SMARTElectrode 15.1.2.0

What's New
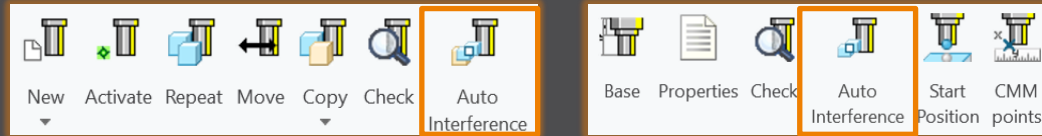
Enhancement

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).
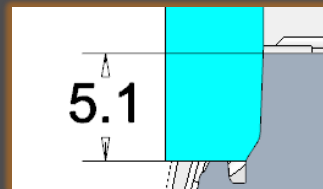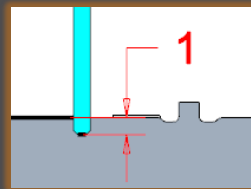
Enhancement

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
```
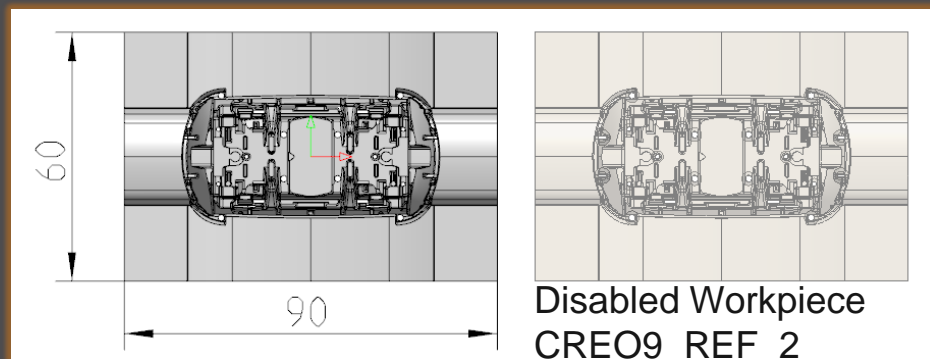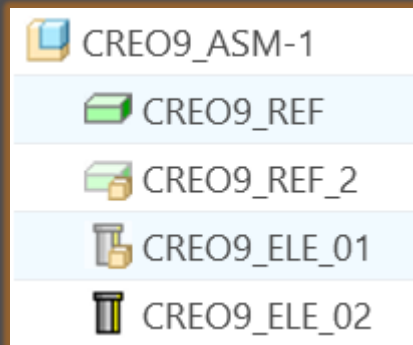
Improvement

|	
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.

CREO9_ASM-1
CREO9_REF
CREO9_REF_2
CREO9_ELE_01
CREO9_ELE_02

Disabled Workpiece
CREO9_REF_2

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 an 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.
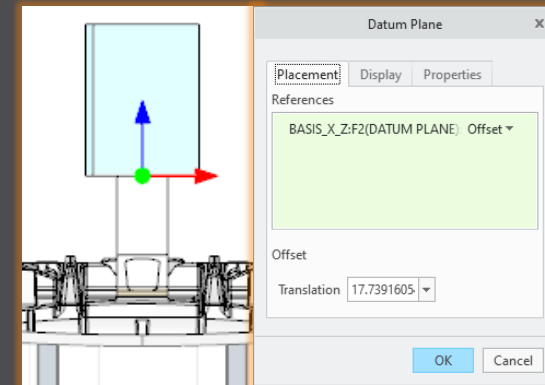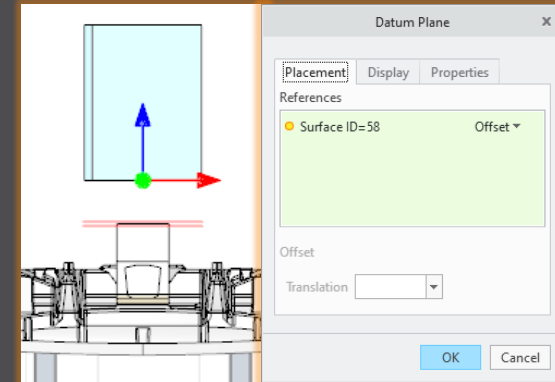
Improvement

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 <u>two</u> rows and <u>one</u> 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 Burnsheet UI and in drawing tables.

How

- The new release automatically adds a size "Custom" to the list.
- 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	🔓 Blank 🔒 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
```

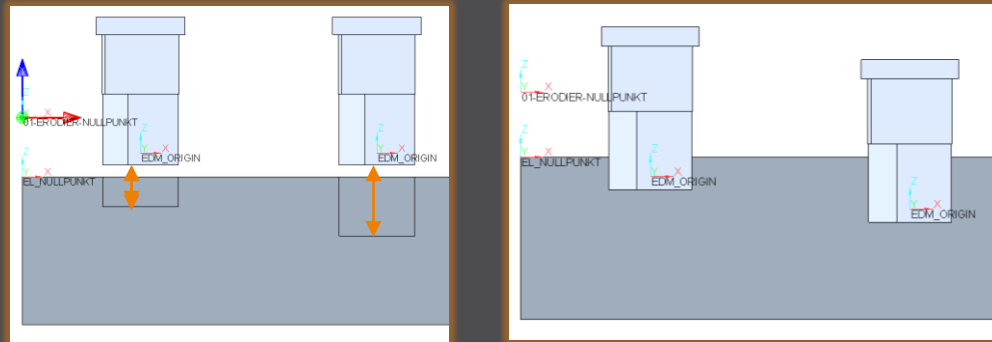## sel_list.txt

```
#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 15.1.1.0

What's New

ENHANCEMENT

What	• Disable workpieces or electrodes in Burnsheet 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 Burnsheet UI and use right mouse button context menu to disable component.
	• Disabled components are displayed with specific icons.

CREO9_ELE-1

CREO9_REF

CREO9_ELE_01

☐ Disable Component

👁 Show Only

📄 Edit Properties
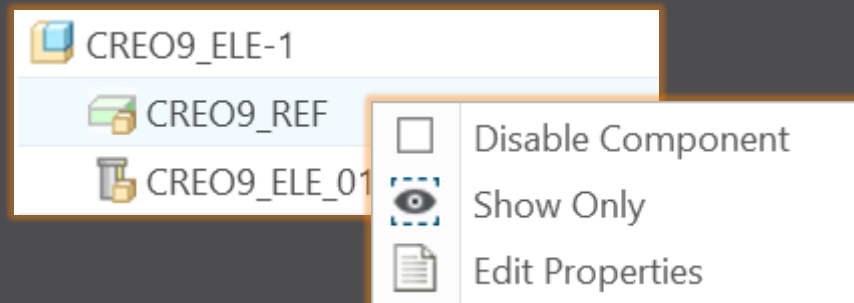
ENHANCEMENT

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
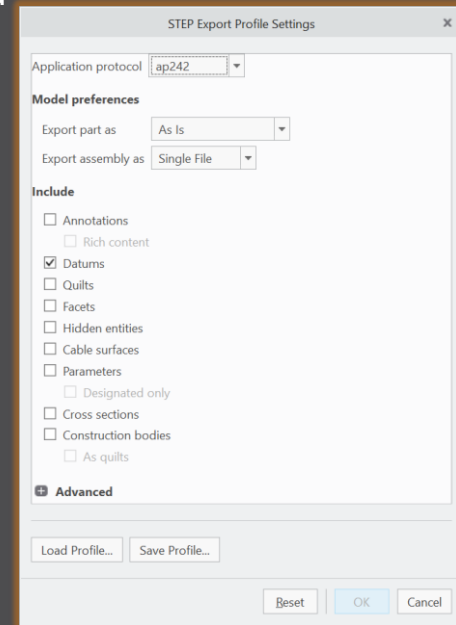
Improvement

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.
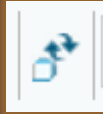
• In some cases, Creo does not remove regen flag after successful regeneration.

• This leads to repeated regeneration of whole assembly if workpiece is affected.

• In such a case further processing is difficult, because of waiting times.

How	• Remove automatic regeneration.
	• Users are now responsible to update design data when necessary.

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 15.1.0.0

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°) if several templates with same blank dimensions are available.
- https://redmine.buw-soft.de/issues/13672

Why

- Order of templates in .dat decided which template - with or without rotation - was assigned. This is improved by defined behavior.

How

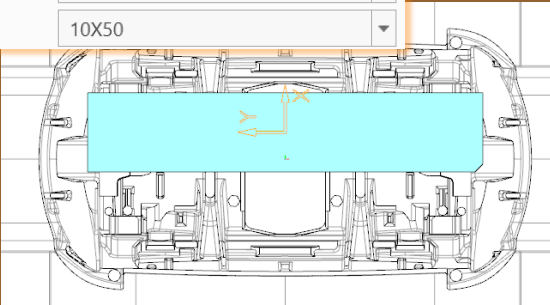**Current Behavior**

		A	0.00
		B	0.00
Z	5.0000	C	90.00

Blank

Type	RECTANGULAR_BASE
Size	10X50
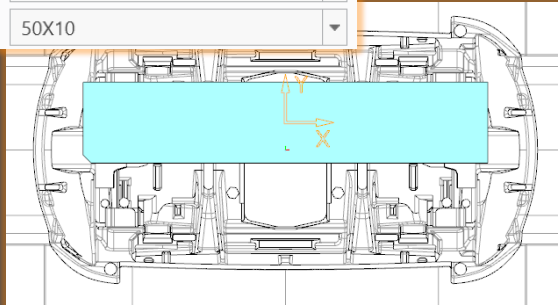
New Behavior

		A	0.00
		B	0.00
Z	5.0000	C	0.00

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
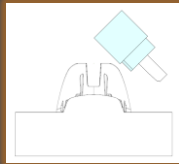
SX	SY	SZ	SA
0.000	18.887	1.571	-45.000

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.
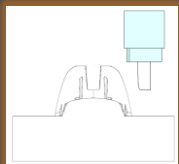
SX	SY	SZ	SA
0.000	18.887	1.571	0.000

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
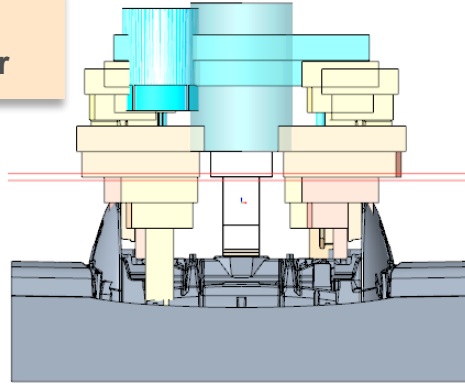
New Behavior
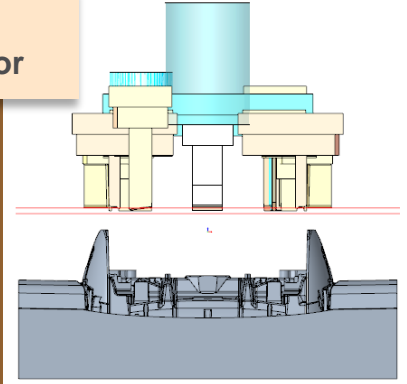
Enhancement

|	
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
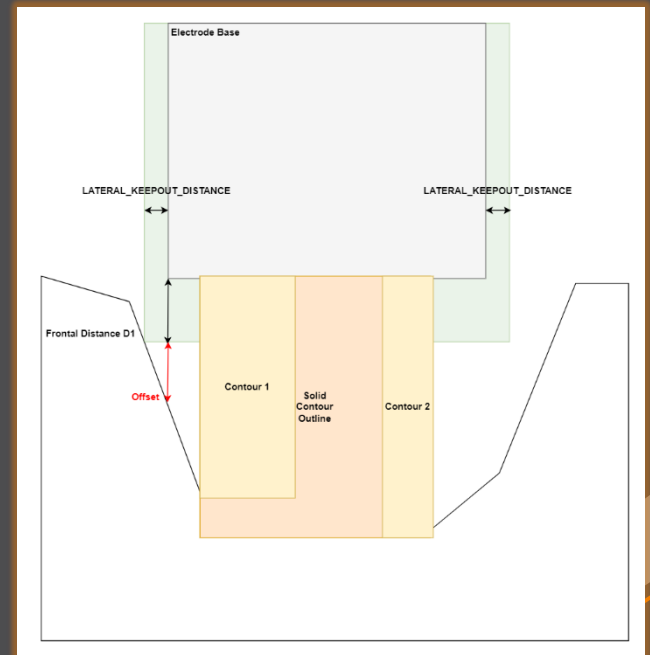
Enhancement

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'
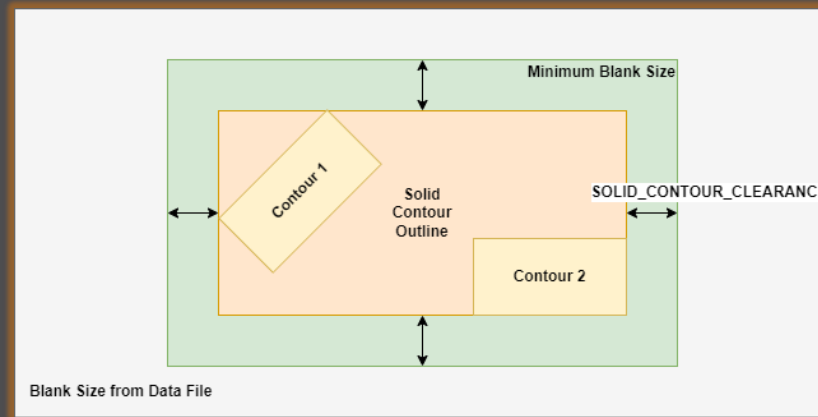
Improvement

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)

Why

- Allows users to switch between both behaviors

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.

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 archieve 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
```

Enhancement

What	•	Use default profiles or option files for 3D exports https://redmine.buw-soft.de/issues/13681

Why	•	Support of custom option files

How	•	Save options file named "def_profile" to export/<type> or processor/<type>.

| Type	Keyword in export template	Options file name
VDA	SE_EDM_BACKUP_VDA	def_profile.dep_vda
STEP	SE_EDM_BACKUP_STEP	def_profile.dep_step
IGES	SE_EDM_BACKUP_IGES	def_profile.dep_iges
CATIA	SE_EDM_BACKUP_CATIA	def_profile.dep_catv5
SAT (Acis)	SE_EDM_BACKUP_SAT	def_profile.dep_acis
NEUTRAL	SE_EDM_BACKUP_NEUTRAL	def_profile.dep_neu
X_T (Parasolid)	SE_EDM_BACKUP_X_T	def_profile.dep_para
UG (NX)	SE_EDM_BACKUP_UG	def_profile.dep_nx
JT (license necessary)	SE_EDM_BACKUP_JT	def_profile.dep_jt

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
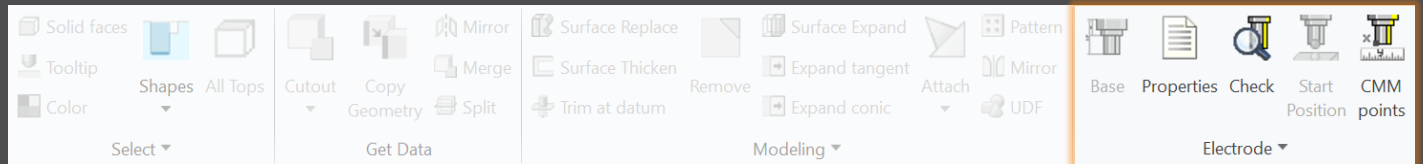- Original coordinates are restored on cancel
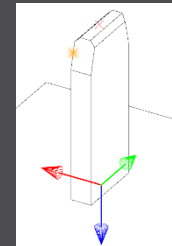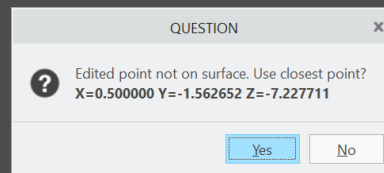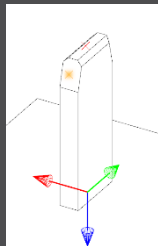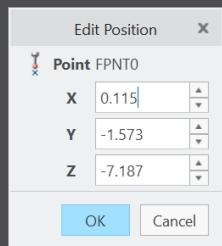
Enhancement

| **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