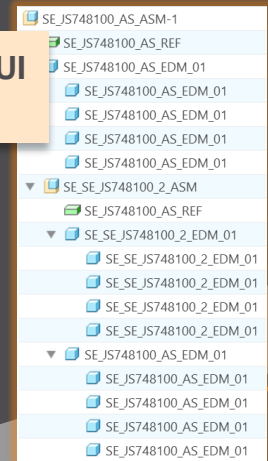




SMARTElectrode 13.0.5.0

What's New





Enhancement

What

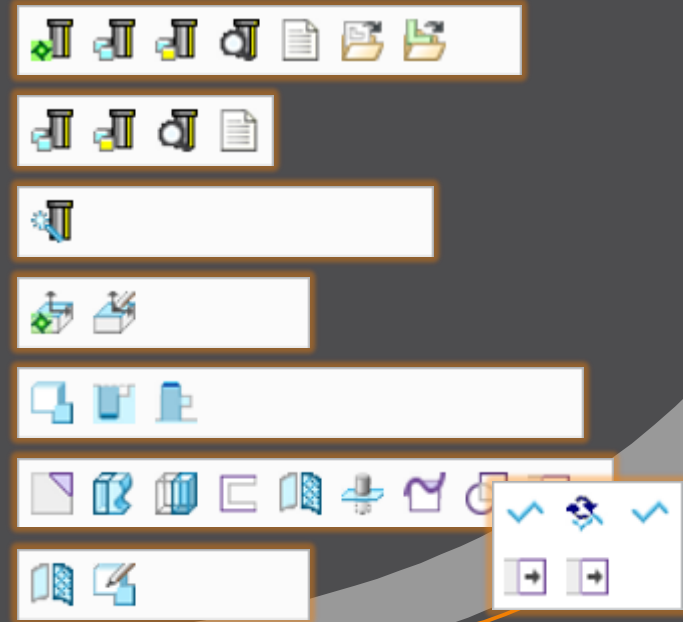
- Introduce SMARTElectrode commands in mini toolbar
- <https://redmine.buw-soft.de/issues/13293>

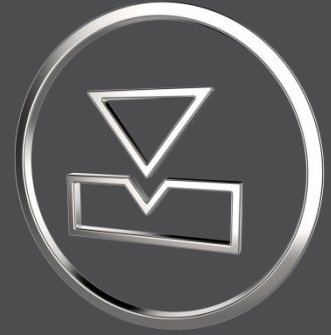
Why

- 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 13.0.4.0

What's New



Enhancement

What

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



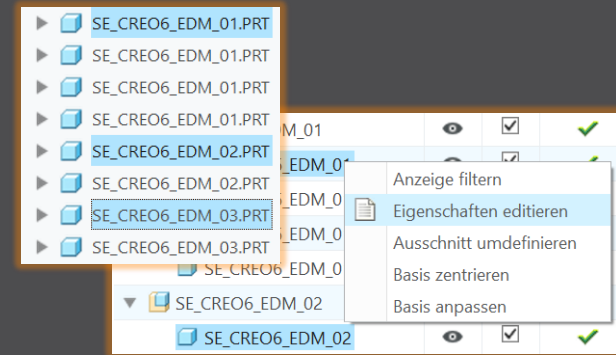
Eigenschaften

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

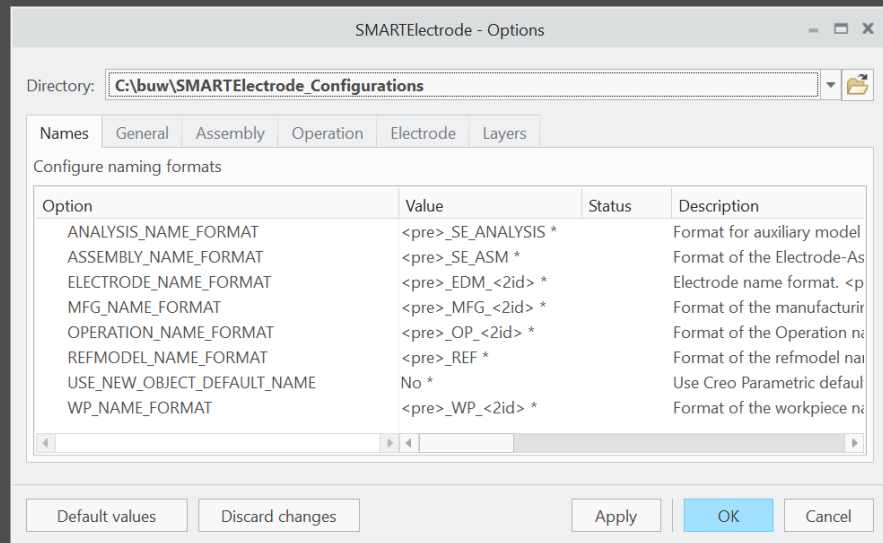
- Overhauled Options UI
- <https://redmine.buw-soft.de/issues/12059>

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

SIZE

A_BASE	<input type="text" value="15.000"/>	D1	<input type="text" value="5.150"/>
B_BASE	<input type="text" value="15.000"/>	D2	<input type="text" value="42.000"/>
LENGTH	<input type="text" value="50.000"/>	D3	<input type="text" value="0.000"/>

Blank

LOCKED 

TYPE

SIZE

A_BASE	<input type="text" value="15.000"/>	D1	<input type="text" value="5.150"/>
B_BASE	<input type="text" value="15.000"/>	D2	<input type="text" value="20.000"/>
LENGTH	<input type="text" value="28.000"/>	D3	<input type="text" value="0.000"/>

Enhancement

What

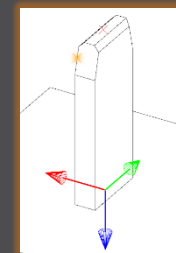
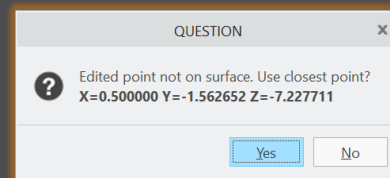
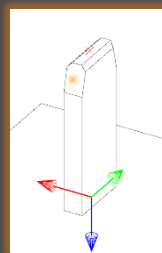
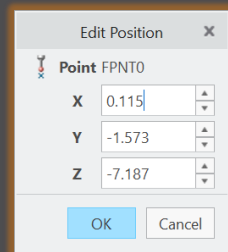
- Edit CMM points in user interface
- <https://redmine.buw-soft.de/issues/12392>

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

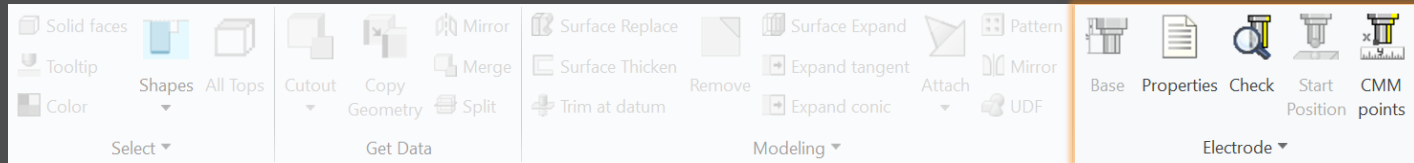
What

- 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

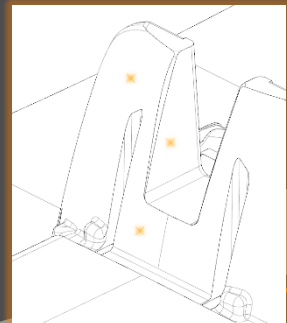


Workflow and functionality is the same as for electrodes

- 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: ID, X, Y, Z, I, J, K. The data is as follows:

ID	X	Y	Z	I	J	K
1	26.12	5.98	7.57	0.01	0.26	0.95
2	29.11	2.26	83.16	0.97	0.09	0.74
3	26.32	2.81	5.24	0.90	1.00	0.05



Improvement

What

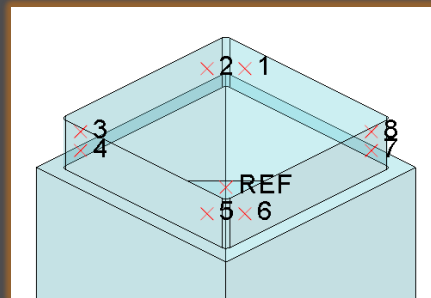
- Measuring points can be added to template.
- <https://redmine.buw-soft.de/issues/11335>

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						
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

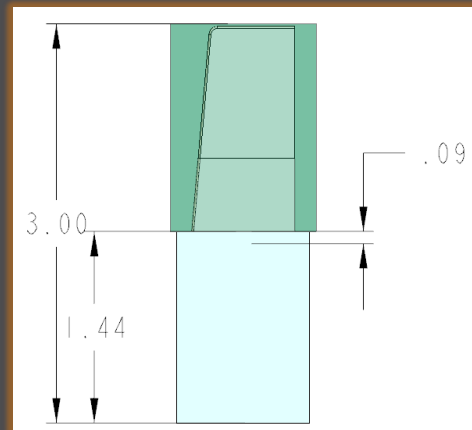
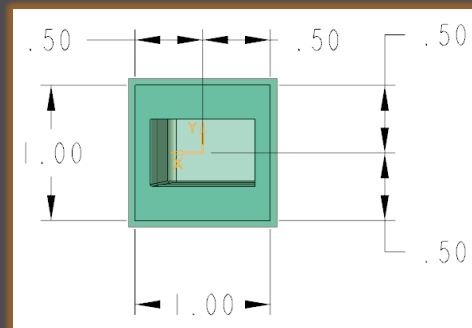
- Automatic creation of dimensions on manufacturing drawing.
- <https://redmine.buw-soft.de/issues/12475>

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 1st column.
- Refer to <https://www.buw-soft.de/en/news/add-workiece-dimensions-automatically/> for more information.



Improvement

What

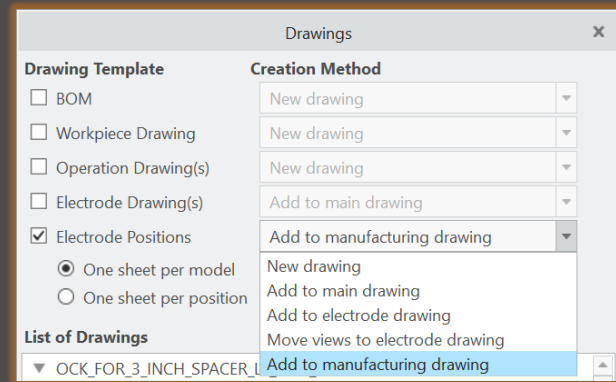
- Drawing UI: new option to add positioning sheet to NC drawing sheet.
<https://redmine.buw-soft.de/issues/11270>

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.

Check Electrode(s) [X]

References
Select Electrode(s)
1 models selected

Options

☒ Interference  ☐ Touching Faces
☐ Assign Colors ☐ Consider Undersize
☐ Calculate Undersize ☐ Effective Contact Area

Results

?	Electrode	Touching Surfaces	Projection Area	Interference
i	SE_CREO4_EDM_A	n/a	0	n/a
	All	0	0	0



SMARTElectrode 13.0.3.0

What's New



Enhancement

What

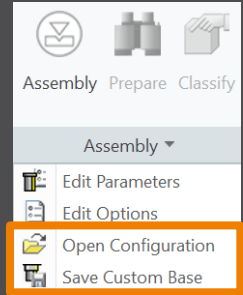
- Added new command to “Save Custom Base” to save userdefined feature (UDF) and data file for electrode blank.
- <https://redmine.buw-soft.de/issues/12001>

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.



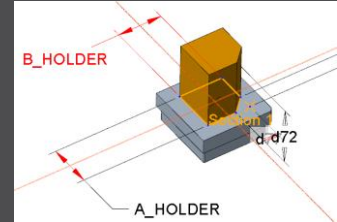
Enhancement

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:** Open “Getting-Started” document for more information

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

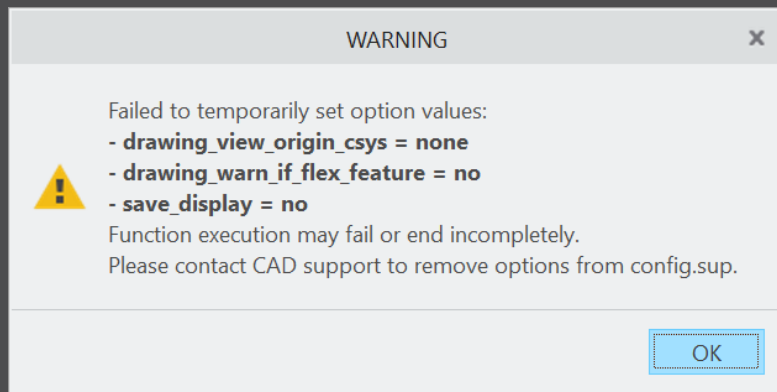
- Check and update mandatory options before drawings are created.

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

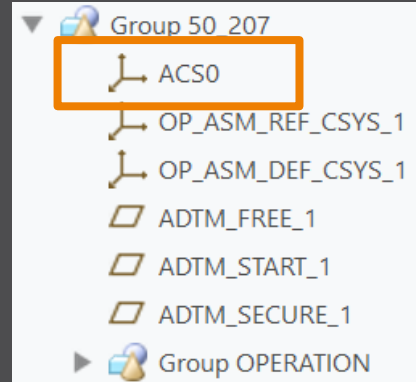
- Operations/origins unreadable if group changed.
- <https://redmine.buw-soft.de/issues/12010>

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 13.0.2.0

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

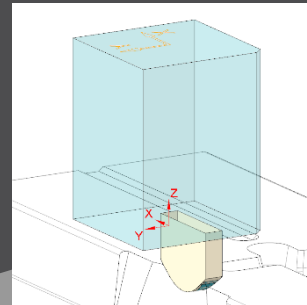
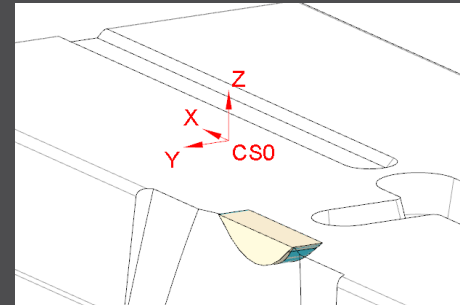
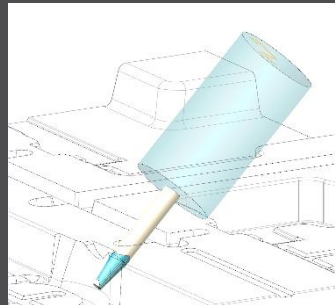
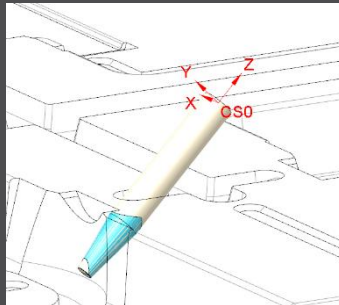
- Electrode base can now also be added on a user-defined coordinate system
- <https://redmine.buw-soft.de/issues/8704>

Why

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

How

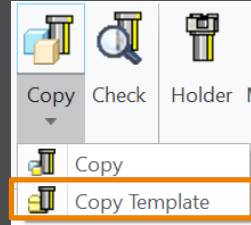
- Define coordinate system in electrode
- Select coordinate system and open Base UI
 - Base will be added to coordinate system
 - Position of coordinate system is taken into account to calculate required blank size
- Base is locked to coordinate system. Delete base to use different option



Enhancement

What

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

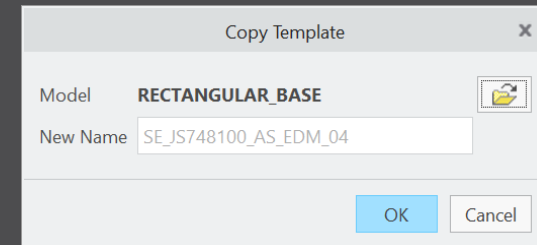


Why

- 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

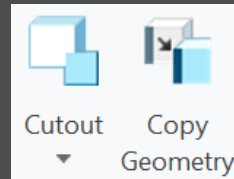
- Csys defined in option SE_EDM_ORGIN_NAME is mandatory
- "configuration\electrode\templates" is used as default path to select templates
- Associated data (drawing, manufacturing) will be copied to new name also
- Controls in Base UI will be disabled if template is detected



Improvement

What

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

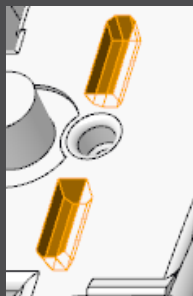


Why

- 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



Surface Sets			
Set	Count		
Individual Surfaces	0		
Seed and Boundary Surfaces	9		
Seed and Boundary Surfaces	9		
Excluded Surfaces	0		

Add
Remove

Improvement

What

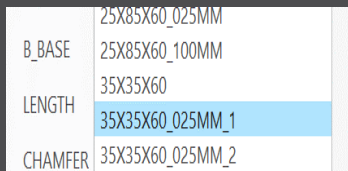
- Base UI - keep predefined holder offset if different holder is selected on details page
- <https://redmine.buw-soft.de/issues/10943>

Why

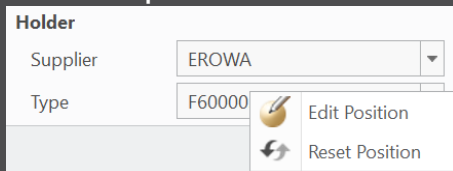
- Adapts behavior of Base UI to Holder UI. Offset / rotation will be retained if a different holder is selected

How

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



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



- 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

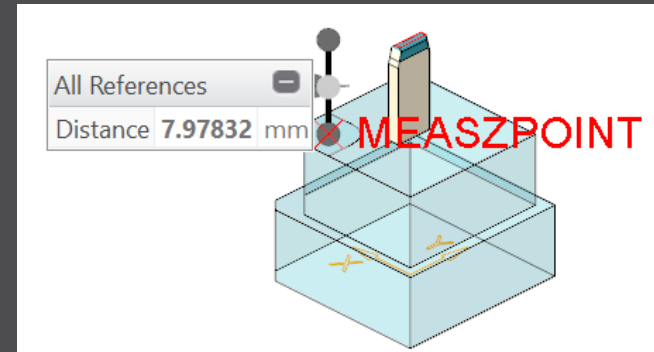
- Calculate <SafetyDistance> based on electrode contour height and position of MEASZPOINT
- <https://redmine.buw-soft.de/issues/11881>

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>

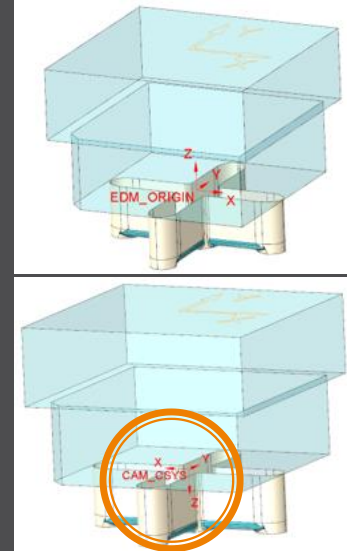
Why

- 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

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



How

Interface to ZK Alphamoduli

What

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

Why

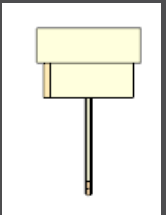
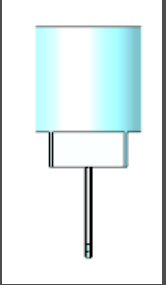
- MeasureProg is the name of the learning/measuring program for the automatic presetting at the CMM

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

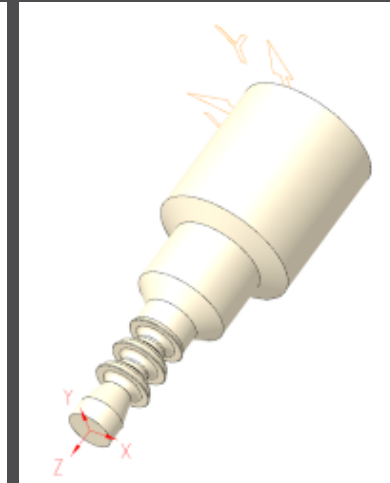
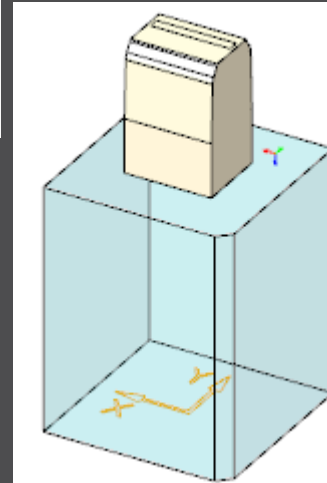
- Suppress <MeasProgType> and <MeasSize...> if no frame available
- <https://redmine.buw-soft.de/issues/11537>
- <https://redmine.buw-soft.de/issues/11587>

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:



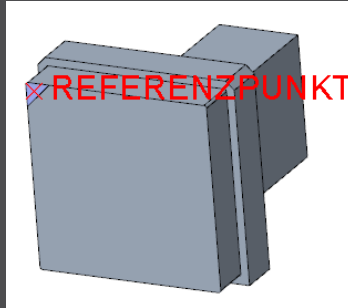
Interface to ZK Alphamoduli

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](#)

### Enhancement

What

Why

How

- Introduced layer definition in my\_drawing\_format.dwg to control display status
- <https://redmine.buw-soft.de/issues/10772>

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

- Add section enclosed with BEGIN\_LAYERS and END\_LAYERS to my\_drawing\_format.dwg
- Define drawing template name, view, layer and display status in a tab separated table
- Drawing name from configuration/templates: asm\_bom, asm\_up, 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

# Fixed Error

## What

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

## Why

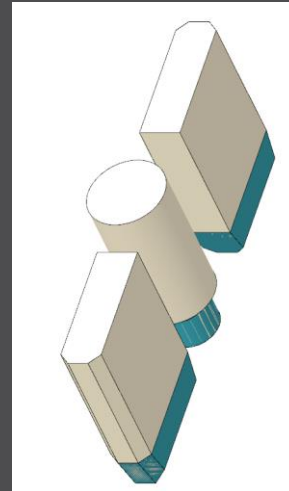
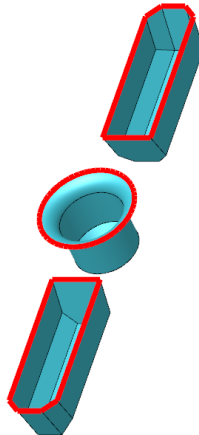
- Starting edges of the boundary loops are not found correctly

## Resolution

- Issue is fixed



Attach



# Fixed Error

## What

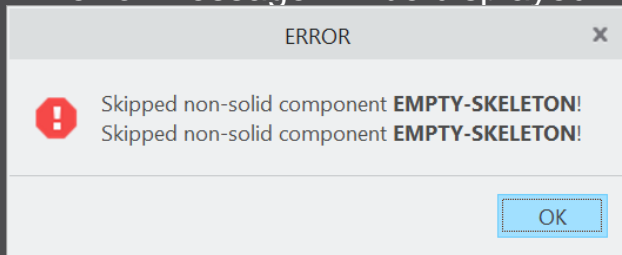
- Project UI - skip models without solids during project creation
- <https://redmine.buw-soft.de/issues/11548>

## 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 13.0.1.0

*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 · BRENNFLAECH
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

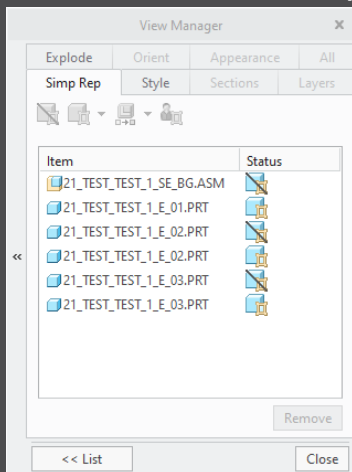
- Consider default action (include/exclude) of simplified representation when valid components for export are collected
- <https://redmine.buw-soft.de/issues/11020>

## 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

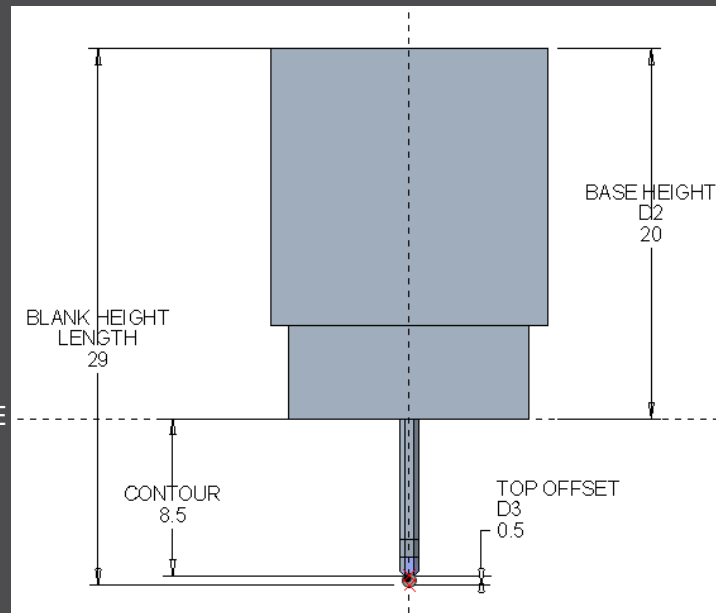
- Round contour height to even value in Base UI
- <https://redmine.buw-soft.de/issues/5550>

## 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

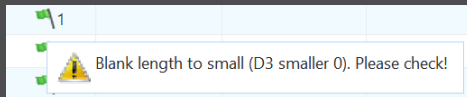
- Show warning in Burnsheat UI if blank length is too small
- <https://redmine.buw-soft.de/issues/8494>

## Why

- Base is **NOT** changed by SMARTElectrode after creation
  - Position of base is retained
  - Size of base is retained

## How

- 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



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

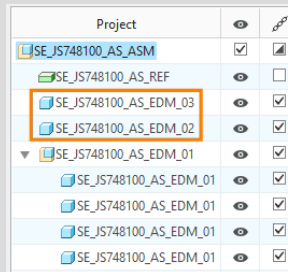
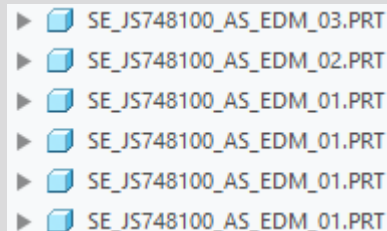
- Burnsheet UI / Output UI: electrodes are ordered by feature number per default
- <https://redmine.buw-soft.de/issues/10409>

## 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



# 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"/>		
 38177-20_SE_REF		<input type="checkbox"/>	
 38177-20-061		<input type="checkbox"/>	 1

 Base not centered on solid.



# Improvement

## What

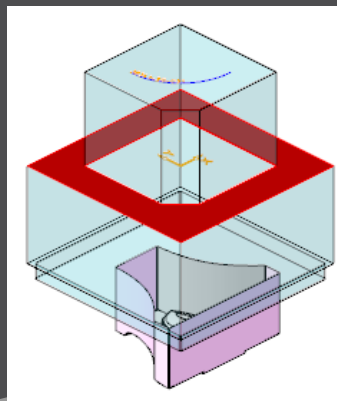
- Use blank dimensions A\_BASE and B\_BASE for coverage check
- <https://redmine.buw-soft.de/issues/10622>

## 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 for calculated burnarea projection:  
<https://redmine.buw-soft.de/issues/10622>



# Improvement

## What

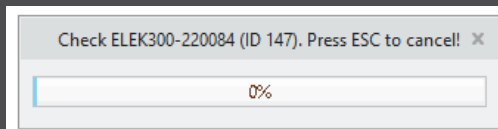
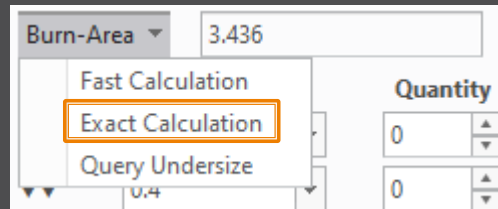
- Allow cancelation of exact burnarea analysis on ESC
- <https://redmine.buw-soft.de/issues/10504>

## 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
i	SE_JS748100_AS_EDM_01		3.18557	✓
i	SE_JS748100_AS_EDM_01		3.18557	✓
i	SE_JS748100_AS_EDM_01		3.18557	✓
i	SE_JS748100_AS_EDM_01		3.18557	✓
i	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>

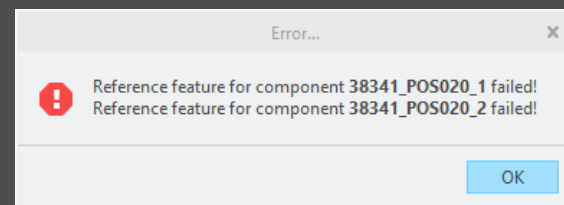
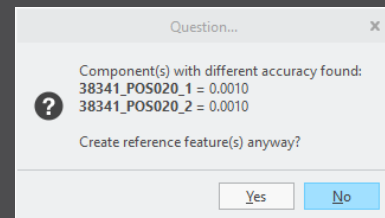
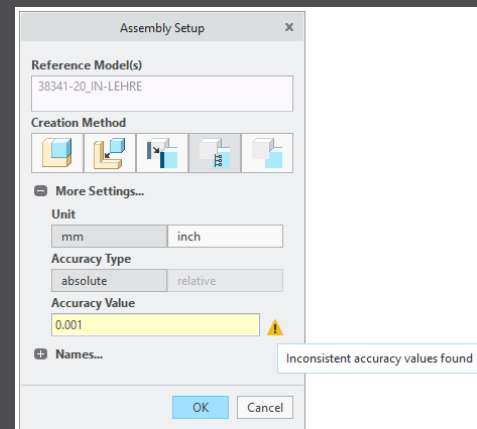
## Why

- 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

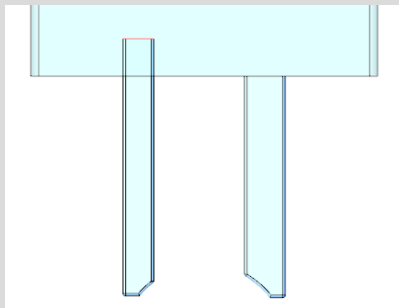
- Use Flexible Modeling 'Substitute' in 'ATTACH' instead of replace
- <https://redmine.buw-soft.de/issues/8703>

## Why

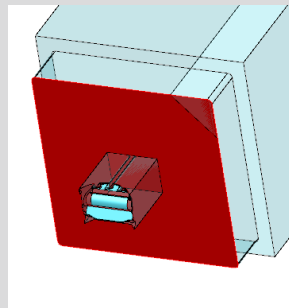
- Normal offset-replace (modeling tab) does sometimes **NOT** unite electrode contour and electrode base, no matter whether FREE\_FACE or solid surface is selected as reference.

## How

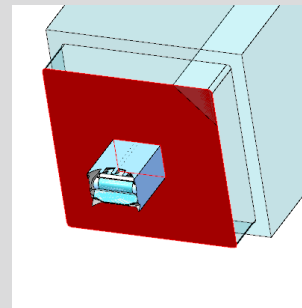
- SMARTElectrode automatically uses feature substitute in group 'ATTACH' instead of offset/replace if license for Flexible Modeling Extension is available



Result for expand



Result for replace

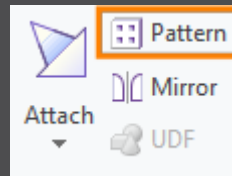


Result for FMX substitute

# Improvement

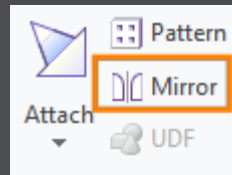
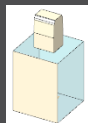
## What

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



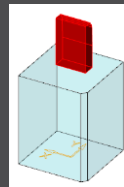
## Why

- 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

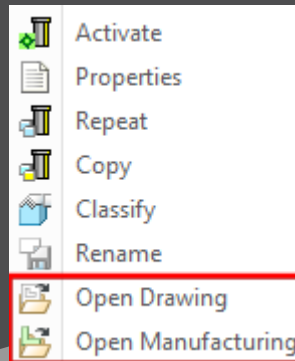
- New commands 'Open Drawing' and 'Open Manufacturing' added to context menu in modeltree and object window
- <https://redmine.buw-soft.de/issues/10411>

## 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

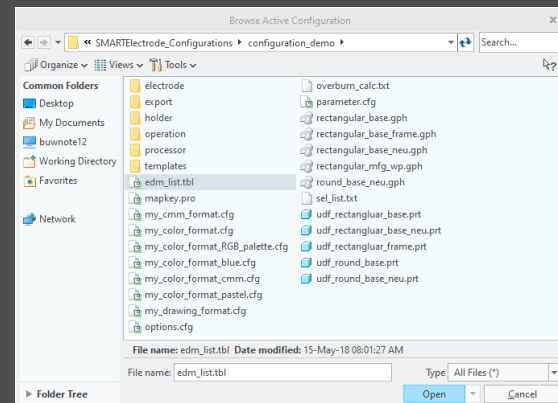
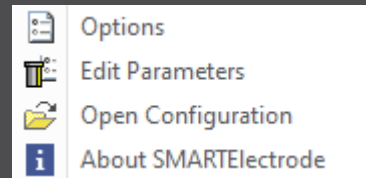
- Introduced new command 'Open Configuration'
- <https://redmine.buw-soft.de/issues/10739>

## 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

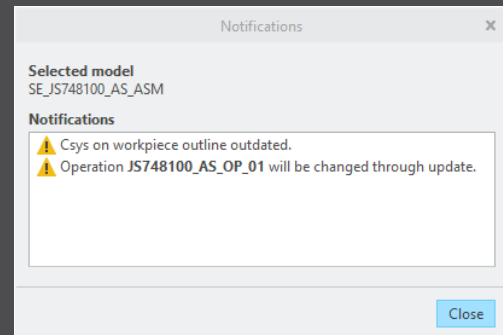
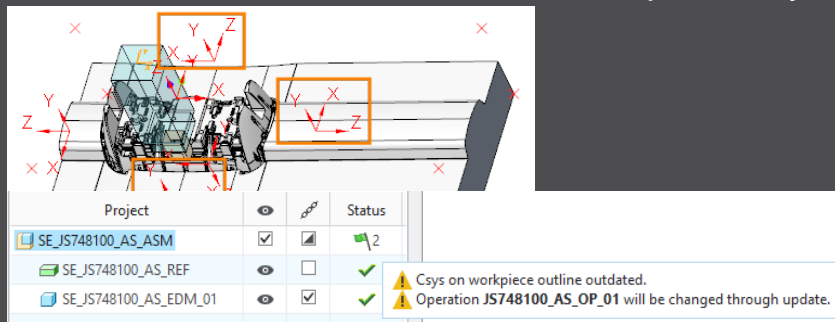
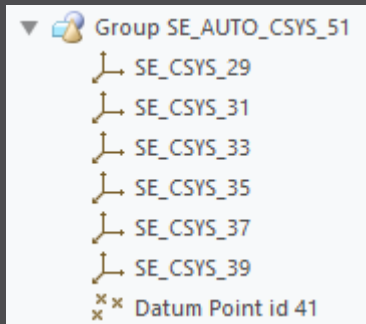
- Disable automatic update of csys on workpiece sides
- <https://redmine.buw-soft.de/issues/10511>

## 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

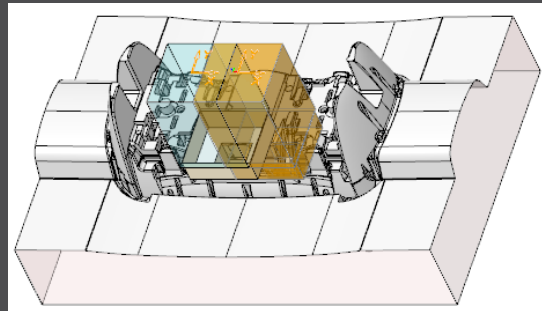
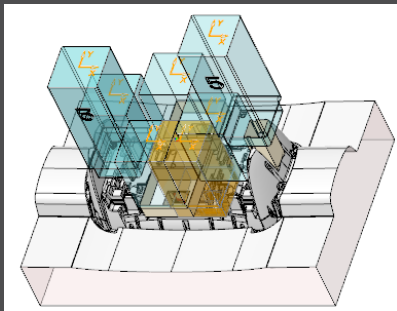
- Repeat UI: only show selected electrodes and preview components when defining new position.
- <https://redmine.buw-soft.de/issues/10399>

## 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

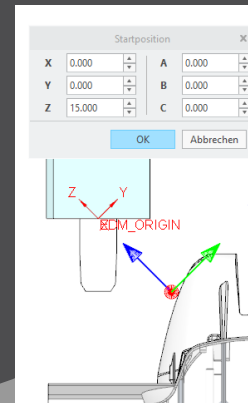
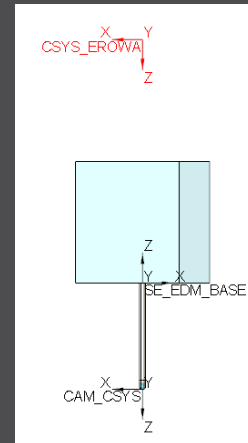
## What

- 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 burnsheets would appear with wrong values
- Use csys showing orientation of blank for calculation of angles
- Always use 'EDM\_ORIGIN' for electrodes designed in SMARTElectrode 7.0
- Use csys 'SE\_EDM\_BASE' or csys defined in option 'EDM\_ORIGIN\_NAME' for electrodes designed in SMARTElectrode 8.0 – 13.0
- This allows adjustment of csys 'EDM\_ORIGIN\_NAME' for easier definition of start position

## How



# Improvement

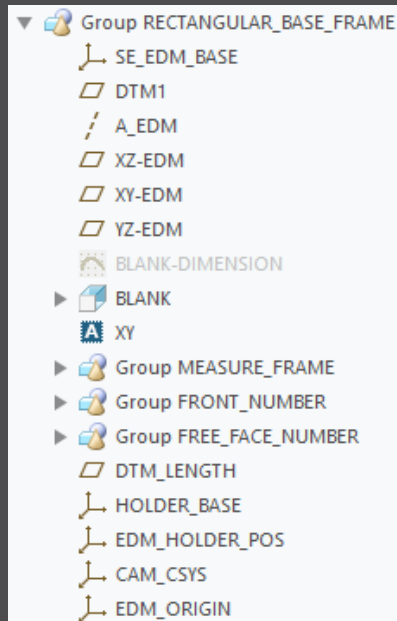
## What

- 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

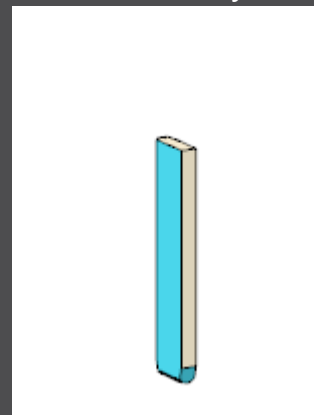
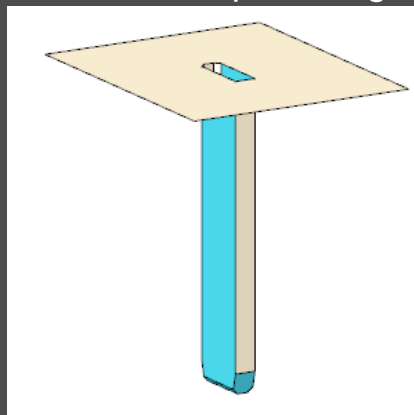
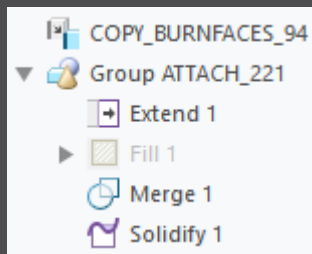
- Check if feature merge in group 'Attach' creates a closed quilt if performed on surface feature or quilt

## 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

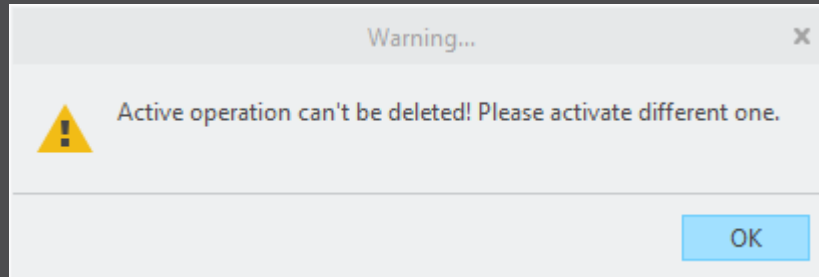
- Prevent deletion of active operation
- <https://redmine.buw-soft.de/issues/10733>

## 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

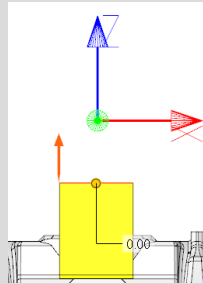
- Electrode base with user-defined FREE\_FACE is suppressed to make design changes
- Base is reset to default position when resumed in Base UI

## Why

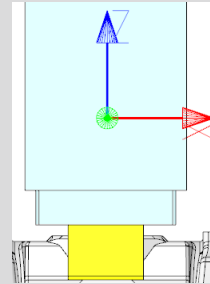
- Information about user-defined FREE\_FACE gets lost
- SMARTElectrode carries out default process to update base

## Resolution

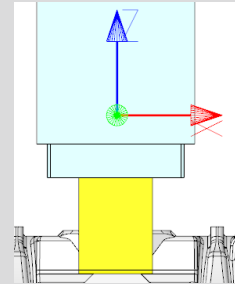
- SMARTElectrode checks reference of datum FREE\_FACE for changes
- Recognition works for all models with user-defined FREE\_FACE



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

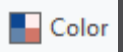
## How

- 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>

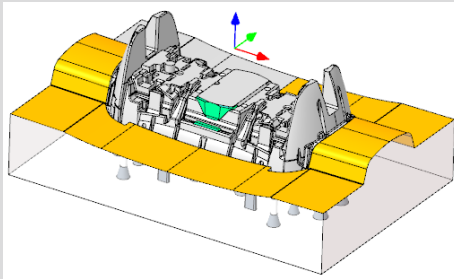


## Why

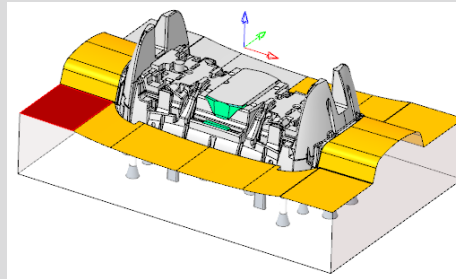
- Sometimes too many surfaces have been selected

## Resolution

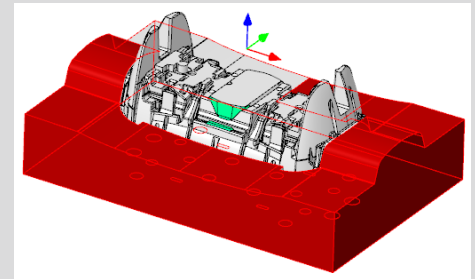
- This issue is fixed



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

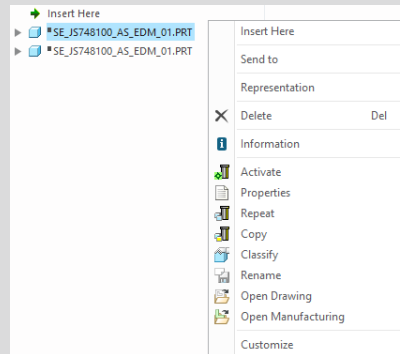
- Commands can be selected from context menu for suppressed electrodes
- Applies to Creo Parametric 4.0 and 5.0
- <https://redmine.buw-soft.de/issues/10518>

## Why

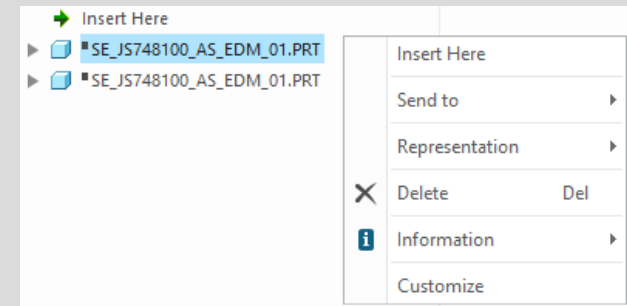
- Component selections are not automatically skipped in above Creo versions

## 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

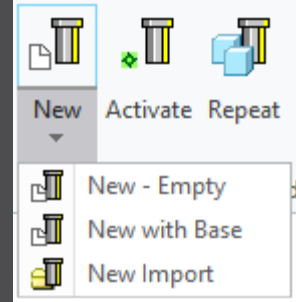
- Command 'New with Base' does not work anymore
- <https://redmine.buw-soft.de/issues/10407>

## 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 13.0.0.0

*What's New*





# Multibody support

## What

- Support for new multibody features introduced in Creo Parametric 7.0  
[<https://redmine.buw-soft.de/issues/9973>]

## Who needs it

- All customers working with Creo Parametric 7.0

## Details/Usage

SMARTElectrode supports multibody features in following modes/models/features:

- Assembly creation for all available methods (original model, merge, copy-geom, inheritance)
- Electrode design
  - Features creating a solid are automatically created in default body or body selected implicitly by references
  - Features without geometrical references like base or support are created in active or default body

## Impact/ Compatibility

- Additional features may be added with new releases from PTC

# 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)

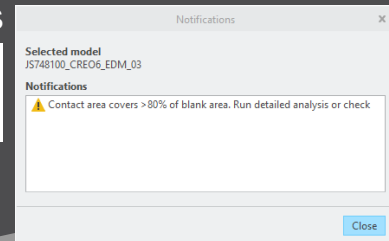
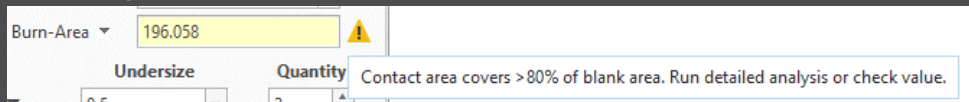
## Who needs it

- 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 Burnsheat notifications

CREATE_TOUCHING_SURFACES_FOR_EDM			Create Feature for result of touching surfaces analysis.		
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>]

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”