

# Generic Software Development and Enhancement Framework – Product Oriented Architecture (POA)



## Applies to:

general development architecture - environment independent

## Summary

This paper describes a technical concept of a generic 3 layer table based development model based on organizational data, application characteristics and a base view. Software products are represented by dynamic runtime objects.

**Author:** Axel Dietrich

**Company:** Axel Dietrich

**Created on:** March 2008

## Author Bio



Axel Dietrich offers as a freelanced consultant professional services in the areas development of SAP solutions and consulting with a special focus on processes related to “global shared services”. He is SAP certified Development Consultant for SAP NetWeaver 2003 – ABAP Workbench and Solution Consultant SAP NetWeaver BI 7.0.

Due to his professional experience and education Mr. Dietrich gained a good knowledge in the SAP development environment including ABAP workbench, SAP BI modeling workbench, SAP BI operation, SAP portal content administration, general data modeling as well as in SAP base technology like transport management, system monitoring, data takeover or authorization maintenance. Beside a special business process knowledge in the modules Customer Service and Plant Maintenance Mr. Dietrich has a very broad knowledge of the value flow within the SAP system.

## Table of Contents

Applies to:.....	1
Summary .....	1
Author Bio.....	1
Table of Contents.....	2
Scope .....	3
POA – Layer Model.....	4
Process view .....	4
Product view.....	4
Base View .....	5
Runtime Objects .....	5
Configuration .....	5
Options.....	5
Implementation.....	5
Related Content.....	6
Copyright .....	7

## Scope

The usage of this development model has a special focus on solutions with shared software services associated with high complex organizational structures and usage types.

This technique might be used in the following content:

- Enhancements of complex used standard components
  - preconfigured processes / applications
  - parallel development on same enhancements / components
  - remove of “hard-coded” organizations etc.
- general development of configurable applications
- generic, efficient and high flexible customizing and configuration framework
- development of reusable, redefine able and version able components
- Process / Product related approach

## POA – Layer Model

### Process view

Main focus of this data structure is to answer the following questions:

- Which organization is using this process?
- Which product is assigned to this organization?

Table key fields of the the process view are the process ID and a free defined organizational hierarchy.

Process ID	Org. 1 (free)	Org. 2 (free)	Product ID	active?
PC0001234	*	*	PD0001234	X
PC0001234	1000	*	PD00012341	X
PC0001234	1000	S101	PD00012342	X

Table 1: simplified Process view: Product filter based on organizational structures.

The organizational structure on a higher level “Org. 1 (free)” could be “Company Code”, on lower level “Org. 2 (free)” “Sales Organization” depending on a business scenario. Only one product may be assigned to the table keys. The best specified record is valid.

Take note of a more sophisticated approach based on a service oriented architecture ([SOA](#)) with the assignment of one service with a product list to one process.

### Product view

Main focus of this data structure is to answer the following questions:

- Which application characteristics are using a product?
- Which runtime object is assigned to the characteristics?

Product ID	Char. 1 (free)	Char. 2 (free)	Class name	Tabname	Srtfield
PD0001234	*	*	ZCLASS_0	ZTAB_0	000001
PD0001234	YCCC	*	ZCLASS_1	ZTAB_0	000002
PD0001234	YCCC	ZS	ZCLASS_2	ZTAB_1	000003
PD0001234	YZZZ	ZM	ZCLASS_1	ZTAB_1	000004

Table 2: simplified product view – filter conditions based on application characteristics.

The characteristic “Char. 1 (free)” on higher level could be represented by “Service Order Type” and “Char. 2 (free)” by “PM Activity Type” dependent on a business scenario. Only one runtime object or configuration may be assigned to the table keys. The best specified record is valid.

## Base View

Basically a dynamic created runtime object identified from the upper views in combination with table based configuration settings represent the Software product.

## Runtime Objects

The enhancement points (of a standard application) required for the particular process have to be bundled into one object and implemented in the methods.

It is mandatory to use object oriented interfaces and or inherited objects for the creation of dynamic runtime objects.

## Configuration

Process related configuration data can be stored in a database cluster table based on a specified structure "Tabname" and a table index ID "Srtfield".

The configuration settings may be used for preconfigured business scenarios (use order type XX, don't process step A ...) or configured UI's (normalized structure for field properties processing required).

## Options

There are several options to enhance the framework:

- implementation of exception processing (product or process replacement)
- dynamic field lists for filter processing (use of "Select Options")
- product selection UI
- true hierarchy resolution
- licensing, valid to ...

## Implementation

Each process implementation requires a separate specification.

Take care of at least the following features:

- LUW, Locks
- Interfaces, Structures
- Organizational View, Characteristics view
- methods, enhancement points
- global data
- standard customizing

Don't:

- Maintain master data (or similar attributes) in the configuration cluster. This would reduce the reuse ability.
- It seems to be more efficient to separate processes for header and items. (Don't mix up different processes.)

Restrictions:

- Active standard enhancements with filter functionality
- menus
- multiple use

## Related Content

Please include at least three references to SDN documents or web pages.

[Product oriented architecture @ www.z-api.net](http://www.z-api.net)

[Service oriented architecture @ www.z-api.net](http://www.z-api.net)

[SDN SOA modeling](#)

## Copyright

© 2008 SAP AG. All rights reserved.

No part of this publication may be reproduced or transmitted in any form or for any purpose without the express permission of SAP AG. The information contained herein may be changed without prior notice.

Some software products marketed by SAP AG and its distributors contain proprietary software components of other software vendors.

Microsoft, Windows, Outlook, and PowerPoint are registered trademarks of Microsoft Corporation.

IBM, DB2, DB2 Universal Database, OS/2, Parallel Sysplex, MVS/ESA, AIX, S/390, AS/400, OS/390, OS/400, iSeries, pSeries, xSeries, zSeries, System i, System i5, System p, System p5, System x, System z, System z9, z/OS, AFP, Intelligent Miner, WebSphere, Netfinity, Tivoli, Informix, i5/OS, POWER, POWER5, POWER5+, OpenPower and PowerPC are trademarks or registered trademarks of IBM Corporation.

Adobe, the Adobe logo, Acrobat, PostScript, and Reader are either trademarks or registered trademarks of Adobe Systems Incorporated in the United States and/or other countries.

Oracle is a registered trademark of Oracle Corporation.

UNIX, X/Open, OSF/1, and Motif are registered trademarks of the Open Group.

Citrix, ICA, Program Neighborhood, MetaFrame, WinFrame, VideoFrame, and MultiWin are trademarks or registered trademarks of Citrix Systems, Inc.

HTML, XML, XHTML and W3C are trademarks or registered trademarks of W3C®, World Wide Web Consortium, Massachusetts Institute of Technology.

Java is a registered trademark of Sun Microsystems, Inc.

JavaScript is a registered trademark of Sun Microsystems, Inc., used under license for technology invented and implemented by Netscape.

MaxDB is a trademark of MySQL AB, Sweden.

SAP, R/3, mySAP, mySAP.com, xApps, xApp, SAP NetWeaver, and other SAP products and services mentioned herein as well as their respective logos are trademarks or registered trademarks of SAP AG in Germany and in several other countries all over the world. All other product and service names mentioned are the trademarks of their respective companies. Data contained in this document serves informational purposes only. National product specifications may vary.

These materials are subject to change without notice. These materials are provided by SAP AG and its affiliated companies ("SAP Group") for informational purposes only, without representation or warranty of any kind, and SAP Group shall not be liable for errors or omissions with respect to the materials. The only warranties for SAP Group products and services are those that are set forth in the express warranty statements accompanying such products and services, if any. Nothing herein should be construed as constituting an additional warranty.

These materials are provided "as is" without a warranty of any kind, either express or implied, including but not limited to, the implied warranties of merchantability, fitness for a particular purpose, or non-infringement.

SAP shall not be liable for damages of any kind including without limitation direct, special, indirect, or consequential damages that may result from the use of these materials.

SAP does not warrant the accuracy or completeness of the information, text, graphics, links or other items contained within these materials. SAP has no control over the information that you may access through the use of hot links contained in these materials and does not endorse your use of third party web pages nor provide any warranty whatsoever relating to third party web pages.

Any software coding and/or code lines/strings ("Code") included in this documentation are only examples and are not intended to be used in a productive system environment. The Code is only intended better explain and visualize the syntax and phrasing rules of certain coding. SAP does not warrant the correctness and completeness of the Code given herein, and SAP shall not be liable for errors or damages caused by the usage of the Code, except if such damages were caused by SAP intentionally or grossly negligent.