	Calculate Undersize	<input checked="" type="checkbox"/>	Effective Contact Area	
Results				
?	Electrode	Touching Surface	Projection Area	Interference
<b>i</b>	SE_JS748100_AS_EDM_01		3.18557	✓
<b>i</b>	SE_JS748100_AS_EDM_01		3.18557	✓
<b>i</b>	SE_JS748100_AS_EDM_01		3.18557	✓
<b>i</b>	SE_JS748100_AS_EDM_01		3.18557	✓
<b>i</b>	SE_JS748100_AS_EDM_02	Cancelled	0	✓
	All	36	12.7423	0

# Improvement

## What

- Allow adjustment of assembly accuracy if inconsistent values are found
- <https://redmine.buw-soft.de/issues/10414>

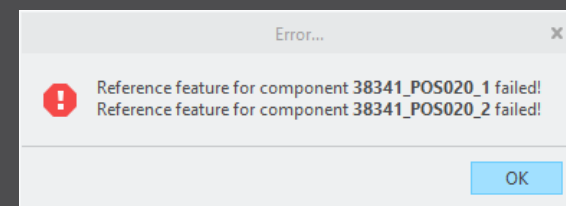
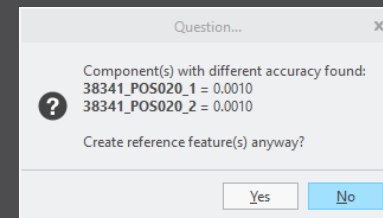
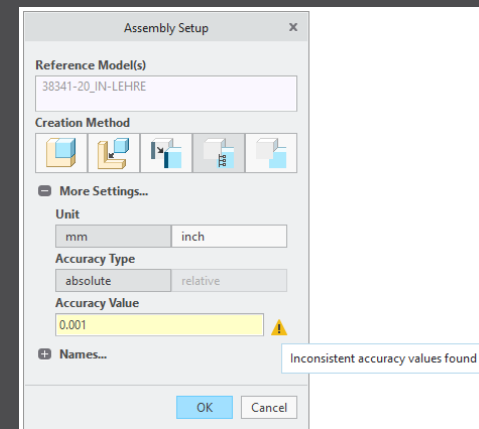
## Why

- Same accuracy and type should be used in complete assembly
- Inconsistent accuracies may lead to errors

## How

- Warning will be displayed in assembly UI
- Input will be preset to smallest accuracy found
- Additional warning will be shown before creation of reference model
- Errors will be displayed afterwards

- **NOTE**  
SMARTElectrode does not change accuracy of the original models! This is because SE can't evaluate if change of accuracy is allowed.



# Improvement

## What

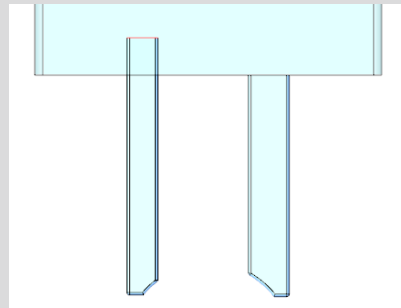
- Use Flexible Modeling 'Substitute' in 'ATTACH' instead of replace
- <https://redmine.buw-soft.de/issues/8703>

## Why

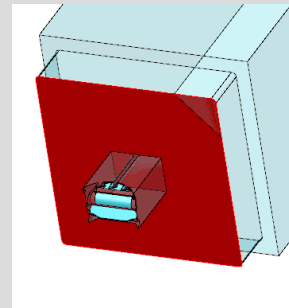
- Normal offset-replace (modeling tab) does sometimes **NOT** unite electrode contour and electrode base, no matter whether FREE\_FACE or solid surface is selected as reference.

## How

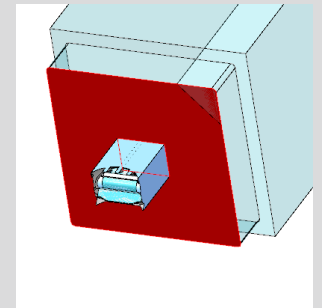
- SMARTElectrode automatically uses feature substitute in group 'ATTACH' instead of offset/replace if license for Flexible Modeling Extension is available



Result for expand



Result for replace



Result for FMX substitute



# Improvement

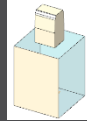
## What

- Handle existing base for commands 'Pattern' and 'Mirror' in design mode
- <https://redmine.buw-soft.de/issues/8495>



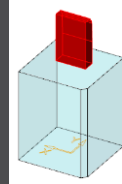
## Why

- Mirror of complete electrode including base may remove chamfers

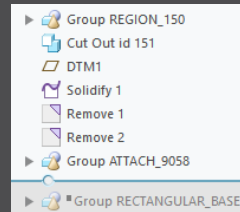


## How

- Command 'Pattern' automatically collects all solid surfaces or surfaces below FREE\_FACE



- Command 'Mirror' automatically activates insert mode and adds mirror feature in front of base



# Improvement

## What

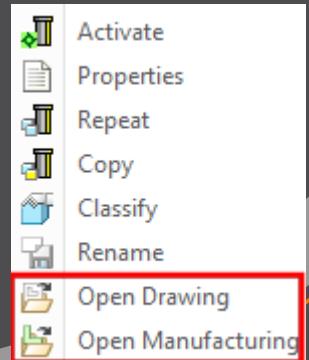
- New commands 'Open Drawing' and 'Open Manufacturing' added to context menu in modeltree and object window
- <https://redmine.buw-soft.de/issues/10411>

## Why

- Easier navigation in electrode assembly

## How

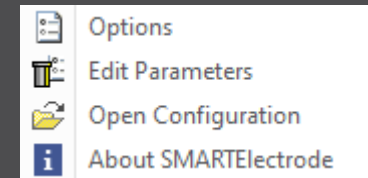
- Commands are only accessible when assembly is active
- Commands are accessible for selected electrode in modeltree and graphics window
- Drawing and manufacturing will be opened in a new window
- If electrode is part of assembly drawing then correct sheet will be shown



# Improvement

## What

- Introduced new command 'Open Configuration'
- <https://redmine.buw-soft.de/issues/10739>

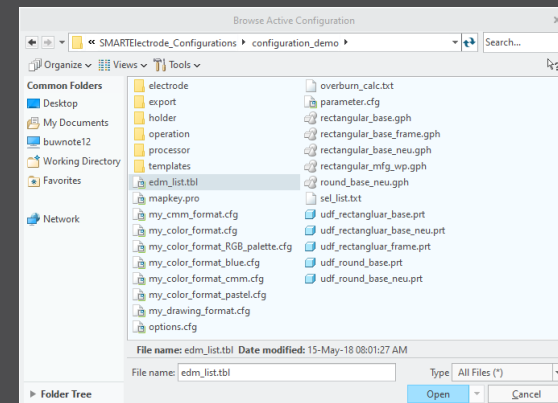


## Why

- Easier access to active configuration

## How

- A file browser opens in active configuration folder
- Actions for selected files / file types
  - parameter.cfg  
Dialog for modification will be opened
  - options.cfg  
Dialog for modification will be opened
  - \*.prt, \*.asm, \*.drw  
Creo file will be opened in a new window
  - any other file  
File will be opened in info window



# Improvement

## What

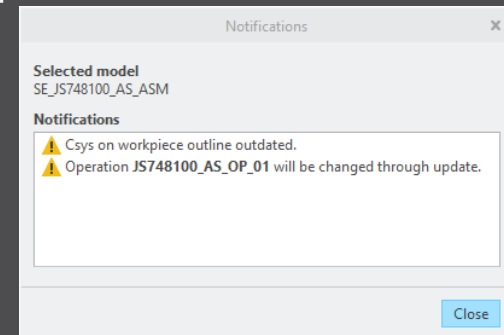
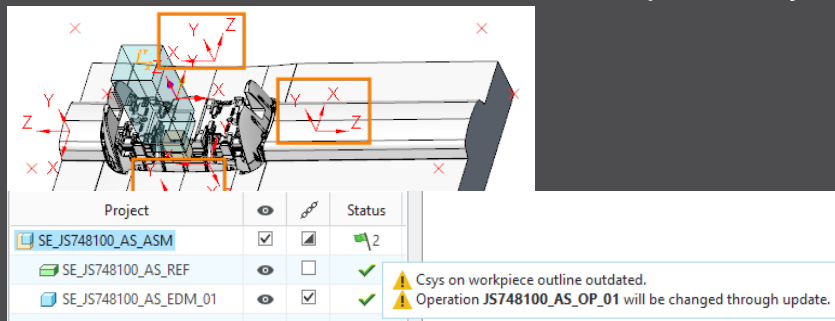
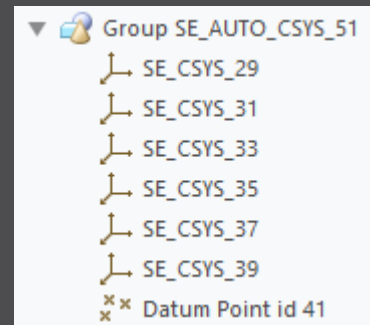
- Disable automatic update of csys on workpiece sides
- <https://redmine.buw-soft.de/issues/10511>

## Why

- User should be in control when dependent operations and electrodes are updated

## How

- The 8 datum points represent the corners of the workpiece outline and can be used for drawing dimensions. These will be updated automatically!
- A notification will be shown in Burnsheat UI for outdated csys
- Double-click in notification details to update csys, operation and electrodes



# Improvement

## What

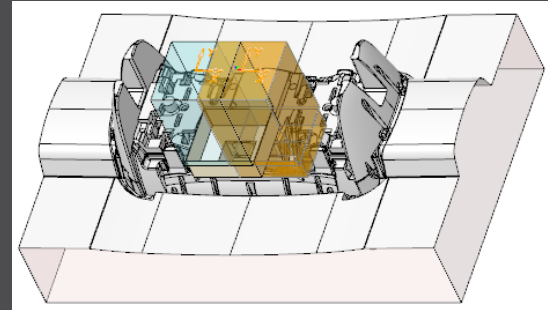
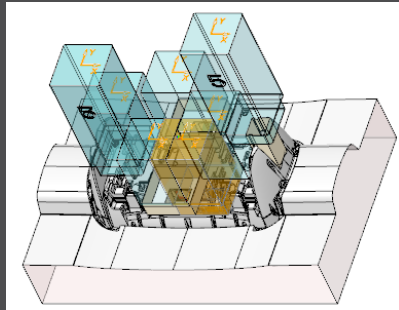
- Repeat UI: only show selected electrodes and preview components when defining new position.
- <https://redmine.buw-soft.de/issues/10399>

## Why

- Improve overview for users if there are many electrodes assembled

## How

- Pre-select electrodes before Assemble Again UI is opened
- Or select in UI (don't forget to confirm selection)
- All electrodes are displayed again on OK or when user starts selection again



# Improvement

## What

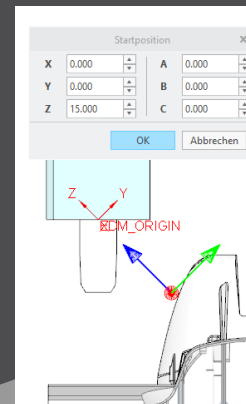
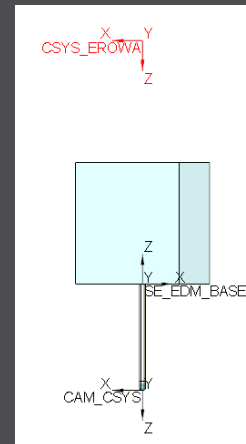
- Use default csys from base to calculate angles
- <https://redmine.buw-soft.de/issues/10822>

## Why

- In some cases, it may be necessary to rotate csys with EDM\_ORIGIN\_NAME
- Angles in burnsheet would appear with wrong values
- Use csys showing orientation of blank for calculation of angles
- Always uses 'EDM\_ORIGIN' for electrodes designed in SMARTElectrode 7.0
- Always uses csys 'SE\_EDM\_BASE' or csys defined in option 'EDM\_ORIGIN\_NAME' for electrodes designed in SMARTElectrode 8.0 – 12.0

## How

- This allows adjustment of csys 'EDM\_ORIGIN\_NAME' for easier definition of start position



# Improvement

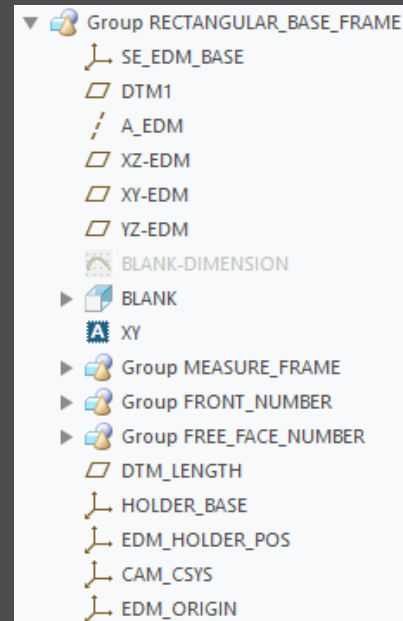
## What

- Allow subgroups in definition of user-defined features for electrode base.
- <https://redmine.buw-soft.de/issues/10389>

## Why

- Sometimes features are nested in groups (MEASURE\_FRAME, FRONT\_NUMBER, FREE\_FACE\_NUMBER) in Base UDF
- These features are currently not considered as part of the base leading to wrong size calculation
- SMARTElectrode now checks all features in base group when checking if a feature/surface is part of base or not.

## How



# Improvement

## What

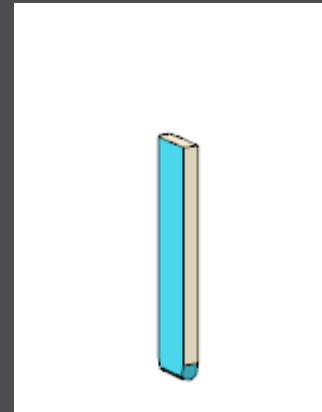
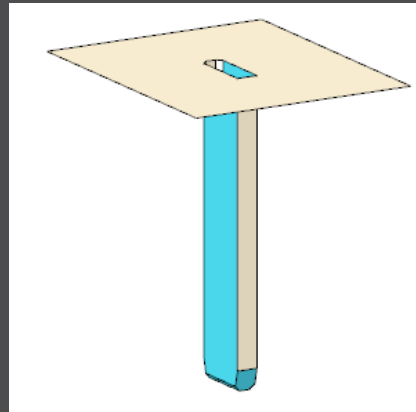
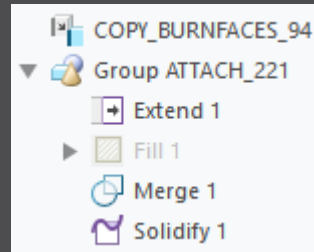
- Check if feature merge in group 'Attach' creates a closed quilt if performed on surface feature or quilt

## Why

- Sometimes merge sets wrong side for 2<sup>nd</sup> quilt to keep
- Leads to an opened quilt which can't be solidified

## How

- SMARTElectrode checks if merge leads to a closed quilt
- SMARTElectrode changes side to keep in merge feature if necessary





# Fixed Error

## What

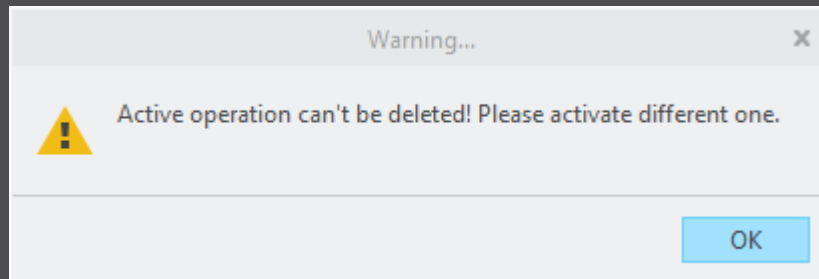
- Prevent deletion of active operation
- <https://redmine.buw-soft.de/issues/10733>

## Why

- SMARTElectrode ribbon is disabled after deletion of active operation
- Most of the commands are still accessible but won't work anymore

## Resolution

- SMARTElectrode checks features whether they belong to active operation before deletion
- Deletion will be canceled with message window if feature of active operation selected



# Fixed Error

## What

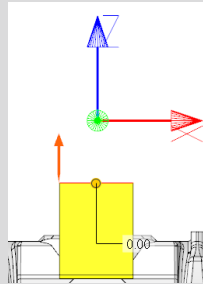
- Electrode base with user-defined FREE\_FACE is suppressed to make design changes
- Base is reset to default position when resumed in Base UI

## Why

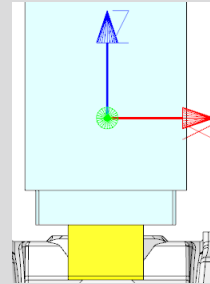
- Information about user-defined FREE\_FACE gets lost
- SMARTElectrode carries out default process to update base

## Resolution

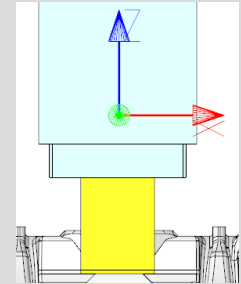
- SMARTElectrode checks reference of datum FREE\_FACE for changes
- Recognition works for all models with user-defined FREE\_FACE



Selected user-defined  
FREE\_FACE



Error on resume in Base  
UI



Fix: position is retained

# Fixed Error

## What

- Workpiece dimensions on drawing sometimes incomplete
- <https://redmine.buw-soft.de/issues/10990>

## Why

- Orientations are sometimes not correctly set after drawing creation from template
- For these drawing views sorting of outline points might fail

## How

- Supported symbolic names for drawing orientations
  - 2d view names: SE\_TOP (SE\_DEFAULT), SE\_BOTTOM, SE\_FRONT, SE\_BACK, SE\_LEFT, SE\_RIGHT
  - 3d view names: SE\_DEFAULT\_ISO, SE\_ASM\_DEFAULT, SE\_ASM\_ISO
- Please refer to 'Getting started' document in installation for more information

# Fixed Error

## What

- Fixed wrong creation of ordinate dimensions on drawings
- <https://redmine.buw-soft.de/issues/10685>

## Why

- Multiple redundant baselines without merging dimensions have been created

## How

- This issue is fixed

# Fixed Error

## What

- Reset surface appearance to default before touching faces are colored
- <https://redmine.buw-soft.de/issues/10405>

## Why

- Reset of surface colors is not applicable in all cases

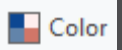
## How

- COLOR\_EDM\_TOUCHING\_FACES has to be available in my\_color\_format.cfg
- A warning will be displayed if 'COLOR\_EDM\_TOUCHING\_FACES' is not applicable
- A distinction is made between the following cases:
  - Check UI: coloring can be done when all electrode positions are selected for touching surface analysis
  - Check UI: a warning will be displayed and coloring will be canceled if NOT all electrode positions are selected for touching surface analysis
  - Base UI: coloring can be done in detailed calculation of contact area if active electrode is used only once in assembly
  - Base UI: a warning will be displayed and coloring will be canceled if active electrode is used multiple times in assembly

# Fixed Error

What

- Fixed wrong result for selection by color
- <https://redmine.buw-soft.de/issues/10857>

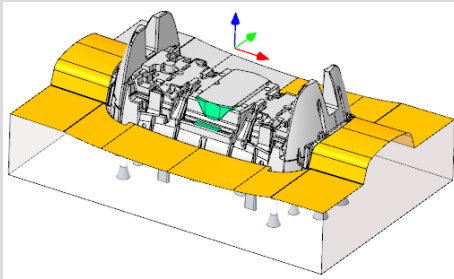


Why

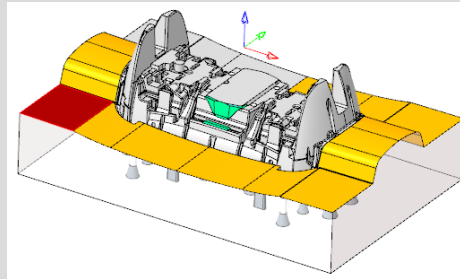
- Sometimes too many surfaces have been selected

Resolution

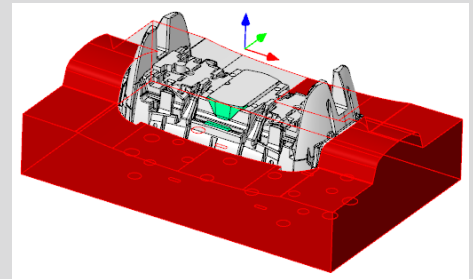
- This issue is fixed



Original



Selected reference



Wrong result

# Fixed Error

## What

- Hide invalid commands in modeltree
- <https://redmine.buw-soft.de/issues/10985>

## Why

- Some commands are invalid in modeltree context menu if selected feature is not inside active component

## How

- This issue is fixed

# Fixed Error

## What

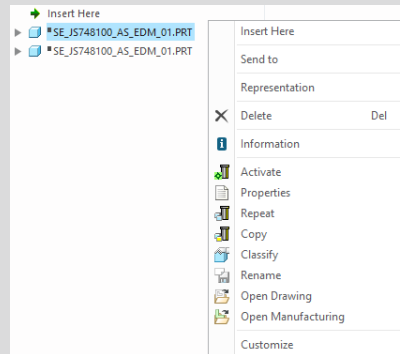
- Commands can be selected from context menu for suppressed electrodes
- Applies to Creo Parametric 4.0 and 5.0
- <https://redmine.buw-soft.de/issues/10518>

## Why

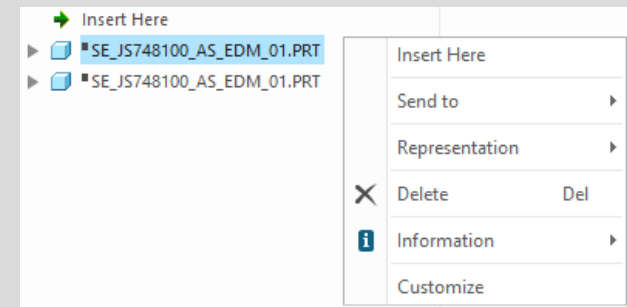
- Component selections are not automatically skipped in above Creo versions

## Resolution

- Issue is fixed
- Commands are removed for suppressed features



Before



After



# Fixed Error

## What

- Crash in Base UI if no workpiece model found
- <https://redmine.buw-soft.de/issues/10488>

## Why

- It's not possible to read workpiece information if no component in assembly is marked as workpiece
- Parameter `SE_CORE_MODEL=1` not available

## Resolution

- Issue is fixed
- Always check if an active workpiece can be found and cancel functionality if necessary

# Fixed Error

## What

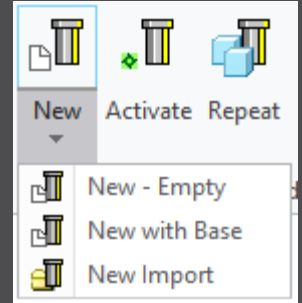
- Command 'New with Base' does not work anymore
- <https://redmine.buw-soft.de/issues/10407>

## Why

- SMARTElectrode checks selected template for completeness before its used
- This includes check for parameters
  - SE\_EDM\_SUPPLIER
  - SE\_EDM\_TYPE
- Command is canceled if any expected parameter is missing

## Resolution

- Issued is fixed
- SMARTElectrode extracts supplier and type from selected data file:  
configuration/electrode/<supplier>/<type>.dat



# Fixed Error

## What

- Help does not open if path contains spaces or special characters.

## Resolution

- Issue is fixed.



# SMARTElectrode 12.0.4.0

*What's New*



# Improvement

## What

- Added threshold to show a warning if contact area covers more than defined percentage of blank area  
[\[https://redmine.buw-soft.de/issues/10357\]](https://redmine.buw-soft.de/issues/10357)

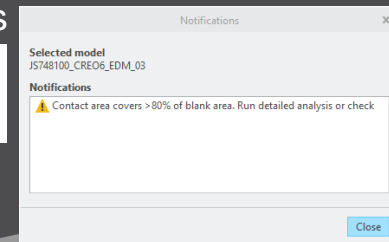
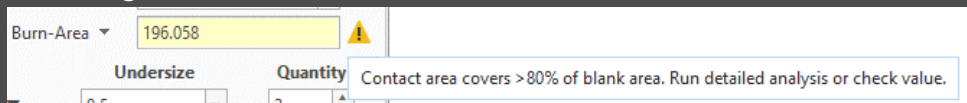
## Who needs it

- Users who output effective contact area for EDM programming

## Details/Usage

- SE performs a fast contact area calculation when Base UI is opened and contact area is 0
- Slower more exact calculation can be started by user in UI
- Check UI always performs the exact calculation
- Option “CONTACT\_AREA\_MAX\_COVERAGE” defines valid percentage
- Warnings are shown in Base UI and Burnsheets notifications

CONTACT_AREA_MAX_COVERAGE	80	Maximum valid coverage of the blank area with contact areas in percent.
---------------------------	----	-------------------------------------------------------------------------



# Fixed error

## Description

- Edited base values are reset on next change  
[\[https://redmine.buw-soft.de/issues/10218\]](https://redmine.buw-soft.de/issues/10218)

A_BASE	17.500	▲▼	D1	5.128	▲▼
B_BASE	15.000	▲▼	D2	40.000	▲▼
LENGTH	48.000	▲▼	D3	0.022	▲▼

A_BASE	15.000	▲▼	D1	5.128	▲▼
B_BASE	15.000	▲▼	D2	35.000	▲▼
LENGTH	43.000	▲▼	D3	0.022	▲▼

## Cause

- Edited values are not correctly saved to template data

## Solution

- Problem is fixed

# Fixed error

## Description

- Some electrodes are not processed during output [<https://redmine.buw-soft.de/issues/10191>]

## Cause

- SE validates every electrode during export and skips suppressed, disabled or incomplete components.
- Check for completeness includes a check of electrode base group
- Check for completeness fails on imported or legacy electrodes as base is not created by UDF.

## Solution

- SE now looks for existence of mandatory EDM coordinate system
- Legacy electrode use “EDM\_ORIGIN” or “EDM\_ORIGIN\_TOP” depending on option value “USE\_POS\_CSYS\_TOP”
- Electrodes beginning with version 8.0 use csys name defined in option “EDM\_ORIGIN\_NAME”



# SMARTElectrode 12.0.3.1

*What's New*





# Fix: Export options not working

## What

- Export options SE\_DECIMAL\_SEPARATOR and SE\_EXPORT\_GAP

## Description

- This option settings are ignored during output

## Solution

- Issues are fixed
- Use SE\_DECIMAL\_SEPARATOR to set . or , as decimal separator in output.
- Use SE\_EXPORT\_GAP to convert undersize values for output
  - 0: uses overburn value without conversion (1:1)
  - 1: duplicates overburn value (2:1)
  - 2: halves overburn value (1:2)



# SMARTElectrode 12.0.3.0

*What's New*



# Enhancement: Separate Templates

## What

- Allow separate templates for all model types in SMARTElectrode. These templates will be used instead of default templates in Creo Parametric.

## Who needs it

- Use separate templates to preset additional parameters and layers or to realize MBD-settings

## Details/Usage

Available templates:

- Electrode assembly: `configuration\model\se_assembly.`
- Reference assembly: `configuration\model\se_reference.asm`
- Reference part: `configuration\model\se_reference.prt`
- Electrode: `configuration\model\se_electrode.prt`
- Analysis model: `configuration\model\se_analysis.prt`
- Manufacturing assembly: `configuration\model\se_mfg.asm`
- Workpiece: `configuration\model\se_mfg_workpiece.prt`

# Improvement: Blank Selection

## What

- Improved automatic selection of blank if different lengths are available for same section.

## Who needs it

- Useful if blanks with fixed size and length are prepared in data files

## Details/Usage

- Electrode blanks are defined in configuration\electrode\- Add several lengths for a blank size. For example:
  - 15x15x50
  - 15x15x75
  - 15x15x100
- SMARTElectrode tries to select best fitting template when base is created

# Save Export to Workspace

## What

- Created output files can be saved to workspace automatically now

## Who needs it

- Necessary if all manufacturing information is passed via PDMLink

## Details/Usage

- To activate this feature open export configuration file `configuration\export\<<format name>\export.cfg`
- Add option “WM\_COPY\_TO\_WORKSPACE YES” to add document as primary content
- Add option “WM\_ADD\_AS\_SECONDARY\_CONTENT YES” if document should be attached to electrode assembly as secondary content.



# SMARTElectrode 12.0.2.0

*What's New*



# Enhancement: UI Start Position

## What

- Interactively define the start position of electrode
- Command is available if electrode component is activated

## Who needs it

- Users who want to optimize start positions for EDM

## Details/Usage

- Defined start position overrides default start position and csys feature STARTPOS in electrode model

- Learn more:
- <https://www.buw-soft.de/en/2020/02/21/new-user-interface-start-position/>
- <https://youtu.be/254n3AtqQDA>

Axis	Value
X	0.000
Y	0.000
Z	0.000
A	0.000
B	0.000
C	0.000

# Enhancement: Selection by Toolpath

## What

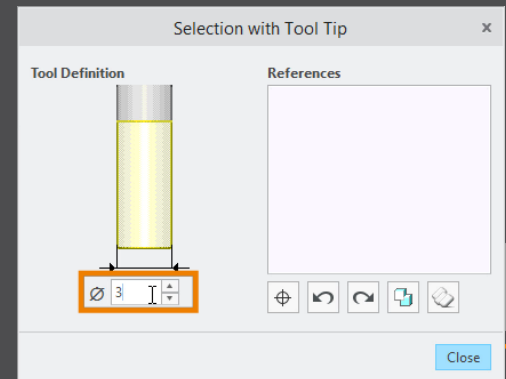
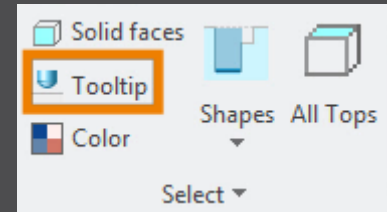
- New tool to interactively check manufacturability and select surfaces

## Who needs it

- Customers who want to select surfaces with a brush styled tool
- Helps to capture even small patches within path

## Details/Usage

- Learn more:
- <https://www.buw-soft.de/en/2020/02/21/new-selection-tools-for-electrodes/>
- <https://youtu.be/OctjK6Usgo8>





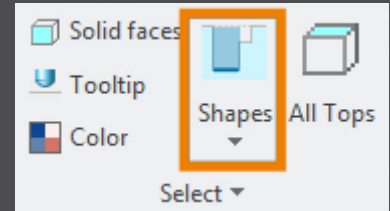
# Improvement: Shape-based Selection

## What

- Integrated Shape-based selection filters from Flexible Modeling Extension in electrode design ribbon

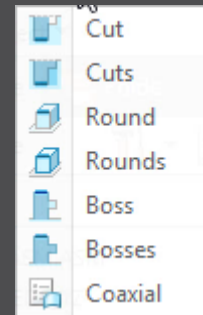
## Who needs it

- Customers who want to use FMX features



## Details/Usage

- Learn more:
- <https://www.buw-soft.de/en/2020/02/21/new-selection-tools-for-electrodes/>
- <https://youtu.be/OctjK6Usgo8>



# Dynamic Editing of Cutout

## What

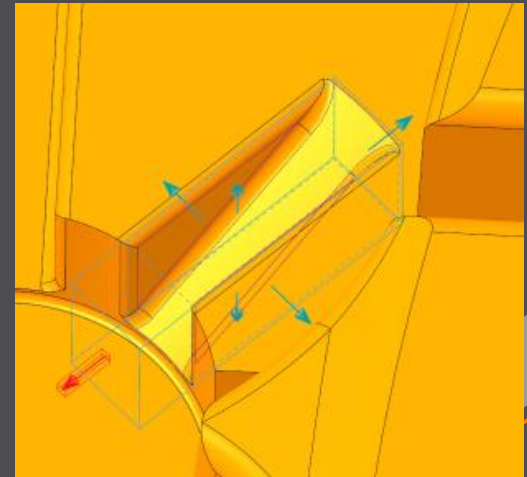
- Size and position can be changed dynamically after selecting the geometry

## Who needs it

- Customers who want to interactively change cutout

## Details/Usage

- Learn more:
- <https://www.buw-soft.de/en/2020/02/21/dynamic-editing-of-cutout-features/>
- <https://youtu.be/hg2yxot2-bo>



# Workpiece dimensions on drawing

## What

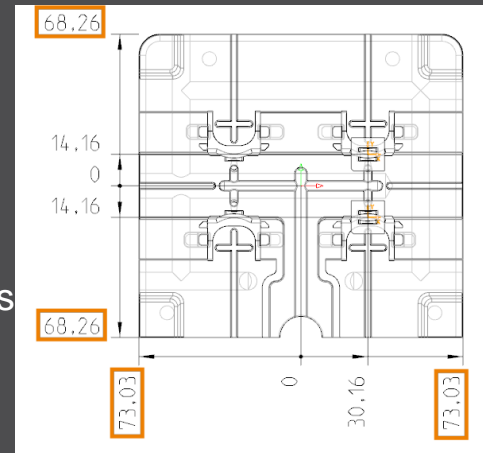
- Add workpiece dimensions to any drawing sheet

## Who needs it

- Customers who want to create workpiece dimensions on electrode documentation

## Details/Usage

- Update of my\_drawing\_format.cfg necessary to use this feature
- Learn more:
- <https://www.buw-soft.de/en/2020/02/21/add-workiece-dimensions-automatically/>
- [https://youtu.be/iH1Ou\\_HutEY](https://youtu.be/iH1Ou_HutEY)



# Improvement: Import 3rd party EDM

## What

- New import workflow is available for Creo part files or neutral formats STEP/IGES
- SMARTElectrode adds datums to imported electrode to enable most of the functionality

## Who needs it

- Customers who need to work with existing electrodes not designed in SMARTElectrode

## Details/Usage

- Due to the variety of design approaches, there may be restrictions in use
- Learn more:
- <https://www.buw-soft.de/en/2020/02/21/improved-workflow-for-import-of-third-party-electrodes/>
- <https://youtu.be/vq-TaOuVh8>



# SMARTElectrode 12.0.1.3

*What's New*



# Enhancement: Redefine Operation

## What

- Electrode position data is automatically updated if zero point is redefined interactively

## Who needs it

- Customers who prefer to incorporate changes without opening the UI

## Details/Usage

- Learn more:
- <https://www.buw-soft.de/en/2019/11/18/automatic-update-when-operation-zero-is-changed/>
- <https://youtu.be/1M9pefJJyWA>

# Notifications in Burnsheat

## What

- Introduced additional notifications in Burnsheat UI

## Who needs it

- Users who want to evaluate electrode status

## Details/Usage

- Learn more:
- <https://www.buw-soft.de/en/2019/11/18/notifications-in-burnsheet/>
- <https://youtu.be/7MqPr5hVnEI>

# Improvement: Multiprog Output

## What

- Added output of electrode type

## Who needs it

- Customers using output for Ingersoll Multiprog

## Details/Usage

- Learn more:
- <https://www.buw-soft.de/en/2019/11/18/data-output-improvements-for-ingersoll/>



# New Templates for Creo NC

## What

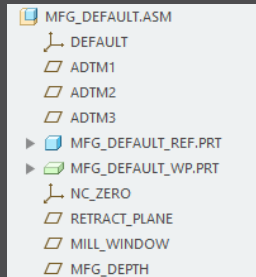
- Empty template MFG\_DEFAULT
- Template for 3-axis milling MFG\_3AXIS
- Template for ModuleWorks MFG\_MODULEWORKS

## Who needs it

- Customers who do NC programming in Creo

## Details/Usage

- Learn more:
- <https://www.buw-soft.de/en/2019/11/18/new-manufacturing-templates-for-use-with-creo-nc/>





# SMARTElectrode 12.0.0.0

*What's New*



# Enhancement: UI Post-Processor

## What

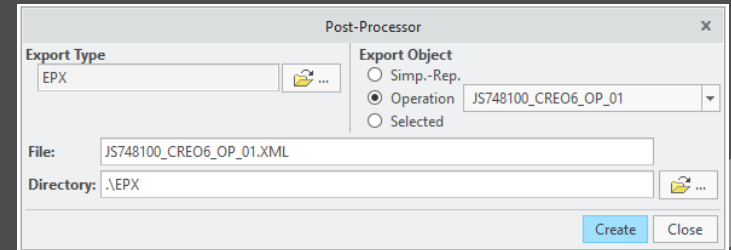
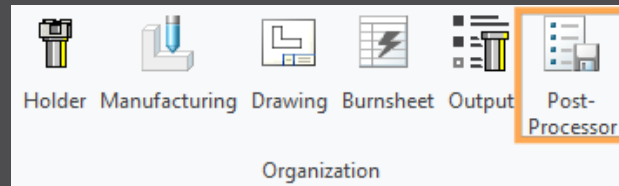
- Added a new user interface to output data for EDM
- All custom formats are still accessible in output UI
- Several controls/formats like AC Form, AgieVision, Ingersoll Multiprog, Makino EPX, Exeron Exoprog, Zimmer & Kreim, ... can be offered on request

## Who needs it

- Customers who want to simplify and speed up EDM programming

## Details/Usage

- UI is accessible in ribbon UI
- Select control/format, object for export and start with 'Create'



# Enhancement: UI Cutout

## What

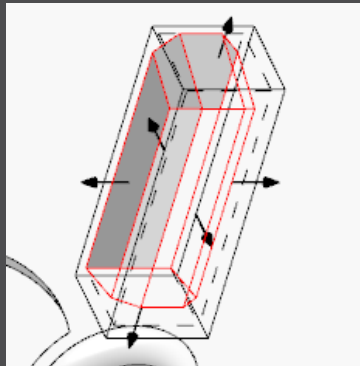
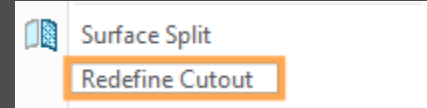
- Added a new user interface define or redefine the solid for cutout
- Position, size and rotation can be adjusted in

## Who needs it

- Customers who need to set size/position of solid

## Details/Usage

- Start definition via ribbon or context menu
- Start redefinition via context menu in modeltree
- UI replaces 'user-defined cutout'



New Cutout

C	0.000	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
X	-15.800	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
Y	3.375	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
Z	-12.028	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
Offset	0.100	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
Length	1.200	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
Width	3.450	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
Depth	1.100	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

Dynamic Drag

OK Cancel

# Enhancement: Redefine Assembly

## What

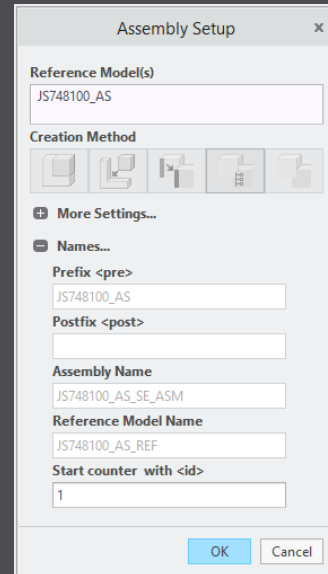
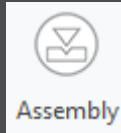
- Definition of electrode assembly can be changed

## Who needs it

- Customers who need to add or remove models from definition of reference parts

## Details/Usage

- Start redefinition via ribbon
- More functionality like renaming of assembly may be added later

A screenshot of a software dialog box titled "Assembly Setup". The dialog has a title bar with a close button (x). It contains several sections: "Reference Model(s)" with a text field containing "JS748100\_AS"; "Creation Method" with five icons representing different assembly methods; "More Settings..." with a plus sign; "Names..." with a minus sign, containing fields for "Prefix <pre>" (JS748100\_AS), "Postfix <post>" (empty), "Assembly Name" (JS748100\_AS\_SE\_ASM), "Reference Model Name" (JS748100\_AS\_REF), and "Start counter with <id>" (1). At the bottom right are "OK" and "Cancel" buttons.

# Improvement: Burn-Area in Base UI

## What

- Added effective contact area and workpiece material to Base UI

## Who needs it

- Customers who need calculated and output contact area
- Customers who get undersize/burngap from database

## Details/Usage

- SMARTElectrode performs a fast calculation if no burn-face value available
- Exact calculation can be started using the Burn-Area menu
- Calculation of undersize values can also be started directly from this UI
- Definition of values in overburn\_calc.txt necessary to use 'Query Undersize'

Workpiece	ST37
Material	Graphite
Quality	-
Burn-Area	3.93559
Fast Calculation	Quantity
Exact Calculation	1
Query Undersize	1

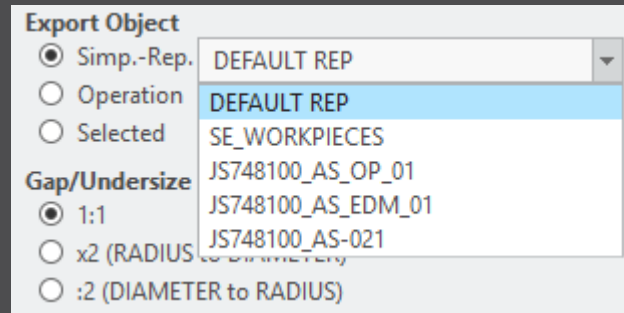
# Improvement: Output Files

## What

- Exports are named like selected operation by default

## Advantage

- This allows export of operations one after another without changing the name interactively



# Improvement: Simpreps in Output UI

## What

- Allow output by simplified representation

## Who needs it

- Customers who want to output a subset of electrodes

## Details/Usage

- Use simplified representations for repair or new electrodes necessary through design change

