CD105

What's New in Web Dynpro ABAP 7.01 and 7.02

Thomas Jung, SAP Technology Solution Management
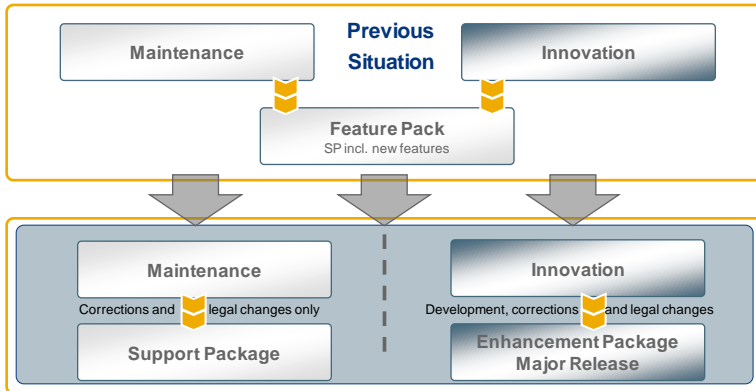
SAP TECHED 10
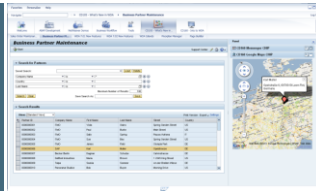

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SAP Enhancement Package for SAP NetWeaver

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SAP enhancement packages for SAP NetWeaver contain new functionality, in addition there will be Support packages containing only corrections. The main goal is to strictly separate maintenance from innovation and increase the quality of support packages.

Maintenance	**Previous Situation**	Innovation

Feature Pack
SP incl. new features

Maintenance		Innovation
Corrections and legal changes only		Development, corrections and legal changes
Support Package		**Enhancement Package Major Release**

Agenda

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1. **Web Dynpro UI Element and Tools Enhancements**

2. Islands

3. Floorplan Manager

4. POWL

5. Local Page Builder

6. Looking Into the Future

Motivation Web Dynpro

Web Dynpro

- UI definition independent of client technology
- As much abstract declaration as possible
- Different rendering engines for different (future) UI technologies without adapting application coding
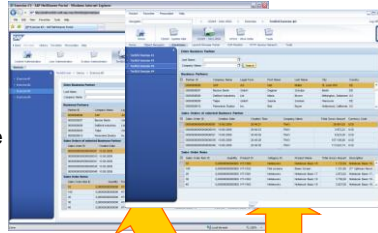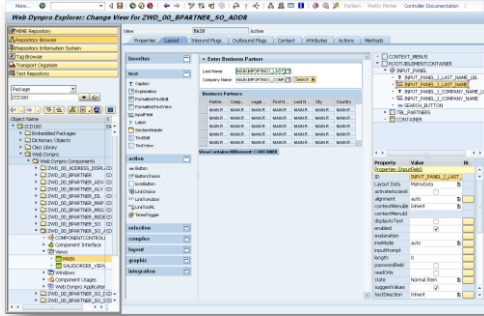

other?

http://...
HTML, JS

http://...
XBCML, delta

???
???

Rendering Engine	Rendering Engine	Rendering Engine

Meta Data
`<xml>`
`<wd:xxx>`
`</xml>`

Web Dynpro

Web Dynpro AJAX Client Succeeds HTML Client

Web Dynpro AJAX Client

- *Drag&Drop*, *Suggestion*, Page Rearrangement
- Use of *XMLHTTPRequestObject*
- Validation of Simple Data Types
- Extensive *Keyboard* Support
  - hot keys, access keys, function keys
- In-place editing, fluid animations
- Enhanced client/server communication supporting on-demand JavaScript
- New Web Dynpro UI theme *SAP Tradeshow Plus*
- New Lightspeed rendering engine with support for inline CSS, JavaScript load on demand and other performance enhancements

Lightspeed Rendering (7.01)

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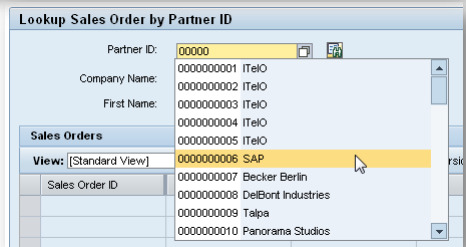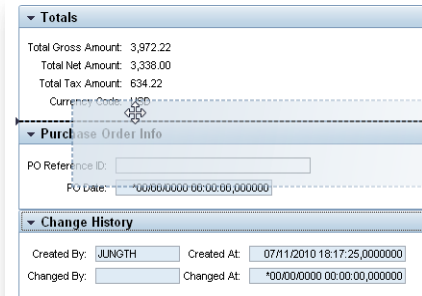
Improvements by New Lightspeed Rendering

- Only stylesheet data and client scripting is loaded that really is required for the current screen

- Reduction of client side rendering time leading to overall performance improvements

- More stable rendering framework

- Some changes in look and feel of existing applications (e.g. no paginator for tables any longer)

- Prerequisite for Signature design (WDTHEMEROOT=sap_tradeshow_plus)

- New UI elements require Lightspeed

- Switched on by default

DEMO

Lightspeed Rendering and AJAX Client
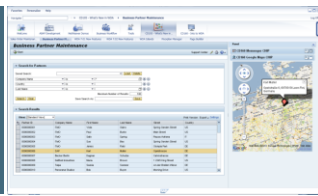
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Agenda

1. Web Dynpro UI Element and Tools Enhancements

   - **7.01 Tooling**
   - 7.01 Enhanced UI Elements
   - 7.01 New UI Elements
   - 7.02 Tooling
   - 7.02 Enhanced UI Elements
   - 7.02 New UI Elements

2. Islands
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6. Looking Into the Future

7.01 Enhanced Tooling – Workbench/Context

New Tabular Context Editor

- Table based representation of the Context instead of a tree
- Easier to view and edit more than one attribute at a time
- Ability to sort by Node or Element name

Where-used list for context elements (7.02)
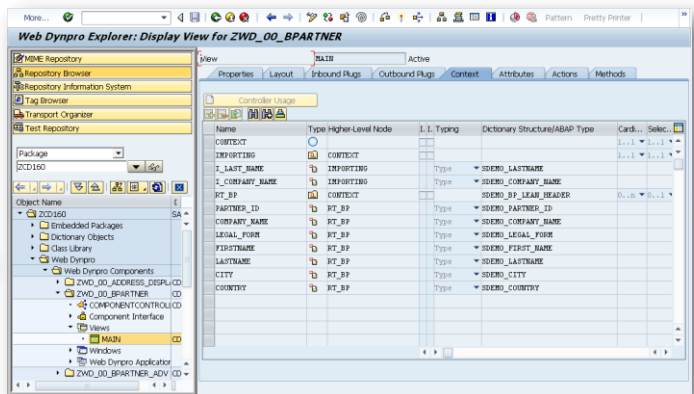
7.01 Enhanced Tooling - Code Wizard

SAP

Code Wizard – Additional Wizards and Reworded Context Wizard

- Considerable Enhanced Code Wizard
- Extended Context Wizards with new Set and Append options and support for Table Operations on each command
- New Generate Popup Window (new 7.0 SPs)
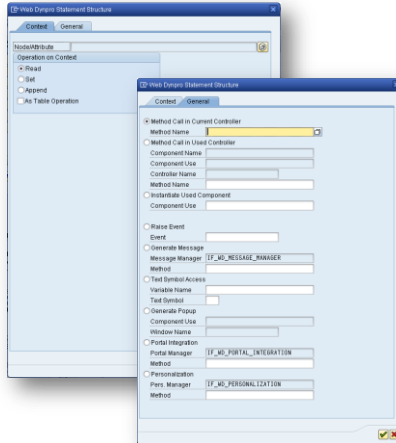
7.01 Enhanced Tooling – Trace Tool

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Web Dynpro Server Side Storage of Client Side Trace Information

- Trace the effect of much of the inner rendering engine using the WD Trace Tool
  - Activate using transaction WD_TRACE_TOOL

Agenda
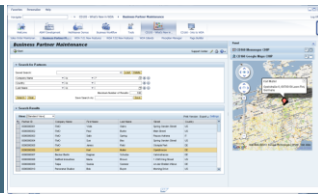
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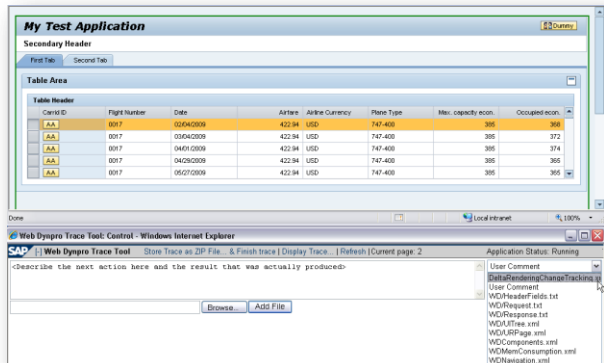# 7.01 Enhanced UI Elements - WDA Keyboard Hotkeys and Access Keys

Access Keys for Focus	■ Access keys allow a user uses to set the focus directly on a UI element ■ Key combination for an access key is always ALT + [first letter of text of UI element/title/label]
Hotkeys for Action Triggers	■ Hotkeys are key combinations with which a user can trigger a specific action ■ Hotkeys can be assigned to Button, ToolBarButton, LinkToAction, MenuActionItem, ToolBarLinkToAction, ToolBarLinkToURL, and LinkToURL
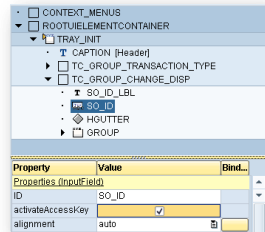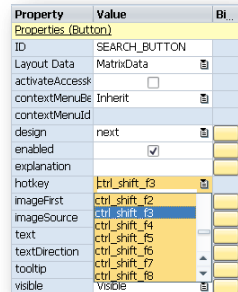
7.01 Enhanced UI Elements - Value Help

Value Help Redesign

- Sorting of individual Columns
- Rearrangement of Columns using Drag and Drop
- Value List type in Title Bar
- Tab for swapping between personalized and general list now a link
- Switching between elemental search helps now via Drop Down List Box
- Hit list header removed
- Settings dialog now opened via Context Menu
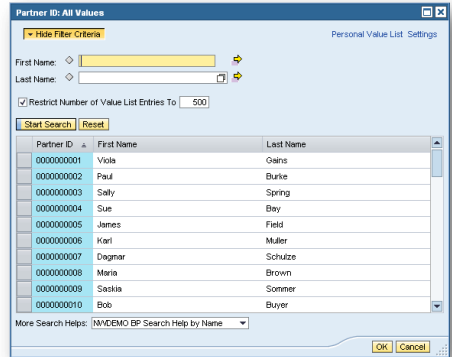
7.01 Enhanced UI Elements – Configuration Editor

Applications Can Now Create Their Own Custom Configuration Editors

- Redesign of the Configuration Editor focused on usability
- You can now build WD Components to function as custom configuration tools (must implement IF_WD_CFG_COMP_EDIT)
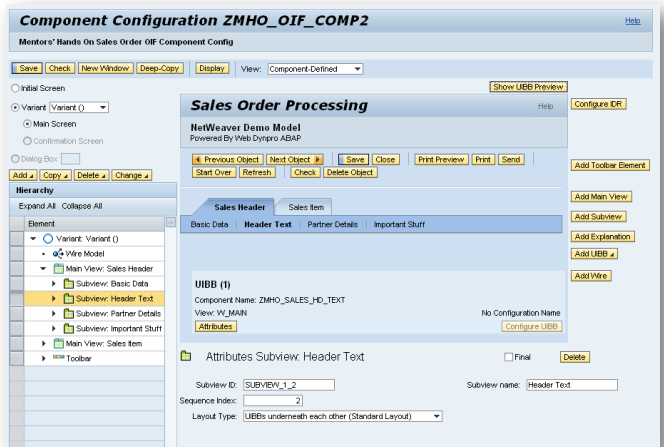
Main Adopter: Floorplan Manager

7.01 Enhanced UI Elements - Table Enhancements

Row Grouping
Creates a Simple Grouping of Rows in Tables – expandable collapsible

Table Row Grouping

Table with Grouped Rows	
Text	Selected
▶ Group 1	
▼ Group 2	
Group 2 Entry 1	☐
Group 2 Entry 2	☐

Header Wrapping

Header Wrapping

Flight data

Airline: This is a very long heading that should not be wrapped	Date	Price	Currency
AC	12/20/2002	1,222.00	CAD
AF	12/23/2002	2,222.00	EUR

Header Grouping

Header Grouping

Group 1

			Group 3	
Group 1			Group 3 / 1	
🟢 Gr1 H1	Gr1 H2	Header 2	Header 3 / 1 / 1	
Column 1	Column 2	Column 3	Column 4	
Column 1	Column 2	Column 3	Column 4	

Agenda
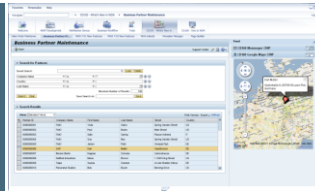
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7.01 New UI Elements – Drag and Drop

New UI Elements and Events To Support Drag and Drop

- New UI elements DragSourceInfo, DropTargetInfo, and DropTarget
- New onDrop event for various UI elements
- Rearrangement of UI element Groups within a GridLayout
- Rearrangement of Columns in Tables
- Browse & Collect Pattern With ItemListBox, Table and Tree

7.01 New UI Elements – Drag & Drop: How To Switch It On

Use of the DragSource and DropTraget To Enable Drag and Drop
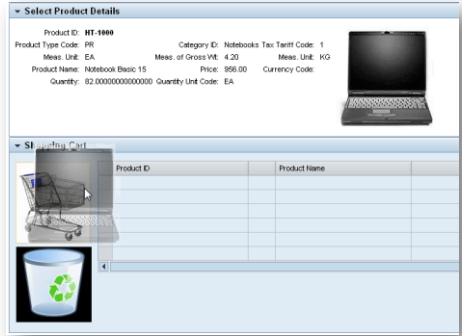
Property	Value	Binding
Properties (DropTarget)		
Events		
onDrop	DROPPED 🗎	🗋

▼ ☒ MY_DRAG_UI_ELEMENT
 • ◇ MY_DRAG_SOURCE_INFO [DragSourceInfo]

▼ ◇ MY_DROP_TARGET
 ▶ ☒ MY_DROP_UI_ELEMENT [Content]
 • ◇ MY_DROP_TARGET_INFO [DropTargetInfo]

Property	Value	Binding
Properties (DragSourceInfo)		
ID	MY_DRAG_SOURCE_INFO	
data		
enabled	☑	
mimeType	text/plain	
scope	Component Instance 🗎	
tags	AnyTagYouLike	

Property	Value	Binding
Properties (DropTargetInfo)		
ID	MY_DROP_TARGET_INFO	
enabled	☑	
name		
scope	Component Instance 🗎	
tags	AnyTagYouLike	

7.01 New UI Elements – Drag & Drop: Table

SAP

The Table Supports Drag and Drop of Its Rows Within Itself and to Other Drop Targets

- DragSourceInfo determines **drag**-behavior of **all** table rows
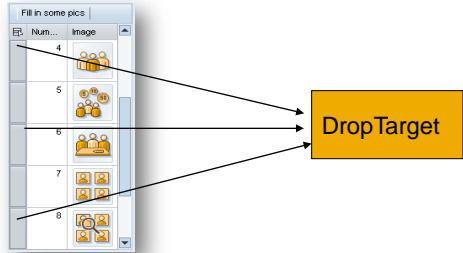
- DropTargetInfo determines how to **insert** objects between **any** two rows

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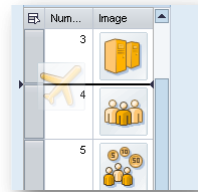
7.01 New UI Elements – Formatted Text Editor

SAP

Simple WYSIWYG Editor for Creating Formatted Text

- Supports:
  - Headers 1 to 3
  - Alphabetical and non-alphabetical list
  - Indentations
  - Text Bold and Italics
- Child element, SimpleFormattedTextField, allows dynamic data to be parsed into text

7.01 New UI Elements - Section Header

Display a Header for a Section Within a Form

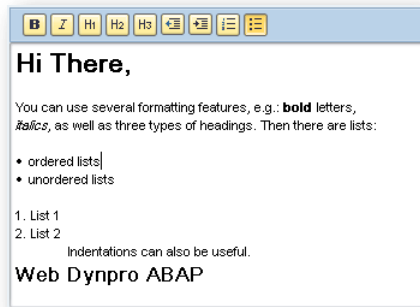- Use a SectionHeader in a TransparentContainer when isLayoutContainer = False
- Never use a Section header without associating it with a TransparentContainer
- SectionHeader is not accessible via tabing
- SectionHeader.text is used for accessibility text of TransparentContainer if accessibilityDescription is missing

Basic Data

Partner ID:	
Company Name:	
Legal Form:	
First Name:	
Last Name:	
Middle Name:	

7.01 New UI Elements - LinkChoice

A Link With a Triangle that Provides Different Options via a Pop Out Menu

- ▼ ◇ LC_MEALS
  - · ◇ BEEF
  - · ◇ CHICKEN
  - · ◇ VEGGIE

MenuActionItems with associated actions

Link Choice

What would you like to eat?

- Beef
- Chicken
- Vegetarian

Link Choice

What would you like to eat?

7.01 New UI Elements - Page Layout

SAP

PageLayout Allows You to Divide the Page into Several Area Easily
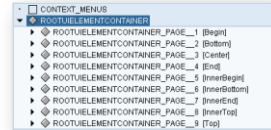
- **Page Layout must be the Root UI element of a view**
- **It should only be used once in an Application at the Top View**
- **Can have up to 9 inner areas**
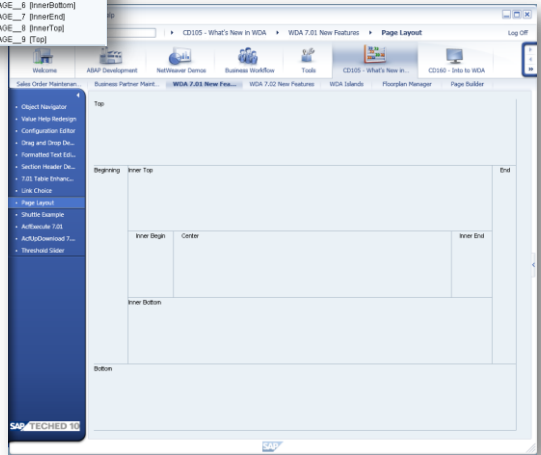
7.01 New UI Elements - Shuttle

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Shuttle – The UI Element For the Browse and Collect Pattern

- Allows users to move entries back and forth between two different UI elements
- Complete logic and coding must be implemented by developer

7.01 New UI Elements - ACFExecute

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ACFExecute Allows Execution of Desktop Applications – Like Notepad or Explorer

- Uses a Java Applet to get around Browser limitations
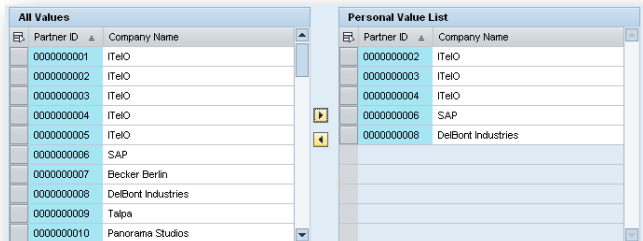- Controlled by a security whitelist

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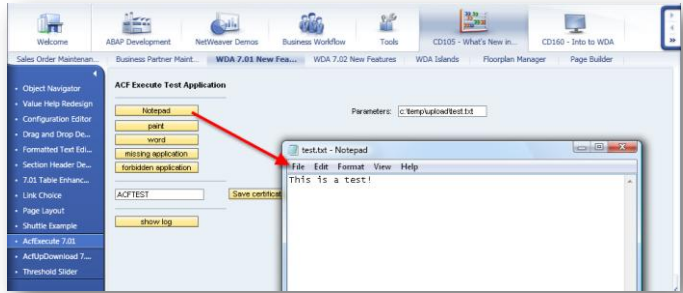
7.01 New UI Elements - AcfUpDownload

SAP
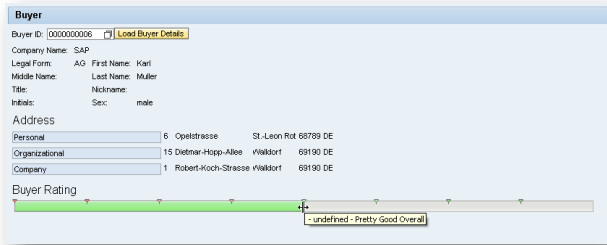
AcfUpDown-load Allows for Silent and Multiple File Uploads and Downloads

- Controlled by Security Whitelist so directory and server access are both restricted
- Designed for use with KPRO or SAP Content/Cache server but can interact with any HTTP handler

7.01 New UI Elements - Threshold Slider

SAP
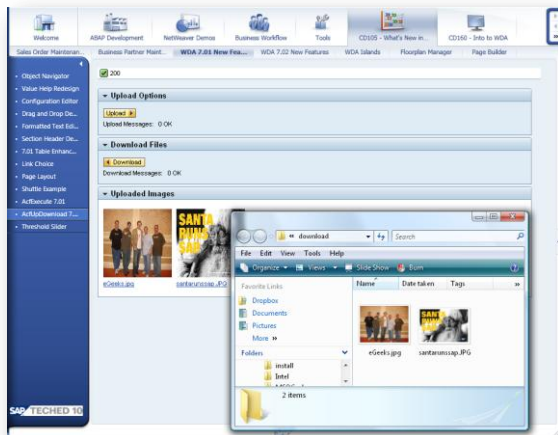
Threshold Slider is a Bar-Like Depiction of a State or an Integer Value

- Color changes with defined threshold values
- Width is determined by number of TickMark intervals
- OnChange event for dynamic processing as the thresholds are met

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Agenda

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7.02 Tooling - New Layout Designer

New Version of the Layout Designer Implemented in Web Dynpro ABAP

- Better WYSIWYG Preview of Rendering
- New Context Menu within Preview Area
- New Menu Options to move UI elements and link to Element Documentation
- Developer Defined Reusable Templates
- Improved Cut and Paste support of UI element blocks
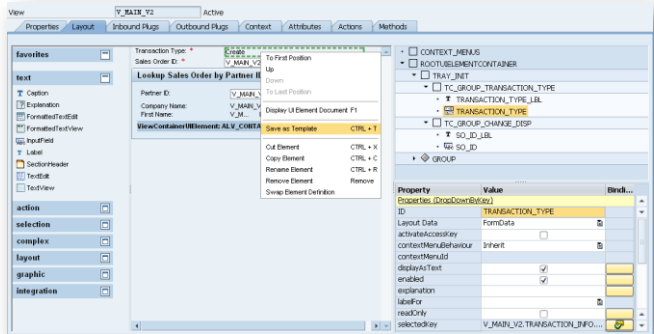
7.02 Tooling - New Window Editor

New Version of the Window Editor With a Graphical View Instead of the Classic Tree View

- Graphical Layout of Window, View, and Plug Relationships
- Similar Rendering to that used in Web Dynpro Java Window Editor
- Drag and drop Views and Plugs to create new relationships
- Tree View for the Window Editor is still supported and you can switch back and forth
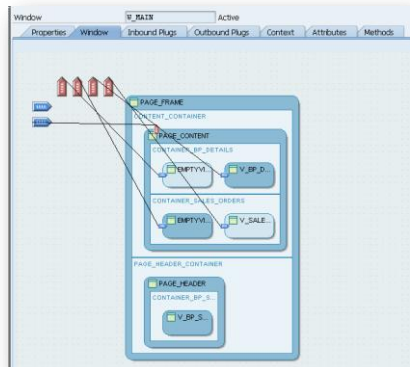
Agenda
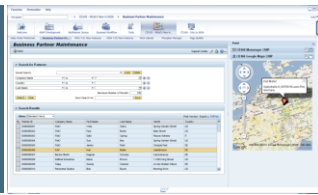
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7.02 Enhanced UI Elements - Table

Table General New Features

- Selection Behavior has been improved; clicking anywhere on table row leads to a selection
- Secondary selection no longer triggers a round trip
- Selection mode singleNoLead and multiNoLead without an onSelect no longer trigger an unnecessary server round trip
- New property DefaultButton for use in the Table Toolbar

7.02 Enhanced UI Elements – Table; Business Suite UI Guidelines 2.0

SAP

Table Header Design	Advanced Filtering and sorting menu UI replaces former "table filter row". Menu entries are… ■ Sort ascending, descending ■ All ■ *Custom …* to open customer filter dialog ■ List of up to 100 filter value suggestions	
Multiple Cell Editor Support	Define several links in same table cell to realize "One Click Actions" ■ Supported cell editors: *Button*, *ToggleButton*, *LinkToURL*, *LinkToAction*, *FileDownload* ■ New Table cell variant: *TableMultiEditorCell*	
New Table Selection Behavior	Selection follows focus. This means the table's lead selection follows the keyboard navigation inside the table.	New application parameter WDUIGUIDELINE = GL20 allows activation of the new selection change behavior and new header design
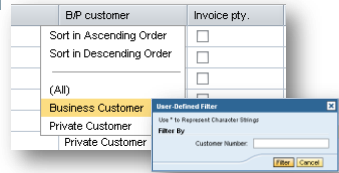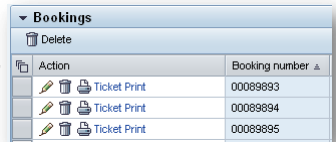
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7.02 Enhanced UI Elements – Table; Business Suite UI Guidelines 2.0 (Continued)

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New Column Resize Behavior	New Table based column resize behavior ■ Resizing one column doesn't affect the other columns ■ Instead the table expands or shrinks maintaining all column sizes	
Client Side Column Scrolling* *without fixed table columns	Support client-side table column scrolling: ■ Display tables of predefined width (in, px, em, ex or %) with <u>large number of table columns</u> ■ Scroll table columns with horizontal table scroll bar ■ Table width keeps stable and does not stretch the embedding container (intrinsic table sizing based on large number of columns to be displayed)	

7.02 Enhanced UI Elements – New Layout Type: FormLayout

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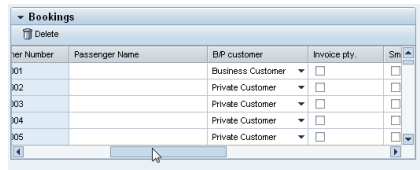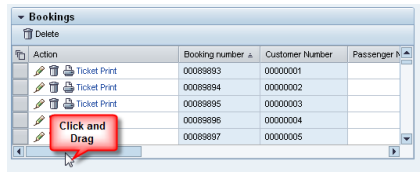
New Form Layout

Design state-of-the art form UIs with new container layout **FormLayout**

- Automatic column distribution to achieve vertical alignment of form UI elements (labels, form fields) across form groups
- New **LayoutData** object types: `FormData`, `FormHeadData`, `FormTopData`
- New Label behavior in FormLayout

Supported FormLayout variants (number of cells : number of form groups)

- 8:1, 16:2, and 16:1

16:2 Form Layout

- Purchase Order Details

| General Data | FormTopData colCount=8 | Processing Data | FormTopData colCount=8 |

Business Partner — FormHeadData

Form Group

new property WDSectionHeader.design = underline
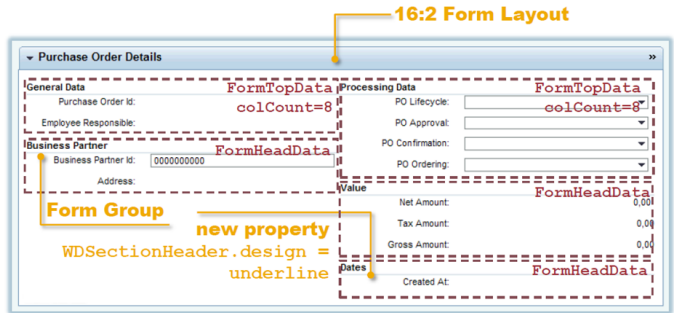
7.02 Enhanced UI Elements – New Label Behavior in FormLayout

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New Label Behavior (in formLayout)

New Label Behavior in FormLayout

- Support truncation and Ellipsis of Labels to avoid pushing size of form groups
- Support right-aligned labels in form gropus
- Required asterisk on the left side of the label

Set new application parameter **WDSTYLE_LABELALIGNMENT** (USEGL, LEFT, RIGHT) to align form labels at right (standard for the new UI Guideline 2.0) or left side

Form Layout

URL Parameters

Switch Label alignment left / right: WDSTYLE_LABELALIGNMENT=LEFT / RIGHT

Switch required Asterisk alignment left / right: WDUIGUIDELINE=GL20 / GL11
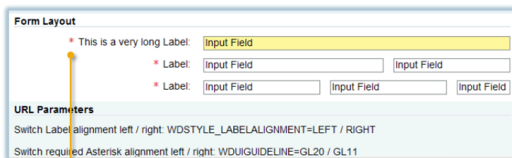
Required Asterisk at left side

Ellipsis

8/1 Form Layout (No Melting Groups)

7.02 Enhanced UI Elements – New Layout Type: FormLayout - Template

Support FormLayout in the Form Template within the ABAP Workbench

New Web Dynpro ABAP Tools Function

Support new FormLayout in existing Form Template
- Define Form Labels using OTR alias browser

Predefine FormLayout variants (number of cells : number of form groups)
- 8:1 and 16:1

7.02 Enhanced UI Elements – Crystal Reports Integration in ALV

Ability to Configure an ALV to Display in Place as a Crystal Report

7.02 Enhanced UI Elements - displayAsText and inputPrompt properties

SAP

DropDown*, InputField, and TextEdit Have a New Property Called displayAsText

Causes field to act as TextView until it receives mouse over or focus, then changes to the edit UI element
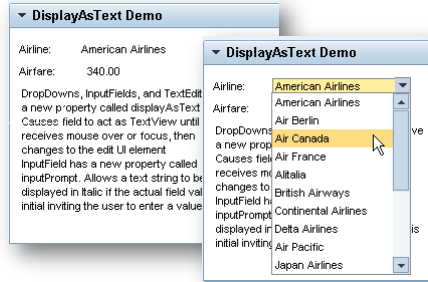
InputField Has a New Property Called inputPrompt

InputField has a new property called inputPrompt. Allows a text string to be displayed in Italic if the actual field value is initial inviting the user to enter a value

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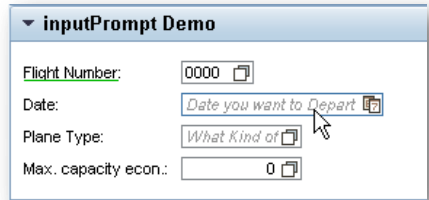
7.02 Enhanced UI Elements - InputField SuggestValues Property

SAP

AJAX based value suggestion as you type

- New property called valueSuggest
- Will use the DDic Search Help to retrieve the values
- Values from the Personal Value List get displayed with a star
- The AJAX callback does NOT trigger the complete WD Phase Model
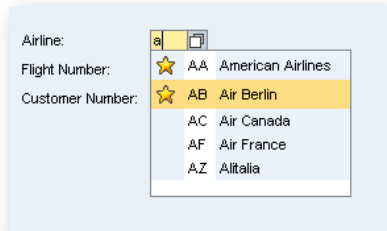
Personal Value List as an in-place DropDown when you press F4
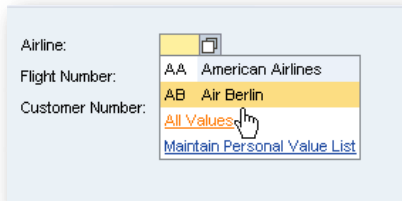
7.02 Enhanced UI Elements - BusinessGraphic imageData Property

SAP

Business Graphics Has a New Property called imageData

- Allows you to receive an XSTRING variable with the GIF image data that is rendered by IGS
- Image data can then easily be saved or used when printing without a secondary call directly to the IGS via the APIs
- Does not work when the BusinessGraphic UI element is not visible

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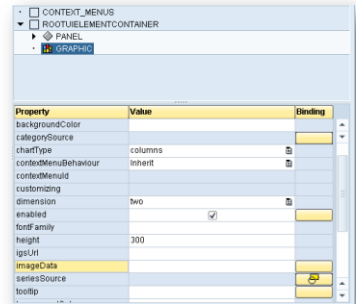
7.02 Enhanced UI Elements - Drag & Drop: MatrixLayout (7.02) and GridLayout (7.01)

SAP

Use of Drag and Drop for Runtime UI Element Arrangement is Expanded to Include the Matrix Layout in 7.02

- Only for GridLayout with one column (7.01, 7.02)

- Only row-wise drag & drop in MatrixLayout (7.02)

- No SE80 support - dynamic programming necessary

- Set „isDragHandle" = true of an image or caption in a layout cell
    => handle for drag and drop of this cell

- Set „dragData" of the layout cells
    => when this cell is dropped
    the value can be retrieved from the event parameter OnDrop.data

7.02 Enhanced UI Elements – Support Active Controls in Scroll Containers

Active Controls in Scroll Container

Support Embedding of Active Controls* inside scroll container UI elements like *TransparentContainer*, *Group*, *Tray*, or *Panel*

Applied by ABAP Page Builder to display Active Controls in Side Panel

*Support Controls:
- InteractiveForm
- OfficeControl
- Gantt
- Network
- FlashIsland
- SilverlightIsland

Adobe Flash Island

scrollable TransparentContainer
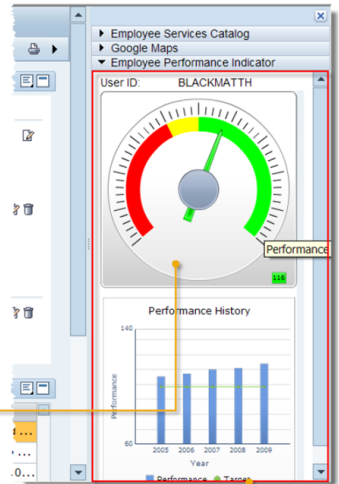
7.02 Enhanced UI Elements – Dynamic Tables in SAP Interactive Forms

SAP Interactive Forms by Adobe

Dynamic Tables Support

Support generic data synchronization of Web Dynpro Controller contexts with Adobe subForm instances dynamically added/removed at runtime

- Creates a new context element if a subForm was added by invoking the **XFA InstanceManager** method *addInstance()*
- Deletes an existing context element if a subForm was removed by invoking the **XFA** I**nstanceManager** method *removeInstances()*

SAP Note 1392968

7.02 Enhanced UI Elements - Context Range Supply Function

SAP

Performance Optimization

Range Supply Function

Range Supply Function: Introduced new type of supply function that informs the application which part of the data needs to be loaded into the context node

- Memory reduction with regard to the WDA Context, especially for context nodes with multiple cardinality that manage large amounts of data
- New context API **IF_WD_CONTEXT_NODE_RANGE** allows passing sections of an internal table to the context node instead of the whole table.

Typical Use Case:
heavy table performance optimization

Main Adopter:
ALV Component

7.02 Enhanced UI Elements - Delta Rendering Optimization

SAP

Performance Optimization

Improvement in Change Recognition

Reduced average response time based on optimized change recognition in the WDA rendering runtime

- No re-rendering for non-state-changing visibility/enabled setter calls
- No re-rendering for non-state changing context attribute updates

Note:
Web Dynpro ABAP Delta Rendering is enabled by default in SAP NetWeaver 7.02

Main Adopter:
FPM
> 10% performance improvement in all FPM applications

SAP Notes
1337404
1403773
For Delivery
into 701

Agenda
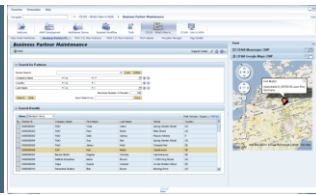
1. Web Dynpro UI Element and Tools Enhancements
    - 7.01 Tooling
    - 7.01 Enhanced UI Elements
    - 7.01 New UI Elements
    - 7.02 Tooling
    - 7.02 Enhanced UI Elements
    - **7.02 New UI Elements**
2. Islands
3. Floorplan Manager
4. POWL
5. Local Page Builder
6. Looking Into the Future

7.02 New UI Elements - Panel

Container UI Element with a New Visual Design (similar to CRMUI) and Expanded Capabilities

- Alternative to Group and Tray
- Expand/Collapse is an arrow on the left side
- More developer control over the Header and Toolbar area
- Title can be editable at runtime
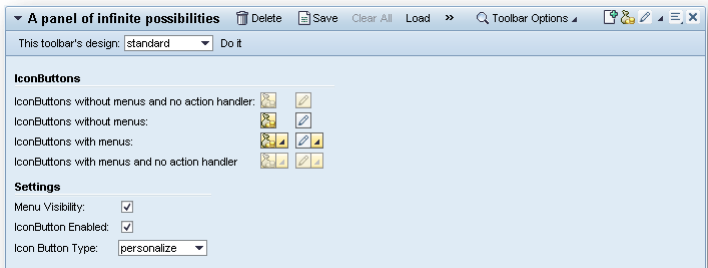
7.02 New UI Elements - PanelStack

PanelStack Offers a Collection of Panels and is a Visual Replacement for TabStrip

New PanelStack UI Element:

- Panels can be stacked so that several panels form one stack with tabs, but can be separated back out into individual Panels
- Each inner Panel is represented by a tab
- The Panel titles are displayed on the tabs and are editable at runtime

Panel

Panel Stack

▼ Basic Data

▼ Sales Info

Sales Order ID: 00000000005000000010
Order Type:
Posting Date: 07/12/2010 18:17:25,0000000

▶ Partners

| Item Details | Item Text | Item Product Details | Add |

Sales Items

Sales Order Item ID	Product ID
10	HT-1040
20	HT-1041
30	HT-1042

Main Adopter: Floorplan Manager
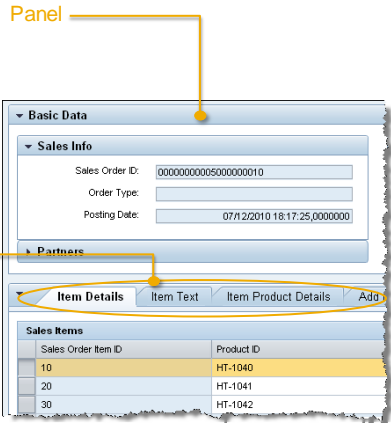
7.02 New UI Elements - IconButton

Simplified Version of the Button That only Displays an Image But Not Text

- Unlike Buttons, IconButtons can have a menu
- Menu can be displayed via a separate menu provider area on the button or directly off the Icon
- No server action is fired if property type=menu

IconButtons

IconButtons without menus and no action handler:

IconButtons without menus:

IconButtons with menus:

IconButtons with menus and no a   Some Menu Item

Help

Settings

Menu Visibility: ☑

IconButton Enabled: ☑

Icon Button Type: help ▼

Main Adopter: Panel
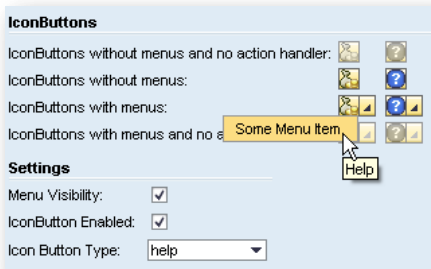
7.02 New UI Elements - Accordion

SAP

Accordion – Much Like a Vertical Version of a TabStrip

- All items can be collapsed simultaneously
- Supports Drag and Drop events onto the Item Header
- Has an aggregated child called MultipleAccordionItems which allow the children to be specified using bound data – makes it more flexible than the TabStrip

---
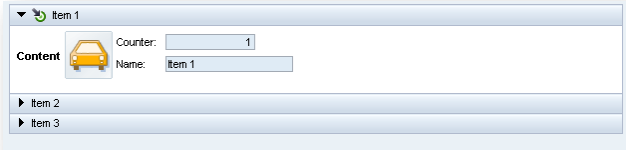
7.02 New UI Elements – Page Layout & Header Design Adaptation

SAP

New Page Header Design

Display Page Header with reduced font size via the new PageHeader UI Element property design with values

- **small**
- **standard**

Fixed Page Header

New Page Layout - Stable Page Header with Scrollable Content

- Keep 'stable' page header with toolbar on top
- Display 'scrollable' page content in transparent container below
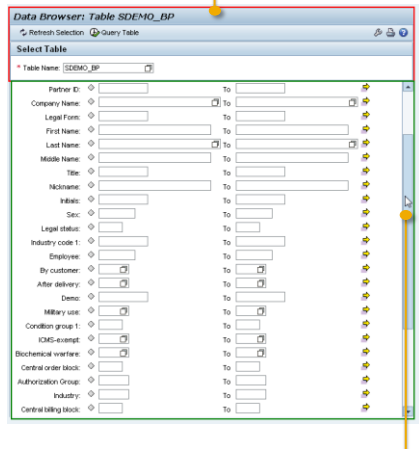
Main Adopter:
Floorplan Manager

Scrollable Content

7.02 New UI Elements – What You See is What You Print Support

Generic 'Simple' Print Support

Allow users to Print visible UI canvas area (what you see is what you print) as a kind of application screen shot:

- Print Preview button opens a modal window with canvas UI rendered in preview mode (no JavaScript, disabled actions, etc.)
- "Preview window" with generic "Print/Close" buttons rendered on top of canvas UI area
- Generic "Print" button opens client specific print dialog

Unsupported UI elements:

- The new generic print function does not support Active Controls like Gantt, InteractiveForm, OfficeControl, Network, FlashIsland, and SilverlightIsland.
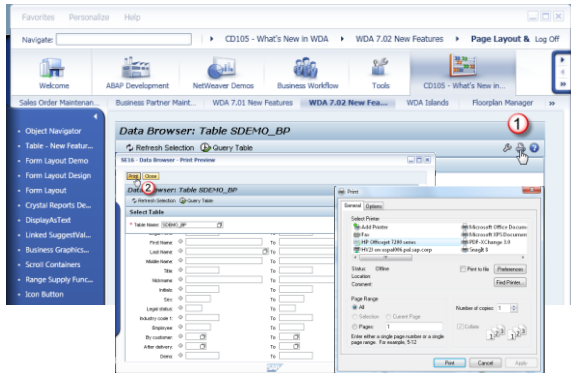
7.02 New General Enhancements - HTML IDs for Stable Automated QTP Tests

Run Automated QTP Tests With Stable HTML IDs

There is an update regarding HTML IDs in Web Dynpro ABAP. You can achieve stable IDs instead of the previous short IDs, if you add the following URL Parameter:

sap-wd-stableids=X

Example

- With the URL Parameter:
  http://<hostname>:<port>/sap/bc/webdynpro/sap/wdr_test_ui_elements?sap-wd-stableids=X
- The generated HTML element IDs look like
  WDR_TEST_UI_ELEMENTS.ID_0001:MAIN.C74_CONTEXT_MENU_BEHAVIOUR_ATTR instead of WD5F
- These IDs keep stable even in case the Web Dynpro ABAP application runs on another server/system

7.02 New General Enhancements - eCATT Test Automation Revived

Run Automated eCATT Tests for Web Dynpro For ABAP

It has long been deprecated functionality, but now it's back!

You can carry out eCATT tests for Web Dynpro ABAP with 'Web Dynpro application' context menu item **'Start ECATT Recording'**
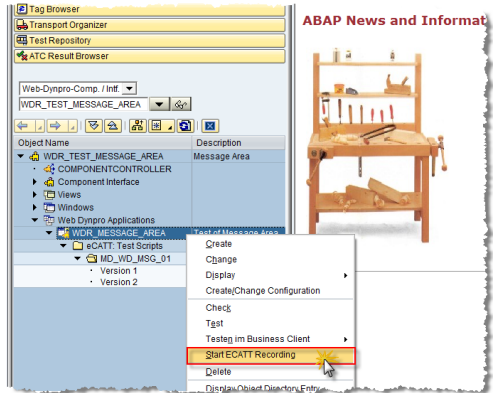
SAP Note 948076

eCATT support for Web Dynpro ABAP: Limitations

7.02 New General Enhancements – Enhanced Debugging Functionality

Debug Via Context Menu

Added new debugging functions to the context menu of a Web Dynpro application. Here the well-known /h comes into play, this time in the form of an URL parameter.
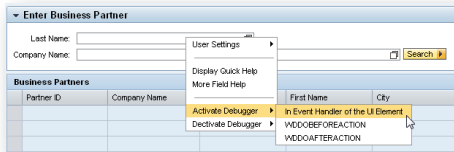
Run Debugger Scripts

New debugging scripts to investigate the navigation behavior (firing plugs) of a Web Dynpro application and the origin of entries in the MessageArea:

`RSTPDA_SCRIPT_WDY_FIRE_PLUG`

`RSTPDA_SCRIPT_WDY_MESSAGES`

These scripts emulate Breakpoint at ABAP command SET SCREEN and Breakpoint at ABAP command MESSAGE in the Dynpro world.

Various other WDA 7.02 Enhancements

SAP

- IFrame is no longer deprecated
- Ecatt testing for Web Dynpro ABAP is now supported with a just a few limitations (OSS Note 948076)
- ACFUpDownload now has the ability open a file dialog and to choose just a directory
- Now have an API to set the Browser Window Title (IF_WD_APPLICATION, SET_WINDOW_TITLE)
- Drag and Drop is enhanced in several ways including the use for rearrangement within the MatrixLayout
- Adobe ACF based forms are depreciated
- Adobe Forms can focus error links into the form content
- Adobe Forms have a Job Profile Option for higher volume print output and new APIs for controlling the Navigation Panel and Print Button in the Reader

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Agenda
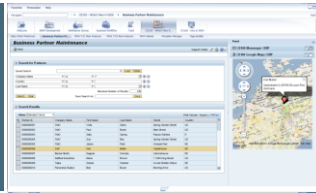
SAP

UI Design in Web Dynpro – Advantages and Limitations

Why Islands?

Dozens of UI elements provided, like buttons, checkboxes, trees, or roadmaps, with specific properties and events

- Adding custom properties/events to existing elements or adding custom UI elements is not possible

Layout managers like Flow Layout or Matrix Layout for an easy arrangement of UI elements

- No pixel perfect layout, no direct manipulation of HTML/JavaScript

User interaction like F4 help or drag & drop

- Often roundtrips required, no RIA behavior

Perfect for most, but maybe not for all. business requirements

→ **Islands as <u>supplements</u> for Web Dynpro**

- ☑ CheckBox
- CheckBoxGroup
- DropDownByIndex
- DropDownByKey
- ItemListBox
- ⦿ RadioButton
- RadioButtonGroupByIndex
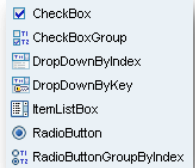
What Is an Island for Web Dynpro?

Regular programming model known for Web Dynpro

Web Dynpro

Rising Stars - Talent Roundtable 2009

Save | Close | Approve | Add Talent | Show Agenda | ◀ 2.2 Consulting Talents | ▶

Compare Talents

Compare
Delete All

Define Filter

Cicero
Position
Manager   Russel Crowe
Person ID   90003750

Mark Twain
Position
Manager   Russel Crowe
Person ID   90003751

Johann Wolfgang v. Goethe
High Potentials, Top Talents, ...
Position
Manager   Russel Crowe
Person ID   90003760

Data interchange possible

Island (displayed in plugin player)

Which Island Technologies Are Available?

Islands is a General Term Representing a Variety of Different Technology Integrations

Adobe Flash Islands
- Based on Adobe Flex components
- Available since NetWeaver 7.11 (ABAP and Java)
- Available since NetWeaver 7.01 (ABAP only)
- Controlled UI technology at SAP

Microsoft Silverlight Islands
- Based on Microsoft .NET components
- NetWeaver 7.02 / 7.2 (ABAP & Java)

Microsoft ActiveX Islands
- SAP internal use only!
- Available since NetWeaver 7.01 (ABAP only)

Web Widgets (HTML Islands)
- NetWeaver 7.2 (Java only), HTML Islands Planned for ABAP in 7.03/7.31

Islands in Web Dynpro ABAP

Adobe Flash Applications	Microsoft Silverlight Applications
■ Developed in Adobe Flex Builder	■ Developed in Visual Studio
■ MXML and ActionScript	■ XAML and .NET languages
■ Running in Adobe Flash Player	■ Running in Silverlight Player

Integration of applications into Web Dynpro
- Integrated in reserved rectangle in Web Dynpro view
- Contained in MIME Repository
- Communication to Web Dynpro component via
  - Special SWF/XAP libraries provided by SAP
  - Context nodes
  - Events
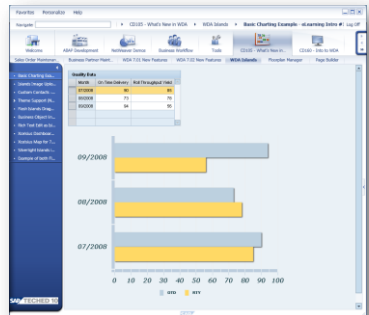
Where Is User Interaction Processed?

Web Dynpro Client
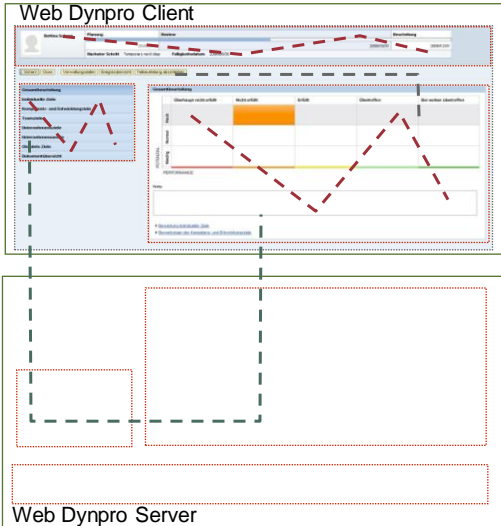
Web Dynpro Server

- **Locally on the client**
  - Interaction within one island

- **Remotely on the server**
  - Interaction between islands
  - Interaction between standard Web Dynpro UI elements (and islands)

Points to Consider When Using Islands

Highly graphical, rich & responsive user interaction

More freedom and capabilities than native browser rendering

More development and maintenance effort will be needed
- Specific UI programming skills needed for Adobe Flex or Silverlight (for control developers only)
- Debugging complexity increases

Meeting SAP accessibility and I18N standards is not automatic
- Accessibility
  - Co-implementation of an alternative, e. g. based on Web Dynpro native
- Internationalization
  - Provide translated texts on the server side and transport them to the client

Performance
- Avoid using more than 3 Adobe Flash Islands on the screen
- Avoid data aggregation on client side
- Provide suitable paging of data

Points to Consider When Using Islands (cont'd)

SAP

Some standard Web Dynpro features are not provided and must be added
- Value help and field help (can be implemented as usual outside the island, however)
- Configuration and personalization

Users might realize that two different technologies are at work
- Different styles
- RIAs (Rich Internet Applications) behave differently from SSR (Server Side Rendering) applications

Two development infrastructures are required
- IDE not integrated into SE80
- SAP versioning and transport mechanisms not before upload of application into MIME Repository

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Agenda
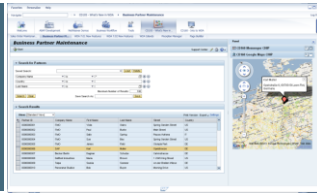
SAP

How Does an Island Work?
Flash Island as an Example

Your Adobe Flex Application

Custom Flex Control

Web Dynpro Wrapper

Data Sources
Properties
Events + Params

WebIslandLibrary30.swc

Flash Player   *XBCML*

Script   Hidden Field

Html/Http

Your Web Dynpro Component

Custom FlashIsland
UI Element

Generic FlashIsland Element

Data Sources
Properties
Events + Params

Web Dynpro Client Abstraction

Web Dynpro Runtime

Html Lightspeed Rendering

XBCML Rendering

← Response

Browser Client

NetWeaver Server

How Does an Island Work?
Flash Island as an Example

Your Adobe Flex Application

Custom Flex Control

Web Dynpro Wrapper

Data Sources
Properties
Events + Params

WebIslandLibrary30.swc

Flash Player   *XBCML*

Script   Hidden Field

Html/Http

Your Web Dynpro Component

Custom FlashIsland
UI Element

Generic FlashIsland Element

Data Sources
Properties
Events + Params

Web Dynpro Client Abstraction

Web Dynpro Runtime

Html Lightspeed Rendering

XBCML Rendering

Request →

Browser Client

NetWeaver Server
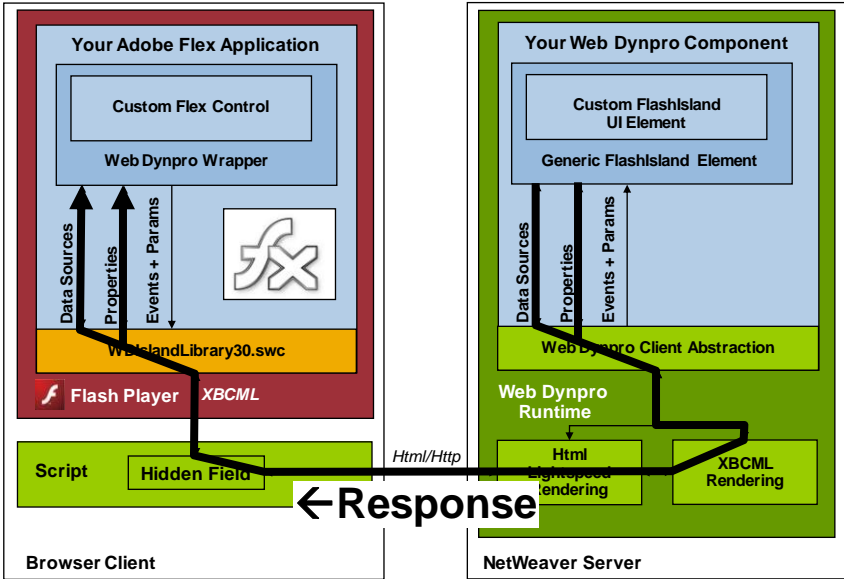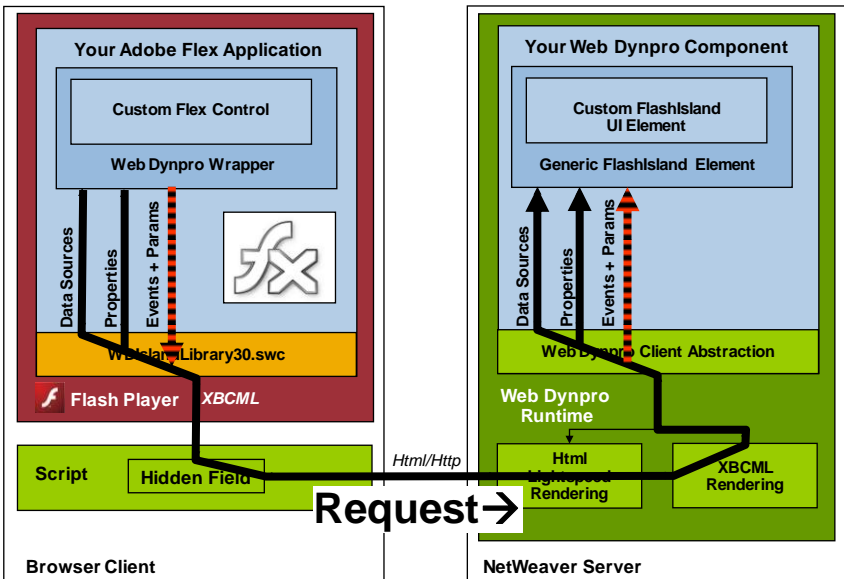
How to Build an Adobe Flash Island
→ The Client Part (i. e. Adobe Flex)

1. Get a development license for **Adobe Flex Builder 3**
2. Understand and practice **MXML** and **ActionScript**
3. Create a Flex Builder project and include Web Dynpro Flash Island library, **WDIslandLibrary30.swc**
4. Develop your Adobe Flex application and write an interface documentation (preferably with asdoc)
5. Build your Adobe Flex application and get as a result the file **Your.swf**

Your Adobe Flex Application

- **3rd Party Control**
- **Custom Built Control**

Web Dynpro Wrapper

Data Sources | Properties | Events + Params

WDIslandLibrary.30swc   **Your.swf**
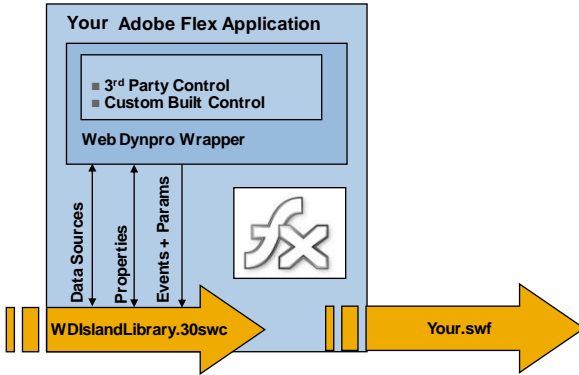
Adobe Flash Islands for Web Dynpro – Appears as a Native UI Element in Web Dynpro

- Web Dynpro Developers can insert Flash Island Components into Web Dynpro as though they are native UI elements

- Data binding and event propagation without having to leave the design constructs of Web Dynpro

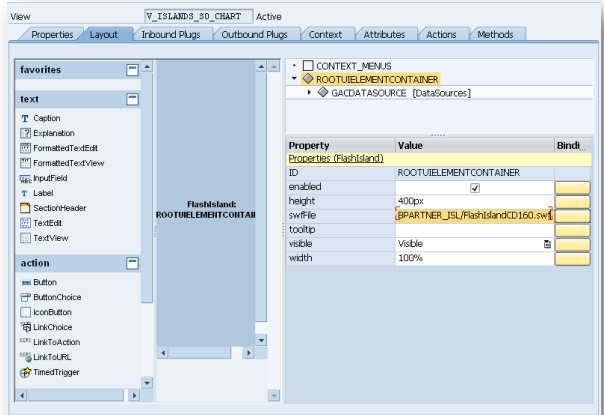| View | V_ISLANDS_30_CHART | Active |

Properties | Layout | Inbound Plugs | Outbound Plugs | Context | Attributes | Actions | Methods

favorites

text
- T Caption
- Explanation
- FormattedTextEdit
- FormattedTextView
- InputField
- T Label
- SectionHeader
- TextEdit
- TextView

action
- Button
- ButtonChoice
- IconButton
- LinkChoice
- LinkToAction
- LinkToURL
- TimedTrigger

- CONTEXT_MENUS
- ROOTUIELEMENTCONTAINER
  - GACDATASOURCE [DataSources]

Property	Value	Bindi...
Properties (FlashIsland)		
ID	ROOTUIELEMENTCONTAINER	
enabled	☑	
height	400px	
swfFile	BPARTNER_ISL/FlashIslandCD160.sw1	
tooltip		
visible	Visible	
width	100%	

FlashIsland: ROOTUIELEMENTCONTAIN

How to Build an Adobe Flash Island
→ The Server Part (i. e. ABAP)

1. Create a Web Dynpro component **YOUR_WD_COMPONENT**
2. Create a view **YOUR_VIEW** and swap the root element to FlashIsland
3. Add **Your.swf** to the **MIMEs** folder
4. Set property **swfFile** of the FlashIsland UI element to **YOUR.SWF**
5. Develop your Web Dynpro component logic

Property	Value	Binding
Properties (FlashIsland)		
ID	ROOTUIELEMENTCO	
enabled	☑	
height	300px	
swfFile	Your.swf	

How to Bind Data Between an
Adobe Flex Application and a Web Dynpro View

Adobe Flex Application

```
[Bindable]
public var flexSource:ArrayCollection;
[Bindable]
public var Company:String;
[Bindable]
public var revenue:String;
[Bindable]
public var profit:String;
```

Web Dynpro View

Property	Value	Bin
Properties (GACDataSource)		
ID	GACDATASOURCE	
dataSource	CHART.CHARTDATA	
name	flexSource	

Declare [**Bindable**] **public** variables for **DataSource(s)** (ArrayCollection) and **Propertie(s)** in your Flex application.

Define **DataSource(s)** and **Propertie(s)** for your FlashIsland UI element.

Bind the **DataSource(s)** and the **Propertie(s)** to the context

Use same names as in Adobe Flex (capitalization!).

How to Fire Events in an Adobe Flex Application and Handle Them in a Web Dynpro View

Adobe Flex Application

```
…
FlashIsland.fireEvent
(this,'CLICK_CHART',{INDEX:index});
…
```

Web Dynpro View

```
▽ ◇ ROOTUIELEMENTCONTAINER
  ▷ ◇ GACDATASOURCE [DataSources]
  ▷ ◇ GACEVENT [Events]
```

Property	Value	Bi...
Properties (GACEvent)		
ID	GACEVENT	
name	CLICK_CHART	
Events		
onAction	CLICK_CHART	

```
method ONACTIONCLICK_CHART .

    data index type i.
    wdevent→get_data(
        exporting name = 'INDEX'
        importing value = index ).

    …

endmethod.
```

Fire **event(s)** with **parameter(s)** in your Flex application.

Define **event(s)** and **parameter(s)** in your FlashIsland UI element.

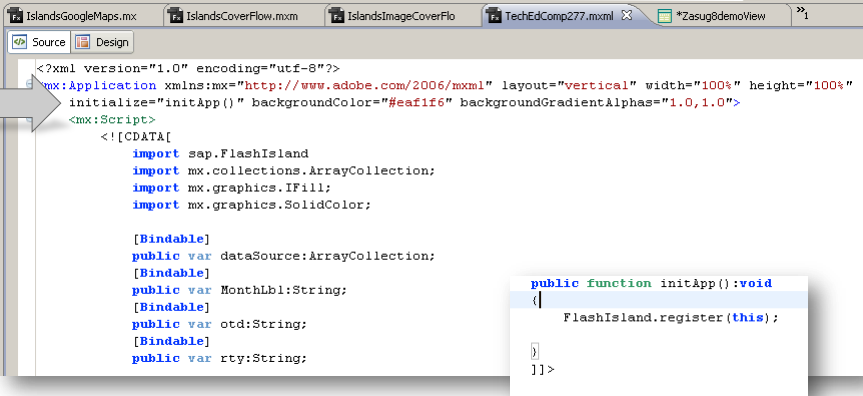Implement for each **event** a method to handle it in your Web Dynpro view**.**

Use same names as in Adobe Flex (capitalization!).

Adobe Flash Island for Web Dynpro – Flex Component

- SAP supplied SWC gets linked to the project

- Provides functionality for the communication translation

■ We need an Initialization routine to register this component with the Web Dynpro/Flash Islands Framework

■ We also need an import statement for the SAP supplied FlashIslands Library (available via the SWC that we linked to the project)

Adobe Flash Island for Web Dynpro – Flex Component

- Public, Bindable variables are automatically available for external Data Binding
- The FlashIsland Library does all the work of performing the data binding and any data type translations

---

Adobe Flash Island for Web Dynpro – Flex Component

- Data Binding can also occur on Public GET/SET Functions

Adobe Flash Island for Web Dynpro – Flex Component


```
public function sendSelItem():void
{
    FlashIsland.addEventListener(sap.FlashIslandConst.EVENT_END_UPDATE, evtTest);
    var newLeadSelection:Object = imageTable.getItemAt(coverflow.selectedIndex);
    FlashIsland.setLeadSelection(this, imageTable, newLeadSelection);
    FlashIsland.fireEvent(this, "newSel", {newLS:coverflow.selectedIndex});
}
```
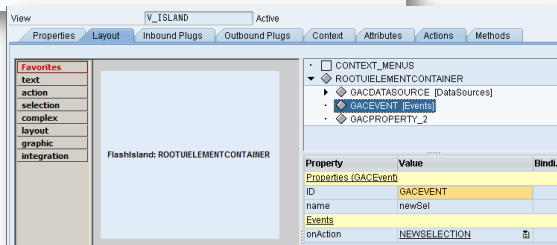
- Events can also be propagated back to Web Dynpro using the fireEvent function of the FlashIsland Library

---

Agenda
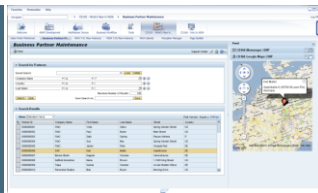
1. Web Dynpro UI Element and Tools Enhancements
2. **Islands**
    - Introduction To Islands
    - Flash Islands Development
    - **7.02 New Features in Flash Islands**
    - 7.02 New Silverlight Islands
3. Floorplan Manager
4. POWL
5. Local Page Builder
6. Looking Into the Future

7.02 Adobe Flash Islands Enhancements

Cross Border Drag and Drop Support

Support cross-border drag and adrop functionality between Adobe Flash Islands and Web Dynpro ABAP Views:

- Drag content from Adobe Flash Islands and drop it to the surrounding Web Dynpro ABAP view
- Drag content from Web Dynpro ABAP view to inner Adobe Flash Island
- Drag and drop content between two or more Adobe Flash Islands that are embedded in Web Dynpro view Layouts
- Drag and drop works according to Web Dynpro drag and drop with **tags**, that need to match

Restriction:

- The scope property of view elements DragSourceInfo and DropTargetInfo in Web Dynpro needs to be set to „global".
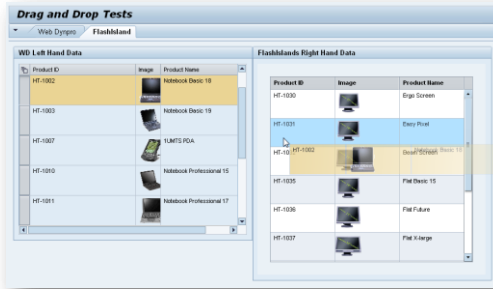
7.02 Adobe Flash Islands Enhancements (Continued)

Support Standard SAP Themes In Adobe Flash Islands

Support SAP standard themes and custom themes in Adobe Flash Islands for Web Dynpro

SAP standard Themes

- sap_hc, sap_highcont
- sap_standard, sap_chrome
- sap_tradeshow, sap_tradeshow_plus

Custom theme support is enabled from Web Dynpro and Adobe Flash Island side.

- Add FlashIslandTheme object when registering to Adobe Flash Island in Flex Initialization coding

```
private function initApp():void
{
    FlashIsland.register(this, new FlashIslandTheme());
}
```

- Theme editor is currently in development to generate the Adobe Flash CSS part for custom themes.
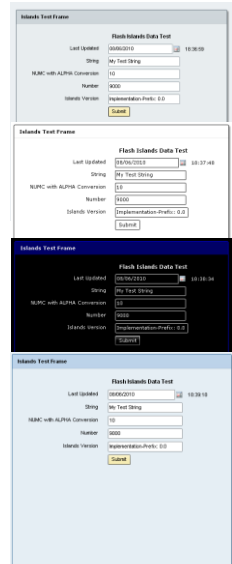
Agenda
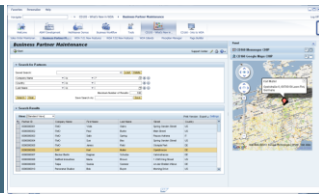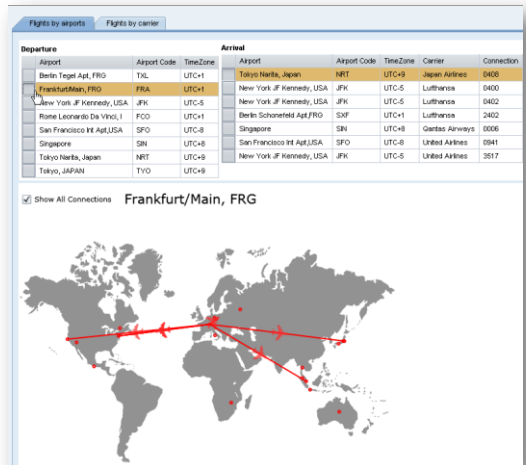
1. Web Dynpro UI Element and Tools Enhancements
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6. Looking Into the Future

New in NetWeaver 7.02
Microsoft Silverlight Islands

- Works nearly identical to Adobe Flash Islands except using the Microsoft Silverlight Framework
- SAP supplies a runtime library (WDSilverlightIslandLibrary.dll) in the /SAP/PUBLIC/BC/UR/nw7/ SilverlightIslands/ MIME Folder

Islands Examples- Cover Flow Product Selector

Examples- Google Maps

DEMO

Islands – Adobe FlashIslands and Microsoft Silverlight Islands
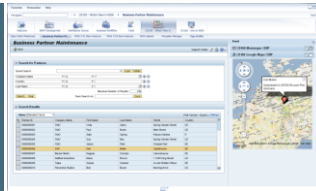
SAP

Agenda

SAP

1. Web Dynpro UI Element and Tools Enhancements
2. Islands
3. **Floorplan Manager**
   - ■ **Introduction To Floorplan Manager**
   - ■ UI Building Blocks
   - ■ 7.02 Overview Page Floorplan (OVP)
   - ■ 7.02 New FPM Features
4. POWL
5. Local Page Builder
6. Looking Into the Future

Introduction: What is FPM?
Easy and highly productive configuration of applications

The Floorplan Manager is the mandatory tool for the creation of new Web Dynpro ABAP applications in the SAP Business Suite

- UI Strategy: Web Dynpro ABAP

- Available for customers: NW 7.0 EHP 1

- Full integration in standard SAP Lifecycle Management

- Pattern Approach: SAP defined Floorplans and Building Blocks

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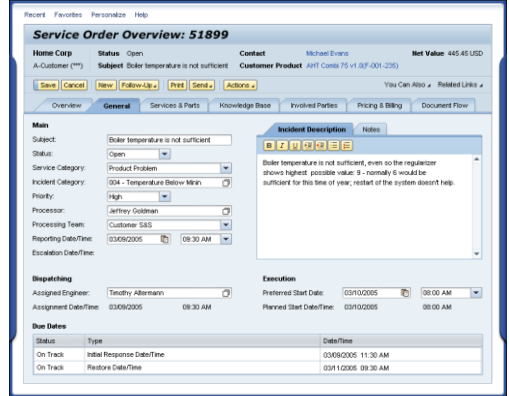
Floorplan Manager - Basic Idea

Business UI content

Application

+

FPM Configuration

Adaptable by customers

=

Application

UI-guideline compliant

Floorplan Manager
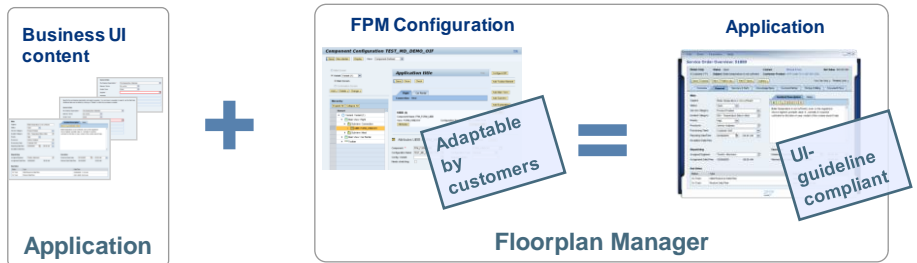
Application: Cares about the business content
FPM: Covers all UI relevant aspects and essential application functionality

Floorplan Manager - Motivation and Goals

Motivation

Reach UI consistency across applications

Goals

Increase development efficiency:
- Central implementation of floorplans
- Configuration to integrate application screens
- Easy configuration of predefined UI building blocks
- Adaptable by customers

Prevent applications from reinventing the wheel:
- APIs for common functionality like navigation, data-loss handling, messaging, etc.

Increase UI consistency across applications:
- Guaranteed compliance with SAP User Interface guidelines
- UI and integration behavior

SAP Defined Floorplans

Floorplans are design templates for applications which allows a user to accomplish a certain activity, such as searching for, identifying and maintaining data for objects. Floorplans are implemented as separate, highly configurable Web Dynpro components.
Floorplan Manager is a framework consisting of these highly configurable Web Dynpro components and providing an editor that is used to configure these components.

Available Floorplans with SAP NetWeaver 7.01:

- Object Instance Floorplan (OIF)
- Guided Activity Floorplan (GAF)
- Quick Activity Floorplan (QAF)

Available Floorplans with SAP NetWeaver 7.02:

- Overview Page Floorplan (OVP)

Object Instance Floorplan (OIF)
As defined in Standards & Guidelines 1.1

SAP

5082 - Purchase Order

Purchase Order: 50

Home Corp   **Status**   Open
Minneapolis, MN   **Customer Produc**

Personalize ▲   Help ▲

Subject   Boiler temperature is not sufficient

☑ Example message text

Save | Close | Read Only | Print... | Send ▲ | Refresh | Clear

You Can Also ▲   Related Links ▲

| Order Header | Relationships | Financial Data | Notes and |
Master Data | **Delivery** | Purchase

Identification Region
Configurable title, ticket area,
header area, personalization
link, help link

Toolbar
- Predefined buttons and
  application specific buttons
- Order of buttons is strictly
  defined in guidelines
- Configuration of *You can
  also / Related links*

Note: Text

View and Subview Tabs
- 2 level views and sub-views
  (only rendered as needed)
- Variants for views and sub
  views depending on
  the startup parameters
- Possibility of dynamic
  changes
- Application decides if
  navigation is possible

Save | Close | Read Only | Print... | Send ▲ | Refresh | Clear

You Can Also ▲   Related Links ▲

Bottom Toolbar
(optional)

Guided Activity Floorplan (GAF)
As defined in Standards & Guidelines 1.1

SAP

Create Purchase Order

Create Purchase Order

Personalize   Help

Status   New   **Document Date**   02/06/07

☑ Example message text

⇨ | **1** Select Supplier | **2** Assign Account | **3** Define Order Items | **4** Review and Submit

◄ Previous | Next ► | Finish | Close | Save Draft...

Specify the purchasing organization

Purchasing Data
Purchasing Organisation:*   Pu
Delivery Terms: Ne
Output Type: T

Supplier
Supplier:*   Olsen Inc.
Address:
Contact: Michael Miller
Email: michael.miller@olsen.com
Phone: 354-452-8845

purchase is

Toolbar
- Predefined buttons and
  application specific
  buttons
- Order of buttons is strictly
  defined in guidelines

Roadmap
- Configuration of the steps and sub-
  steps
- *Clickable* roadmap
- Variants for steps/sub-steps
  depending on startup parameters
- Possibility of dynamic changes
- Application decides if navigation is
  possible

◄ Previous | Next ► | Finish | Close | Save Draft...

Quick Activity Floorplan (QAF)
As defined in Standards & Guidelines 1.1

Toolbar
- **Predefined buttons and application specific buttons**
- **Order of buttons is strictly defined in guidelines**

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UI Building Blocks

Floorplan Manager Framework supports configuration and assembly for all UI parts of an application:

Generic UIBBs*:
- Lists
- Forms

Freestyle UIBBs:
- Text editor
- Floorplan aspects itself*

*Delivered by the FPM framework

UI Building Blocks

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UI Building Blocks

SAP

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UI Building Blocks

SAP

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UI Building Blocks

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- Forms

Freestyle UIBBs:

- Text editor

- **Floorplan aspects itself***

*Delivered by the FPM framework

DEMO

Floorplan Manager

Floorplan Manager – Improvements in 7.02

Achievements in 7.02 (BS 7 i2010)

UI Guideline 2.0 investments:
- **Overview Page Floorplan (OVP)**
- **Revised Guided Activity (HGA)**
- **New Form Layout**

General investments:
- **New GUIBBs: Search, Tree & Launchpad**
- **GUIBB enhancements: ALV Rendering, Drag'n'drop, …**
- **Launchpad investments (e.g. support of BOBJ report types)**
- **Message mapper**
- **Wiring & BOL adapter**

Configuration investments:
- **Hierarchy Browser & Deep Copy**
- **Concept and preparation of new configuration editor**

Agenda
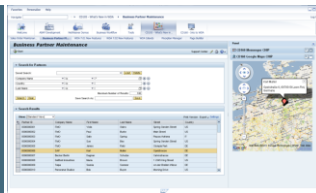
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Overview Page Floorplan (OVP)
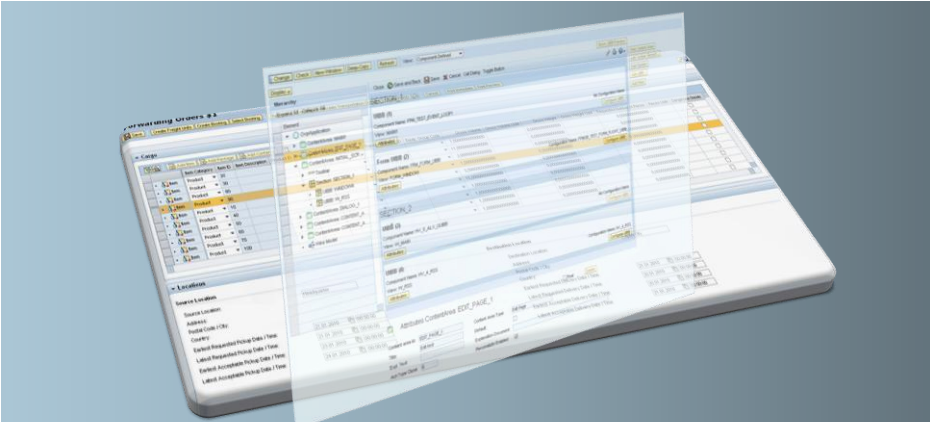
Overview Page Floorplan (OVP)
Introduction

Overview page floorplan:

- New floorplan to display/edit instances of business objects (according to new guideline)
- Configuration of applications containing a set of pages and navigation between the pages
- Based on WD component FPM_OVP_COMPONENT
- Same event loop behaviour as known from existing floorplans

OVP page types

- Overview page (new)
- Edit page (new)
- Initial screen and dialog window (similar to existing floorplans)

Personalization functionality

Runtime APIs for dynamic floorplan changes

Overview Page Floorplan
Page Structure
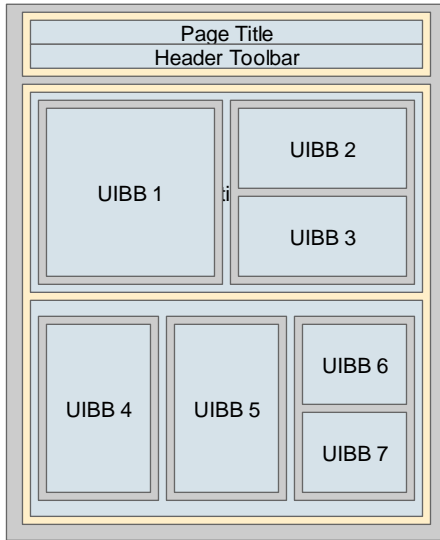
Fixed page header

Page content (scrollable container)

One or more sections

Each section has a separate column layout (one, two, or three columns)

The UIBBS are arranged inside the columns

Overview Page Floorplan
Example: Overview Page

Edit Home address

Save And Back | Save | Cancel

* Country Key: Germany

Address

Care Of:
Street and House No.: Hauptstrasse 25
Postal Code: 69190
* City: Walldorf
District:
Telephone Number: 06227 77777
Distance in km: 6

Validity

⊙ Valid as of Today
○ Valid From
○ Valid From/To

How to personalize?

- Personalization on-the-fly by drag&drop and expanding and collapsing the panels
- Personalization via personalization dialog

What can be personalized?

- Order and position of UIBBs
- Expand state of the UIBB panels (Assignment blocks)
- Page layout (e.g. number of columns in a section and stacking behaviour)
- Visibility of UIBBs

Overview Page Floorplan
Personalization Dialog

SAP

Personalization Editor

Currently Not Displayed Assignment Blocks

Title	Collapsed
Communication	☐
Personal ID	☐
Alternative Name	☐
Benefits Medical Information	☐

Displayed Assignment Blocks

Layout Type: Two Column Layout (50:50) ▼

☐ Stacked Layout   ☐ Stacked Layout
Stack Count: 0   Stack Count: 0
☑ Stack collapsed   ☑ Stack collapsed

⊕ ⊖ ⇧ ⇩   ⊕ ⊖ ⇧ ⇩

Title	Collapsed
Personal Data	☐
Addresses	☐

Title	Collapsed
Bank Information	☐
Family Members / Dependents	☐
Internal Data	☐

Save | Reset to Default | Cancel

Overview Page Floorplan
Layers of personalization

SAP

Configuration
- Default values for all settings
- Open OVP component configuration in config editor

Administrator personalization (customizing)
- Run application in administration mode (URL-parameter sap-config-mode=X)
- Changes of configuration defaults valid for all end users
- Reset: Restore configuration values

End user personalization
- Individual user specific personalization
- Reset : Restore administrator values (if there are any) or configuration values (otherwise)

Overview Page Floorplan Runtime APIs

SAP

Interface IF_FPM_OVP_CNR

- Allows toolbar modifications
- Can be called anytime during FPM event loop (e.g. in UIBB process event)
- Typical usage:
    - Add/Hide/Enable/Disable a toolbar element (e.g. a button, toggle button or button choice)

Interface IF_FPM_OVP
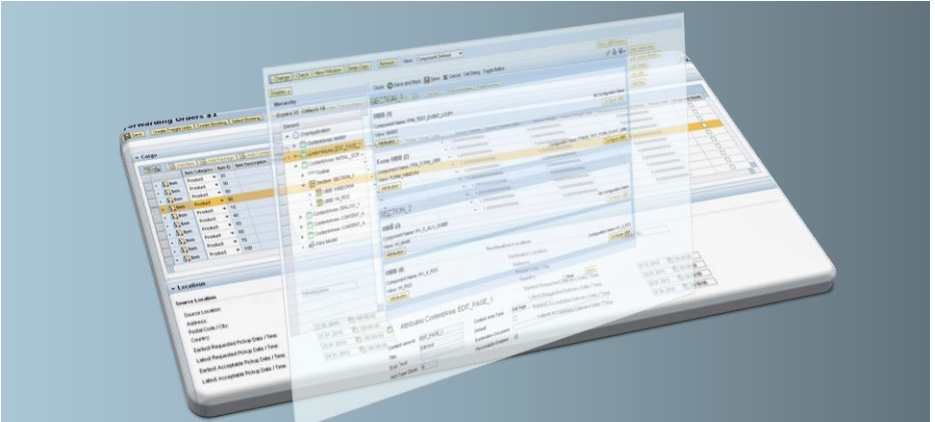
- Allows full control over flooplan state
- Only accessible via application controller at a given point in time during FPM event loop (in method OVERRIDE_EVENT_OVP)
- Typical usage:
    - Add/remove/change a UIBB, section or page properties
    - Add/remove/change the UIBB wiring

Agenda
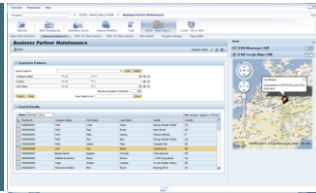
SAP

Wiring FPM@BOL

Wiring

- Wiring allows to define runtime dependencies between UIBBs by configuration
    - Wires are configured in the floorplan configuration
    - A wire assigns the outport of a source UIBB to a UIBB
    - A wire assigns a connector class which encapsulates dependency logic
    - Connector classes can be parametrized
    - Typical example: The content of a form depends on the selection in a list
    - At runtime, UIBBs are processed at PBO in the order according to the wire graph
    - Tabbed Components can be independently wired (optional)
- Wiring mainly addresses generic (BO) frameworks
- To enable wiring, UIBBs need to implement a WD interface
    - A UIBB model has to provide a class implementing a feeder model interface
    - GUIBBs are automatically enabled if the feeder class implements the feeder model interface
- The feeder model class retrieves the runtime data from the connector class
- Additionally, a transaction handler class can be assigned in the configuration
    - A transaction handler class manages transactional events like SAVE or CHECK
    - The application controller is still available for applications

FPM BOL Adapter

- FPM delivers a BOL adapter in the WEBCUIF layer
- The FPM BOL adapter comprises various generic implementations
  - Feeder classes for GUIBB FORM, LIST and SEARCH
  - Connector classes, in particular for BOL relations
  - Transaction handler
  - Assistance classes to support freestyle UIBBs
- FPM BOL adapter enables easy creation of FPM applications on BOL components
  - Application creation possible without code (pure configuration)
  - Technical BOL access is hidden
  - If necessary, adaptations can be implemented by method redefinitions
    - Adapter classes are enabled for ABAP OO inheritance (not final)
    - Adapter classes are highly modularized (simple redefinition)

New FormLayout
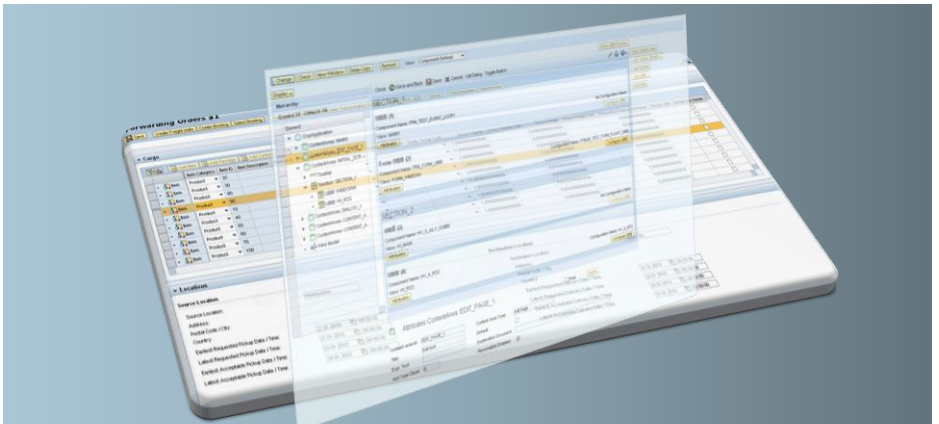
New Forms

- The New Form is different from the Old Form in more than one way.
- The New Form is also known as GRID Form as it is similar to Excel.

	A	B	C	D	E	F	G	H	I	J	K	L	M
1	Group1												
2	LABEL_CARRID:												
3													
4													
5	LABEL_CARRNAME:												
6													

- At design time or in configuration ,on top letters are available like ABCD.. and on left side the row numbers are available .
- All the elements are configured within this canvass using co-ordinates available in properties.

Attributes Element: LABEL_CARRID   ☐ Final   Delete

Component name:	CARRID	Display Type:	Text View
Label Visibility:	Is visible	Element start:	D
Element End:	F	Text:	LABEL_CARRID
UI Element Width:		Tooltip:	
Boolean:		Boolean:	
Label Start:	A	Label End:	B
Row Start:	1	Row End:	4
Text View Design:	standard	Wrapping:	☐
Text View Layout:	native	Semantic Color:	standard
Alignment:	auto		

New Forms

- Layout Type's in Forms

  There are 3 types of layout

  1. 8/1->Eight columns(A-H) and any number of rows
  2. 16/1->Sixteen Columns(A-P) and any number of rows
  3. 16/2->Sixteen columns(A-P) and any number of rows(Recommended by UI)

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
	General Data								Additional Data							
	Account Plan ID*										Currency					
	Account Plan								Dates							
	Account Type										Planning Period					
	Planning Account										Valid From					
	Product Planning Basis										Valid To					
	Planning Profile Group															
	Employee Responsible															
	Territory Id															
	Organizational Data								Status							
	Sales Organization										Current Status					
	Distribution Channel										New Status					
	Division										Status Profile					

  Inside Forms,we can have groups,UI elements and buttons.

  E.g.   GROUP
          → Label1 → Element1
          → Label2 → Element2
  And so on...
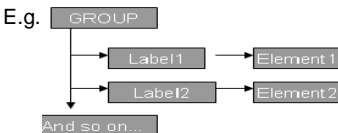
- For For exact details please refer UI guideline document.

Hierarchical List GUIBB
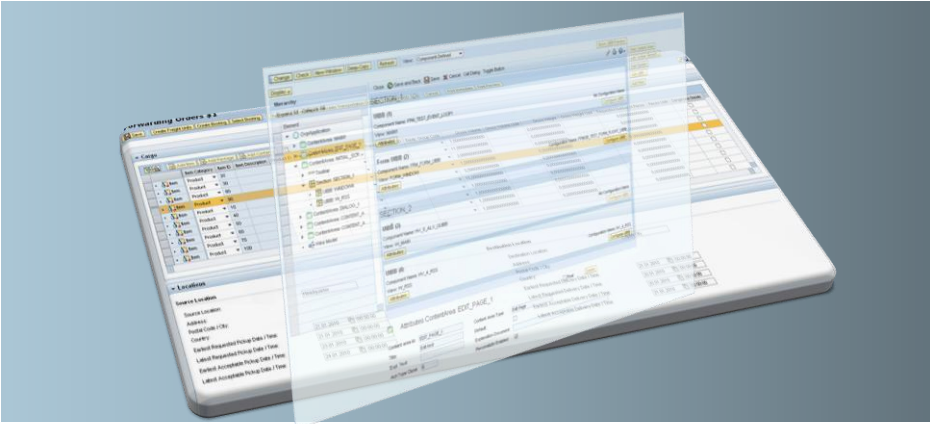
Hierarchical List GUIBB

The hierarchical list GUIBB is a configurable generic UIBB which allows to have the feature of a Hierarchy or a Tree in the UI.The parent child relationship in the hierarchy can be maintained by applications by using the application data at runtime.

- The hierarchy related information needs to be provided in the feeder class. FPM relates this information with the proper UI elements and a hierarchy is thus realized.
- The hierarchical list GUIBB allows the application to have incremental loading of data, i.e. Loading the data only when a particular node is opened, thus improving the performance.
- Applications can have a configurable toolbar in the GUIBB. They can also configure various kinds of cell editors and cell level UI property handling.
- Applications can configure default buttons for Expand All and Collapse All features. Demo

Hierarchical List GUIBB

Airlines / Flights / Schedules	Activate Airline	Flight Date	Plane Type	Departure City	Departure Country	Arrival City	Maximum seats in BC	Occupied seats in BC	Airline Website
▶ Air Canada	☐						0	0	http://www.aircanada.ca
▶ Air France	☐						0	0	http://www.airfrance.fr
▶ Alitalia	☐						0	0	http://www.alitalia.it
▼ British Airways	☐						0	0	http://www.british-airways.com
▶ 0003	☐			RIO DE JANEIRO	Brazil (BR)	ACAPULCO	0	0	
▼ 0016	☐			HARARE	Zimbabwe (ZW)	SINGAPORE	51	9	
• Details	☐	06-30-2009	FOKKER 100				11	2	
• Details	☐	07-19-2009	FOKKER 70				6	1	
• Details	☐	03-10-2010	FOKKER 70				6	1	
• Details	☐	07-19-2010	FOKKER 100				11	2	

ALV Rendering/ Drag&Drop
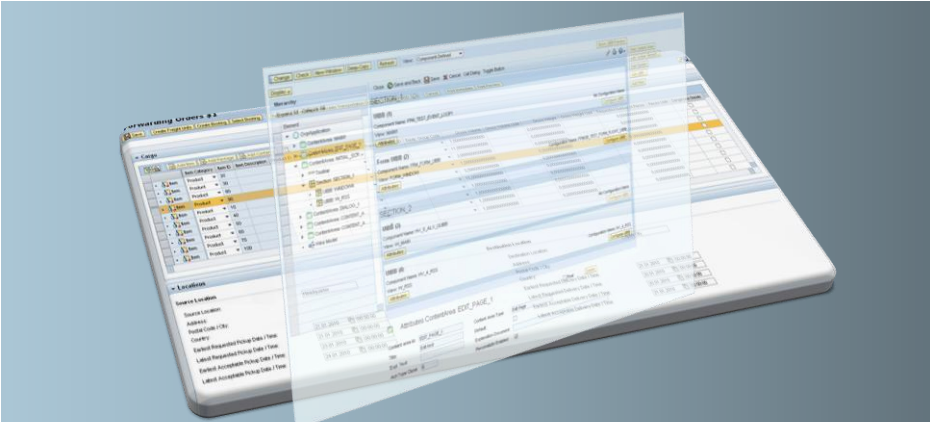
ALV rendering in GUIBB List

SAP

Main features

- GUIBB List can be optionally displayed as ALV table at runtime.
- Features like Export to Excel and Print will be addtionally available on the LIST GUIBB,if ALV is enabled.
- User settings and personalization available implicitly with ALV.
- Changes in configuration->change render as drop down in settings.
- Changes in feeder or code ->None,same as GUIBB Lists

w: [Standardsicht] ▼	Print Version	Export ⏷														▽ 🖉
lt	ID	No.	Date	Airfare	Curr.	Plane	Capacity in economy class	Booking total	URL	ACTION	IMAGE	PROGRESS	MONEY	MONEY_REFERENCE	TRUE	FPM_BACKEND_INDEX ▲
00	AA	1	FLDATE	6.983,32	FLDATE	YAK-242	180	0,00	FLDATE	FLDATE	FLDATE	FLDATE	500	EUR	X	1
00	AA	1	FLDATE	1.342,40	FLDATE	DO328	33	10.739,20	FLDATE	FLDATE	FLDATE	FLDATE	500	EUR	X	2
00	AA	1	FLDATE	6.983,32	FLDATE	YAK-242	180	0,00	FLDATE	FLDATE	FLDATE	FLDATE	500	EUR	X	3
00	AA	1	FLDATE	1.342,40	FLDATE	DO328	33	10.739,20	FLDATE	FLDATE	FLDATE	FLDATE	500	EUR	X	4
00	AA	1	FLDATE	1.342,40	FLDATE	DO328	33	10.739,20	FLDATE	FLDATE	FLDATE	FLDATE	500	EUR	X	5
00	AA	1	FLDATE	6.983,32	FLDATE	YAK-242	180	0,00	FLDATE	FLDATE	FLDATE	FLDATE	500	EUR		6
00	AA	2	FLDATE	6.983,32	FLDATE	YAK-242	180	0,00	FLDATE	FLDATE	FLDATE	FLDATE	500	EUR		7
00	AA	2	FLDATE	1.342,40	FLDATE	DO328	33	10.739,20	FLDATE	FLDATE	FLDATE	FLDATE	500	EUR		8
00	AA	2	FLDATE	6.983,32	FLDATE	YAK-242	180	0,00	FLDATE	FLDATE	FLDATE	FLDATE	500	EUR		9
00	AA	2	FLDATE	1.342,40	FLDATE	DO328	33	10.739,20	FLDATE	FLDATE	FLDATE	FLDATE	500	EUR		10 ▼

Considerations Of ALV Usage

- Performance: ALV takes up a lot of additional memory.
- Once switched to ALV rendering it is not possible to switch back to normal list rendering (because user might use ALV personalization and that will get lost in case of switching back to standard list rendering).
- Going forward we want to use those services available from ALV team and integrate in normal list. E. g. Export to Excel is already available today with normal list rendering.
- Summary: Whenever possible avoid ALV rendering and stay with standard list rendering and instead use services available there (e. g. export to excel).

Drag and Drop in UIBB's

Drag-and-Drop is a feature to move (cut or copy) data at runtime within and between individual user interface building blocks (UIBBs) and generic user-interface building blocks (GUIBBs).

For example, you can use *Drag-and-Drop* feature to move a row of data from one list GUIBB to another list GUIBB.

Features

- Move data between a UIBB, List, ALV List and Hierarchical List
- Move data from a UIBB, List, ALV List or Hierarchical List to a Form
- Move the nodes of a Hierarchical List to another List, ALV List, Hierarchical List, Form, or UIBB
- Move nodes within a Hierarchical List

Enabling and Performing Drag and Drop

Configuring *Drag-and-Drop* in GUIBB's

> *Drag-and-Drop* attributes can also be defined in configuration editor of the corresponding GUIBB.

Drag-and-Drop at runtime

During drop, an event "FPM_DROP_COMPLETED" will be raised with the event parameter to perform the drag and drop.
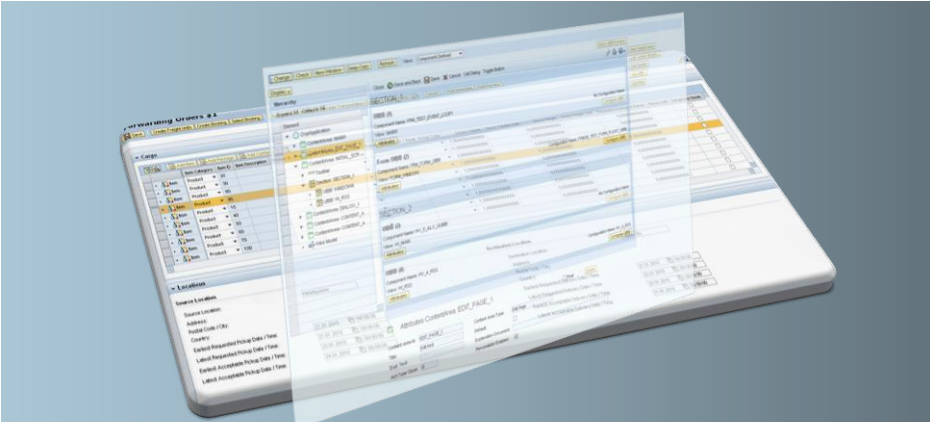
Message Mapper

Message Mapper

SAP

Message Mapper is a tool used to map messages (error messages, warning messages, and information/Success messages) that are currently displayed by the system to a more user understandable form.
(eg) Infotype 0001 does not exist => Organization data does not exist. Please contact Admin

FEATURES:

■ *Message Context*

Applications can specify their own contexts (Mandatory Parameter)

     ESS / HRAS / PLM /SRM

■ *Message Source*

The original Messages passed should be either T100 or BAPIRET2 Messages.

■ *Alternate Message*

Alternate message can be T100 or OTR or free text message

     FPM_DEMO   100 => FPM_VALIDATE 100 *(T100 to T100)*

     FPM_DEMO   100 => "Enter Valid Details" *(T100 to Free Text)*

     FPM_DEMO   100 => APB_FPM_TEST/INVALID_DETAIL *(T100 to OTR)*

■ *Message Category*

Message grouping can be done based on Categories.

Applications can use Categories to specify Roles (Administrator/Manager/Employee), Technical Grouping (No Authorization, Wrong Customizing) or Functional Grouping (Shopping Cart Customizing).

     For "No Authorization" Category, display an alternate Message "You are not authorized to do the Changes".

     For all "Employee" users, hide the warning message.

     For all "Shopping Cart Customizing" issues display a message "Maintain proper SC Customizing".

Message Mapper

■ *Message Type*

Change the Error/Warning/Success messages to any other Message Type.

> For Employee users display "Purchasing budget is exceeded" as a Error message instead of Warning Message

■ *Message Namespace*

Separate namespace for SAP and Customer Message Mappings.

Customers can override the message mapping done by SAP applications if not marked as final. Customer mapping will be given priority over SAP entries.

> SAP FPM_VALIDATE 100 Invalid Entry
> ZCUST FPM_VALIDATE 100 Flight Details provided are invalid

■ *Hide Message*

Possible to Hide Messages and such messages are logged so that they can be referred in future

> Hide all Warning Messages for "Employee" user

■ *Log Messages*

The logging will be inactive by default but user can activate the same via the global parameters (config editor) or URL parameter.

BADI: **FPM_BADI_LOG_MAPPED_MSG**

■ *Remove Duplicate Messages*

Duplicate Alternate Messages will be removed.

Message Mapper

■ *Generalization*

If the alternate message mapping is not present for the criteria provided, then subsequent level of generalization will be considered, till an alternate message mapping is found.

> **Message Mapped** : SRM_CUSTOMIZE => Customizing Missing. Contact System Admin
>
> **Message Reported** : SRM_CUSTOMIZE 001 (*Since specific message mapping is not found, this will be generalized*).

CUSTOMIZING VIEWS (sm30)

> FPM_V_MSG_MAPPER
>
> FPM_VMSGCATEGORY

CONFIGURATION

Search GUIBB

Abstract

Overview

The initial implementation of the Search GUIBB was introduced with NW 7.02

The Search GUIBB is used in several applications
- **Transportation Management**
- **Embedded Analytics**
- **…etc.**

Implementing the new guideline the Search GUIBB has been enriched
- **Free Text Search**
- **Multiple attributes**

Implementation Facts

- **Package:** APB_FPM_GUIBB
- **Component:** FPM_SEARCH_UIBB
- **Feeder Interface:** IF_FPM_GUIBB_SEARCH

Overview

Free Text Search

Saved Search:		Load	Delete
Search Term	is	IT*	⊕

"Google Like" Search Approach

Maximum Number of Results: 100

Search | Clear   Save Search As: Free Search | Save

Result List

	Company Name	Legal Form
	ITelO	Inc.
	ITelO	Inc.
	ITelO	Inc.

Multivalue Search

Search Criteria

Timeframe	is	This Week	⊕ ⊖
Service Area	is		⊕ ⊖
Resource Type	is		⊕ ⊖
Qualification	is		⊕ ⊖

Welding - good
Soldering - medium
English - fluent

Edit   Multivalue field

Usage for concatenated search attributes

Agenda
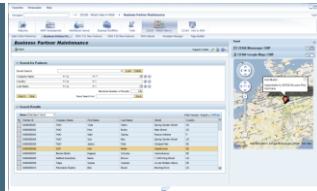
1. Web Dynpro UI Element and Tools Enhancements
2. Islands
3. Floorplan Manager
4. **POWL**
   - **Introduction to POWL**
   - New Features in 7.01
   - New Features in 7.02
5. Local Page Builder
6. Looking Into the Future

POWER Lists – A Quick Introduction

POWL framework – A Generic Web Dynpro Component

Selection criteria

Date Selection criteria

Generic Web dynpro ALV

Meta data of ALV,
Data fed by Application

POWER Lists – A Quick Introduction

Application Logic and Data Selection is Developed Via a Feeder Class

IF_POWL_FEEDER

CL_POWL_DEMO_SFLIGHT
Methods
GET_OBJECT_DEFINITION
GET_SEL_CRITERIA
GET_OBJECTS
GET_FIELD_CATALOG
GET_ACTIONS
HANDLE_ACTION
GET_ACTION_CONF
GET_DETAIL_COMP

Agenda
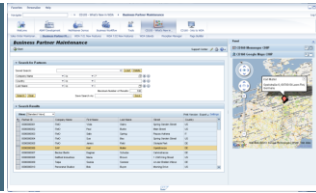
1. Web Dynpro UI Element and Tools Enhancements
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   - New Features in 7.02
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POWL New Features – 7.01

Dynamic Selection Criteria	■ Former Release - Fixed Date selection criteria E.g., "23.03.2008" ■ With EhP1(Now!) - Dynamic Date E.g., "Today +/- N Days" ■ *First Step towards supporting Dynamic Selection Criteria in POWL (currently only Date Selection Criteria)*
Columns Visible to User Available to Application At Runtime	■ A Performance Requirement ■ Application does a runtime 'Selective fetch' depending Visible Columns to the end user
Remote API Enablement of POWL	■ Cross-System support

POWL New Features in 7.01 - Dynamic Variables in POWL

Former Release

Change Query 'Flights' (Object Type: Flight Details)

Flight Date: ◇ [____] To [____] ➡

Preview Criteria Personalization

Apply Cancel

7.01-Dynamic Variable Definition for Dates

Change Query 'TechEd Demo - LH' (Object Type: Demo)

* Airline: ■ LH □ To [____] ➡
Connection Number: ◇ [____] To [____] ➡
Flight Date: ◇ [____] To [____] ➡
' Comma escape ': ◇ [____] To [____] ➡

Preview Criteria Personalization Calculated Dates

Apply Cancel

Change Query 'TechEd Demo - LH' (Object Type: Demo)

* Airline: ■ LH □ To [____] ➡
Connection Number: ◇ [____] To [____] ➡
Flight Date: 📅 08/09/2010 To 08/11/2010 ➡
Flight Date Calculated From: Today To: Today Plus 2 Day(s)
' Comma escape ': ◇ [____] To [____] ➡

Preview Criteria Personalization Calculated Dates

Apply Cancel

Define Calculated Dates

Flight Date: From: [Today ▾]
To: [Today Plus N Day(s) ▾] * Number of Days: [2]
' Comma escape ': From: [____ ▾]
To: [____ ▾]

Today Minus N Day(s)
Today Minus N Working Day(s)
Today Plus N Day(s)

OK Cancel

POWL New Features in 7.01 - Dynamic Variables in POWL Admin Queries

Dynamic Data Calculation Also Available in Admin Queries

Maintain Table Views: Initial Screen

🖉 🖫 🖫 🖫 ✏Query Parameters ✏Query Settings ✏Calculated Dates 🔒Check ✏Authorizations

Query ID [ZCD105_DEMO]

View: Query definition

Description [CD105]
Type [DEMO]
☐ Sync. call
Layout
Refresh T

Define Calculated Dates

Calculated Dates

Parameters	From	Formula Parameters(Change Values via F4)	Calculated Date	To	Formula Parameters(Change Values
Flight Date	Today		08/09/2010	Today Plus N Day(s)	
' Comma escape '					

Fixed Date
Today
Today Minus N Day(s)
Today Minus N Working D
Today Plus N Day(s)
Today Plus N Working Day

POWL New Features in 7.01 - Dynamic Variables in POWL Admin Queries (Continued)

Dynamic Data Calculation Also Available in Admin Queries
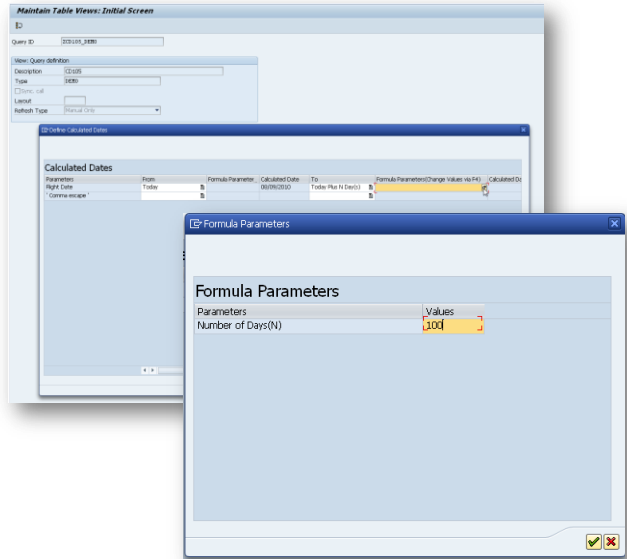
POWL New Features in 7.01 - Dynamic Variables in POWL; Defining New Formula

Besides the SAP Delivered Date Formula, You Can Add Your Own Custom Formulas

IF_POWL_DYN_VAR

CL_POWL_DYN_VAR_DATE1
Attributes
Description
Methods
GetParameters
GetDefinition
Calculate
Encode_Parameters
Decode_Parameters
Get_Attributes

BAdi "BADI_GET_DYN_VAR_CLS" to be implemented

POWL New Features in 7.01 - Visible Columns Available to Application at Runtime

Former Release – Feeder Class Must Process and Return All Columns

Selection done for all Columns!

85 hidden columns

Only 15 visible columns

100000 records

Selection: (85+15) * 100000

POWL New Features in 7.01 - Visible Columns Available to Application at Runtime

Additional Parameter for List of Visible Columns in Method GET_OBJECTS of Feeder Class

Ty.	Parameter	Type spec.	Description
▶□	I_USERNAME	TYPE XUSER	User name
▶□	I_APPLID	TYPE POWL_APPLID_TY	Application ID indentifying POWL-I
▶□	I_TYPE	TYPE POWL_TYPE_TY	POWL type ID
▶□	I_SELCRIT_VALUES	TYPE RSPARAMS_TT	selection parameters of the respe
▶□	I_LANGU	TYPE LANGU DEFAULT SY-LANGU	Language Key
□▶	E_RESULTS	TYPE INDEX TABLE	selection result table (c.f GET_OB
▶□	I_VISIBLE_FIELDS	TYPE POWL_VISIBLE_COLS_TTY OPTIONAL	table of visible columns
□▶	E_MESSAGES	TYPE POWL_MSG_TTY	messages to be displayed to the u
□▶	E_WORKFLOW_RESULT_COUNT	TYPE POWL_COUNT_TY	count for workflow worklist

Method   IF_POWL_FEEDER~GET_OBJECTS   Active

CAUTION: The performance benefit is not inherent in the framework itself, but will be achieved by the application developers working with this function.

Example Class: **CL_POWL_VISIBLE_COLUMNS_TEST**

POWL New Features in 7.01 - Remote API Enablement of POWL
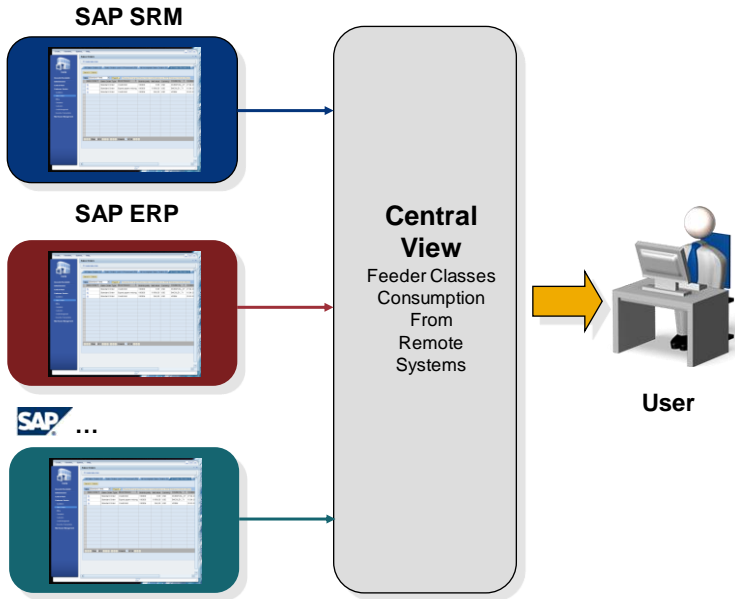
POWL New Features in 7.01 - Remote API Enablement of POWL; Business Case Example

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POWL New Features in 7.02 – Administrator Cockpit

POWL Administrator Cockpit to Simplify Setup and Configuration	- Transaction POWL_COCKPIT - A consolidated cockpit to perform all admin operations/ customizations - Single point of entry for different types of POWL - Possibility to check validity of customization entries - Possibility to test-launch POWL

POWL New Features in 7.02 – Simple Object Editing

Exit to Custom Web Dynpro Component in a Popup for Additional Processing or Editing

- Possibility to open custom WD View as a pop-up
- WD Interface POWL_POPUP_EDITOR_COMP_IF needs to be implemented
- Interface method IF_POWL_FEEDER_EXT~GET_UI_PERIPHERALS needs to be implemented returning the pop-up component name
- Possibility to have control on result cache outside the feeder
- Enhanced action handling possibility from pop-up action (Event FIRE_ACTION)
  - Refresh
  - Update of data node
  - Control back in feeder
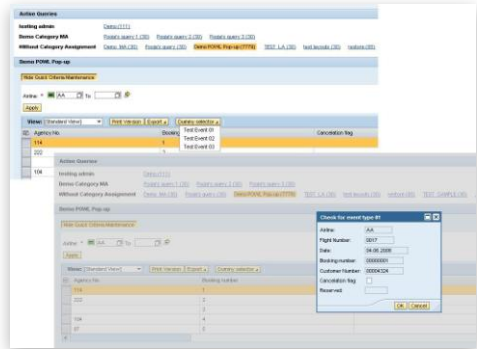
POWL New Features in 7.02

Switchable POWL Query

- Possibility to deliver POWL Queries via Switch BC Sets
- Not an inherent functionality! Application components need to implement BADI - SFW_SWITCH_CHANGED making a call to FM POWL_PACK_SELCRIT_FOR_EHP
- Template enhancement implementation available and can be copied - POWL_SWITCH_QUERY_TEMPLATE

Synchronous Debugging

- Possibility to override asynchronous refresh in debug mode
- Not an inherent functionality! User parameter SYNC_DEBUG needs to be set
- Eases pain in debugging Power List application within portal or NWBC

POWL New Features in 7.02

Validation of Selection Screen Input	■ Possibility of selection validation from
	  ■ Admin level – Transaction POWL_QUERY
	  ■ Creation of personalized query
	  ■ Modification of query
	■ New Interface method IF_POWL_FEEDER_EXT~CHECK_SELCRIT_VALUES needs to be implemented

Enhanced Query Description	■ Unambiguous query title at
	  ■ Personalization level
	  ■ For Tab-strip Layout
	    ■ Configuration possibility – Parameter *includeCategoryInfoInQuery* introduced
	    ■ Layout Personalization

POWL New Features in 7.02

Error Page for POWL	■ Standard Error Page - Inherent functionality! ■ Customer Error Page – Configuration possibility - Parameter *errorPageUrl* introduced
Real Parameters From Select Options	■ Inherent functionality! ■ Technical enhancement to sync-up with enhancements provided by WD Select Options Component
Drop Down For Selection Criteria	■ Inherent functionality! ■ Dropdown with valid values in admin query (Transaction POWL_QUERY) ■ Drop down with domain fixed values
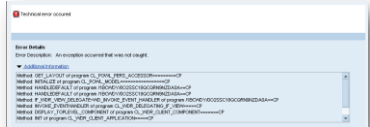
POWL New Features in 7.02

Propagation of UI State Change Events	■ Configuration possibility - Parameter *enableALVCellAction* introduced ■ Action with ID - POWL_ALV_CELL_ACTION triggered during UI state change
Message Handling From Outside the Feeder	■ Possibility to log messages from embedding WD components ■ Interface method – RENDER_MESSAGES exposed in POWL_UI_COMP needs to be implemented
Default Lead Selection	■ Configuration possibility – Parameter *enableDefaultLeadSelection* introduced ■ Lead selection event triggered on load ■ Detail component visible by default

---

POWL New Features in 7.02

Link Display As Per Updated UI Guidelines	■ Links without underlines ■ Configuration possibility – Parameter *noUnderlineForLinks* introduced
Runtime Modification of Visible Types	■ BADI Definition - BADI_TYPE_CUST ■ Interface IF_BADI_RUNTIME_TYPE_MODF needs to be implemented
Propagation of Event *Select All*	■ Inherent functionality! ■ Event POWL_LEAD_SEL triggered also for select-all

Agenda
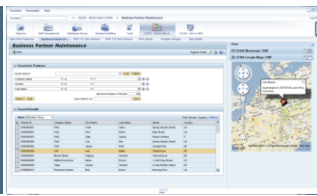
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What's it all about?

GLOSSARY

CHIP
- **C**ollaborative **H**uman **I**nterface **P**art
- Registered in a library (CHIP catalog)
- CHIP model describes capabilities of a CHIP (e.g. "wiring") and is not based on a concrete UI technology
- Technically: Web Dynpro ABAP Component which implements a certain WD Component Interface

Local Page Builder
- Tool to define and structure UI screens and to support Runtime Authoring
- Ability to fill the screen with available basic parts (CHIPs) and connect these parts ("wiring")
- Technically: configurable Web Dynpro Component to specify the layout and initially loaded CHIPs

Side Panel
- Separated part of the screen (in the form of a splitter) to display additional information
- Can be opened / closed
- Main application can parameterize CHIPs in the Side Panel via "tagging"
- Technically
    - Layout is a Page Builder configuration of type SIDEPANEL
    - Accessible via WD Side Panel API (it's not an UI element)

Local Page Builder

Employee Services: Personal Information

Back | Contact Helpdesk

My Team

FULLNAME	USERID	PHONE	MOBILE	OFFICE	ADDRESS
Matthew Black	BLACKMATTH	+1 215 548-...	+1 215 485-...	PA3, B4.26	851 Red Lion Road, Phila...
David Adams	ADAMSDAVID	+1 215 963-...	+1 215 477-...	PA2, C1.12	1 Logan Square, Philadel...
Brian Robinson	ROBINSONBR	+1 215 963-...	+1 215 744-...	PA2, C1.12	324 S. 10th Street, Phila...
Elaine Dawson	DAWSONELAI	+1 215 963-...	+1 215 756-...	PA2, C1.14	6333 Germantown Ave, ...
John Hamilton	HAMILTONJO	+1 215 962-...	+1 215 998-...	PA3, A1.05	237 St James Pl, Philadel...

Page

Address Data

Permanent Residence

Street Address: 324 S. 10th Street
City: Philadelphia
Telephone: 001/215 963-4711

Emergency Address

Street Address: Dietmar-Hopp-Allee 19
City: Walldorf
Telephone: 0049/6227 74747

Personal Data

Mr. Brian Robinson Single
14.05.1964 No Children

🏠 Family Data

Employee Services Catalog

Suchen nach: [   ] Suche starten

- ▼ 🔷 Favoriten
- ▼ 📁 Web Dynpro Components
  - 📄 Address Data
  - 📊 Bank Data
  - 🏠 Family Data
  - 📋 My Team
  - 📊 Performance Indicator
  - 👤 Personal Data

Collapsible Side Panel

▶ Google Maps
▶ Employee Performance Indicator

Local Page Builder

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CHIPs (**C**ollaborative **H**uman **I**nterface **P**art)
= WD components that implement interface IF_CHIP

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  - Web Dynpro Components
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Emergency Address

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City: Walldorf
Telephone: 0049/6227 74747

Mr. Brian Robinson   Single
14.05.1964   No Children

Family Data

- CHIPS can have **inports** and **outports** (developer needed)
- **Wiring** can be defined between ports of CHIPs for a communication

CHIP catalogue
- Special CHIP
- Component configuration for WD component WDR_CHIP_CATALOG with selected CHIPs

User can rearrange CHIPs on page
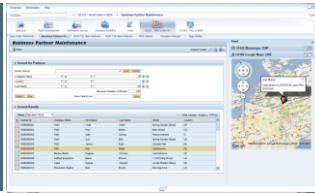
Google Maps
Employee Performance Indicator

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1. Web Dynpro UI Element and Tools Enhancements
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   - What is It?
   - **Tools**
   - Tagging
   - Asynchronous Event Services
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Web Dynpro ABAP Page Builder and CHIPs – Support CHIP Maintenance in SE80

Create and Maintain Web Dynpro CHIPs in the ABAP Workbench

Create "Web Dynpro CHIPs" in SE80 by…

- Selecting a Web Dynpro Component, its interface view and startup plug to be exposed as the CHIP
- Entering the CHIP's technical name, display name and optionally CHIP icon
- Enabling CHIP inports and outports for wiring in SE80

Note: to define a CHIP for a specific Web Dynpro Component, you don't even have to change the component. Interface component controller methods can be used as CHIP inports and interface WD events can be used as CHIP outports

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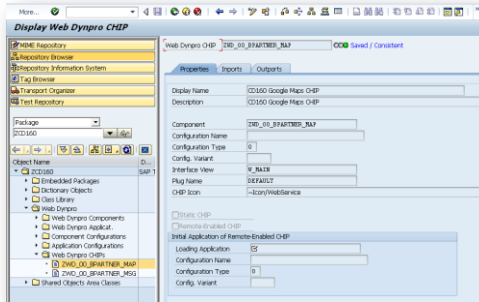
Web Dynpro ABAP Page Builder and CHIPs – Layout Tool for Advanced Runtime Authoring

Advanced Runtime Authoring in Configuration Mode

The new Web Dynpro ABAP Page Builder layout tool offers the following features:

- Add columns and rows with one click
- Merge adjacent cells
- Define width of columns in pixel or percent
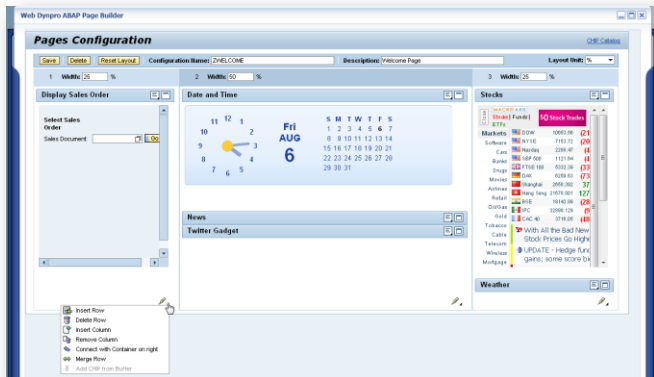
Web Dynpro ABAP Page Builder and CHIPs – CHIP Tray Menu

Where Used List for CHIPs

List of Related CHIPs

The CHIP tray menu offers the following features:

- Show connections (wiring)
- Where Used List: show all pages containing the current CHIP
- List of related CHIPs: show all CHIPs with matching inports with respect to the outports of the current CHIP
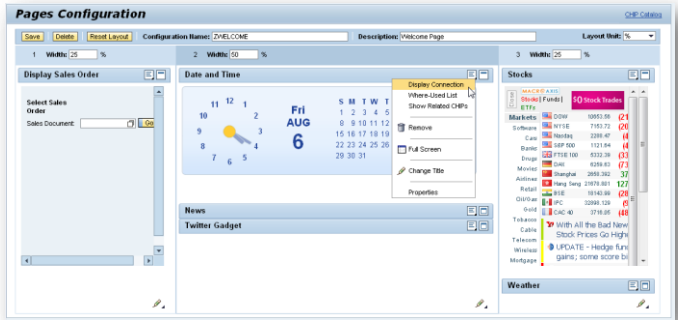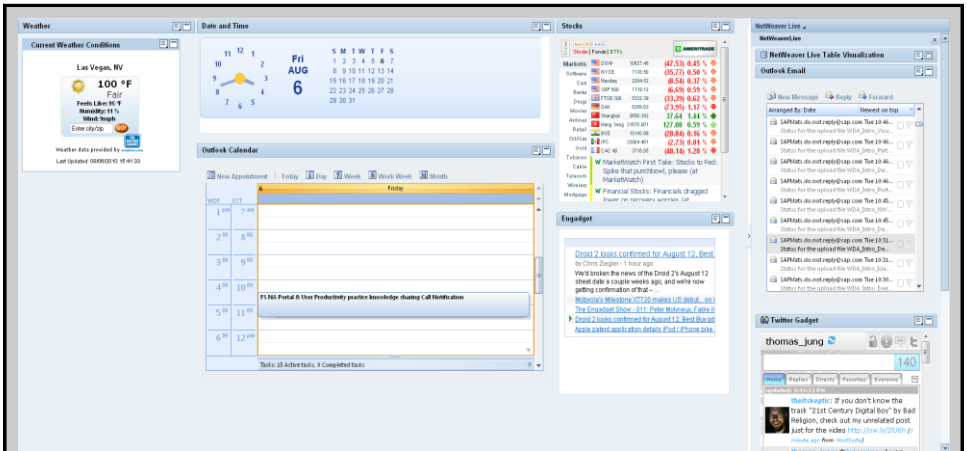
DEMO

Page Builder / Side Panel

Agenda
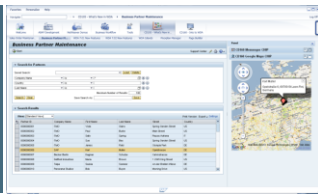
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Tagging Service

KEY MESSAGE

Web Dynpro Context tagging can be used for Automatic CHIP Wiring.

Tagging Service

- **Web Dynpro Context Attributes can be tagged with additional information**
- **Tagging of Web Dynpro Context Attributes can be done using Web Dynpro Customizing mode (sap-config-mode=X), or WD Tagging API**

- **CHIP Port Parameter definitions can be tagged as well**
- **Values of tagged Web Dynpro Context Attributes are automatically exposed as CHIP Port Events at runtime**

- **BCV uses WD Context Tagging and Automatic Wiring to pass the application context to the BCV Side Panel CHIPs**

Tagging of Web Dynpro Context Attributes using customizing UI

Tagging of CHIP Port Parameters using CHIP definition UI

Tagging Service

KEY MESSAGE

Web Dynpro Context tagging can be used for Automatic CHIP Wiring.

Tagging Service

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- **Values of tagged Web Dynpro Context Attributes are automatically exposed as CHIP Port Events at runtime**

- **BCV uses WD Context Tagging and Automatic Wiring to pass the application context to the BCV Side Panel CHIPs**

WD Context tagging information is transferred to CHIPs via automatic wiring

---

Remote Integration of WDA CHIPs

KEY MESSAGE

WDA CHIPs that follow the CHIP component model can be reused in any CHIP environment.

Remote Integration of WDA CHIPs

- **WDA CHIPs are remotely consumable without additional effort for WDA CHIP developers.**
- **E.g. WDA CHIPs will be remotely consumable in the Global Java CCP CHIP infrastructure – a first round trip has been achieved.**
- **WDA CHIPs registered in the ABAP CHIP catalog can be integrated to any other CHIP catalog via RFC.**

Remote Integration of WDA CHIPs

KEY MESSAGE
Adaptation of WDA CHIPs is done in CCP WDA CHIP adapter and WDA CHIP launcher application using XML based client-side Portal Eventing.

Remote Integration of WDA CHIPs

- **For remote integration each WDA CHIP is hosted in a separate WDA CHIP launcher application within a separate session.**
- **Each WDA CHIP is adapted by a CCP WDA CHIP adapter that**
  - **Exposes the CHIP port definition**
  - **Handles the WDA CHIP launcher application**
  - **Forwards inports to the WDA CHIP launcher application**
  - **Receives outport events from the WDA CHIP launcher application**
- **Communication between Java and ABAP is done using client-side Portal Eventing**
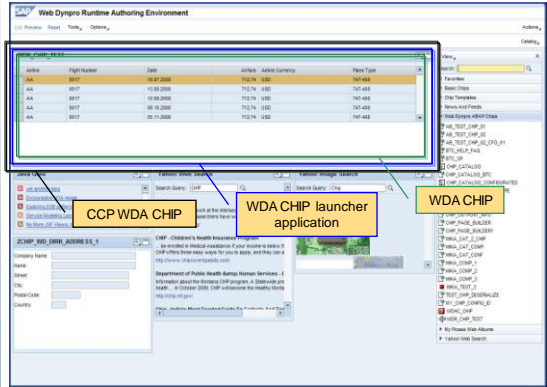
Agenda
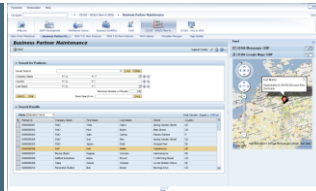
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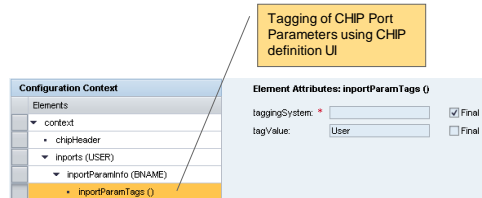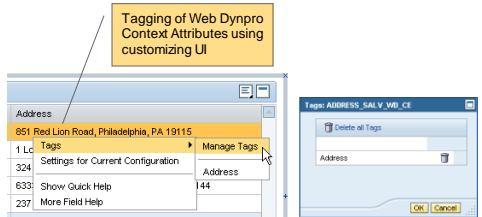   - **Asynchronous Event Services**
6. Looking Into the Future

Asynchronous Event Service

KEY MESSAGE

WDA CHIPs can load its content asynchronously.

Asynchronous Events

- introduced as a general WD capability
- event notification service to
    - register events
    - deregister events
- WD Application introduces a single polling independent of WD session
- high-performance polling against ICM cache
- asynchronous process in scope of application development
- possibility to register more than one action
    - will be executed in one roundtrip by default (WD Application parameter WDALLOWMULTIPLEACTIONS)
- later: configurable polling frequency
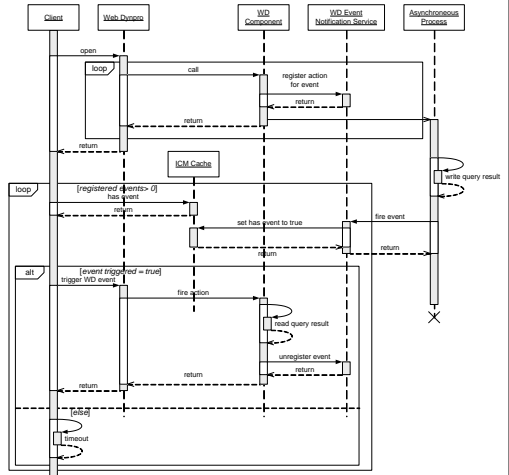
Asynchronous Event Service

How to use the Asynchronous Event Service

- get an Event Service instance by CL_WD_NOTIFICATION_SERVICE=>GET_SERVICE(<my_view_controller>)
- register the Event by <my_event_service>->REGISTER_NEW_EVENT(<my_action>)
    - result is an event ID <my_event_id>
    - polling mechanism is started client-side

- if the asynchronous process is finished set the event status to done with the help of CL_WD_NOTIFICATION_SERVICE=>UPDATE_EVENT_STATUS(<my_event_id> <my_event_status>)
    - <my_event_status> = CL_WD_NOTIFICATION_SERVICE=>C_STATUS_DONE will stop the polling mechanism and the registered action will be triggered

Sample Applications

- **WDR_DEMO_MESSENGER**

- **WDR_TEST_NOTIFICATION**
  (more technically)
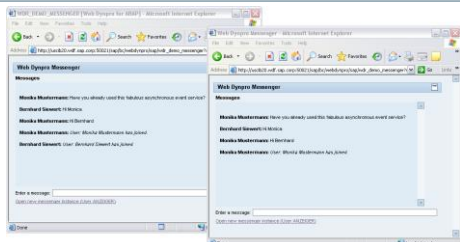
Notification Service (7.02)
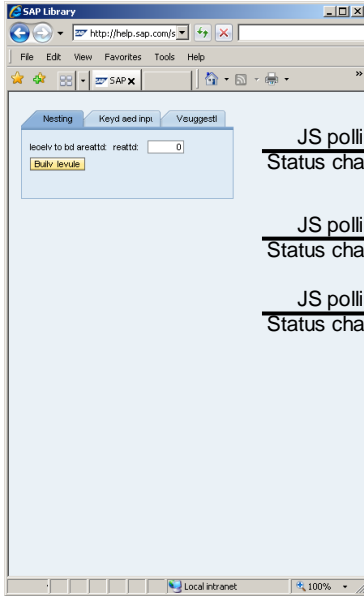
ICM

Status
In progress

Cache

JS polling:
Status changed?

JS polling:
Status changed?

JS polling:
Status changed?

Application Server X

Dispatcher

WD Work Process

Work Process m

Work Process n

Application Server Y

Dispatcher

Work Process a

Work Process b
asynchronous

Work Process c

Notification Service (7.02)

ICM

Status
done

Cache
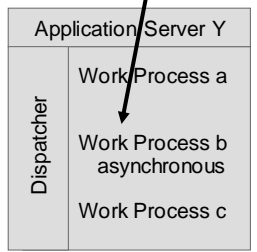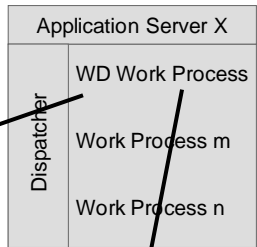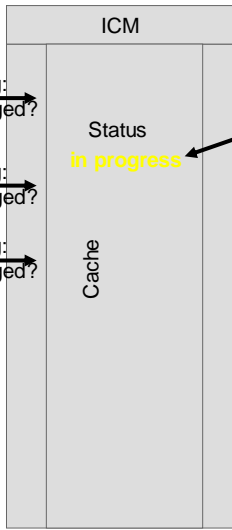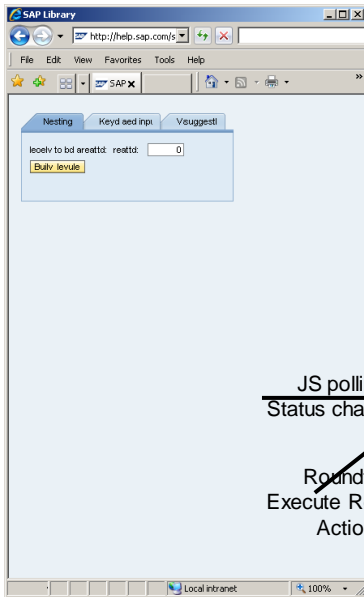
JS polling:
Status changed?

Roundtrip –
Execute Registered
Action(s)

Application Server X

Dispatcher

WD Work Process

Work Process m

Work Process n

Application Server Y

Dispatcher

Work Process a

Work Process b
asynchronous

Work Process c
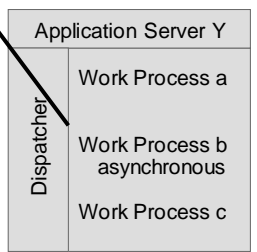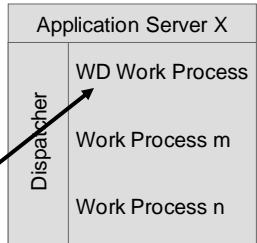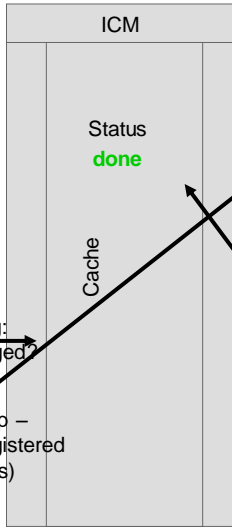
Notification Service: The Web Dynpro Part

```
METHOD the_trigger_method.
  DATA lo_notif_service TYPE REF TO if_wd_notification_service.
  DATA lv_id            TYPE wdr_notification_id.

* Get handler
  lo_notif_service = cl_wd_notification_service=>get_service(
    wd_this->wd_get_api( ) ).

* Register WD action and receive unique action ID
    lv_id = lo_notif_service->register_new_event( 'CALL_BACK' ).

* Start asynchronous processing and pass on the unique ID
  CALL FUNCTION 'ANY_RFC_FUNCTION_FOR_ASYNCHRONOUS_EXECUTION'
    STARTING NEW TASK 'TASK1'
    EXPORTING id = lv_id.
ENDMETHOD.


METHOD onactioncall_back.
* Do now whatever had to wait.
ENDMETHOD.
```

Notification Service: The Asynchronous Task Part

```
FUNCTION ANY_RFC_FUNCTION_FOR_ASYNCHRONOUS_EXECUTION.
* Local  interface:
*     IMPORTING
*       VALUE(ID) TYPE  WDR_NOTIFICATION_ID

* Do what Web Dynpro is waiting for
...

* Notify ICM Cache of status change
  cl_wd_notification_service=>update_event_status(
      event_id    = id
      event_status = cl_wd_notification_service=>c_status_done ).
ENDFUNCTION.
```
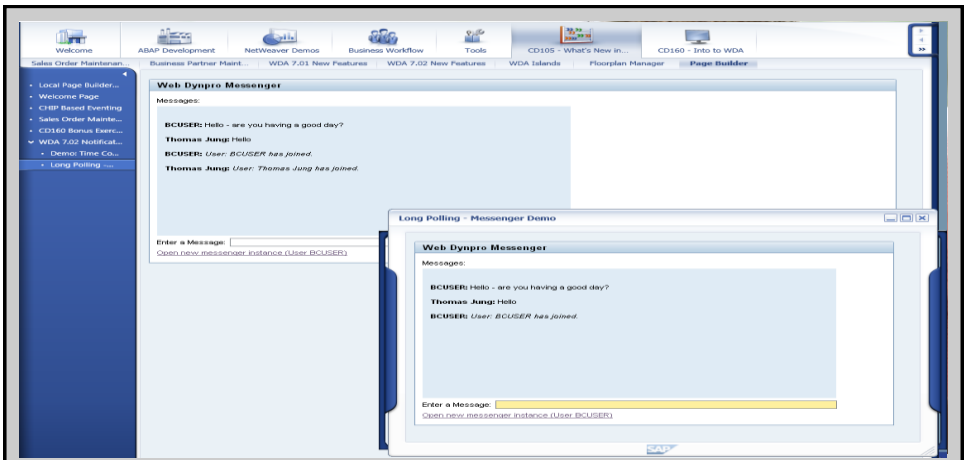
DEMO

Notification Service

Agenda
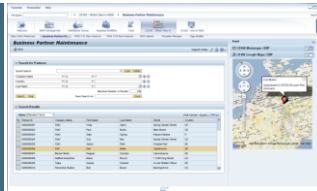
1. Web Dynpro UI Element and Tools Enhancements

2. Islands

3. Floorplan Manager

4. Local Page Builder

5. POWL

6. **Looking Into the Future**

Disclaimer

SAP

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Disclaimer

SAP

The next section describes possible future features for Web Dynpro ABAP that are currently under investigation within the SAP Labs. This is a look at work in progress and prototype functionality and in no way should be assumed that these features will definitely make their way into a future release level. This is designed to give you a feel for some of the things that SAP is investigating for the future.

Preview From the Labs

New Features Future – HTML Islands

HTML Islands For Safe, Black Box Integration of Non-Web Dynpro HTML and JavaScript
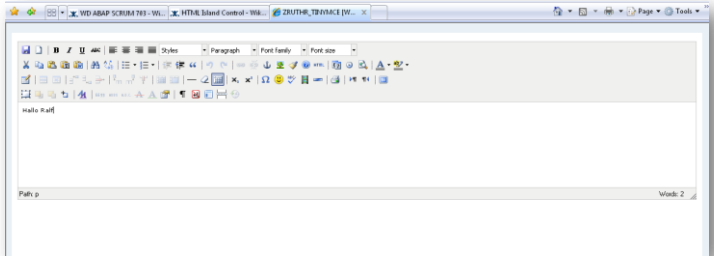
Preview From the Labs

New Features Future – Improved FPM Configuration

Completely Redesigned FPM Configuration Tool
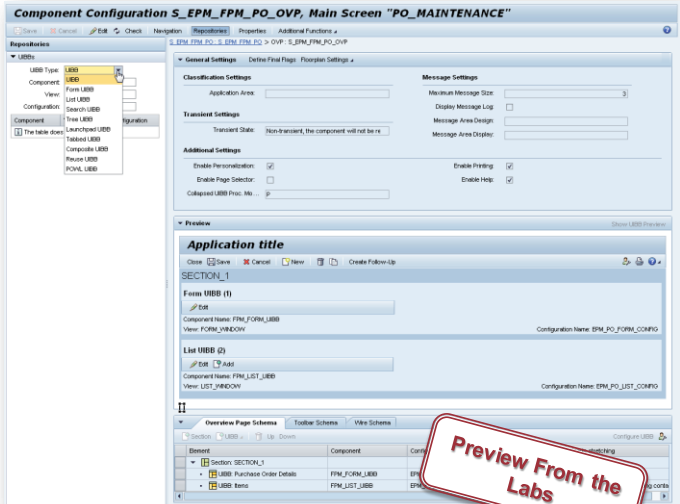
Preview From the Labs

New Features Future – Improved FPM GUIBB Configuration

Completely Redesigned FPM Generic UI Building Block Configuration

Preview From the Labs

New Features Future – Splitter UI Element

General Splitter UI Element Which Allows Nesting and Easy Insertion of Inner Content

Preview From the Labs

New Features Future – Tag Cloud

Tag Cloud UI Element With Inner Items Driven By Bound Context Elements

Application Settings for TagCloud and TagCloud Items

The TagCloud will be generated based on settings below. Furthermore, there are settings made via the dataSource node to which the TagCloud is bound: The Text and the Tooltip of each TagCloud Item will be set automatically. The Size of the items (maximum the size set below) will be set randomly as well as the Hitcount and whether an item is enabled or not. The Hitcount will be shown in brackets after the Text if and only if it is not equal to 0. The properties of a single TagCloud Item can be changed via the appearing input fields after having selected a single TagCloud Item.

Number of Generated TagCloud Items (<200): `20`

Width of Tre...

- ☐ CONTEXT_MENUS
- ▾ ☐ ROOTUIELEMENTCONTAINER
  - ▸ ☐ TC1
  - ◇ HG1
  - ▾ ☐ TC2
    - ◇ TAGCLOUD

TagCloud Settings

TagCloud Enabled: ☑
TagCloud Visibility: ☑

Property	Value	Binding
Properties (TagCloud)		
ID	TAGCLOUD	
contextMenuBehaviour	Inherit	
contextMenuId		
dataSource	MAIN.DATA	✓
enabled	☐	✓
tagEnabled	☐	✓
tagHitcount	MAIN.DATA.HITCOUNT	✓
tagSize	MAIN.DATA.SIZE	✓
tagText	MAIN.DATA.TEXT	✓
tagTooltip	MAIN.DATA.TOOLT	
tooltip		
visible	MAIN.UI_SETTINGS.TAGCLO...	
Events		
onTagSelect	TAGCLOUDITEMCLICK	

TCItem1 (3) TCItem2 TCIt...
TCItem8 TCItem9 T...
TCItem15 T...

Preview From the Labs

New Features Future – Redesigned Select Options

Simplified Visual Design and Interaction for Select Options – Matches the Design of the Search GUIBB in FPM

Airline Code ▾	Ist ▾	AA	⊕ ⊖
Airline Code ▾	Beginnt Mit ▾		⊕ ⊖
Connection Number ▾	Ist ▾		⊕ ⊖
Flight Date ▾	Ist Nicht ▾	🗓	⊕ ⊖
Checkbox ▾	Ist ▾	☑	⊕ ⊖

`Get Input`

Preview From the Labs

New Features Future – Stateless Applications

Stateless Applications With New Form Based UI Elements and Client Side Actions

Preview From the Labs

New Features Future – Context Trace Tool

Context Trace Tool Which Can Be Activated Via CTRL+ALT+SHIFT+X

Preview From the Labs

Q&A

Feedback

Please complete your session evaluation.

Be courteous — deposit your trash,
and do not take the handouts for the following session.

THANK YOU !

Further Information

SAP Public Web:

SAP Developer Network (SDN): www.sdn.sap.com

Business Process Expert (BPX) Community: www.bpx.sap.com

- SAP BusinessObjects Community (BOC): boc.sap.com
- Web Dynpro ABAP: http://www.sdn.sap.com/irj/sdn/nw-wdabap
- NWBC: http://www.sdn.sap.com/irj/sdn/nw-businessclient
- Islands: http://www.sdn.sap.com/irj/sdn/adobe-flash-islands
- FPM: http://www.sdn.sap.com/irj/sdn/nw-wdabap?rid=/webcontent/uuid/00b4312a-ac72-2b10-e0ad-e0219cfeb78e

Related SAP Education and Certification Opportunities

http://www.sap.com/education/

- NET310: 5-day introductory classroom training on Web Dynpro ABAP
- NET311: 3-day classroom training on advanced Web Dynpro ABAP
- NET312: 3-day classroom training on UI elements
- NET313: new 2-day classroom training on Floorplan Manager

Further Information

Related Workshops/Lectures at SAP TechEd 2010

CD103, choosing the Right UI Technology for the Right Project, Lecture (1 hour)

CD105, What's New in Web Dynpro ABAP 7.01 and 7.02, Lecture (2 hour)

CD160, Developing User Interfaces with Web Dynpro ABAP, Hands-On (4 hours)

CD163, Creating Mashup User Interfaces with the New Web Dynpro ABAP Page Builder, Hands-On (2 hour)

CD164, Using SAP NetWeaver Business Client, Hands-On (2 hour)

CD203, Best Practices for Designing Web Dynpro ABAP User Interfaces, Lecture (2 hours)

CD217, Building Interactive UIs Utilizing Page Builder and SAP BusinessObjects Xcelsius in SAP NetWeaver Business Client, Lecture (1 hour)

CD264, Creating Online and Offline Form Processing Scenarios with Adobe Forms and Web Dynpro for ABAP, Hands-On (2 hour)

CD266, ABAP Development: Update Your Skills to SAP NetWeaver 7 and Beyond, Hands-on (4 hours)

APPENDIX

Remote API Enablement of POWL RFC Library

- **POWLR_ASYNC_COLLECT_ACTIONS**

- **POWLR_ASYNC_COLLECT_FIELDCAT**

- **POWLR_ASYNC_COLLECT_OBJECTS**

- **POWLR_ASYNC_COLLECT_OBJECT_DEF**

- **POWLR_ASYNC_COLLECT_SELCRIT**

- **POWLR_ASYNC_COLLECT_VAL_ACT**

- **POWLR_GET_ACTION_CONF**

- **POWLR_HANDLE_ACTION**

Remote API Enablement of POWL
RFC Library

- **`POWLR_MULTI_COLLECT_ACTIONS`**

- **`POWLR_MULTI_COLLECT_FIELDCAT`**

- **`POWLR_MULTI_COLLECT_OBJECTS`**

- **`POWLR_MULTI_COLLECT_OBJECT_DEF`**

- **`POWLR_MULTI_COLLECT_SELCRIT`**

- **`POWLR_MULTI_COLLECT_VAL_ACT`**

Help Center Motivation
SAP Help and Customer-Specific Processes

SAP

Generic documen-tation in the SAP system

SAP customer

Company-specific
Documentation outside the SAP system:

- SAP information + learning materials
- Partner solutions
- Shared network folders
- Solution Manager
- Wiki pages
- Intranet pages

SAP Business Suite products
- Customizing
- Modifications
- Specific processes
- UI Adaptions

Author **?** User

How can company-specific (process-specific) information be
- made available best to **end-users**?
- integrated with the **application**?
- made available for a **search** function

Help Center Concept
Process-Specific Information at the User Workplace

SAP application

Example

Process expert

Business user

Help Center: Change Sales Order

- ▾ Search
  - [Search]
- ▾ Note   Change Delete
  - Check order 56789 with Mrs Summer.
  - Create list of top-ten customers.
- ▾ Frequently Asked Questions
  - How can I get a change code?
  - Which discount types do I use for large orders?

Application-related Help Center

- ▾ Worth Knowing
  - How to Change Orders Created Automatically
  - How to Search for an Order
  - How to Update the Quantity in Orders
  - SAP Library: Change Sales Order
- ▾ Learning Content
  - Sales Learning Map
  - Sales Order Management (Delta)
  - Sales Order Training Courses - Overview

Provides process-specific content (FAQs, links to files and Web pages)

Uses process-specific information while working with the application

The information provided by process experts
is published **directly** to the users' workplaces.

Help Center Overview
Supported Applications, Help Center Content

ABAP Transaction Dynpro
Help → Application Help

ABAP Web Dynpro
Help → Help Center

Help Center: Change Sales Order - Windows Internet Explorer

Example

Help Center: Change Sales Order

Search for Help Center Content

- ▾ Search
  - [Search]

User-specific:
User's own note

- ▾ Note   Change Delete
  - Check order 56789 with Mrs Summer.
  - Create list of top-ten customers.

Company-specific:
- FAQs
- Links to
  - files
  - Web pages

- ▾ Frequently Asked Questions
  - How can I get a change code?
  - Which discount types do I use for large orders?
- ▾ Worth Knowing
  - How to Change Orders Created Automatically
  - How to Search for an Order
  - How to Update the Quantity in Orders

SAP-specific
  - SAP Library: Change Sales Order

- ▾ Learning Content
  - Sales Learning Map
  - Sales Order Management (Delta)
  - Sales Order Training Courses - Overview

The User's Personal Note

Create note

Edit and save note

Change note

Notes are user-specific and application-specific. In the Help Center, a user can only acces own notes.

FAQ Administration

The **process expert view** (special role) offers edit functions for FAQs.

Editor with formatting functions

A mouse click on the question link opens (or closes) the answer.
- Same behavior for process experts and end users -

Link Administration

The **process expert view** (special role) offers edit functions for links.

Help Center: Change Sales Order

- Search
- Note   Change   Delete
  - Check order 1723 with Mrs. Summer.
  - Create list of top-ten customers.
- Frequently Asked Questions   Create
  - How can I get a change code?
  - Which discount types do I use for large orders?
- Worth Knowing   Create Link
  - How to Change Orders Ceated Automatica
  - How to Search for an Order
  - How to Update the Quantity in Orders
  - SAP Library: Change Sales Order
- Learning Content   Create Link
  - Sales Learning Map
  - Sales Order Managem
  - Sales Order Training C

Context menu:
- Web Page
- File in Network Folder
- File in Solution Manager Project
- File in Solution Manager Repository
- New File in Solution Manager Repository

- Change Link
- Delete Link

Link to a **Web page** via the Web address (http://...)

Link to a **file** stored on a **shared network folder** configured for the Help Center

Link to a **file** stored in the **Solution Manager** (in the project structure or in the special repository for Help Center files)

Uploads a file to the **Solution Manager** repository and creates a **link** in the Help Center To change the file, the Process Expert downloads it, changes its content and uploads it again (using functions offered by the context menu of the link).

Search for Help Center Content

Search areas:
Content of this application, optional of related applications or of all applications in the client

Help Center: Change Sales Order

- Search
  [order] [Search]
- Note   Change   Delete
  - Check order 1723 with Mrs. Summer.
  - Create list of top-ten customers.
- Frequently Asked Questions   Create
  - How can I get a change code?
  - Which discount types do I use for large orders?
- Worth Knowing   Create Link
  - How to Change Orders Ceated Automatically
  - How to Search for an Order
  - How to Update the Quantity in Orders
  - SAP Library: Change Sales Order
- Learning Content   Create Link
  - Sales Learning Map
  - Sales Order Management (Delta)
  - Sales Order Training Courses - Overview

Help Center: Change Sales Order

- Search
  [order] [Search]
  Search Area: [ ] This Application
  Results 1 – 3 of 3
  - Sales Order Management (Delta)
  - Sales Order Training Courses - Overview
  - Check order 1723 with Mrs. Summer. Create list of top-ten...
- Note   Change   Delete
  - Check order 1723 with Mrs. Summer.
  - Create list of top-ten customers.
- Frequently Asked Questions   Create
  - How can I get a change code?
  - Which discount types do I use for large orders?
- Worth Knowing   Create Link
  - How to Change Orders Ceated Automatically
  - How to Search for an Order
  - How to Update the Quantity in Orders
  - SAP Library: Change Sales Order

Search result list
- Own notes
- FAQs
- Links
- Help (SAP Library)
- Glossary

Central Administration of Notes, FAQs and Links

Administration of Help Center Content

▼ Selection

Category: Worth Knowing
Link Type:
Language: EN
☑ Cross-Application
☑ For Individual Applications Changed ...
Application Type: Transaction Changed By:
Application: Created On: ◇ To
Created By:

Content selection per category:
- Notes
- Frequently Asked Questions
- Wort Knowing
- Learning Content

Search

▼ Worth Knowing

Save | Create Link To.. | Delete Reference | Transport Links

View: [Standard View] | Print Version | Export ▲

Link Text (English)	Link Type	Link Target	Applicatio...	Applica...	Changed ...
How to Change Orders Ceated Automatically	File in Network Folder	test.doc	TRAN	VA02	20.06.2009
How to Search for an Order	File in Network Folder	Auftrag.ppt	TRAN	VA02	17.06.2009
How to Update the Quantity in Orders	File in Network Folder	How to Update the Quantity in Orders	TRAN	VA02	23.06.2009

Search results per category

Notes
Deletion only - in case user is blocked or does not exist any more

Save | Create Link To.. | Delete Reference | Transport Links

▼ Details

◀ Previous Entry | Next Entry ▶

Attributes
Link Text (English): How to Change Orders Created Automatically
Link Type: File in Network Folder
Folder: \\dev\R22\KTM\Test_Management_Development\KTP\BusinessSuite_Han\
File: test.doc Browse...
Test Link

Information
Changed On: 29.06.2009
Changed By: ZOBEL
Created On: 23.06.2009
Created By: ZOBEL
Original Language: EN

Language Variants
	Language	Link Text
		How to Change Orders Created Automatically
	EN	How to Change Orders Created Automatically

Application Assignment
Add | Entfernen | Cross-Application
	Typ	Application
	Transaction	VA02

FAQs and links
- Same functions as in the Help Center's process expert view
- Multiple assignment of FAQs and links to applications
- Transport of FAQs and links

Translation of FAQs and Link Texts

Translation of Help Center Texts

▼ Selection

Category: Worth Knowing
Link Type:
Language: EN
Target Language:
☑ Cross-Application
☑ For Individual Applications Changed On: ◇ To
Application Type: Transaction Changed By:
Application: Created On: ◇ To
☐ Only to Be Updated Created By:

Content selection per category:
- Frequently Asked Questions
- Wort Knowing
- Learning Content

Search

▼ Worth Knowing

Save

View: [Standard View] | Print Version | Export ▲

Link Text (English)	Link Text (German)	Application Ty...	Application	Changed On
How to Change Orders Ceated Automatically		TRAN	VA02	
How to Search for an Order		TRAN	VA02	17.06.2009
How to Update the Quantity in Orders		TRAN	VA02	23.06.2009

FAQs
The questions and answers are displayed in the same editor as in the process expert view.

Link texts
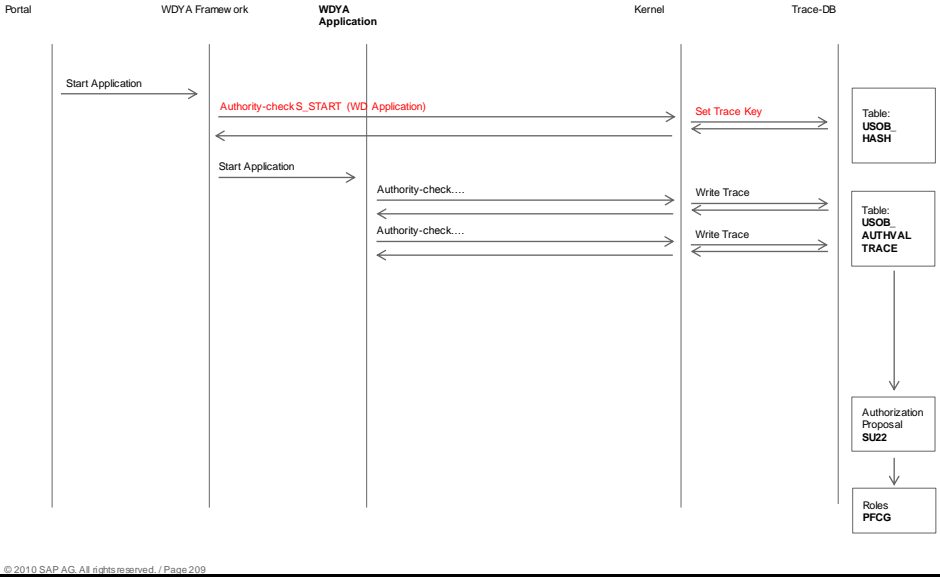The link text (source language) plus row for target language is displayed per selected item.

Save

Translation of link texts

▼ Übersetzung

◀ Previous Entry | Next Entry ▶
Source Language (English): How to Search for an Order
Target Language (German): Einen Auftrag suchen

Authorizations - Specification

SAP

- Authorization for Web Dynpro Application (WDYA) shall be checked when started
  - Authorization object S_START shall be used
  - key of S_START: TADIR-Key
- When creating a role containing a WD application, there shall be a service, which automatically proposes all authorizations necessary to execute the application
  - SU22 traces shall be switched on for WD applications
- Some applications (SRM) use application configurations (WDCA) to differentiate their roles
  - Only one WD application
  - Several WD application configurations
- Application parameter WD_AUTHCHECK_FOR_CONFIG shall be introduced to specify the different behavior
  - When set, SU22 trace shall be done based on WDCA instead of WDYA
  - When set, authorization checks shall be performed for both, WDCA and WDYA
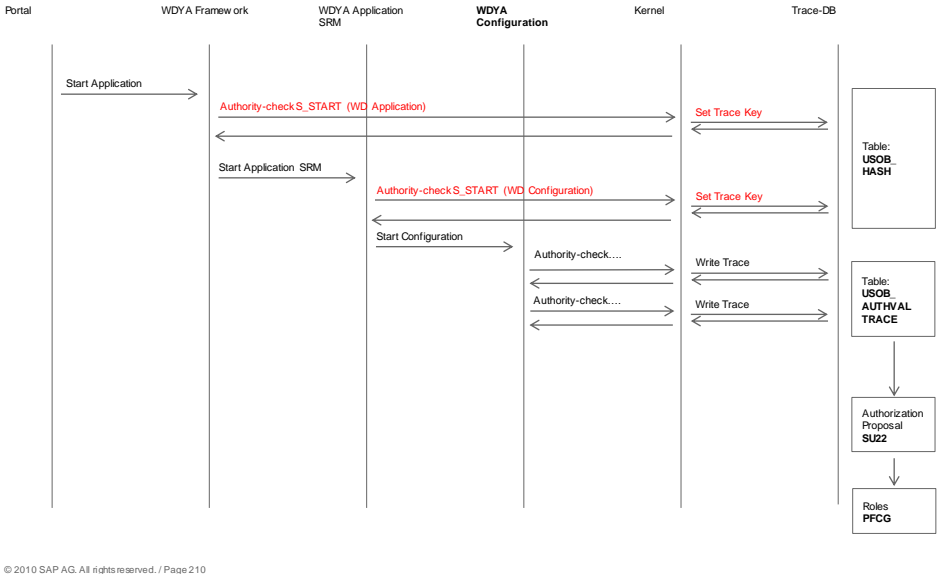 - The application parameter shall only be set in SE80, not via URL-parameter

---

Specification: TODOs for application

SAP

- The scope implies, that the application must include authorizations for S_START in their roles
  - Existing traces for WDYA can be reused (SU22: TADIR-Service R3TR WDYA <..>)
  - Normal applications (WD_AUTHCHECK_FOR_CONFIG = ‚') must add S_START authorizations for WDYA to their roles
  - SRM-like applications (WD_AUTHCHECK_FOR_CONFIG = ‚X') must add S_START for WDCA and WDYA to their roles

Start Authorization for WD Application

Portal	WDYA Framework	**WDYA Application**	Kernel	Trace-DB

Start Application

Authority-check S_START (WD Application)

Set Trace Key

Table: **USOB_HASH**

Start Application

Authority-check….

Write Trace

Authority-check….

Write Trace

Table: **USOB_AUTHVAL TRACE**

Authorization Proposal **SU22**

Roles **PFCG**

Start Authorization for WD Application Configuration

Portal	WDYA Framework	WDYA Application SRM	**WDYA Configuration**	Kernel	Trace-DB

Start Application

Authority-check S_START (WD Application)

Set Trace Key

Table: **USOB_HASH**

Start Application SRM

Authority-check S_START (WD Configuration)

Set Trace Key

Start Configuration

Authority-check….

Write Trace

Authority-check….

Write Trace

Table: **USOB_AUTHVAL TRACE**

Authorization Proposal **SU22**

Roles **PFCG**

Authorization Checks

- Variables for Cases
  - WD_AUTHCHECK_FOR_CONFIG: application parameter in se80 to switch on the check and trace for configurations instead of application
  - Configuration_id(pfcg): application configuration entered in a PFCG-menu entry for a specific WebDynpro application (parameter WDCONFIGURATIONID)
  - Configuration-id(se80): application configuration entered in se80 for a specific WebDynpro application (parameter WDCONFIGURATIONID)

application	configuration-id (se80)	configuration-id(pfcg)	WD_AUTHCHECK_FOR_CONFIG	check object 1	check object 2
wd_application	\<none>	\<none>		WDYA wd_application	\<none>
wd_application	\<none>	\<none>	X	WDYA wd_application	WDCA wd_application
wd_application	\<none>	config_pfcg		WDYA wd_application	\<none>
wd_application	\<none>	config_pfcg	X	WDYA wd_application	WDCA config_pfcg
wd_application	config_se80	\<none>		WDYA wd_application	\<none>
wd_application	config_se80	\<none>	X	WDYA wd_application	WDCA config_se80
wd_application	config_se80	config_pfcg		WDYA wd_application	\<none>
wd_application	config_se80	config_pfcg	X	WDYA wd_application	WDCA config_pfcg

---

Authorization traces (SU22)

- Variables for Cases
  - WD_AUTHCHECK_FOR_CONFIG: application parameter in se80 to switch on the check and trace for configurations instead of application
  - URL-Parameter sap-wd-configId

application	sap-wd-configId	WD_AUTHCHECK_FOR_CONFIG	SU22-Key
wd_application	\<none>		WDYA wd_application
wd_application	\<none>	X	WDCA wd_application
wd_application	config_url		WDYA wd_application
wd_application	config_url	X	WDCA config_url

Screenshot: Configuration_id(pfcg)

Ändern von Rollen

| 🖉 | 📇 Andere Rolle | ᵈ⁄ᵉ | ℹ️ |

Rolle		
Rolle	Z_PB_NWBC_TEST	
Beschreibung		
Zielsystem		🟢 K

Web-Dynpro-Anwendung ⊠

Web-Dynpro-Anwendung	WDR_APPLICATION
Beschreibung	test
Protokoll	☐ HTTPS

Parameter

Name	Wert	
WDCONFIGURATIONID	config_pfcg	

| 🔍 Beschreibung | Attribute | 🟢 Menü | 🟢 Berechtigungen |

Hierarchie
- ▽ 🗀 Menü der Rolle
  - 📎 Object Navigator
  - 📎 NWBC starten
  - 📎 Benutzerpflege
  - ▷ 🗂 PageBuilder

- Bericht
- Berechtigungsvorschlag
- Web-Dynpro-Anwendung
- BSP-Anwendung
- Web-Adresse oder Datei
- Vordefinierte URL aus Verzeichr
- Generische Web Adresse (URL
- WebSource aus Drag and Relat
- Externes Mail-System
- Knowledge Warehouse Link
- SAPScript (Texts defined with SI

✅ ❌

Screenshot: Configuration-id(se80) and WD_AUTHCHECK_FOR_CONFIG

Web Dynpro Explorer: Web-Dynpro-Anwendung ändern

| Anwendung | zhe_page_builder | gesichert |

| Eigenschaften | Parameter |

Parameter	Wert
PAGE_TYPE	
WD_AUTHCHECK_FOR_CONFIG	
WDCONFIGURATIONID	CONFIG_SE80

Repository Browser
Repository Infosystem
Transport Organizer

Web-Dynpro-Comp. / Intf. 🗐
WDR_CHIP_PAGE ▼ 𝒩

Objektname	B
▽ 🎛 WDR_CHIP_PAGE	AB
▷ 🗀 Assistance-Klasse	
🎛 COMPONENTCONTROLLER	
▷ 🎛 Component-Interface	
▷ 🗂 Custom-Controllers	
▷ 🗂 Views	
▷ 🗂 Windows	
▷ 🗂 MIMEs	
▽ 🗂 Web-Dynpro-Anwendungen	
▷ 🗔 ZMA_CHIP_PAGE	CH
▷ 🗔 zside_panel	
▷ 🗔 zhe_page_builder	
▷ 🗔 wdr_chip_page	We
▷ 🗀 Component-Konfigurationen	

Screenshot: SU22

TADIR-Service R3TR WDYA ZWDR_CHIP_PAGE anzeigen

Information

TADIR-Service	R3TR WDYA ZWDR_CHIP_PAGE	gesichert

Eigenschaften   Berechtigungobjekte

Selektionsergebnis

Status	TADIR-Service	Fl
	R3TR WDYA ZWDR_CHIP_PAGE	

&Feldwerte

Berechtigungsobjekte

	Status	Objekt	Objektbezeichnung	Vorschl
		S_DEVELOP	ABAP Workbench	NEIN
		S_PB_PAGE	ABAP Page Builder: Page Konfiguration	JA
		S_START	Startberechtigungsprüfung für TADIR-Objekte	JA

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