Adoption and Simplification of the Graphical User Interface

PREEvision
Agenda

- Customer Feedback
  Perspectives
  Configuration of perspectives
  GUI adoptions for all perspectives
Customer Feedback
GUI Simplification in PREEvision

Usability Feedback from the field

Project Starting Feedback

The feedback coming from users which are not familiar to PREEvision is:

- Very complex
- Complicated
- Hard to learn
- Concepts not clear
- Too much functionality
UX Workshop Feedbacks

- Several UX-Workshops held with expert users, focus on working with diagrams
- Facts
  - all users worked in the E/E Expert perspective
  - all tested use cases had been successfully performed
- Results
  - Good feedback for our diagrams
  - Feature wishes for a more efficient working
  - Most experienced users attested PREEvision a great functionality and found it not too complex
Reasons for Customer Feedback: complexity

1. PREEvision unites many tools and shows them in one user interface:
   - Requirement Engineering Tool
   - AUTOSAR System Design Tool
   - Wiring Harness Tool
   - Test Engineering and Management Tool
   - Ticket System and Planning Tool
   - Safety Tool

2. with additional functionality
   - Version management
   - Lifecycle management
   - Collaboration
   - ...

3. and relations between all model artifacts
It is possible to define several GUIs via perspectives, each supporting a dedicated use case. Perspectives define the shown views, their arrangement and content. Perspectives can

- be distributed
- set invisible for special roles
- locally adopted by users
- serve as a navigation instrument via dashes or
- serve as a cockpit
Views – Show users the right content

Views are tabbed areas and give a special view on the data.

- Adoption regarding size and position is possible via Drag & Drop.
- Views even can be dropped to another screen.
- PREEvision allows to define even complete new views (portlets/dashes) showing either
  - context sensitive Table Editors which follow the selection in the ModelView (e.g. showing all file attachments beneath the selection) or static table content
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  - context sensitive Table Editors which follow the selection in the ModelView (e.g. showing all file attachments beneath the selection) or static table content
  - Charts
  - Perspectives (if used as navigation dash)
  - Explorers
Explorer: Workflow oriented editor

- Guided editor, each category represents 1 step in a workflow
- Categories expandable and collapsible
- Content in a category can be filtered as in the ModelView
- Each category can have specialized Table Editors
- Selecting an artifact in a category opens registered Table Editor automatically
- Multiple Table Editors for an artifact possible: Tables alternatives are shown tabbed and must not be opened manually
- All Table Editor features available
- Completely configurable
Configuration
Use case oriented reduction of tree depth and details (filter)

Use case oriented toolbars and menu items

Use case oriented perspective (configurable, predefined, distributed, role based)

Use case oriented form and tables

Use case oriented views

Use case oriented Property Page content

Use case oriented assistance list
To create a customized perspective, the following steps are usually necessary:

1. Open an existing perspective to serve as base for the new perspective.

2. Save the perspective under a new name via menu **Window > Save Perspective as...**. The perspective is now locally available.

3. Save the perspective into the model to distribute the perspective and restart PREEvision in order to bring the new perspective under management of PREEvision.

4. Open the required views to be part of the perspective and arrange them within the workspace layout.

5. Define an icon and a (localized) name for the perspective.

6. Configure menus and toolbars available in the perspective.

7. Configure filters for the Model View.

8. Configure filters for the Property View.

9. Configure filters for the context menu of the ModelView.

10. Assign prioritized perspective elements.

11. Assign Online Checks.

12. Save the perspective into the model to distribute the perspective.

**Configuration tips**

- If the perspective should be used inside a Portlet View set an background image.

- If you want the perspective to be your default perspective you can set it as **Initial Perspective**.
Within the perspective configuration, the available views and their placement within view areas can be configured. Furthermore, it can be configured whether an editor area is available or not. An editor area is for example used to display diagrams and tables.

**Views**

- Open the needed views via **Window > Show View** and arrange them
- Beside these Views you can define own views (Portlets/Dashes) via **Window > Create New Portlet**
  - Attach a table, chart or another perspective via drag&drop
  - Tipp: if you use Portlets for a cockpit referencing other perspectives it is possible to hide the Tab of the Portlet views via **Window > Hide Tabs** for Perspective.

**Editor area**

- Enable/Disable the Editor Area: select **Window > Enable/Disable Editor Area**
  - **Hint:** if the editor area has been disabled for a perspective, an open editor area will be closed when switching to this perspective.
Setting up a perspective: Define icon and localize name

► Changing the perspective icon

1. In the perspectives toolbar, right click on the icon of the currently active perspective and select **Choose Icon**.
2. Select an icon, e.g. a PNG file

► Localization

1. By default, the name of a distributed perspective is defined in the name of the Perspective Configuration.
2. Create a new Localization in the Perspective Configuration (context menu New | Localization).
3. Open the General property page of the Localization and in the Language drop-down list, select the client language to which the Localization shall be applied.
4. Enter the localized perspective name.

Configuration tip

► Localization is also possible for tables, charts, metrics, reports and rules
Setting up a perspective: Define menu and toolbar

- Arrange toolbar and perspective toolbar buttons via drag&drop
- Configure visible menu items and toolbar buttons

1. In the main menu, select Window | Customize Perspective....
2. In the dialog, the following tabs can be used for the configuration:
   - Toolbar Visibility: configure which toolbars and which toolbar buttons should be displayed.
   - Menu Visibility: configure which menus and which menu items should be displayed.
   - Action Set Availability: configure which action sets should be available. Action sets contribute a set of menu items and toolbar buttons associated to a specific function. For example, the "Search" action set contributes the Search menu and toolbar.

Configuration tip
- If you have disabled a functionality, e.g. the command Customize Perspective you can access the command via the Quick Access field in the toolbar.
Filters are stored within a perspective and can be defined for

- **ModelView Filter**
  filters based on hierarchy or on metaclasses
Filters are stored within a perspective and can be:

- **ModelView** filters based on hierarchy or on metaclasses
- **Property Editor** filters for pages and attributes
Filters are stored within a perspective and can be defined for:

- **ModelView** filters based on hierarchy or on metaclasses
- **Property Editor** filters for pages and attributes
- **Context menu** filter context menu items of the ModelView

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**Configuration**

**Filter – Simplification of the data model**

Filter types:

- Open with
- New
- Reuse
- Mapping

Filter menu:

- Show Reuse
- Refactoring
- Project Management
- Execute Consistency Check
- Metrics
- Report
- Export
- Copy Mappings
- Develop Mappings
- Run Artifact
- Run Circuit Synthesis

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**Navigation**

- Cut
- Copy
- Delete
- Rename
- Refresh Element
- Undo Execute Online C... whole model...

- Set Workspace
- Files and Formatted Text
- Open Traceability View
- Filter Hierarchy Level
- Filter MetaClass

- Change Object Configuration...
- Reset Object Configuration
- Select as left side for compare
- Change history

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There are two different filters for the ModelView available:

- The **MetaClass Filter** can be used to hide artifacts of a specific meta class including all contained artifacts. For example, hiding Customer Feature Packages via a meta class filter will also hide their contained Customer Features.

- The **Hierarchy Level Filter** can be used to hide artifacts of a specific meta class but still show their contained artifacts if they are of another meta class. For example, hiding Customer Feature Packages via a hierarchy level filter will show all Customer Features without the Customer Feature Package structure.
ModelView filters can be configured via context menu or via filter dialog

1. The Configure Filter dialog can be opened via **Configure Filter...** in the view menu of the Model View.

- **Configuration tip**
  - ModelView extensions via Model Queries are also stored within the perspective and can be used to show additional data in the ModelView.
To filter the context menu of the ModelView, a blacklist file can be attached to the perspective. The blacklist contains the IDs of the context menu items to be hidden.
Setting up a perspective: define Context Menu filter for the ModelView

1. On your local file system, create a text file with the file extension *.list
2. Call the context menu on the perspective configuration New > Context Menu Black List Configuration File and select the file from the local file system.
3. Open the Status view (Window | Show View | Administration | Status).
4. Press <ALT>+<SHIFT>+<F6>. The mouse pointer changes into the icon 🔄
5. Open the context menu and click on the item you want to hide. The ID is displayed in the Status view.
6. Copy the line from the Status view and insert it into the black list file.

Configuration tip

- To filter a complete submenu, copy the first part of the ID up to the hash character (#) to the blacklist file. Example: Hide the complete New | Documentation submenu. MENU-ID: vi.basicmodeloperations.ui.actions.CreateNewModelElementAction
Setting up a perspective: define filter for the Property Editor

Define filters for shown pages, attributes and relations.

1. In the Model View, select an artifact of the required artifact class.
2. In the Property View, enable the filter configuration mode via the toolbar button.

3. Use the toggle buttons in front of the property pages/properties to define which items are visible/invisible.

Configuration tip
- It is also possible to select several artifacts in the ModelView to define a filter for multiple artifact classes.
Excursion: Define artifact pickers for the Property Editor

In addition to custom Artifact Pickers for Table Editors it is possible to define Artifact Pickers for the Property Editor.

- All Artifact Picker types are available:
  - Generic Table Artifact Picker
  - Meta Class Artifact Picker
  - Metric Artifact Picker
  - Query Artifact Picker

- A custom Artifact Picker for the Property Editor is shown preferential in the combo when the Artifact Picker for the corresponding Metaclass is opened

- Several Artifact Pickers can be defined for a Metaclass

- The order of the available Artifact Pickers in the Combo can be adopted
Prioritized perspective elements are shown on top level in context menus and can be

- Table Editors
- Metrics
- Consistency Checks

The bound Tables, Metrics and Checks are presented on top level in the context menu of the ModelView for a quicker access, other available items are now located in a submenu “Others”.

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Setting up a perspective: assign Online Checks

By default no online check results are displayed in a perspective. As Perspectives are designed for a special use case it is possible to assign specific checks which are automatically proofed. Bind Online Checks to a perspective to ensure that the perspectives use case relevant validation results are shown.

If a perspective with assigned online checks is activated:

- Only the assigned checks can be activated in the E/E Model Online Check view.
- Only results of the assigned and activated checks are displayed in the E/E Model Online Check view.
- Only severity icons results of the assigned and activated checks are displayed in the ModelView, Diagrams and Table Editors.

Configuration

1. Open the Online Checks property page of the Perspective Configuration.
2. Assign the required Group(s) via drag&drop to the Online Checks table.
GUI adoptions for all perspectives
GUI adoptions for all perspectives

GUI adoption for all perspectives - ModelView

- Artifacts in the ModelView can be dynamically displayed with custom icons and labels based on attributes and lifecycles

- The New menu in the ModelView can be extended by own actions for extensive operations
GUI adoptions for all perspectives

GUI adoption for all perspectives - ModelView

- **Simplified Model View**: by default the ModelView doesn’t shows the Administration (except the own user) and Branch, Revision and Metaclass information.
- Administration can be shown via dropdown menu
- Detailed artifact information can be activated via toggle button
  - The attributes to be removed in the simple representation can be defined via the object configuration and the tag `<details>`
  ```xml
  <groupNoAttribute><group><aliasName>: </group></groupNoAttribute>
  <name><details> <group> /<ArtifactBranch>/ArtifactRevision</group> </name>
  <grey>(ArtifactType): </grey> </details>
  ```
- The latest active setting (Show Administration true/false and Show detail information true/false) is reapplied at the next client startup.
Drag & Drop actions

- Simply create mappings, links or reorder requirements via Drag & Drop of one artifact to another. Drag & Drop is supported in the ModelView as well as in all other editors even between views and editors.

- Drag & Drop actions can be customized by metrics, e.g. paste a requirement structure with automatically created reuses, or drop a Ticket on another Ticket to mark it as duplicate.
  - Actions can be started by drag&drop or by copy&paste special
  - The customized actions are available in the ModelView, Table Editors and in Diagrams.

- Default action, menu position, icon and localization can be defined
GUI adoptions for all perspectives

Summary: GUI adoption for all perspectives

- Diagram Configuration: Legend, Title Block
- Artifact Configuration (name, icon, coloring, font, shown details)
  - Model view display
  - Diagram display
    - Display for direct & indirect attributes of objects in diagram
- Table Editors, Charts, Explorer, Metrics and Reports
- Artifact Pickers in Table Editors or the Property Editor
- Quicksearch: attributes to be searched by default
- Search: customized search pages
- New menu (Metric-based operations)
- Lifecycles
- Drag&Drop operations
- Custom attributes
- Scopes
GUI adoptions for all perspectives

Summary: specific perspective adoption

- Perspectives
  - Background, icon, switch order, localization
- Views
  - Position, size and kind of view/editor area
  - Property view filtering
  - ModelView extension and filtering
  - Assistance views with predefined table editors
  - Portlet views with predefined table editors or charts
- Menu
  - Context menu filtering (each perspective can have a blacklist)
  - Menu and toolbar filtering
- Online Checks
  - Prioritized perspective elements
  - Initial perspective Editors: allows to automatically open Table Editors, Diagrams or Explorer Editors to offer users a predefined entry point into the model.
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