



WORLD EVENT
2010

Implementing ModelCHECK

Configuring ModelCHECK

Parameters and Relations

2010

Scenario – Parameters Checking

- ABC Corp recently acquired XYZ Corp. Both companies used Pro/ENGINEER. ABC Corp wants to merge the data sets. ABC Corp's Pro/ENGINEER Administrator has determined parameter changes are necessary before the data sets can be merged.

2010

Secrets of Success – Clear and Inclusive Requirements

- Clearly define
 - How – Via ModelCHECK (no customization req.)
 - What – Parameters and Relations
 - When – Interactive Dev & Batch Update
 - Where – From Disk, To Disk
 - Why – Adhere to Corporate Standards before import to Windchill
- Review the source models to determine all use cases to be addressed

Secrets of Success – Adoption

- Automatically fix everything possible
 - Batch process and auto-fix where possible
- If the user has to interact with it:
 - Make it as automatic as possible
 - Limit initial checking to very few items
 - Add checks as errors decrease
 - Ensure user cannot work around ModelCHECK
 - Set modelcheck_dir in config.sup

Batch Mode updates

- **LAYERS:**

- Adds items to layers
- Changes the layer display status
- Creates layers
- Deletes extra layers
- Renames layers
- Moves items between layers

- **RELATIONS:**

- Adds relations and comments

- **PARAMETERS:**

- Creates parameters (if their values are known)
- Deletes extra parameters
- Designates parameters for PDM tools

- **MISC:**

- Fully regenerates the model from the first feature and reports any problems
- Renames datums
- Saves the model

Interactive (ModelUPDATE) Checks

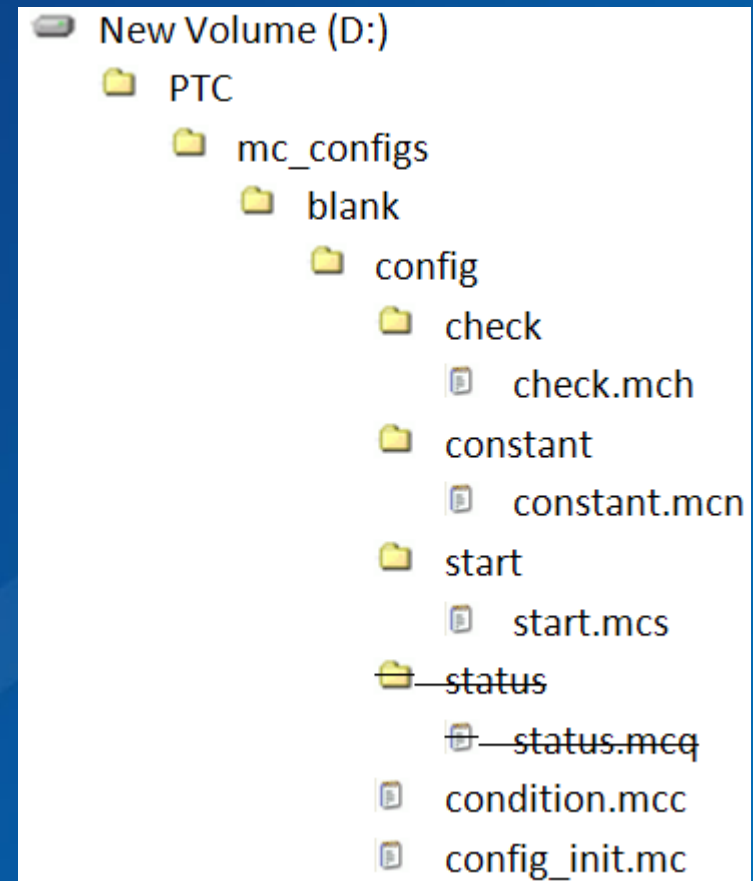
- **LAYERS:**
 - STARTLAYR (Missing Layers)
 - EXTRA_LAYERS (Extra Layers)
 - LAYER_MOVE (Move Items from Old Layers to New Ones and Delete the Old One)
 - LAYER_PLACE (Layers Contain Standard Items)
 - LAYER_STATUS (Layer Status)
 - LAYER_UNWANTED (Non-Standard Layers)
 - DRAWING_LAYERS (Drawing Layers)
- **PARAMETERS:**
 - EXTRA_PARAMS (Extra Parameters)
 - PARAMCHECK (Parameter Format Errors)
 - PARAM_MAP (Parameter Mapping)
 - PARAM_UNUSED (Unused Parameters)
 - PARAM_UNWANTED (Non-Standard Parameters)
 - STARTPARAM (Missing Parameters)
- **RELATIONS:**
 - REL_UNWANTED (Unwanted Relations)
 - RELATION_MISS (Relations That Are Missing)
 - RELATION_UPDATE (Relations That Need Update)
- **VIEWS:**
 - CREATE_VIEW (Create Views)
 - ERASED_VIEWS (Erased Views)
- **MISC:**
 - ACCURACY_INFO (Accuracy Information)
 - BURIED_FEAT (Buried Features)
 - INSERT_MODE (Insert Mode Left Active)
 - MATERIAL_INFO (Material Type)
 - UNUSED_MODELS (Unused Models in Drawings)
 - UNUSED_SHEETS (Empty Sheets)

Changes to Make

ABC Corp	XYZ Corp	ModelCHECK Task
FINISH (Parts only)	(Doesn't exist)	Create FINISH as a string
(Taken from Windchill)	MODELED_BY (Parts and Asms)	Delete MODELED_BY
(Taken from Windchill)	AUTHOR (Drawings only)	Delete AUTHOR
DESCRIPTION (=DESC1+" "+DESC2)	Title	Rename TITLE to DESC1 Create DESCRIPTION and DESC2 Designate DESCRIPTION Set relation

Secrets of Success – Minimal Configuration

- config_init.mc
 - Must be completely populated
- condition.mcc
 - Must contain conditions
- check/<check>.mch,
start/<start>.mcs and
constant/<constant>.mcn
 - Must exist
 - Unpopulated options are
turned off by default.
- status/<status>.mcq and other
configuration files
 - Not initially required



Secrets of Success – Help and Syntax

The image shows two overlapping software windows. The background window is the 'PTC ModelCHECK Configuration Tool', which has a tree view on the left with categories like 'Initialization settings', 'Conditional settings', 'Configuration settings', 'Check files', 'Start files', 'Constant files', 'Status files', and 'Text files'. The 'Check files' category is expanded, showing 'check.mch' selected. The main area of this window contains a message box, a 'Check type to view' dropdown set to 'All', and a table of check configurations.

Check Name	Options	Interact	Batch	Regen	Save
DEF_DENSITY	YNEW	N	N	N	N
DENSITY_MDLUPDOK	YNEW	W	N	N	N
STARTCHECK	YNEW	E	E	N	N
EXTRA_PARAMS	YNEW				
DRAWING_PARAMS	YNEW				
PARAM_RENAME	YNEW				

The foreground window is the 'Pro/ENGINEER Help' window, displaying the 'Help Center' for 'EXTRA_PARAMS (Extra Parameters)'. It includes a search bar, a list of help topics, and detailed information for the selected topic.

EXTRA_PARAMS (Extra Parameters)

Y/N/E/W

Reports extra parameters in the model. Extra parameters are not listed in the start part. If any are found, you can highlight the features in question in the Pro/ENGINEER window.

If the ModelUPDATE mode is enabled, this check automatically deletes the extra parameters.

Suggested Settings:

Inter	Batch	Regen	Save
W	W	W	W

Related Links

- [Part Mode Checks](#)
- [ModelUPDATE Checks](#)
- [To Create a Parameter](#)

Instance: GENERIC

Secrets of Success – Multiple Configuration File Sets

- Point to different configuration file sets with modelcheck_dir
 - Blank
 - Empty configuration set for new check development
 - Default
 - PTC default files
 - Removed from <Pro/E Load Point>\modchk\text\usascii\config
 - Development
 - Active development set(s)
 - Help
 - An all-inclusive configuration set for navigating help
 - Released
 - Always keep a backup of the last functional set of configuration files
 - ment Set
 - Maintain the production set of configuration files



Enable ModelCHECK

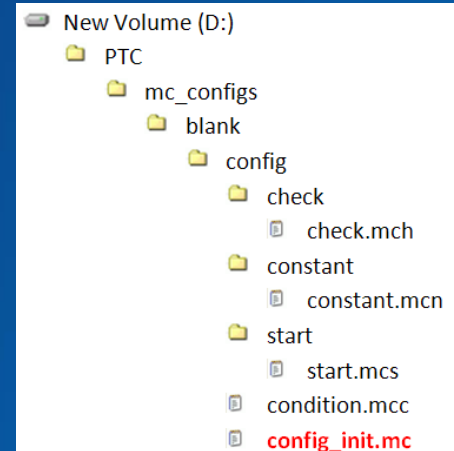
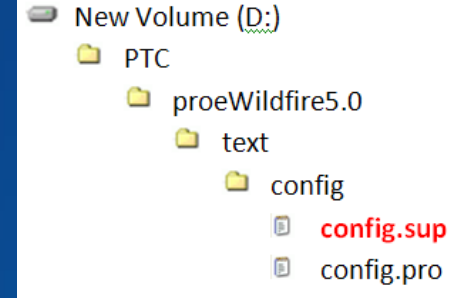
- In Pro/ENGINEER

```
5.. config.sup
! Enable ModelCHECK
modelcheck_enabled yes
! Specify the ModelCHECK Configuration Files location
modelcheck_dir D:\PTC\ProSystem\modelcheck\configs\Parameters
```

- In ModelCHECK

```
5.. config_init.mc
# Enable ModelCHECK Y=enable, N=disable, A=Ask user
MC_ENABLE YNA Y

# Enable/Disable ModelCHECK in specific modes
MODE_RUN YN Y Y N N
```



Enable Batch Mode Updates

- Enable batch mode updates

```
5.. config_init.mc
# Automatically update errors in models when run in BATCH
MODE UPDATE YN  Y Y N N
```

- Call out required configuration files

```
4.. condition.mcc
# SET CONFIG FILE
# Just using the else statement will use one set of configuration
# files for all files.
ELSE  config=(check/check.mch) (start/start.mcs) (constant/constant.mcn)
```

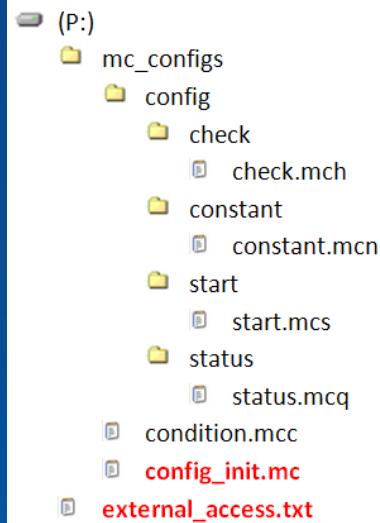
Secrets of Success – Control

- Enterprise ModelCHECK
 - Store on a network drive
 - modelcheck_dir P:\MC_Configs\
 - Configure folder permissions as read-only to users, full control to administrators
 - Enable MC_AUTHORIZATION_FILE

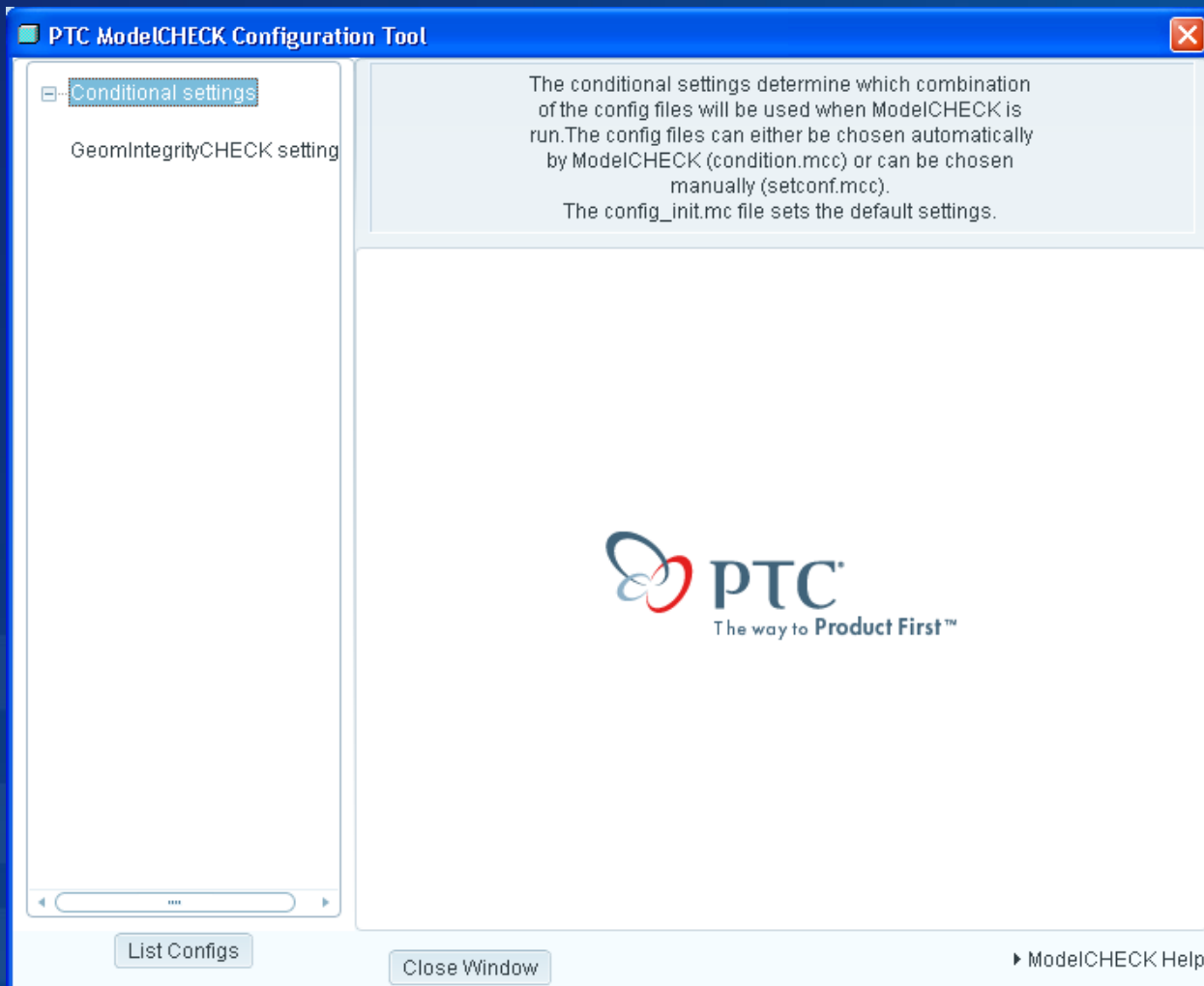
```
4.. config_init.mc
# Use the external file for authorization to use Configurator Tool
MC_AUTHORIZATION_FILE YN Y
```

- Create and populate external_access.txt

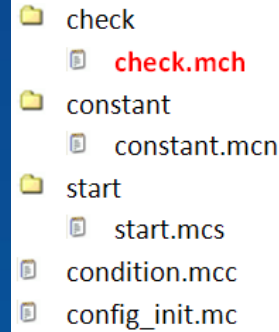
```
5.. external_access.txt
# ModelCHECK Authorization File
#
# Administrators List
# Administrators have full control of configuration files
LIST_ADMINISTRATOR rmeadows
#
# Users List
# Users can only access the "GeomIntegrityCHECK and use LIST Configs.
LIST_USER jdfelkins
LIST_USER bgivehand
```



MC_AUTHORIZATION_FILE Results



Unrelated options that need to be enabled

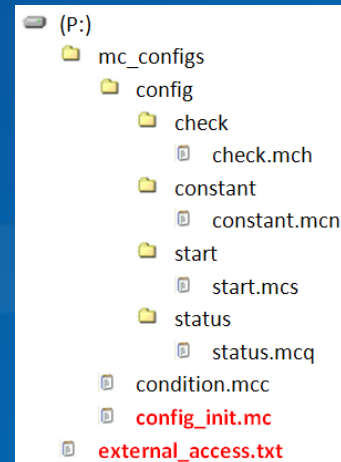


- Empty configuration files
 - All options are set to “N” by default
- Address ModelCHECK behavioral issues
 - A few options should be set to “Y” or greater by default

```
4.. check.mch
# If you don't set this to N, you get prompted to generate
# mass props every time you run ModelCHECK interactively.
DEF_DENSITY YNEW  N N N N N
# SPR 1156787 - It is to address prompt issue when running
# ModelCHECK Interactive.
DENSITY_MDLUPDOK  YNEW  W N N N N
```

Secrets of Success – Change Management

- Use source control (SVN) to manage changes
 - Manage new check development
 - Compare Pro/ENGINEER Upgrades



Create Finish

ABC Corp	XYZ Corp	ModelCHECK Task
FINISH (Parts only)	(Doesn't exist)	Create FINISH as a string

- Enable start checks and parameter modification

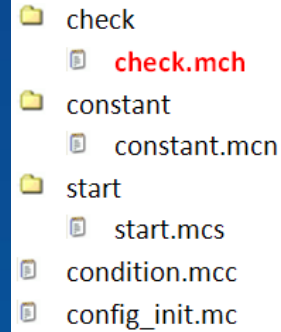
```

6.. check.mch
# Enable <start>.mcs for parts, assemblies and drawings
STARTCHECK YNEW E E N N N
# Enable parameter updates in modelupdate mode
PARAMCHECK YNEW E E N N N
  
```

- Create FINISH as string with unspecified value

```

2.. start.mcs  3.. check.mch  4.. condition.mcc
# Create (ENSURE EXIST) FINISH
PRT_PARAMETER FINISH STR EQ NULL
  
```



Delete MODELED_BY

ABC Corp	XYZ Corp	ModelCHECK Task
(Taken from Windchill)	MODELED_BY (Parts and Asms)	Delete MODELED_BY

- Enable removal of extra parameters

```
6.. check.mch
0 10 20 30 40 50 60
# Enable <start>.mcs for parts, assemblies and drawings
STARTCHECK YNEW E E N N N
# Enable parameter updates in modelupdate mode
PARAMCHECK YNEW E E N N N
# Tells ModelCHECK to delete any parameters not listed in <start>.mcs
EXTRA_PARAMS YNEW E E N N N
```

- Exclude MODELED_BY from the start.msc file and it will be automatically removed

Delete AUTHOR

ABC Corp	XYZ Corp	ModelCHECK Task
(Taken from Windchill)	AUTHOR (Drawings only)	Delete AUTHOR

- Include drawing parameter checks

```

6.. check.mch
0          10          20          30          40          50          60
# Enable <start>.mcs for parts, assemblies and drawings
STARTCHECK  YNEW  E  E  N  N  N
# Enable parameter updates in modelupdate mode
PARAMCHECK  YNEW  E  E  N  N  N
# Tells ModelCHECK to delete any parameters not listed in <start>.mcs
EXTRA_PARAMS  YNEW  E  E  N  N  N
# Enables <start>.mcs for drawings
DRAWING PARAMS  YNEW  E  E  N  N  N
  
```

- Exclude AUTHOR from the start.msc file and it will be automatically removed

Rename TITLE to DESC1

ABC Corp	XYZ Corp	ModelCHECK Task
DESCRIPTION (=DESC1+" "+DESC2)	TITLE	Rename TITLE to DESC1

- Enable parameter rename

```

6.. check.mch
0          10          20          30          40          50          60
# Enable <start>.mcs for parts, assemblies and drawings
STARTCHECK YNEW E E N N N
# Enable parameter updates in modelupdate mode
PARAMCHECK YNEW E E N N N
# Tells ModelCHECK to delete any parameters not listed in <start>.mcs
EXTRA_PARAMS YNEW E E N N N
# Enable Parameter Renaming
PARAM_RENAME YNEW E E N N N
  
```

- Map TITLE to DESC1 and ensure DESC1 exists

```

6.. start.mcs
0          10          20          30
# Rename TITLE to DESC1
PRT_PARAM_RENAME TITLE DESC1
ASM_PARAM_RENAME TITLE DESC1
PRT_PARAMETER DESC1 STR EQ NULL
ASM_PARAMETER DESC1 STR EQ NULL
  
```

Create DESC2 and DESCRIPTION

ABC Corp	XYZ Corp	ModelCHECK Task
DESCRIPTION (=DESC1+" "+DESC2)	TITLE	Create DESCRIPTION and DESC2

- Enable start checks and parameter modification

```

6.. check.mch
# Enable <start>.mcs for parts, assemblies and drawings
STARTCHECK YNEW E E N N N
# Enable parameter updates in modelupdate mode
PARAMCHECK YNEW E E N N N
  
```

- Create DESCRIPTION and DESC2 without a value

```

4.. start.mcs
# Create (Ensure Exists) DESCRIPTION and DESC2
PRT_PARAMETER DESCRIPTION STR EQ NULL
ASM_PARAMETER DESCRIPTION STR EQ NULL
PRT_PARAMETER DESC2 STR EQ NULL
ASM_PARAMETER DESC2 STR EQ NULL
  
```

Designate DESCRIPTION

ABC Corp	XYZ Corp	ModelCHECK Task
DESCRIPTION (=DESC1+" "+DESC2)	TITLE	Designate DESCRIPTION Set relation

- Enable start checks and parameter modification

```

6.. check.mch
0 10 20 30 40 50
# Enable <start>.mcs for parts, assemblies and drawings
STARTCHECK YNEW E E N N N
# Enable parameter updates in modelupdate mode
PARAMCHECK YNEW E E N N N
  
```

- Designate DESCRIPTION without changing the value

```

6.. start.mcs
0 10 20 30
#DESIGNATE DESCRIPTION
PRT_PARAMETER DESCRIPTION STR EQ PDM
ASM_PARAMETER DESCRIPTION STR EQ PDM
  
```

Create Comment and Relation

ABC Corp	XYZ Corp	ModelCHECK Task
DESCRIPTION (=DESC1+" "+DESC2)	TITLE	Set relation

- Enable comments and relations evaluation

```

6.. check.mch
# Enable <start>.mcs for parts, assemblies and drawings
STARTCHECK YNEW E E N N N
# Enable evaluation and creation of relation comments
RELATION_COMM YNEW E E N N
# Enable evaluation and creation of relations
RELATION_MISS YNEW E E N N
  
```

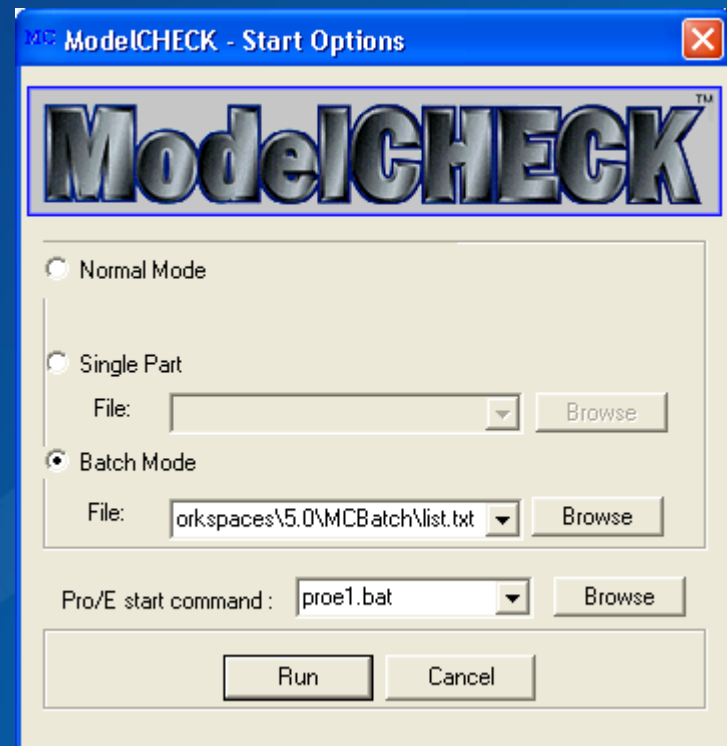
- Specify comments and relations to validate / create

```

4.. start.mcs
#CREATE COMMENTS AND RELATIONS
PRT_COMMENT SET PART FULL DESCRIPTION
PRT_RELATION DESCRIPTION=DESC1+" "+DESC2
ASM_COMMENT SET ASSEMBLY FULL DESCRIPTION
ASM_RELATION DESCRIPTION=DESC1+" "+DESC2
  
```

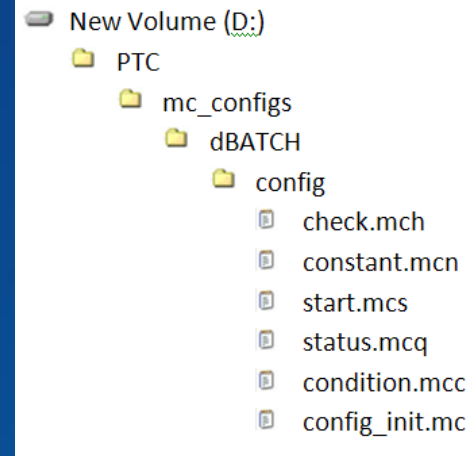
ModelCHECK Batch Mode

- Launch ModelCHECK Batch
 - Start > All Programs > PTC > Pro/ENGINEER > ModelCHECK
 - <Pro/E load point>\bin\modelcheck.bat
- Inputs
 - List of files to process
 - dir /b > list.txt
 - Pro/ENGINEER launch command
 - Configuration files
 - Env Var: MC_DIR
 - config.pro: modelcheck_dir



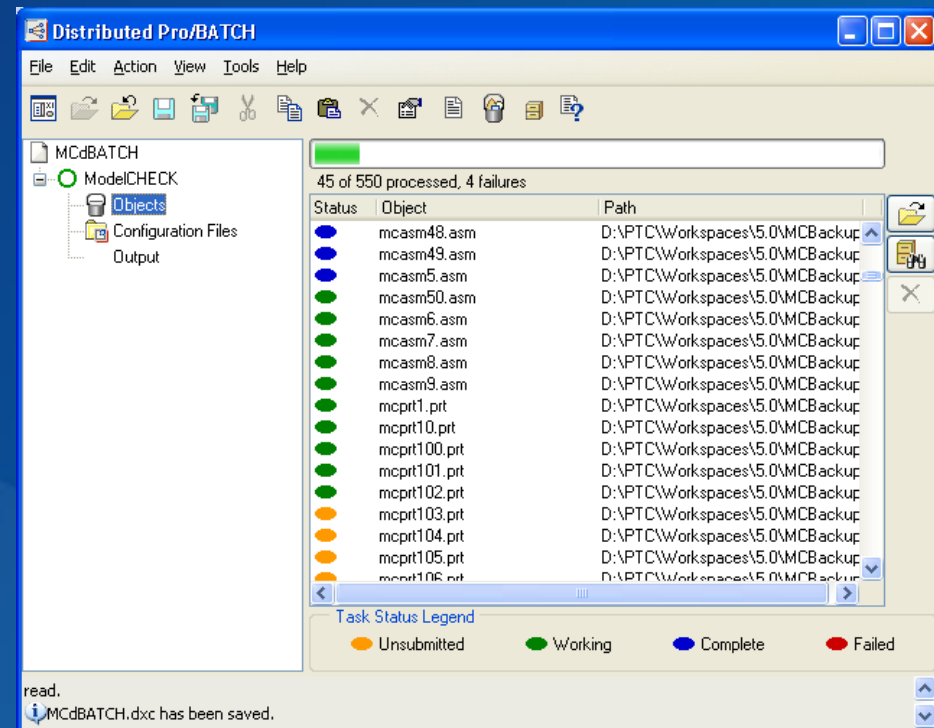
Distributed Pro/BATCH

- Launch Distributed Pro/BATCH Standalone
 - Start > All Programs > PTC > Pro/ENGINEER > Distributed Pro/BATCH
 - <Pro/E load point>\bin\ptcdbatch.bat
- Inputs
 - ModelCHECK Task
 - Actions > New Task Group... > ModelCHECK
 - Objects (files to process)
 - Drag-n-drop from Windows Explorer
 - Configuration files
 - Config.sup
 - Configuration files
 - All are in a single folder level
 - Condition.mcc must be updated from:
 - ELSE config=(check/check.mch)(start/start.mcs)(constant/constant.mcn)
 - To:
 - ELSE config=(check.mch)(start.mcs)(constant.mcn)
 - Output
 - Target directory
 - If environmental variable of MC_BATCH_REPORT_DIR is set, reports are saved as per environment variable
- Save the configuration

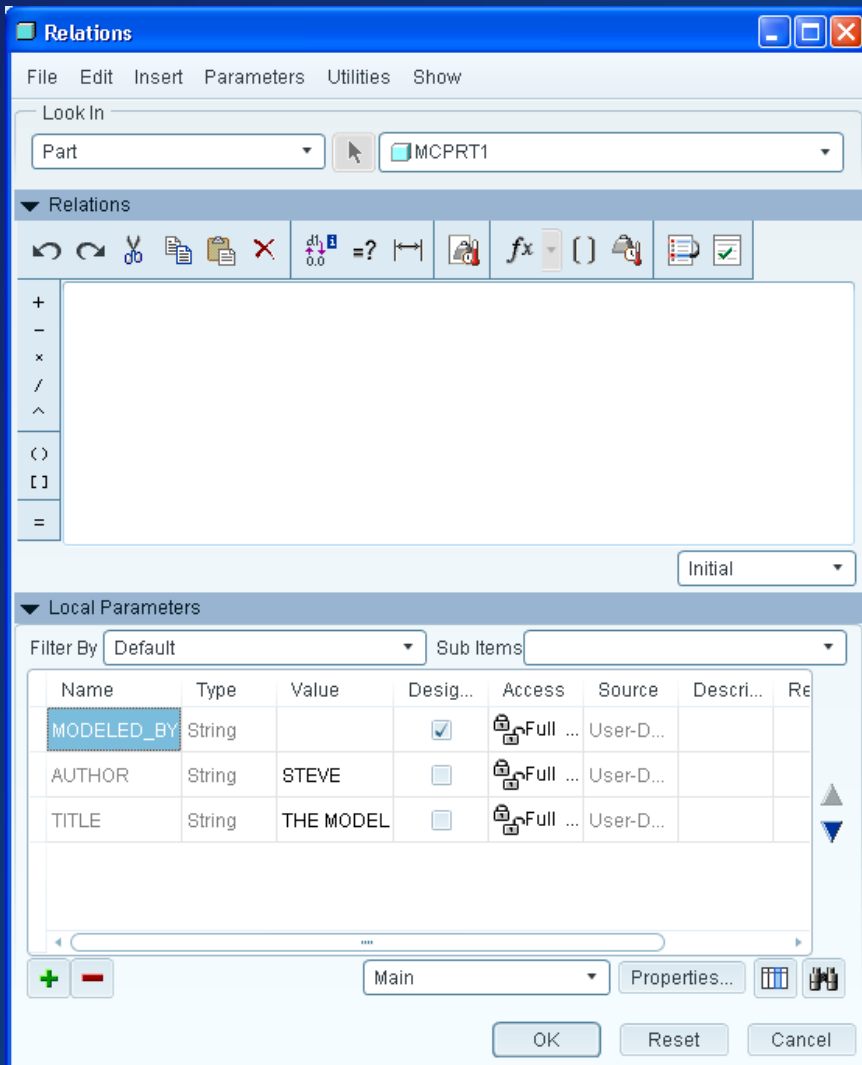


Distributed Pro/BATCH

- Benefits
 - Free standalone mode
 - Scalable to enterprise
 - OOTB ModelCHECK Batch Processor
 - Processes files in Windchill
 - Can write custom batch processors

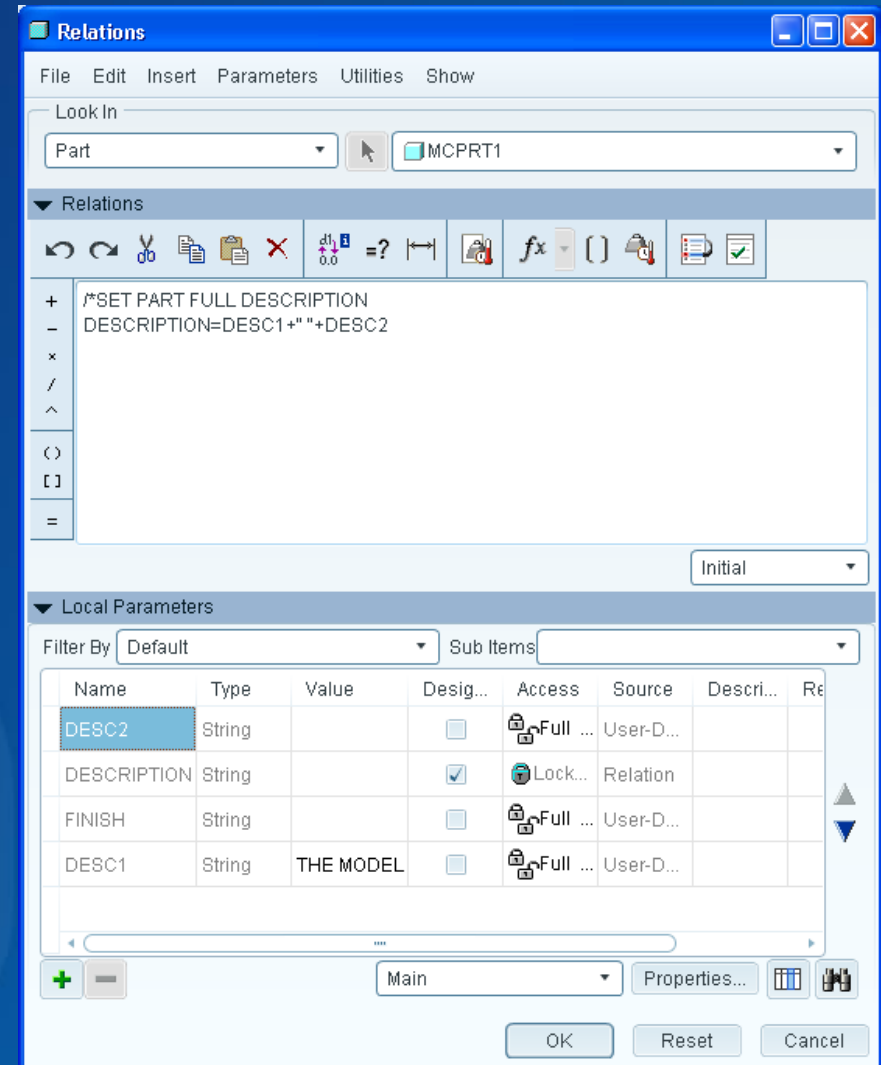


500 Parts – Before & After



The 'Relations' dialog box is shown with the 'Look In' field set to 'Part' and 'MCPRT1'. The 'Relations' toolbar is visible. The 'Local Parameters' table is displayed with the following data:

Name	Type	Value	Desig...	Access	Source	Descri...	Re
MODELED_BY	String		<input checked="" type="checkbox"/>	Full ...	User-D...		
AUTHOR	String	STEVE	<input type="checkbox"/>	Full ...	User-D...		
TITLE	String	THE MODEL	<input type="checkbox"/>	Full ...	User-D...		



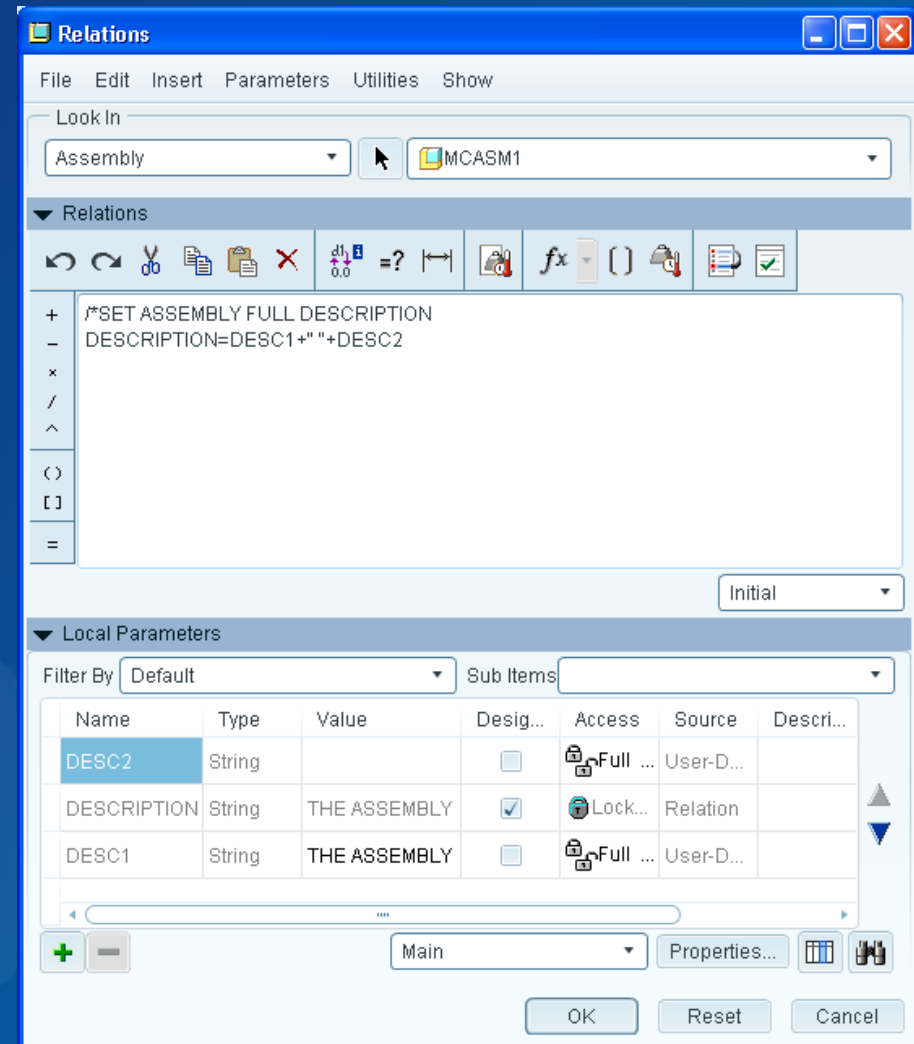
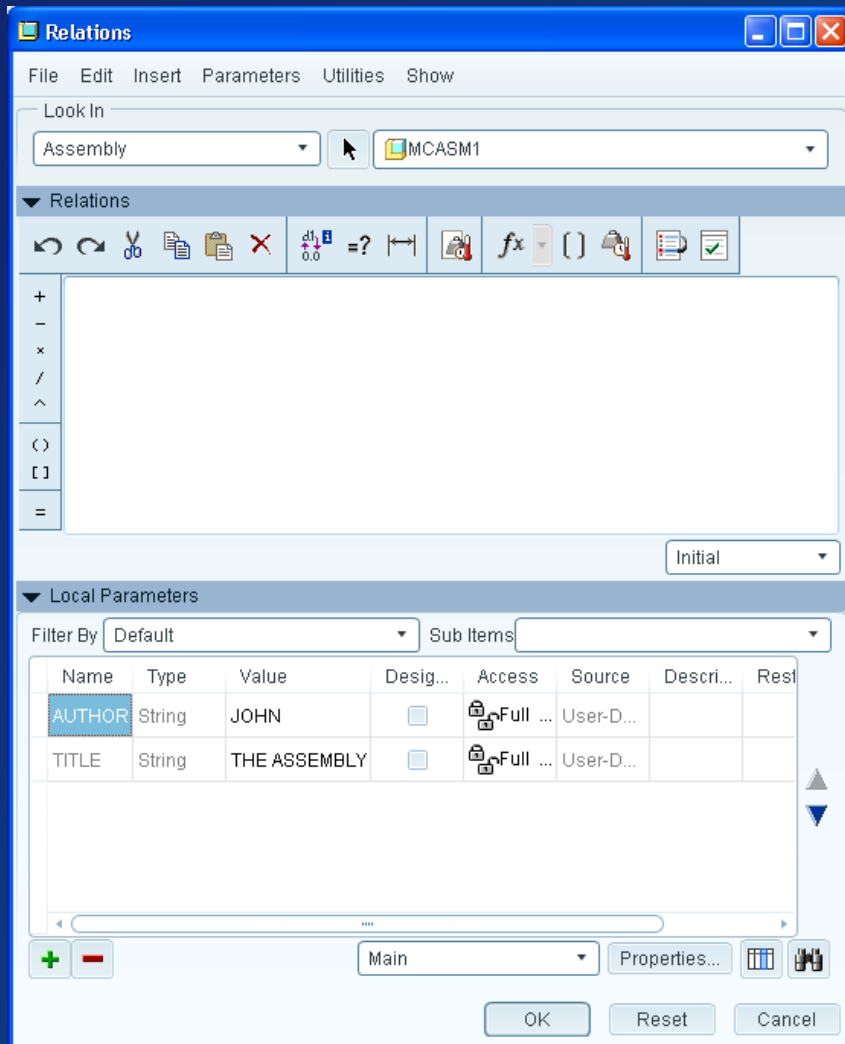
The 'Relations' dialog box is shown with the 'Look In' field set to 'Part' and 'MCPRT1'. The 'Relations' toolbar is visible. The 'Relations' text area contains the following text:

```
/*SET PART FULL DESCRIPTION  
DESCRIPTION=DESC1+" "+DESC2
```

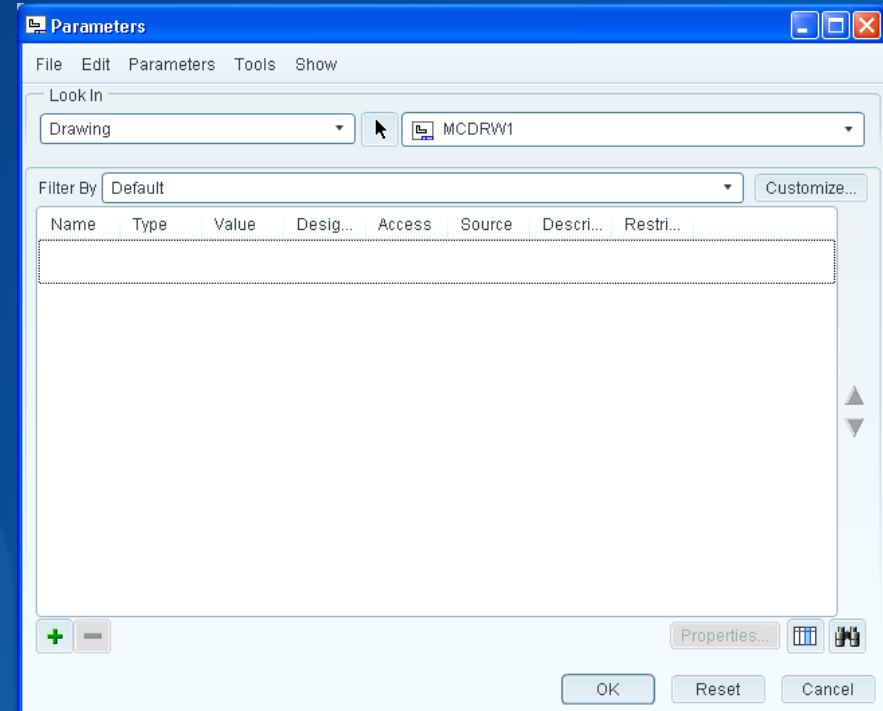
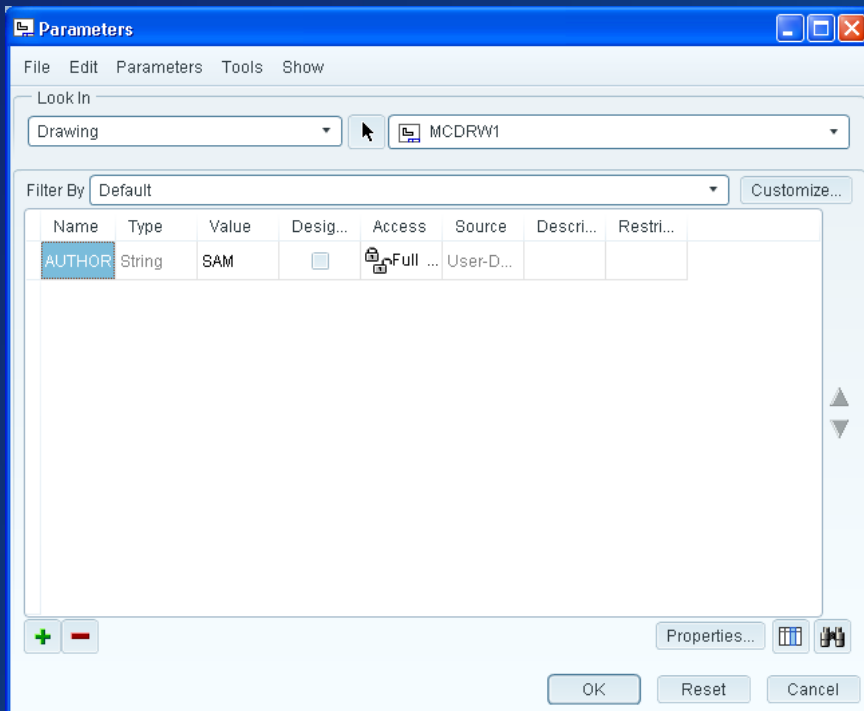
The 'Local Parameters' table is displayed with the following data:

Name	Type	Value	Desig...	Access	Source	Descri...	Re
DESC2	String		<input type="checkbox"/>	Full ...	User-D...		
DESCRIPTION	String		<input checked="" type="checkbox"/>	Lock...	Relation		
FINISH	String		<input type="checkbox"/>	Full ...	User-D...		
DESC1	String	THE MODEL	<input type="checkbox"/>	Full ...	User-D...		

50 Assemblies – Before & After



200 Drawings – Before & After



References

- PlanetPTC
 - [ModelCHECK Administration Group](#)
- PTC Technical Support
 - [Pro/ENGINEER Help Center](#)

2010



WORLD EVENT
2010

Questions?

Matt Meadows

C: 314 749 8377

2010

New Checks – Pro/ENGINEER Wildfire 5.0 M050

- New No Resolve Mode Checks
- Changes to Package Components Check
- New Mechanism Components Check
- New Fixed Components Check
- New Flexible Components Check

2010

New No Resolve Mode Checks

Pro/ENGINEER Wildfire 5.0 eliminated resolve mode and introduced new feature statuses. Now models with feature failures can be opened successfully.

check\<<check>.mch

- FAILED_FEATURES
- FAILED_COMPONENTS
- CHILD_FAILED_FEATURES
- CHILD_FAILED_COMPONENTS
- CHILD_EXT_FAILED_FEATURES
- CHILD_EXT_FAILED_COMPONENTS

Run Modes: Options

- Interactive: YNEW
- Batch: YNEW
- Regenerate: YNEW
- Save: YNEW
- Metrics: YN
- ModelUpdate: N/A
- Batch Update: N/A
- VDA: N/A
- RuleCHECK: N/A

When the above are set to Error or Warning: Provide appropriate expanding of the model tree and highlighting of the offending model tree node

Changes to PACK_COMPONENTS

Defines a packaged component as an under constrained rigidly constrained component.
Mechanism constraints are ignored.

check\<check>.mch

- PACK_COMPONENTS

Run Modes: Options

- | | |
|-----------------|------|
| • Interactive: | YNEW |
| • Batch: | YNEW |
| • Regenerate: | YNEW |
| • Save: | YNEW |
| • Metrics: | YN |
| • ModelUpdate: | N/A |
| • Batch Update: | N/A |
| • VDA: | N/A |
| • RuleCHECK: | N/A |

When set to Error or Warning: Provide highlighting of the offending component and a pick to enter redefine mode for the component.

New MECH_COMPONENTS

Identifies and reports mechanism constraints

check\<check>.mch

- MECH_COMPONENTS

Run Modes: Options

- Interactive: YNEW
- Batch: YNEW
- Regenerate: YNEW
- Save: YNEW
- Metrics: YN
- ModelUpdate: N/A
- Batch Update: N/A
- VDA: N/A
- RuleCHECK: N/A

When set to Error or Warning: Provide highlighting of the offending component and a pick to enter redefine mode for the component.

New FIXED_COMPONENTS

Identifies and reports components with fixed constraints

check\<check>.mch

- FIXED_COMPONENTS

Run Modes: Options

- Interactive: YNEW
- Batch: YNEW
- Regenerate: YNEW
- Save: YNEW
- Metrics: YN
- ModelUpdate: N/A
- Batch Update: N/A
- VDA: N/A
- RuleCHECK: N/A

When set to Error or Warning: Provide highlighting of the offending component. Provide a pick to enter component redefinition.

New FLEX_COMPONENTS

Identifies and reports flexible components in assemblies

check\<check>.mch

- FLEX_COMPONENTS

Run Modes: Options

- Interactive: YNEW
- Batch: YNEW
- Regenerate: YNEW
- Save: YNEW
- Metrics: YN
- ModelUpdate: N/A
- Batch Update: N/A
- VDA: N/A
- RuleCHECK: N/A

When set to Error or Warning: Provide highlighting of the offending component.