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Architecture Guideline for SAP SCM 2008

SCM 7.0, SNC 7.0, EWM 7.0, EM 7.0,
TM7.0, xSOP 7.0

History

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Contents

1 Revision Log

Version	Status	Date	Remarks
1.10	Reviewed Version - with Action Items completed	04.07.2007	Reviewed version. Minor adaptions due to areview action items in all sections.
1.00	Review Version	26.06.2007	Review version of the document
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2 Stakeholders

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3 Key Findings / Recommendations / Open Items

Key Issues / Recommendations	Comments / Consequences
Impact of Suite Excellence for SCM 7.0	Watch / Adopt in later versions of document

Suite Excellence as major goal for Business Suite 2008 aims at harmonizing and simplifying SAP Business Suite to become the business process platform of choice in all industries. See chapter 4.1.2 for details.

At this point in time the impact of Suite Excellence for SCM 7.0 is not yet clear. Possible findings will be incorporated in later versions of this document.

4 Architecture Goals and Guiding Principles

4.1 Basic Architecture Goals, Decisions, Target Architecture

A new Business Suite Roadmap was defined as presented by Henning Kagermann during the keynote at Sapphire Atlanta:

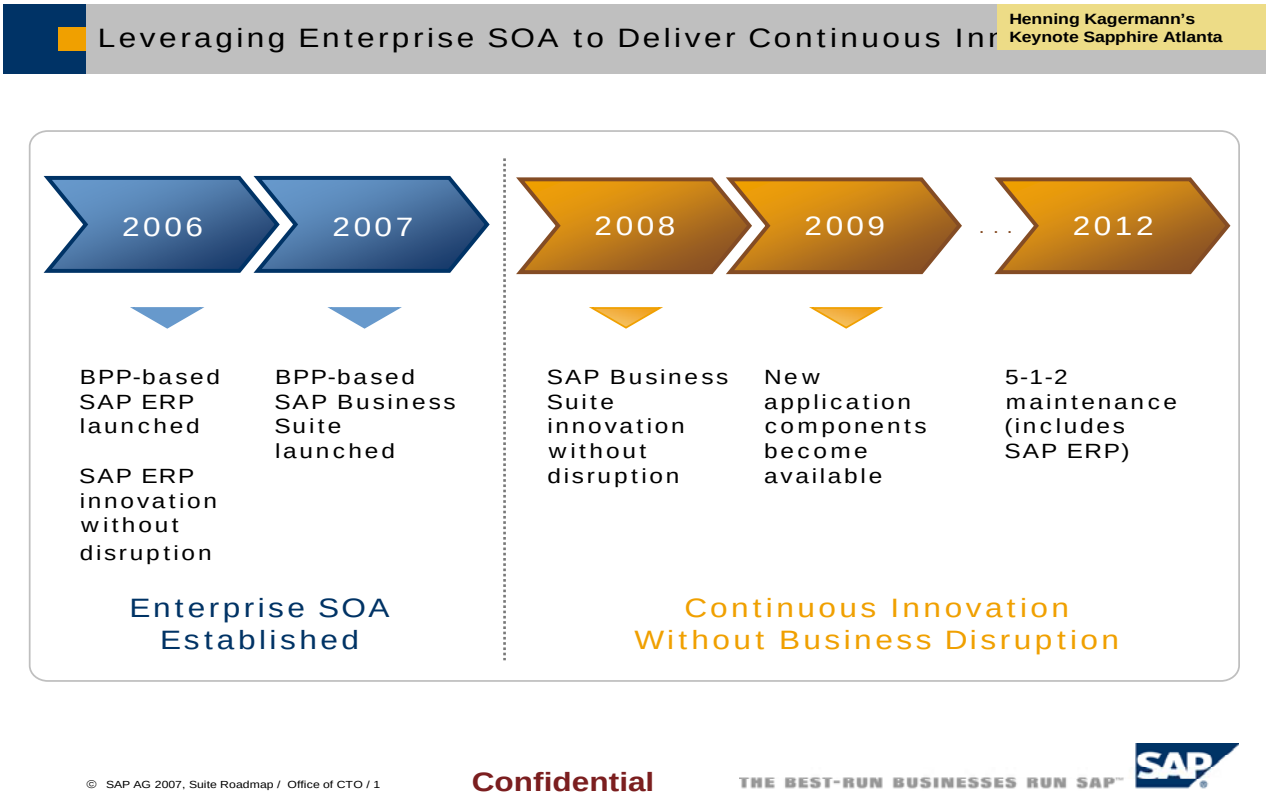

Figure 1: Continuous Innovation without Business Disruption

The roadmap is designed to achieve the following key milestones:

- By 2007, delivering a service enabled Suite (to complete the Enterprise SOA roadmap started in 2005, announced in 2003)
- By 2008, Business Suite to be harmonized, established as the Stable Core; and incremental innovation to be delivered via synchronized enhancement packages for the entire Suite
- 2009 onwards – Enterprise SOA by design innovations run in side-by-side mode on the same platform

ERP is already executing on this strategy. As announced on Sapphire, the other Business Suite components will follow and ship the Stable Core release in 2008. Starting from this point in time new functionality will be delivered to customers either by:

- Enhancement Packages to be applied w/o disruption
- Composite Applications
- AP Based application delivered in a side-by-side model starting 2009

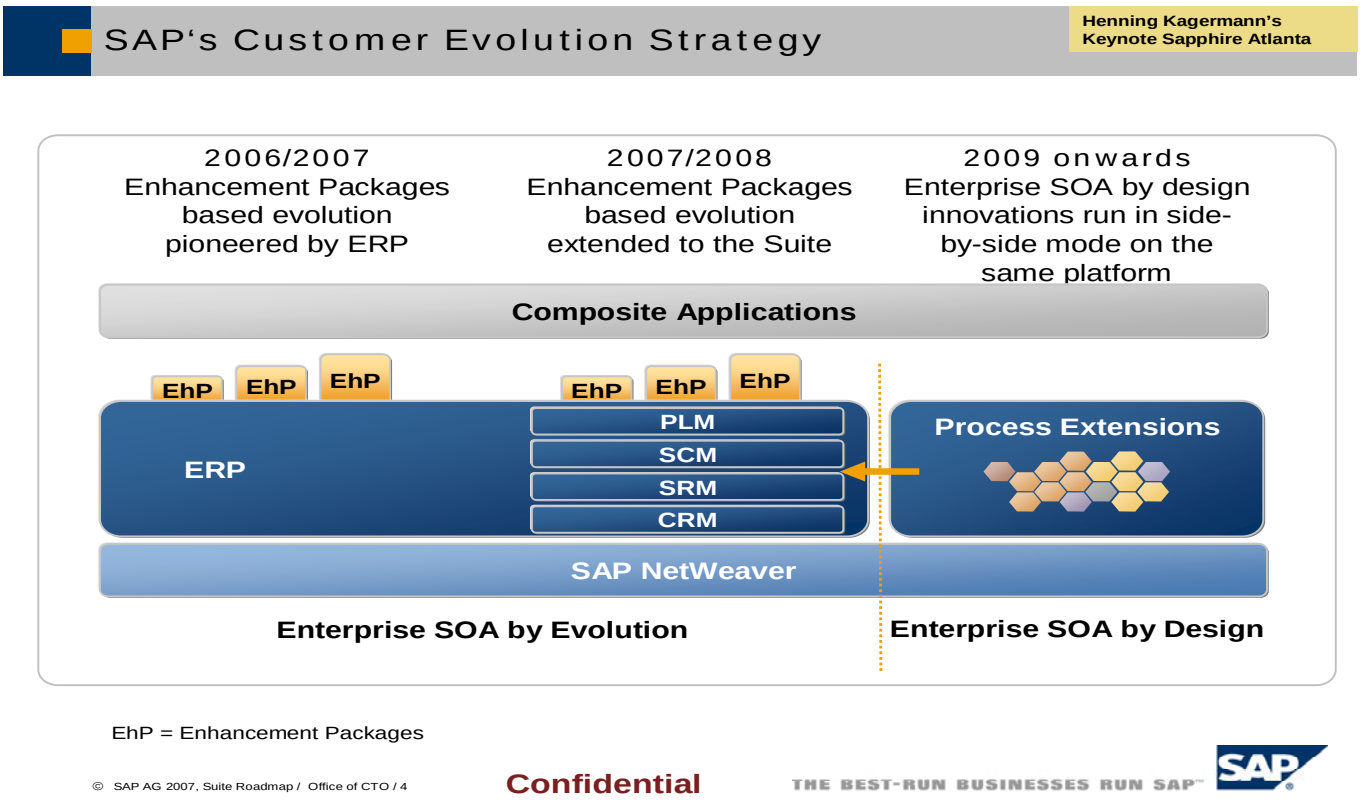

Figure 2: Enhancement Packages for the whole Business Suite

Based on this overall strategy the following major architecture goals were defined for SCM 7.0:

- **Stabilize the Core**
  - Enhancement Package concept for SCM (after SCM 7.0) (see chapter 4.1.1)
  - Architectural preparation for Enhancement Package delivery
  - Downward compatibility of SCM Basis regarding applications (old app. version runs with new SCMB)

- **Simplification and Business Suite Harmonization** (see chapter 4.1.2)
  - Create a new, harmonized user experience with Client Technology Harmonization (NW Business Client enabling)

- **Support SCM 2008 quality goals with a suitable architecture** (see chapter Quality Excellence 4.1.3)
  - SCM Basis Structuring (instrumental for 1.)
  - SCM Basis Automated Testing Capabilities

- **Follow SAP's overall enterprise SOA / Composition Strategy**
  - SCM as an enterprise SOA enabled platform for composition with composition environment

In scope for this architecture guideline document are all projects starting in 2007 that "touch" the SCM server:

- SNC 7.0
- TM 7.0
- xSOP 7.0
- EWM 7.0
- SCM 7.0
- EM 7.0

Special Guidelines are required for SCM Basis 7.0.

A new roadmap was defined for SCM as part of the Business Suite 2008:

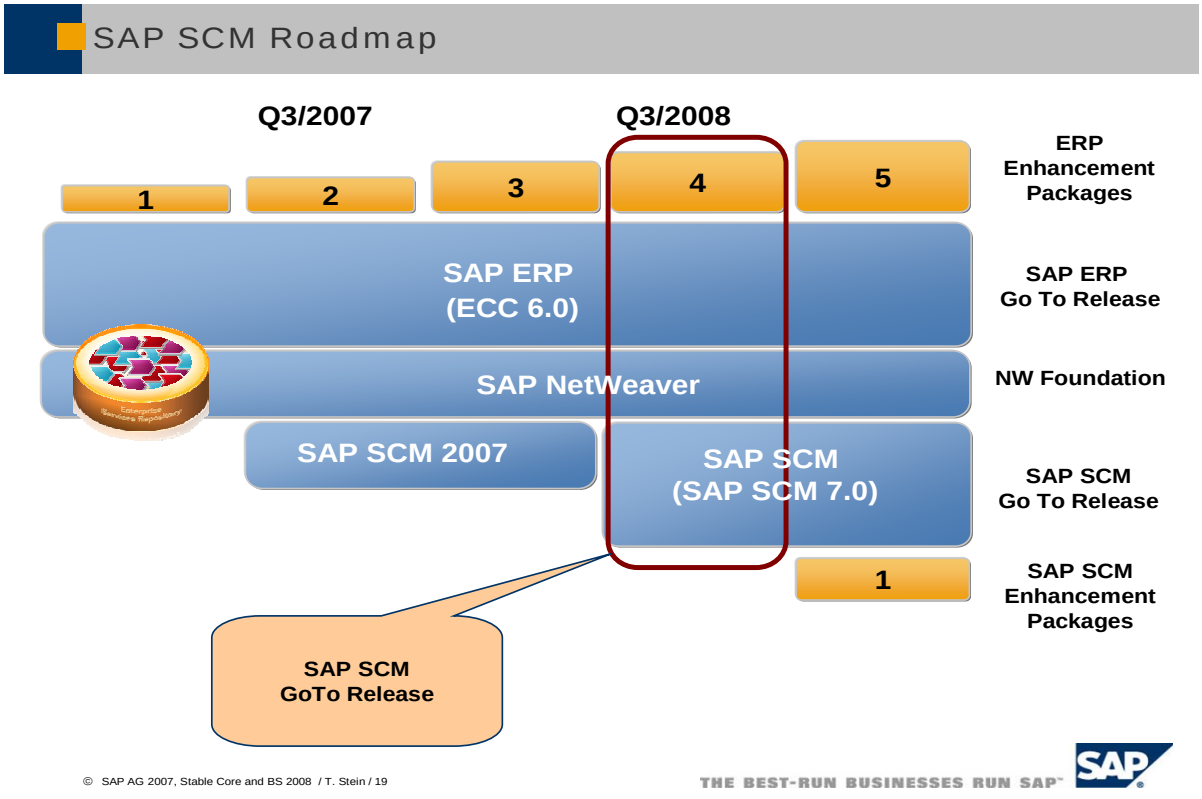

Figure 3: SAP SCM Roadmap

SCM will deliver the Stable Core release / Go-To-Release in Q3/2008. The first SCM Enhancement Package will be delivered in 2009.

It was decided that the following products delivered in 2008 belong to the Stable Core and thus, have to deliver Enhancement Packages in 2009 (see column Part of BS 2008, indicated with a yes):

What belongs to BS 2008? - SCM/PLM/MAN view

Area	Product in 2008	Description	Part of BS 2008 = Stable Core	Relevant for Harmonization	Comment, Reasoning
Manufacturing	SAP ERP	SAP ERP	Yes	Yes	ERP Core Manufacturing part of stable core ERP 2005
	SAP XLPO	SAP xApp Lean Planning and Operations	No	Yes	xApp, acq. FactoryLogic (Java)
	SAP XMII	SAP xApp Manufacturing Integration and Intelligence	No	Yes	xApp, acq. Lighthammer (Java)
Product Lifecycle Management	SAP ERP*	SAP ERP	Yes	Yes	PLM incl. cProjects 4.0, cFolders 4.0, Recipe Mgmt and parts of ECC - part of stable core ERP 2005
	SAP PDE (PLM Core Add-On)	SAP PLM Product Development and Engineering	Yes	Yes	New development starting in 2007, ERP2005 AddOn
	SAP XPD	SAP xApp Product Definition	No	Yes	xApp, separate price list item
	SAP XRPM	SAP xApp Resource and Program Management	No	Yes	xApp, separate price list item
Supply Chain Management	SAP SCM	SAP SCM	Yes	Yes	Including APO, EM, 5.0 TM AddOn and eSOA AddOn, ...
	SAP EXTENDED WAREHOUSE MGMT.	SAP Extended Warehouse Management	Yes	Yes	Server part but separate product as well
	SAP SNC	SAP Supply Network Collaboration	Yes	Yes	Server part but separate product as well
	SAP AUTO-ID INFRA-STRUCTURE	SAP Auto-ID Infrastructure	No	Yes	Basis Add-On, separate price list item
	SAP TRANSPORTATION MANAGEMENT	SAP Transportation Management	No	Yes	Basis Add-On, separate price list item
	SAP XSOP	SAP xApp Sales and Operations Planning	No	Yes	xApp, Basis Add-On, separate price list item

* SAP EasyDMS will be treated separately since based on Microsoft Technology that might be changed

Figure 4: Components as part of the Stable Core Paradigm

The following figure gives an overview about the currently planned schedule for the SCM 7.0 development:

Program	Product	Version	2008																					2009	
			Q2			Q3			Q4			Q1			Q2			Q3			Q4			Q1	
			Apr	Mai	Jun	Jul	Aug	Sep	Okt	Nov	Dez	Jan	Feb	Mrz	Apr	Mai	Jun	Jul	Aug	Sep	Okt	Nov	Dez	Jan	Feb
xSOP 7.0	xSOP	7.0							PDEF			DEV									AT			AT/VAL	
All 7.0	All	2008	PDEF			DEV									AT			AT/VAL			RU				
TMS 7.0	TM	7.0				PDEF			DEV						AT			AT/VAL			RU				
EWM 7.0	EWM	7.0	PDEF						DEV						AT			VAL			RU				
SNC 7.0	SNC	7.0	PDEF						DEV						AT			VAL			RU				
SCM 7.0	SCM	7.0		PDEF					DEV						AT			VAL			RU				

Figure 5: Release Schedule for Components in SCM/PLM/MAN covered by the Guideline

As a result of release synchronization, all Stable Core products in 2008 will have RTC in the third quarter of 2008.

4.1.1 Stable Core Paradigm for Business Suite 2008

The Stable Core Paradigm provides a new development and delivery model for the SAP Business Suite 2008. The new delivery model replaces the traditional practice of shipping release upgrades every 1 or 2 years. The new model is based on the concept of a **Stable Core** of the product that is extended by optional **enhancement packages**.

In the past the high effort and costs of applying release upgrades often caused customers to stay with old releases. Customers who decided not to upgrade could not benefit from new functionality. If they decided to do the upgrade they could not be sure that the existing functions were not affected. Often they had to run a full regression test of all functions that were relevant for their business. In addition, time was wasted by upgrading installed components that were never used by the customer and by installing new components that the customer did not intend to use. At the same time SAP has to offer new products or innovation within existing products to make their products attractive. Customers only buy new software if they expect reasonable innovation with added value for their business.

The goal of the new delivery model is to make innovations accessible to customers more quickly while minimizing the risk of affecting existing functionality used by the customer. The customer should be able to benefit from new functionality without being forced to apply a release update. In addition, the customers should be able to select only those new functions that are required for their business. That means that the offering and delivery should be two-fold. On the one hand the core functionality must be stable. On the other hand innovation within the product must be allowed.

The practice of shipping new releases every 1-2 years is replaced by a new delivery model. SAP Business Suite 2008 will be shipped as the base release that will remain stable for the following years. New functionality will be shipped as optional enhancement packages that can be used by customers selectively if required for their business. The enhancement packages introduce new functions on top of the SAP Business Suite 2008 release with minimum impact on existing functionality. The customers can rely on the rule that the core remains stable for the lifetime of the product. Customers who do not install and activate enhancement packages get support packages for the core that are guaranteed to contain no new functionality. Enhancement packages introduce only documented changes with a clearly defined functional benefit.

The Stable Core paradigm will have a major impact on the software development process in Enhancement Package environments. But since SCM will start to deliver EhPs in 2009, the impact for SCM 7.0 is limited to preparational measures that are described in chapter 4.3.

4.1.2 Business Suite Excellence / Suite Harmonization

Suite Excellence is a project aimed at harmonizing and simplifying SAP Business Suite to become the business process platform of choice in all industries.

This project will examine how we can harmonize our suite offering for customers, while at the same time eliminating duplication of efforts and functions across SAP. Since there can be no "one-size-fits-all" approach, the goal is to centralize at the right level for gains in efficiency and effectiveness. The result will be the most holistic, integrated, business-user focused suite that SAP has ever offered.

The objectives of the Suite Excellence project are defined as follows:

- Research and define suite-wide, common needs for unification in deployment & lifecycle management (including User-Management, Security and Hubs…)
- Drive architectural answers for On-Demand solutions
- Drive Scenario Harmonization along the defined scenarios (e.g. including products like GRC)
- Define enhanced models for Scenario provisioning and consumption (Event enabling, Search Enterprise Services like TREX…)
- Drive UI Harmonization on a general level (like branding) and along the defined scenarios together with UI Strategy program
- Research, define „white“ spaces of the Master Data Management and drive the decision process how to fill such gaps
- Research the need for usage of new NW releases
- Drive a Front-Runner project for AP Adoption

The deliverables of the project are among others:

- Harmonized deployment & lifecycle management
- General UI branding
- Common UI blocs and navigation behavior along scenarios (Decision papers and implementations in BS 2008)
- Gap list and decision paper about Master Data Management
- Harmonized scenarios (UI, Customizing, Documentation…)
- Powerful enterprise SOA services (e.g. with events) and easy consumption
- Design paper for On-Demand solutions
- Decision paper about the need of a NW upgrade until 2012
- Frontrunner project for AP adoption in 2007 and a decision paper for further AP based projects

Business Suite Excellence will have a major impact on development for Business Suite 2008. Additional aspects and requirements from the Suite Excellence workstreams will be incorporated into later versions of this document.

4.1.3 Quality Excellence

Quality Excellence is a project focused on increasing quality in all applications to move scalability and customer satisfaction to the next level.

Quality management (QM) ensures customer satisfaction and raises the productivity of our development and maintenance activities. As a result, it is not only the task of a QM department to ensure quality, but quality should be an integral part of everyone's job and everything done throughout the organization.

The goal of the Quality Excellence project is to identify, initiate, and execute projects to improve quality across SAP Business Suite, SAP NetWeaver, and related products.

One aspect of the Quality Excellence initiative is Quality by Architecture. It is clear that an early consideration of quality aspects right from the beginning is the right approach. Chapter 4.3 defines quality relevant preparational measures for SCM 7.0 that helps to support the goals of Quality Excellence.

4.2 Overview on Architecture Topics

The following chapters describe major architecture topics that are relevant for development in SCM 7.0:

- NetWeaver Technology Platform
- User Interface
- Client Technologies
- Business Process Integration
- Workflow
- Usage of Switch Framework
- Reporting, Analytics, Search
- Usage of Print Forms / Adobe Document Services
- Business Configuration / Solution Manager
- Decoupling
- SCM-Basis vs. Application Development
- Extensibility
- Service Enablement

4.2.1 NetWeaver Technology Platform

The following guidelines apply with respect to usage of the NetWeaver platform:

1. SAP SCM 2008 and its AddOn components will be developed based on NetWeaver 2004s (SAP Basis 7.00).
2. Projects must not use or rely on functions shipped with higher basis releases.
3. It was decided that SAP SCM 2008 will be delivered based on NetWeaver 2004s. If this decision will be revised at a later stage, this will have (almost) no impact on the architecture outlined here. Only exception would be mandatory adoptions to NW 7.10 functions (e.g. EWM BOPF, package concept migration …).
4. ABAP is the main programming language to be used for SAP SCM 2008.
5. Java must not be used to develop backed components.

The SAP Business Suite 2008 and all future enhancement packages must run on NetWeaver 7.0. Content shall be developed using NetWeaver 7.0 environments only. This applies to all content, regardless of the technology and development environment that is used (for example to ABAP, Java, BI, XI or portal content).

Unless downported, NetWeaver 7.1 features are generally not available for SAP Business Suite 2008.

4.2.2 User Interface

> ***"Today we have around 21 technologies for our user interface. As a result we are far away from providing a harmonized user experience. In fact customers are confused about the mass of UI technologies used in SAP's products. In addition, SAP pays a very high price to maintain all these UI technologies (TCD)."***

In order to control the situation we have defined four groups of UI technologies.

Group 1

- Web Dynpro ABAP
- Web Dynpro Java

Group 2

- Flex (on top of WD/SCXML) (*formal governance exception required*)
- Java SWING (*formal governance exception required*)

Group 3 *(legacy only, don't use for new development)*

- ABAP / Dynpro (SAPGUI Family)
- IAC (Internet Application Components) for mobile applications

Group 4

- BI UI Framework
- BSP native *
- HTMLB
- IAC / Easy Web Transactions (powered by ITS)
- Flow Logic
- JSP based UI's
- Portal Framework (partly based on HTMLB)
- PDV
- XHTML, Plain HTML
- Others, including stuff you have not invented yet

*: BSP will be fully supported for all CRM releases.

Figure 6: Groups of UI Technologies (Red List - Quicklink /go/255-list in the Cooperate Portal)

The PTB decided that there is only one mainstream UI technology for application development in the future, esp. for new development: *Web Dynpro* which is referred to as "group 1". This mainstream UI technology covers application development, reporting, analytics, collaboration, and so on

If "group 1" UI technologies are not sufficient for a small number of use cases that require full GUI style interaction, **"group 2"** UI technologies are defined.

For the group 2, UI governance approval is required to determine when use cases truly can not be satisfied from group 1 technologies.

Since we will not be able to replace all our existing SAP GUI screens in the near future, ABAP Dynpro has been listed as "**group 3**" technology. For example ABAP / Dynpro will not be used for new development, but may continue to exist as a legacy technology with only very small modifications being made to existing screens based on customer requests. In case that an existing application that mainly uses ABAP / Dynpro is enhanced, new screens may also continue to use ABAP / Dynpro as UI technology.

All other UI technologies are part of "**group 4**". ***NetWeaver will stop the support for these UI technologies for internal development after NW04s***. The end of support for external development will be after the next NetWeaver release. This applies to all modules shipped as part of mySAP or Industry Solutions besides CRM. For all CRM Releases BSP will be further supported.

For guidelines regarding customizing please refer to chapter 4.2.9.

Key Decisions for Business Suite 2008

- The mainstream UI technology of the Business Suite will be **WebDynpro ABAP** from “group 1”
- SAP will offer a NW business client beside a zero footprint client
- NW business client will rely on the role definition of PCD/PFCG

4.2.2.1 Floorplanmanager WebDynpro ABAP

In order to simplify and flexibilize the usage of ABAP Web Dynpro the “Floorplanmanager WebDynpro ABAP” was created.

The Floorplan Manager supports SAP *developers* and customers/ISVs in the process of creating their application UIs in compliance with the UX Floorplan specification. Additionally, it allows *administrators* to configure the UIs in a modification-free manner, e.g. by adding custom UI building blocks to these applications, or by adopting parameters of applications or UI building blocks.

The Floorplan Manager is a framework which is sitting on top of NetWeaver’s Web Dynpro ABAP. Thus it makes use of WebDynpro features such as contexts, configuration, phase model etc. For logging purposes the standard ABAP application log of transaction SAAB is used.

Client-wise, all applications will be running in Enterprise Portal Core and NetWeaver Business Client. They will be startable from POWL, report launch pad, and work / control centers.

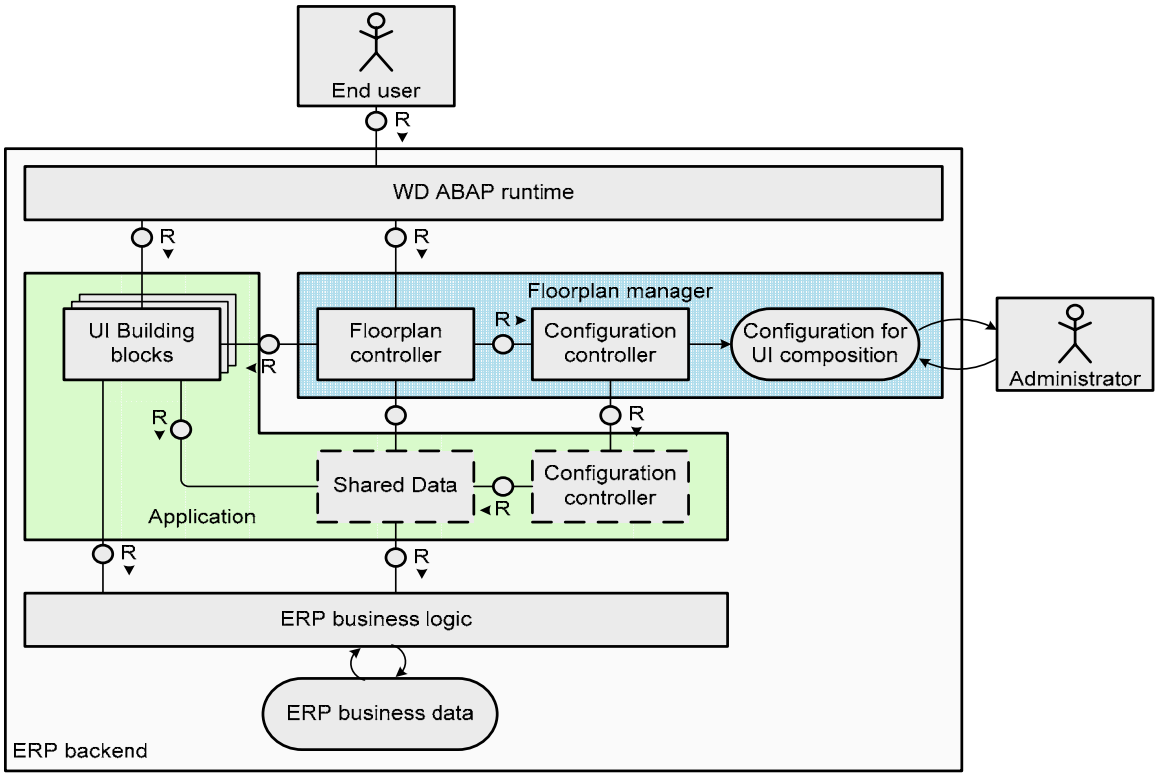

Figure 7: WD Floorplan Manager - Architecture

For more details take a look at the SRS of the Floorplanmanager WebDynpro ABAP.

4.2.2.2 Frontend Performance of Web Dynpro Applications

One critical topic of Dynpro Applications is the performance; therefore it should be closely monitored. There is a little tool called FrontEndMeter (available in the Corporate Portal via R&BI→Performance News→Performance News May ´07. FrontEndMeter allows the measurement of all frontend related quantities within one tool. For measuring the HTTP-traffic,, MIME cache usage and tracing of the roundtripps the tool 'SimTec HttpWatch' should be used (download from software corner).

4.2.2.3 User Centered Design and Style Guides

Independently the overall UI strategy has to be followed, to increase user productivity. The user-centered design process forms the foundation for SAP User Experience's work and is integrated into SAP's product development lifecycle. Cross-functional collaboration, evaluation, and design iteration are core to this process.

A common style guide which describes the common design guidelines for the mySAP Business Suite is published in the corporate portal.

For further information visit the Portal Pages of the SAP User Experience Group in the Corporate Portal via PTU Suite Optimization→Initiatives→User Experience or via shortcut /go/ux.

4.2.3 Client Technologies

To enable SAP's Unified User Experience it is not enough to follow SAP's official UI technology policies but also to provide the right Client Technology. A major goal is to achieve simplification by Client Technology Harmonization. The main stream path is to enable the SCM Applications for NetWeaver Business Client and NetWeaver Portal (Core).

The benefits of Client Technology Harmonization are reduced TCO for the customer and increased user experience by improved user adoption and easing the user's tasks.

Depending on the characteristics of the user's task the appropriate client technologies should be used.

For example the user can act in different roles and it is necessary that the client technology supports the user's needs with regards to his or her role.

In general the client technology might depend on

User's role

One user can have different roles within the business process or during his or her daily work

- Professional tasks
- Occasional tasks
- Transactional tasks
- Information related tasks with
    - Unstructured Information
    - Structured Information

Company and technology restrictions

- IT decision of the company
- Available bandwidth
- Required response times
- Global distribution of a company

Daily working process

- Location of the user (office, mobile)
- Nomadic users, users with different working places
- Work routine (checking systems only in the morning)

Considering the different capabilities of available client technologies the following figure illustrates for SCM and PLM applications how usage types and roles can match with the appropriate client technology.

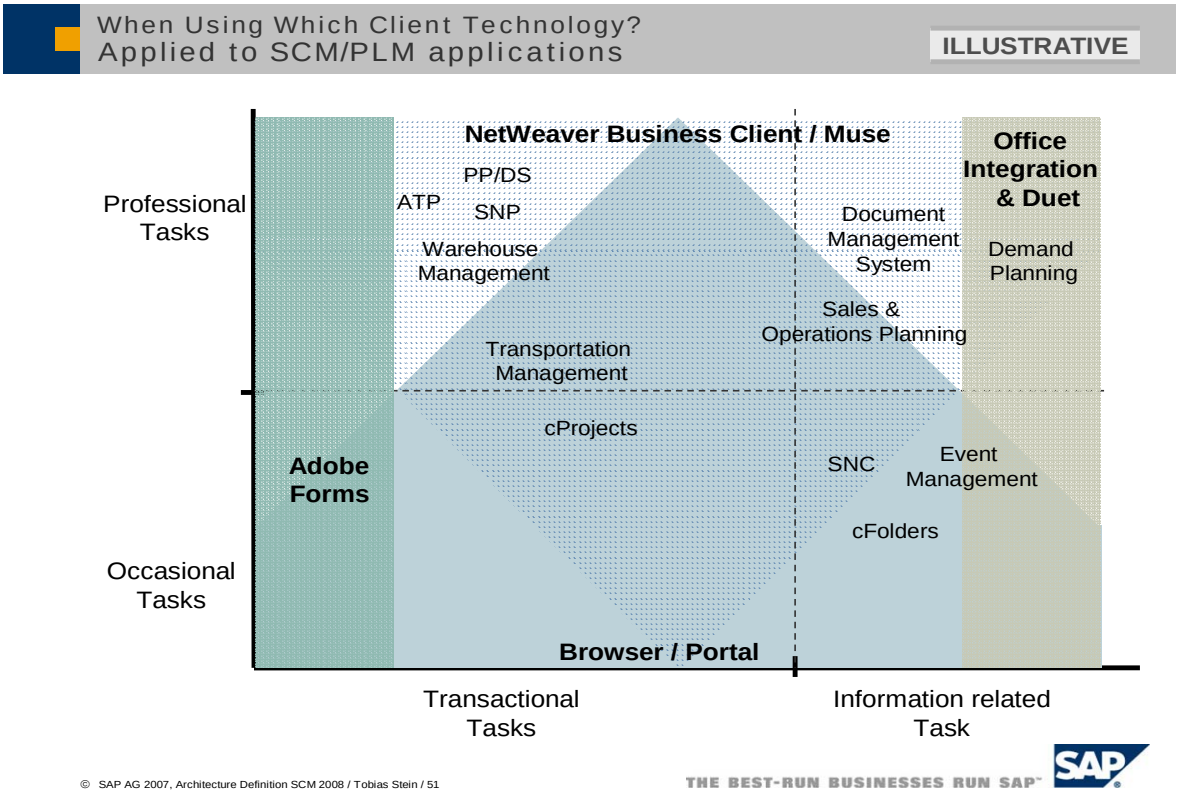

Figure 8: When Using Which Client Technology

4.2.3.1 Client Technology Selection

For SCM the following guidelines for choosing the appropriate Client Technology should be used:

NetWeaver Business Client (NWBC)

NetWeaver Business Client will be the broad client technology for SCM wherever applicable.

- Usage Type / Role
  - Professional Tasks (e.g. Planner Role, Administrator Role)
- Applicable for
  - xSOP
  - SNC Customer Collaboration
  - TM
  - EWM
  - EM

- SCM/APO

SAPGui

Since SAP leaves the choice to the customer and eventually the user of how to most efficiently access SAP SCM, SAPGui has to be supported also for new Dynpro based transactions in addition to NWBC (which is SAP's recommendation). Thus IMG and Easy Access Menu have to be maintained additionally in order to support SAPGui for new transactions.

- Usage Type / Role
  - Professional Tasks
  - All other Tasks where NWBC can not be used (e.g. for technical reasons)

Web-Browser

Pure (Web-)Browser Clients are supposed to be used for collaborative scenarios only

- Usage Type / Role
  - Occasional Tasks
- Applicable for
  - SNC Supplier Collaboration

Enterprise Portal / Enterprise Portal Core

Common Framework for Cross System and Role Based Processes

- Usage Type / Role
  - Occasional Tasks (EP)
  - Professional Tasks (EP Core)Portal
- Applicable for
  - TM

4.2.3.2 PFCG Roles

In order to enable NetWeaver Business Client for SAP SCM roles are necessary to provide content for the client.

Therefore PFCG Roles with menus have to be created. The entire SCM functionality should be available via roles. In order to keep resulting efforts limited a pragmatic approach should be used to transform all existing area menus into PFCG Roles.

This can be achieved by importing the area menu entries into the corresponding PFCG role menu. The role menu has to be restructured according to the service map concept which allows 4 to 5 levels in the menu. Transactions, programs or applications are added either in level 4 or – if used - in level 5.

Level 3 items have to be documented (maximum two lines of documentation) to provide a proper description when the PFCG role is uploaded into SAP Enterprise Portal.

Object Based Navigation (OBN) should be used for dynamic screen titles in WD-ABAP applications and cross-screen communication.

4.2.3.3 Portal Roles

To enable Enterprise Portal the customer can create Portal Content Directory (PCD) Roles manually or generate them from PFCG Roles.

4.2.3.4 NetWeaver Business Client Enabling in SCM 7.0

A project was proposed to address the creation of PFCG roles in SCM 7.0 as described above to enable the usage of the NetWeaver Business Client in SCM.

This project will be completed within the SCM 7.0 timeframe.

4.2.4 Business Process Integration

As SAP Business Suite may be distributed across multiple instances there is commonly even more than one integrated database. Currently a variety of technologies, e.g. CIF, RFC, IDoc, BAPI and XI, provide the integrity of the concerned data.

communication source -> communication target (technical communication dependency)	NW2004s	R/3 4.6c	R/3 4.70 (Enterprise)	ERP 2004	ERP 2005 incl. EA-IPPE 400	CRM 2005	SRM 2005	SAP SCM BASIS 5.0	SAP SCM BASIS 5.1	SAP SCM BASIS 7.0	SCMB PLUS 5.1	SCMB PLUS 7.0	SCM 5.0	SCM 5.1	SCM 7.0	SCM SOP 5.1	SCM SOP 7.0	EWM 5.1	EWM 7.0	SAP TMS 6.0	SAP TMS 7.0	SAP SNC 5.1	SAP SNC 7.0	SAP AII 5.1	SAP AII 7.0	SCEMSRV 5.0	SCEMSRV 5.1	SCEMSRV 7.0	EA-IPPE 400	QIE 200	GEOCODING	WCL	CPRXRPM 400	SAP SCM OPTIMIZER 5.1	SAP SCM OPTIMIZER 7.0
R/3 4.6c									CIF	CIF, RFC			CIF	CIF	CIF			IDOC	IDOC			IDOC, XI, RFC	IDOC, XI, RFC			RFC	RFC	RFC							
R/3 4.70 (Enterprise)									CIF	CIF, RFC			CIF	CIF	CIF			IDOC	IDOC			IDOC, XI, RFC	IDOC, XI, RFC			RFC	RFC	RFC							
ERP 2004									CIF	CIF, RFC			CIF	CIF	CIF			IDOC	IDOC			IDOC, XI, RFC	IDOC, XI, RFC			RFC	RFC	RFC							
ERP 2005	D								CIF	CIF, RFC			CIF	CIF	CIF	IDOC	IDOC	RFC	qRFC, (IDOC)		IDOC, XI	IDOC, XI, RFC	IDOC, XI, RFC			RFC	RFC	RFC	D						
CRM 2005	D							IDOC	IDOC	IDOC			RFC	RFC	RFC																				
SAP SCM BASIS 7.0	D				RFC										DYN		DYN		DYN		DYN		DYN						D		IGS		RFC		RFC
SCMB PLUS 7.0	D																																		
SCM 7.0 (APO)	D	CIF	CIF	CIF	CIF					D		D											D			RFC	RFC	RFC	D						
SCM SOP 7.0	D									D			RFC	RFC	RFC																				
EWM 7.0	D	IDOC	IDOC	IDOC	qRFC, (IDOC)	RFC				D		D	RFC	RFC	RFC						XI			RFC, WS	RFC, WS					D					
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SCEMSRV 5.1	D	RFC	RFC	RFC	RFC																			D, RFC	D, RFC										
SCMB PLUS 5.1	D																																		
SCM 5.1 (APO)	D	CIF	CIF	CIF	CIF					D		D										D				RFC	RFC	RFC	D						
SCM SOP 5.1	D									D			RFC	RFC	RFC																				
EWM 5.1	D	IDOC	IDOC	IDOC	qRFC (IDOC)	RFC				D		D	RFC	RFC	RFC									RFC, WS	RFC, WS					D					
SAP TMS 6.0	D				XI, IDOC					D									XI	XI							RFC	RFC							
SAP SNC 5.1	D	XI, IDOC	XI, IDOC	XI, IDOC	XI, IDOC					D			XI, IDOC	DYN, XI, IDOC	XI, IDOC													RFC	RFC						
SAP AII 5.1	D																									XI, D, RFC	XI, D, RFC	XI, D, RFC							
WCL 5.1																											RFC								
SAP SCM OPTIMIZER 5.1									RFC																										

Figure 9: Component Integration in SCM

Red cells in the diagram indicate inappropriate integration dependencies – improvement is under clarification. The following abbreviations are used:

CIF	CIF Middleware
D	Direct call
IDOC	IDOC
RFC	RFC
DYN	Dynamic call (customizable)
XI	Exchange Infrastructure
IGS	Internet Graphics Server
WS	WebService

4.2.4.1 Integration Technologies

In most of the cases existing integration dependencies cannot be changed. Only if completely new integration scenarios are introduced, a message-based integration via XI is obligatory. Existing XI-Interfaces have to be used or new XI interfaces have to be defined. This is esp. the case for integration of SCM AddOn components among each other.

In general it is the goal to use XI-Interfaces if possible.

If it is possible to structure an application and likewise the processes in Deployment Unit-like components without major efforts then this has to be done for existing processes as well.

The following guidelines must be considered:

- For new scenarios or processes the interfaces must be built with XI based on message types that are approved by PIC council.
- Synchronous cross-application component communication shall be avoided. New synchronous cross-application component communication is only allowed via Web Services and with PIC approval. Published synchronous calls have to be continuously supported.
- Existing, published interfaces like BAPI, IDoc and so on must still be supported.
- New BAPIs and IDocs need approval from architecture team
- An A2A integration based on a mapping of existing IDOCs to newly created XI Service Interfaces (defined in ESR) is in line with the product standard Application Integration & Interfaces and can be used for new integration scenarios.
- Also existing communication technologies between different applications of the SAP Business Suite like APO CIF will remain in the next release.
- Do not use SAP Business Connector anymore and replace each existing use.
- Cross-Component BPM (ccBPM) must not be used for integration of SAP applications. The use case for ccBPM is 3rd-party integration (non-SAP applications) and cross-system integration like B2B in distributed SAP environments at customer projects.

Exceptions have to be approved by the SCM/PLM/MAN architecture team:

- New BAPIs or IDocs are allowed in exceptional cases (approval required)

- Technical connections to other components might be realized with RFC in exceptional cases (approval required). Instead of qRFC the newer bgRFC shall be used.

4.2.4.2 Integration between Software Components

The following guidelines apply for usage of objects in other software components:

- The usage of objects in underlying software components is allowed if the access is not restricted by means of the package concept
- In general the usage of objects in higher software layers (software components above own component) is prohibited
- The direct usage of objects in software components on the same level (software component next to own software component) is prohibited. But a communication between software components on the same level is possible via message-based integration.

There are some areas in which the rules above cannot be enforced in a strict way:

- Dynamic calls from SCM_BASIS to higher layers are necessary in some use-cases. But here it has to be guaranteed, that the higher component is installed and active (e.g. by customizing or by call-back mechanisms). All possible deployment scenarios have to be checked and evaluated.
- Due to performance reasons it is sometimes necessary to allow direct integration (local FM calls) between software components on the same level if running on one single instance. But here it has to be ensured, that both components are running on the same instance. If deployed separately, message-based communication is to be used.
- There are some existing violations to the rules above that are due to legacy coding.

Exceptions have to be discussed and approved by the SCM/PLM/MAN-Architecture Team.

4.2.5 Workflow

1. SAP Business Workflow is the workflow engine for all workflow processes in SAP SCM 2008.
2. Guided Procedures must not be used in SCM 2008.
3. The *Workflow Builder* is used by developers as the standard design tool for workflows
4. Do not use *ccBPM* for workflow.
5. Do not use the *(Java) Ad-hoc Workflow*!
6. Do not use *Workflow Modeler* (originally from CRM, now in ABA)!
7. Do not use *BW Process Chains* for workflow issues! Use them for BI load processes only.

The Business Suite Excellence project evaluates an event enabling of the Business Suite. This might have an impact on the usage of the local event infrastructure and BOR objects in SCM. Up to now no details are known. Therefore no specific guideline is available.

4.2.6 Usage of Switch Framework

Since the switch framework will be used in future Enhancement Packages to switch business functions it is not recommended to use the switch framework in the Go-To-Release SCM 7.0. This would cause additional dependencies, which are unwanted.

1. It is not allowed to use all parts of the Switch Framework in SAP SCM 7.0. The usage of switches is released for SAP Business Suite starting with Enhancement Packages. Here it will only be used out of business related reasons and to switch between technical concepts.
2. Also Enhance Points and Enhancement Sections shall not be used in SCM 7.0 since they create new code lines that would need to be tested.
3. The usage of *Enhancement Spots* is allowed only for the new kernel based BAdIs.

4.2.7 Reporting, Analytics, Search

Reporting and analytics span all lists and reports users need to do their job.

- Analytical reporting, formatted reporting as well as planning applications are based on SAP BI.
- Operational reporting is done mainly within the OLTP systems (with SAP List Viewer (ALV)).

TREX is part of NetWeaver 7.0 and may be used in SAP SCM 7.0 to offer fast search capabilities.

4.2.8 Usage of Print Forms / Adobe Document Services

The Accessibility Roadmap can only be achieved with Adobe Forms.

1. All new printing of forms has to be done with Adobe Forms. A separate guideline is available (see TWIKI). Additionally SmartForms can be provided for the following reasons: TCO reduction (customer does not have to use J2EE based component Adobe Document Services), functionality (printing with matrix printers not supported with Adobe)
2. All existing SAP Script-Forms and SmartForms within the Print workbench must be migrated to Adobe Forms (was mainly done in SCM 5.0 already – old SmartForms remain and are not deleted).

But the software component Adobe Document Services is optional for SCM.

- If it is not installed customers can only use the "old" SmartForms (if existing)
- If only Adobe Forms are provided by the application then Adobe Document Services and J2EE are required.

All exceptions have to be approved by the SCM/PLM/MAN architecture team.

4.2.9 Business Configuration / Solution Manager

1. Use SAP IMG and ABAP DDIC tables for customizing applications (ABAP and Java).
2. All content has to be prepared for the SAP Solution Manager.
3. All enhancements of existing configurations have to follow the common upgrade rules.
4. New customizing tables have to be encapsulated with ABAP-OO classes (or function modules) and shall not be access directly from within the application.
5. All customizing transactions shall be BC-Set compatible.

All exceptions have to be approved by the SCM/PLM/MAN architecture team.

4.2.10 Decoupling

The following general decoupling guidelines apply for development in SCM:

1. It is strictly forbidden to couple software components, which were decoupled before. As a goal the software components EWM, EM, APO(SCM), xSOP, TM and SNC must not be coupled with direct usages of objects.
2. The SCM package concept has to be strictly used in all new developments to ensure the decoupling between software components (link).
3. The SCM package concept is recommended for existing components but not mandatory. Within SCM Basis the package concept is mandatory (see chapter 4.3.2.1).
4. For new applications UI decoupling is mandatory: Source code that is UI related has to be grouped in a separate main package.
5. The BAdI definition and the BAdI call must be located in the same software component.
6. The view maintenance generation for tables and views must be located in the same software component. Other software components may create their own views in order to generate the view maintenance.

Concerning guidelines for usage of objects in other software components refer to chapter 4.2.4.2.

Exceptions have to be discussed and approved by the SCM/PLM/MAN-Architecture Team.

The following guidelines apply regarding the decoupling of table entries:

1. Table entries can only be delivered with one software component. The global table key (GTABKEY) checks should be enabled in all development and correction (support package) systems in order to ensure this.
2. Table entries must not be re-transported within SCM components and other software components at the same or higher level, e.g., a table entry that belongs to SCM Basis cannot be re-transported in SCM Server or a table entry that belongs to an ECC component cannot be re-transported in an SCM component.
3. The check against other software components ensures possible additional deployment options. Table entries in underlying software components (NetWeaver) should not be re-transported within SCM components. Exceptions have to be approved by the GTABKEY contacts.

4.2.11 SCM-Basis vs. Application Development

Parts of applications that are used in multiple components should be located in SCM-Basis.

Please note that relocations between software components are no longer possible in Enhancement Packages, i.e. no relocations after release SCM 7.0.

1. New components in SCM-Basis shall avoid dynamic call-backs and must not use direct calls into application components in higher layers. Dynamic call backs if not avoidable shall be done by use of BAdIs.
2. Structure packages on top of SCM-Basis must not be connected dynamically or directly.
3. New objects in SCMB have to follow the SCM Basis governance process (see the following slides: SCMB Relocation Governance Process
4. New relocations and exceptions to the rules above have to be discussed and approved by the SCM/PLM/MAN-Architecture Team.

The following slides describe the SCM Basis approval process:

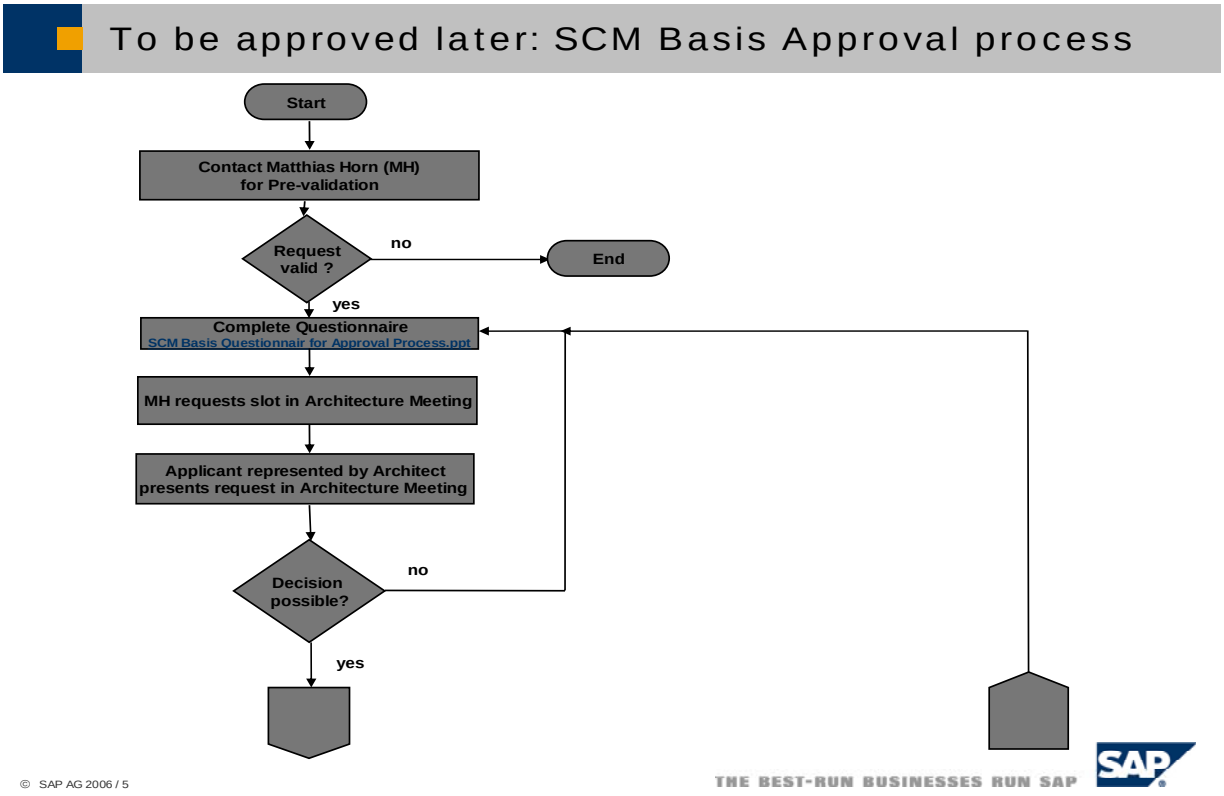

Figure 10: SCM Basis Governance Process

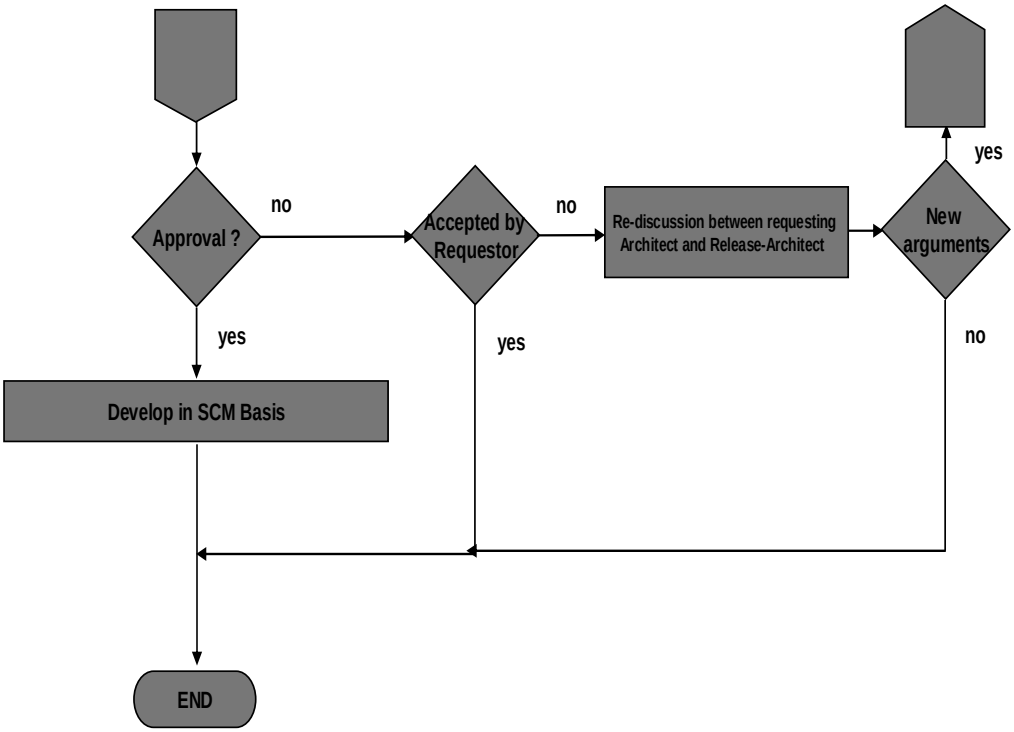

Figure 11: SCM Basis Governance Process (2)

The following rules apply for SCMB relocations (see SCMB Relocation Governance Process).

Process for SCM Basis relocations (7.0)

General process for relocations of objects from SCM SWCs into SWC SCM_BASIS

1. **Guarantee 100% test automation (unit tests) for new packages to be relocated**
2. **Get approval from SCMB governance process (architecture team) → contact Matthias Horn / Tobias Stein (see slides in appendix)**
3. **Create piece list as local object in the development system of the SCM SWC (transaction SE01) for objects to be relocated**
   a. **Make sure to logon to the correct client (development or customizing), e.g. SCM 001/100 or SNC 200/205**
4. **Create IT/IBC message on component DEV-SCM-GEN with the following information/requests**
   a. **Piece list name, receiving component (SCMB) / package name**
   b. **Request transport of objects as originals in receiving component in A6B**
5. **Set message for processing to QPL**
6. **Processing by DSS after approval**
   a. **Perform relocation and specify in IT/IBC message**
   b. **DSS informs AOF (Hajo Schmutzler)**
   c. **Set IT/IBC to ‚authors action'**
7. **Consolidation in A6B (900/905)**
   - **Repository objects**
     a. **Create transport request in A6B (development client 900)**
     b. **Include relocation transport (via menu option), check and release**
   - **Customizing**
     a. **Create transport request in A6B (customizing client 905)**
     b. **Include relocation transport (via menu option)**
     c. **Make sure the customizing entries for the keys do exist, check and release**
     d. **In case of GTABKEY conflicts request exception and forward IT/IBC to Matthias Horn**

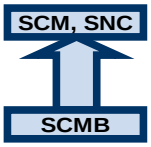

Figure 12: Process for Relocations to SCM Basis

For SCM Basis the compatibility rules (see chapter 4.3.1.2) that will be relevant in Enhancement Packages are already mandatory in SCM 7.0 support packages.

4.2.12 Extensibility

“Extensibility” covers the broad area of how to add functions to application components or solutions that have already been “released,” by adding fields to existing business objects and services (**structural extensibility**) and/or providing additional business logic/coding or new business objects/services (**behavioral extensibility**).

General product standards of SAP foresee an ability for extensibility which is sufficient for customers and partners. Thus all SAP SCM applications have to provide extensibility capabilities. The decision on the details of design and implementation of the extensibility capabilities is up to the owners of the specific application.

New BAdIs should be implemented with the new kernel based BAdIs using enhancement spots.

BAdI definition and call to the BAdI must be done in the same software component.

4.2.13 Service Enablement

A full service enabling over all software layers, covering each object, interface and method, is not in scope for mySAP Business Suite. For example, not all existing BAPIs have to be implemented as new service interface, visible in XI ESR or the WEB-Service repository of the backend application system. It has to be decided according to the scenario, if the BAPI should be published as XI Service via the ESR (and potentially as direct WEB Service). The scenarios that should be fully service enabled must be identified according to portfolio cases.

Basically there are two possible service-enabling methods:

1. Enterprise SOA by Design (eSOA enabling for AP): comprises business object and service modeling as well as implementation of core and compound services using the Enterprise Services Infrastructure (ESI). SOA by Design full follows the new technical transaction model as defined in AP.
2. Enterprise SOA by Evolution (eSOA enabling for Business Suite): encapsulation of existing functionality and publication of it as A2A, B2B services or A2X services (mainly used for UI). The interfaces are based on Global Data Types (GDTs)and approved by the PIC governance process. The interfaces of these UI/A2A/B2B services are defined in the Enterprise Services Repository.

Details on the governance process for GDTs can be found in Content Governance - SAP Corporate Portal.

Note that only the latter approach is used within SAP Business Suite services Enablement, because ESI can not be used in Business Suite systems (this NetWeaver functionality is switched off by a system switch in case of Business Suite systems). All SCM systems are in respect to this system switch treated as Business Suite systems.

Further guidelines concerning service enablement of the Business Suite can be found here: https://wiki.pal.sap.corp:8443/display/PTGSOA/enterprise+SOA+Home

4.2.13.1 General Development Process Rules

To protect customer investments, it is a must

- to support existing BAPIs, BOR-objects and IDOCs in enterprise SOA enabled applications, even in case the old BAPIs and IDOCs functionality is fully covered by the new services. This is mandatory due to legal obligations.
- to support already existing services in ESR of a former software version (i.e. release) in all follow-up releases of the application component.

In general, Enterprise SOA service enablement of SCM applications have to obey the rules as defined in SAP wide PIC governance process and the implementation guide for service enablement in SAP Business Suite (see above).

4.2.13.2 Provisioning of direct WEB Services

Besides the service provisioning based on XI (e.g. based on XI proxies in the application systems), direct WEB-Services shall be provided in the application systems (generated out of the XI proxies). As a general rule, for every synchronous XI services a direct WEB-Service shall be created also.. Up to now, NetWeaver 2004s enables for synchronous WEB-Services only. Thus synchronous XI services have to be created as basis for the direct WEB-Services, potentially leading to the fact that the XI services are doubled (asynchronous and synchronous ones) just for the sake of being able to create direct WEB-Services out of XI proxies.

Additional functionality will come with NetWeaver 2004s Support Packs (e.g. SP14 and beyond) which will allow for Generation of (asynchronous) WEB-Services out of asynchronous XI services (enabled for Peer-to-Peer). These new NetWeaver features shall be taken into account when thinking about the need for additional synchronous XI interfaces (just for the sake of being able to create direct WEB-Services).

4.2.13.3 Security and Authorization checks within Service Processing

NetWeaver 2004s provides some security checks during the consumption of XI services or direct WEB-Services, for example authorization checks for running direct WEB-Services in the application system. Due to the fact that these NetWeaver Security and Authorization Checks are always generic, independent of application business data, the provided services must include authority checks based on application business data. This could be achieved by usage of application authority objects (could be the same as used in application system internal transactional processing).

4.2.13.4 Enterprise SOA Content of SAP SCM in ARIS Tool

Within the PIL *Specification Phase* the business level and the configuration modeling of services and business processes must be handled according to the unified methodology for SAP Business Suite and Application Platform based on the ARIS tool. According to current PIC governance process, this is equivalent to passing the PIC-0 simultaneously to PIL specification review.

The models are used as the basis for creating content within SAP Solution Manager (manual creation of content, there is no technical upload of models into Solution Manager). No runtime objects are generated on that level of modeling out of the ARIS content.

All new integration scenarios and XI-interfaces (also Web Services that might not be created out of an XI interface proxy) in SCM have to be modeled in ARIS during the specification phase.

Modeling according to the unified methodology's architecture view is mandatory for **all** service-enablement activities in the SAP Business Suite. Scenario model, process map and the process component interaction model must be created and business objects and interfaces must be identified. The content of the architecture view, especially business objects, process components, logical deployment units, and integration scenarios, is subject to a process modeling governance process.

For a detailed description of the methodology, see in the Portal the ESA_Modeling_Handbook.doc .

4.2.13.5 Enterprise SOA Content of SAP SCM in ESR of XI

Interface Design according to the PIC process is mandatory for each service.

In the PIL *Design Phase* the complete business object with it's structure and all its attributes and interfaces is designed in the Enterprise Services Repository. According to current PIC governance process, this is equivalent to passing at least PIC-1 simultaneously to PIL overview design review (Details on attributes are matter of PIC-3 and detailed Design) .

For all new XI content, e.g. new interfaces, two content versions have to be provided, one for ESR 7.1 and one for XI 7.0 (current XI content development systems are X8R and X7R). Reason for this could be the fact that in customer system landscape their might be a XI 7.1 system already in use due to other integration scenarios, and thus the new SCM integration scenarios have to be provided in this XI system. Other possible reason could be the usage of new ESR 7.1 features like 'reliable messaging' which will be made possible with NW04s based backend systems also. It is recommended to implement enterprise service definitions in ESR 7.1 (i.e. X8R) first, and then perform a down-transport to XI 7.0 (i.e. X7R). It is recommended to stick to com-

patibility conditions in order to allow for down-transports of the content to XI7.0. Some ESR 7.1 features for content building are not backward compatible, but already exist in XI7.0 in a different form (e.g. Mapping Content, Integration Scenarios). In case such content is developed, is has to be implemented manually in both XI content development systems.

Keep in mind that SCM systems have to be enabled for integration with XI7.0 and ESR7.1 runtime. Thus the service provisioning in the SCM backend system shall not rely on new ESR7.1 runtime features which are not down-ported to the NW04s runtime, meaning that theses features are not available in the SCM backend systems build on NW04s. Some of the new features will be down-ported, these features might be used in case the availability in NW04s backend runtime can be assured for the NetWeaver Support Pack which is prerequisite of the SCM release.

4.3 Guidelines for Enhancement Package Development in SCM

The following link points to a document that describes the general rules for Stable Core (TM and xSOP do not belong to the Stable Core – see chapter 4.1.1) and Enhancement Packages for Business Suite 2008. It was written by Office of the CTO and lead architects of the Business Suite areas: Link.

All the rules mentioned in this document apply for development of Enhancement Packages in SCM.

In addition to that it was decided, that the ERP approach for development in Enhancement Packages will be used for the other Business Suite components as well. Thus, the development guidelines described by ERP (current version ERP EhP Development Guidelines Version 1.7-Link) are relevant and mandatory for SCM as well.

Some areas in SCM that have additional, special requirements are listed here in this chapter.

Please note that SCM will start to develop Enhancement Packages in the development cycle after SCM 7.0 (starting after Q3/2008). Therefore the Enhancement Package rules are not directly relevant for development of SCM 7.0.

But since development in an Enhancement Package environment will have limitations (e.g. no architectural changes, no XPRAs …) there is the need for preparational measures. These measures are listed in the following chapters as well.

4.3.1 SCM additions to ERP EhP development guidelines

Enhancement packages are a new SAP technique to deliver new functionality more often, more quickly to customers. The EhP technique is designed for:

- Simple and Rapid Deployment of New Functionality
- Regular Business Innovation with Minimized Disruption
- Flexible adoption with Optional and Cumulative Enhancement Packages

EhPs contain new versions of the included software components and are based on a defined SP stack. Each new version of a SWC is based on the previous version.

SCM Enhancement Packages

- are based on SCM 7.0 and NetWeaver 2004s
- contain optional, additional functionality which can be installed and activated by the customer specifically
- shall not affect customers who don‘t explicitly activate specific functionality
- only in these areas end-user trainings and regression tests shall be necessary
- are delivered as new versions of the corresponding software components
- customer can decide which SWC should be installed and which functionality should be activated
- allow an easy upgrade of Software Components

General rules that will apply for Enhancement Package development in SCM are:

- No XPRAs are allowed
- No XPRA like reports/activities as precondition to run EhPs after installation of EhPs are allowed
- No new After Import Methods are allowed
- No relocations are allowed
- No critical table changes are allowed
- Critical table changes are defined in the corresponding DDIC guidelines
- No database relevant switch-able DDIC allowed
- No new functionality in Support Packages allowed
- All UI changes in EhP in comparison to SCM 7.0 or earlier EhP versions have to be hidden via a switch
- All changes in software components have to be compatible to the SCM 7.0 version of the other components
- Installation of EhP and activation of new functionality may not decrease system performance
- Customers have to upgrade all of their activated EhP versions, when they install any part of a newer EhP version
- All changes of table entries which are relevant for UI or business processes have to be recorded in switch BC-Sets

Exceptions to these rules might exist but must be reviewed thoroughly.

The switch framework is a tool that provides the technical prerequisites to control which functions are made visible. You can use the Switch Framework to activate, for example, enhancement objects, interface elements, or Customizing layers. The switch framework is part of the enhancement framework (EhF).

All changes which affect user interface or business processes have to be put behind a switch (either via switch framework or customizing). The switch framework is the preferred option here.

For switching coding using the switch framework BAdIs shall be preferred to enhancement points or sections, since this minimizes the risk of possibly incompatible changes in the original coding.

4.3.1.1 Newer Server / Add-on Components

The components SNC and EWM are newer and thus require a higher flexibility in terms of the development process. On the other hand the basic rules and guidelines for Enhancement packages have to be applied explicitly for these components as well.

As a means of flexibility these components can define their own level of granularity for the business functions, e.g. only a small number of business functions can be used.

4.3.1.2 Compatibility Rules in Enhancement Packages

The measure of stability that is required by a development object usually depends on its visibility. An object that is only visible in a closely restricted area can be changed as often as necessary, as it is easy to identify

and to adapt potential users. On the other hand, if the users are in different systems or in different application components, an incompatible change can result in serious problems.

In an Enhancement Package development landscape **objects which are used by other software components** must therefore not be changed incompatibly.

The following guide is designed to help make necessary changes to objects of this sort downward-compatible and should assist both requesters and approvers equally in deciding about a compatible change:

https://portal.wdf.sap.corp/irj/go/km/docs/room_project/cm_stores/documents/workspaces/815b2262-1516-2910-e9a1-f6811174dfc0/EHP%20rollout/Guidelines_Rules%20for%20Ehp/Rules%20for%20downward%20compatible%20development.doc

4.3.1.3 SCM Basis Development

The following guidelines apply:

- A business function in an application may have a link / dependency to a switch in SCM Basis.
- A business function in SCM Basis must not have a link / dependency to the application.

Rules to ensure downward compatibility (see chapter 4.3.1.2) are especially relevant for SCM Basis development in Enhancement Packages.

4.3.1.4 liveCache / COM

The following guidelines describe the EhP approach for liveCache / Com deliveries:

- Each SCM EhP contains a new LCA- and LC-build (C++ part) and a new LCAPPS version (ABAP part).

  (LCA = liveCache Applications, LC = liveCache-Kernel.)
- The LCAPPS software component version is a mandatory component for each EhP if component SCM(APO) is installed (e.g., it can not be deselected in transaction SAINT)
- APO customers have to upgrade to the resp. LCA-/LC-build combination for the Enhancement Package if the new version of component SCM(APO) is installed with the EhP as well
- All changes in LCAPPS follow the general Enhancement Package Guidelines (LCAPPS has to be compatible to the same version of the other components as well as the original Go-To-Release version (SCM 7.0 …), DDIC changes follow Support Packages Rules. No Switches for DDIC. No XPRAS …).
- Non-disruptiveness

  Installation of an EhP will not require a LCAPPS XPRA, an initialization of liveCache or an adaptation of ABAP coding in other software components of SCM 7.0 and its EhPs. From LCAPPS perspective the installation of an EhP is similar to the installation of a SP in the already existing SCM releases <= SCM 5.1.

The following development rules will apply for liveCache / COM for Enhancement Packages:

- No live Cache initialization allowed when EhPs are installed
- Only compatible changes allowed – e.g. no changes in LCAPPS that would require a reaction of the application

4.3.1.5 Optimizer

The following guidelines describe the EhP approach for optimizer deliveries:

- Each SCM EhP contains a new Optimizer version
- APO customers have to upgrade to the resp. Optimizer version for the Enhancement Package if the new version of component SCM(APO) is installed with the EhP as well

The following development rules apply for optimizer components for Enhancement Packages:

- No switches in C++ part of the optimizer engines
- ABAP parts (RCCF, Opt.-UIs) follow the general Enhancement Package Guidelines (see above, e.g. all software component versions have to be compatible to the same version of the other components as well as the original Go-To-Release version (SCM 7.0 …), DDIC changes follow Support Packages Rules. No Switches for DDIC. No XPRAS …).
- Non-disruptiveness of optimizer engines will be guaranteed by regression tests with real-customer scenario data

4.3.2 Preparation Measures for Stable Core

The following reasons describe why preparation steps are necessary for the Go-To-Release of SCM:

- Architectural changes are critical in enhancement packages. Planned architecture changes shall be completed with Business Suite 2008.
- Changes in EhPs must be strictly compatible with the base release of Business Suite 2008
    - Consumers of the changed functionality in other software components must not be forced to make any adaptations
    - Software components can be upgraded separately

The following chapters describe preparational measures to address this situation.

4.3.2.1 SCM Basis Structuring

Explicit contracts between software components (package interfaces) and a reduction of the number of visible objects are crucial as preparation measure for EhPs. Thus SCM Basis Structuring aims at:

- SCM Structuring is identified as a need to prepare for development of Enhancement Packages in a Stable Core environment
- Currently SCM Basis is not clearly structured concerning content, interfaces and their documentation, package structure and usage

The project has the goal to structure SCM Basis based on the guidelines provided by the SCM 7.0 Architecture Definition project

- Structuring of packages with SCM package concept

- Create new package structure and adapt package assignments
- Activation of Package Checks as Server for all packages
- Create clearly defined, external package interfaces (APIs)
- Adapt usage access from other component's packages
- Documentation of APIs
    - Inventory – describe and structure content of SCMB - create Wiki
    - (Rough/technical) documentation of all interface components

4.3.2.2 SCM Basis Automated Testing

In an EhP environment there as a need for additional regression test capabilities. EhPs allow to upgrade only selected software component versions. Together with switches/business functions there will be various combinations that need regression testing. Automated testing capabilities support this need.

The scope of this project will be:

- Automated testing capabilities of SCM Basis are needed in order to support the goals of the SCM Basis Structuring project
- Need for downward compatible development of SCM Basis requires regression tests with multiple release versions of using software components
- Therefore automated testing capabilities shall be provided
    - Test cases for all external interfaces of SCMB - Partly defined in project SCM_DEV_SCMB_70 (ABAP Unit, eCATT, ...)

4.3.2.3 Training Measures for EhP development

The SAP development organizations have to ensure that the development teams know the technologies needed for enhancement packages. Training should cover the switch framework and how to use the enhancement framework.

There is a 3-day classroom training for the ABAP Switch Framework available.

Since it is not feasible to train all developers who are working in an EhP environment in these classroom trainings, it is recommended to define multipliers in each group. These multipliers shall attend the class room training and in a second step they shall roll-out this information to their team.

It is recommended to complete these trainings until development for SCM EhP 1 starts.

4.3.2.4 Quality Assurance Measures for EhP development

Additional test cases will have to be provided and executed to prove that new enhancement packages comply with the above rules. Test cases for switches have to ensure both that the deactivated functions do not affect the existing system and that the new functionality works correctly when the switches are activated.

Compatibility of enhancement package versions of software components with the Stable Core version of other software components must be tested as well.

4.3.2.5 EhP Addendum to Design Template

In order to support and to ensure that the key elements of EHP development guidelines are already discussed and reviewed at design time an addendum document to the PIL design template T011 has been created: EhP-Design-Addendum.

The addendum template contains new chapters on Switch Concept, Switched Objects and Couplings of SW Components. It is recommended to copy the chapters into each design as part of detailed design. Please refer to the explanatory texts in the template for more details on what to describe in each chapter.

4.4 Rules for Add-On Software Component development

Components with add-on deployment scenarios on ERP as well as on SCM (SNC, EWM) and/or stand alone shall

- Behave identical in terms of integration, i.e. shortcuts and direct calls to ECC shall not be implemented in SCM. Service like based integration (also RFC) is still allowed if it takes place independent of the deployment option.
- IMG and Menu tree has to be implemented in a way that the IMG and menu tree of the host server application component (e.g. ERP) is dynamically enhanced with the deployment of the SCM Add-On component.
- Carry out active risk management concerning negative impacts originating from their deployment and usage in respect to the host server application component (e.g. ERP) and other installable ADD-ON components. Among others, this includes architectural analysis of usage of application functions/frameworks, situated in the lower software stack like ABA and NetWeaver that is used also outside of SCM and by the SCM Add-On component. This includes content of database tables (filled by deployment and usage of the Add-On, do not forget about master data!), BADI implementations owned by the Add-ON for BAdI's situated in the lower software stack (think about single usage BAdI's which might get a second implementation due to the deployment of the ADD-ON), or any other dynamic integration with an upward integration arrow from lower level software stack to the Add-On component. For example avoid BAdI implementations that do not have a filter which restricts the execution of the implementation to the Add-On component transactions.
- Not (must not) enlarge their prerequisite software component stack. This would lead to a more complex deployment.

The usage of package concept with narrow interface in the structure package is recommended for AddOn components.

4.5 Development Language Switch

The development language is English. All objects should have original language English after the Development Language Switch project has finished successfully. Table entries of customizing tables with original language German has to be maintained in German.

Up- and Down-Port as well maintenance has to follow the guidelines (link) if language dependent parts are involved.

4.6 List of ERDs

Planned ERD	Responsible Archi
No ERDs were defined. All relevant topics are covered in this document.	

5 Technology Decisions and Constraints

5.1 Technology Selection

This chapter lists technology decisions, guidelines and special aspects of development in the SCM 7.0 environment.

5.2 Prohibitions for technology issues

There is a list of UI technologies that must not be used for new developments in SAP (chapter 4.2.2 for the "UI red list" of UI technology that has to be phased out).

Cross-Component BPM (ccBPM) should not be used for integration of SAP applications. The use case for ccBPM is 3rd-party integration (non-SAP applications) and cross-system integration like B2B in distributed SAP environments at customer projects.

Usage of Java for backend applications is not allowed.

5.3 Exceptions for technology issues

All exceptions have to be approved by the SCM/PLM/MAN architecture team.

6 Reuse Decisions and Constraints

6.1 Selection and Prohibitions for reuse issues

The following objects from SAP reuse layers are used in SCM and need to be maintained until the end of standard maintenance of SCM 7.0:

Reuse software (software component version)	Owned (BPP / / other)	Maintenance until e of extended maintenance of applicatio	Usage (must / shou must not)	Remark / explanation
IBase	AP	Yes	must	for PP/DS variant configuration
Business Partner	AP	Yes	must	for SNC, EWM, SPP
Product	AP	Yes	must	for AutoID (not SCM 7.0 - own release)
IPPE	AP	Yes	must	for PP/DS, EWM Packing Specification, Interchar ability
Lime	AP	Yes	must	for EWM, SNC, F&R

Reuse software (software component version)	Owned (BPP / / other)	Maintenance until end of extended maintenance of application	Usage (must / should must not)	Remark / explanation
Pricing Engine (former IPC)	AP	Yes	must	for EWM-Condition Technique (Slotting, Wave Management and Packing Specification)
All NetWeaver 7.0 layers incl. ABA 7.0	NW	Yes	-	

The following AP components are used by the mySAP Business Suite:

mySAP usages of AP Components

Component	mySAP usage	Enhancement needed from mySAP
IBase	▪ ERP, SCM, CRM	▪ ERP Ops: In evaluation ▪ CRM: In evaluation
Business Partner	▪ ERP, SCM, CRM, SRM, IS	▪ ERP Ops: In evaluation ▪ CRM: Triggered by portfolio cases, Cat/Ford
Product	▪ ERP, SCM, CRM, SRM	▪ ERP Ops: In evaluation ▪ CRM: Cat/Ford and Pharma/CLM
Sales Config Engine (former IPC)	▪ ERP, CRM	▪ ERP Ops: In evaluation
CCM	▪ ERP, CRM, SRM	▪ ERP Ops: In evaluation ▪ CRM: Basic enhancements already in progress, due to A1S requirements for E-Commerce use ▪ SRM: In evaluation for complex services
IPPE	▪ ERP, SCM	▪ ERP Ops: In evaluation ▪ SCM: In evaluation
Lime	▪ ERP, SCM	▪ ERP Ops: In evaluation ▪ SCM: In evaluation
Transaction Tax Engine (former IPC)	▪ ERP, CRM, SRM	▪ ERP Ops: In evaluation
Pricing Engine (former IPC)	▪ ERP, SCM, CRM, SRM	▪ ERP Ops: In evaluation ▪ CRM: Cat/Ford ▪ SRM: In evaluation for complex services

Figure 13: SAP Business Suite Usages of AP Components

6.2 Exceptions for reuse issues

All exceptions have to be approved by the SCM/PLM/MAN architecture team.

7 Software Layers and Components

7.1 Software Layers

The logical structure of SAP SCM 2008 consists of the following layers

- UI Layer
  - Enterprise Portal (not part of SCM)
  - Presentation Layer
  - UI Control Layer
  - UI Application Layer
- Message Handling
  - Message Distribution
  - Message Interface Layer
  - Message Control Layer
- Application Layer
  - APO
  - SNC
  - WME
  - F&R
  - EM
  - xSOP
  - TM
- Object Access Layer
- Database Access Layer
- Database Layer

The architectural overview can be seen on the following diagrams. The diagrams represent the target architecture for SCM 7.0 as it is defined in this document. Later changes will be incorporated in the diagrams.

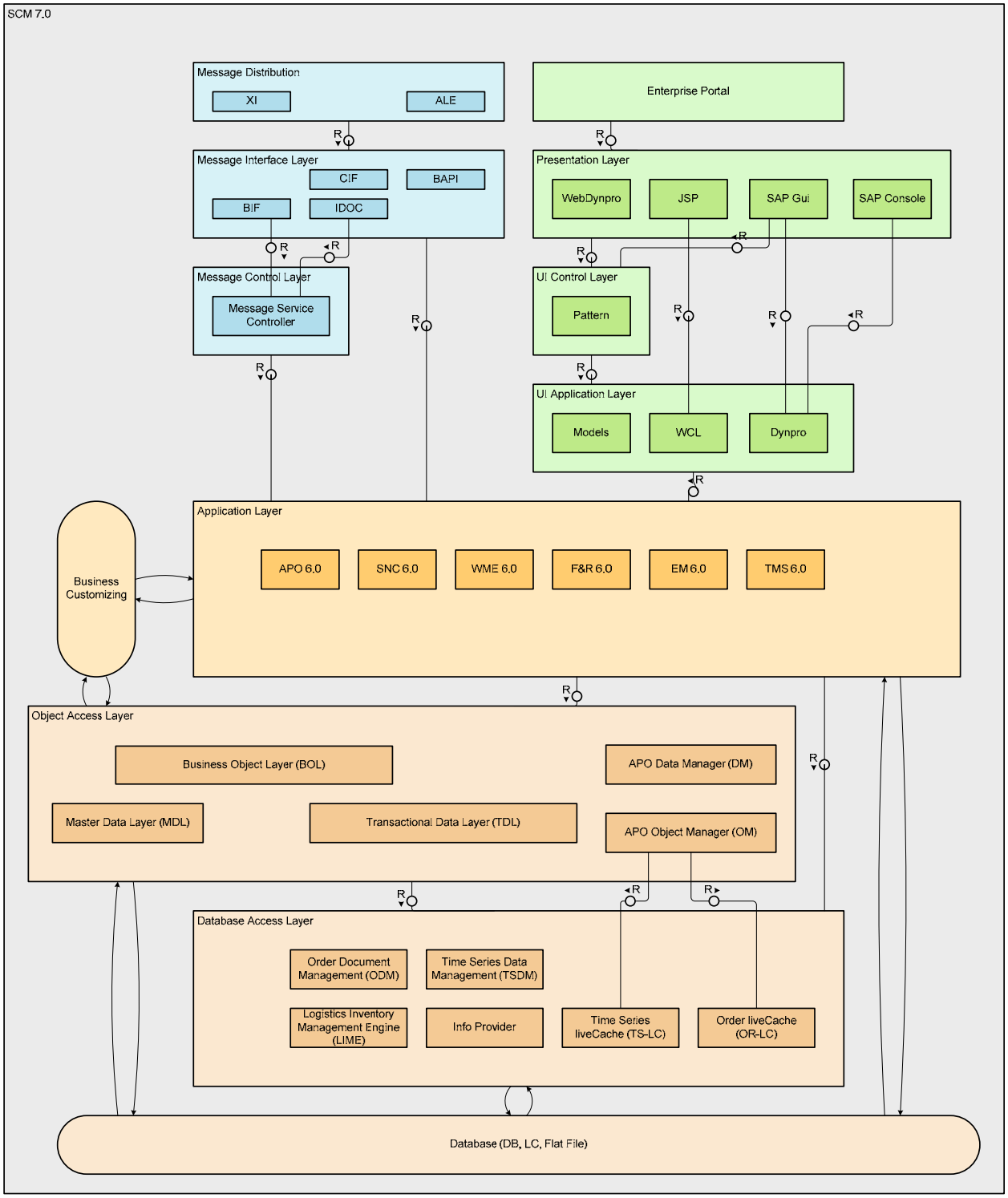

Figure 14: Block Diagram SCM 2008 overview

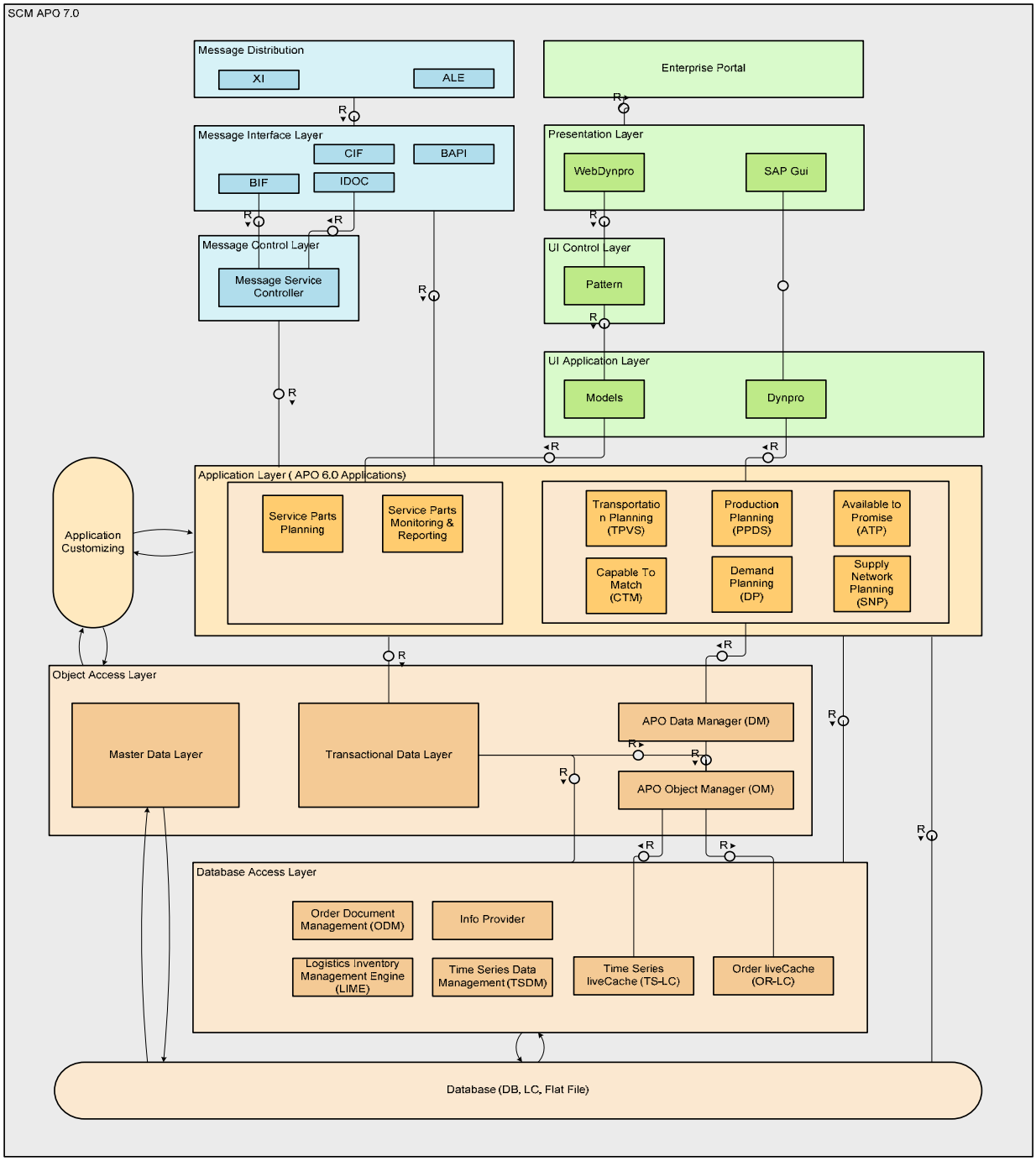
SCM APO 7.0
Message Distribution
XI
ALE
Enterprise Portal
Message Interface Layer
CIF
BAPI
BIF
IDOC
Presentation Layer
WebDynpro
SAP Gui
Message Control Layer
Message Service Controller
UI Control Layer
Pattern
UI Application Layer
Models
Dynpro
Application Customizing
Application Layer (APO 6.0 Applications)
Service Parts Planning
Service Parts Monitoring & Reporting
Transportatio n Planning (TPVS)
Production Planning (PPDS)
Available to Promise (ATP)
Capable To Match (CTM)
Demand Planning (DP)
Supply Network Planning (SNP)
Object Access Layer
Master Data Layer
Transactional Data Layer
APO Data Manager (DM)
APO Object Manager (OM)
Database Access Layer
Order Document Management (ODM)
Info Provider
Logistics Inventory Management Engine (LIME)
Time Series Data Management (TSDM)
Time Series liveCache (TS-LC)
Order liveCache (OR-LC)
Database (DB, LC, Flat File)

Figure 15: Block Diagram SCM 2008 APO

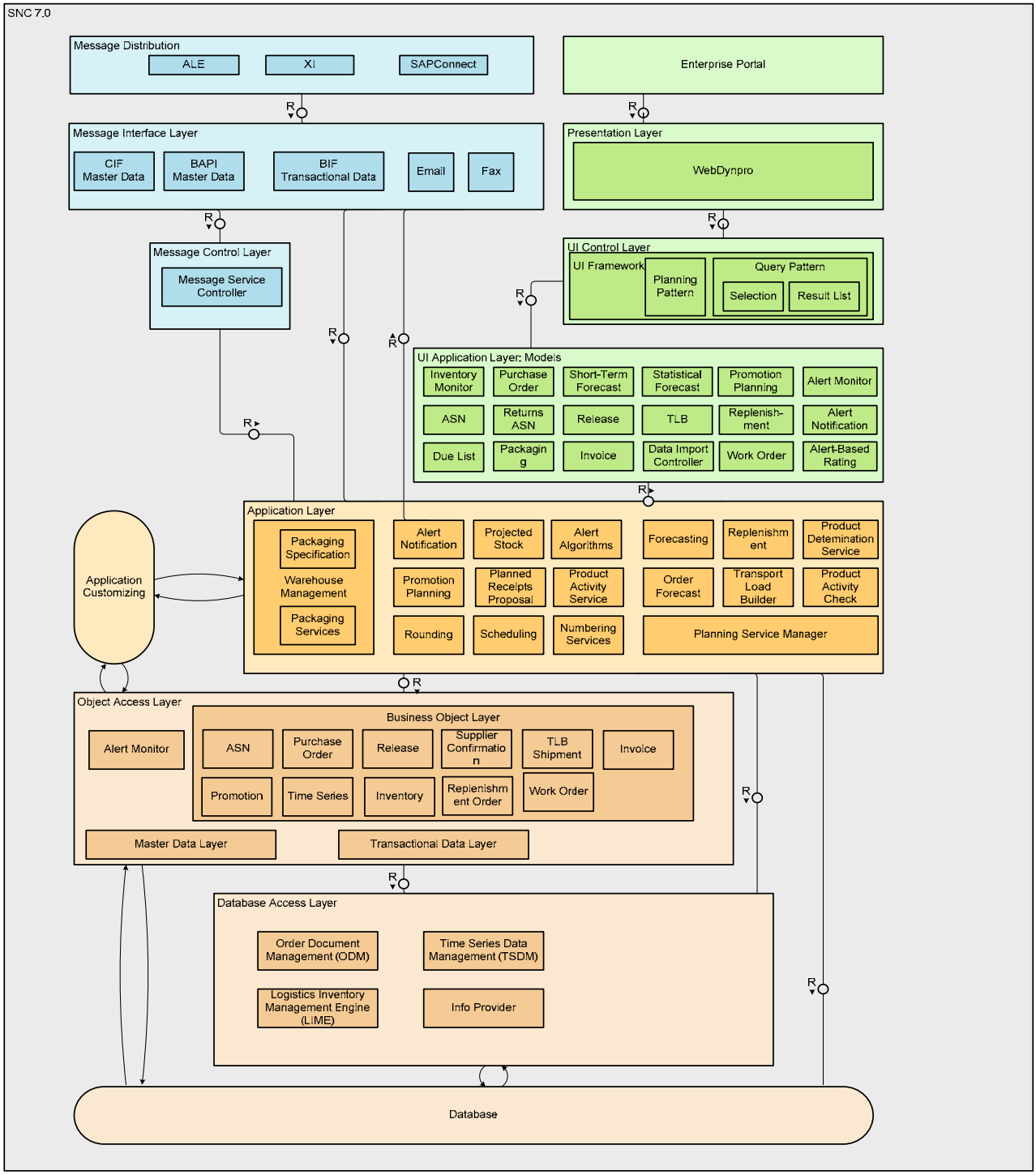

Figure 16: Block Diagram SCM 2008 SNC

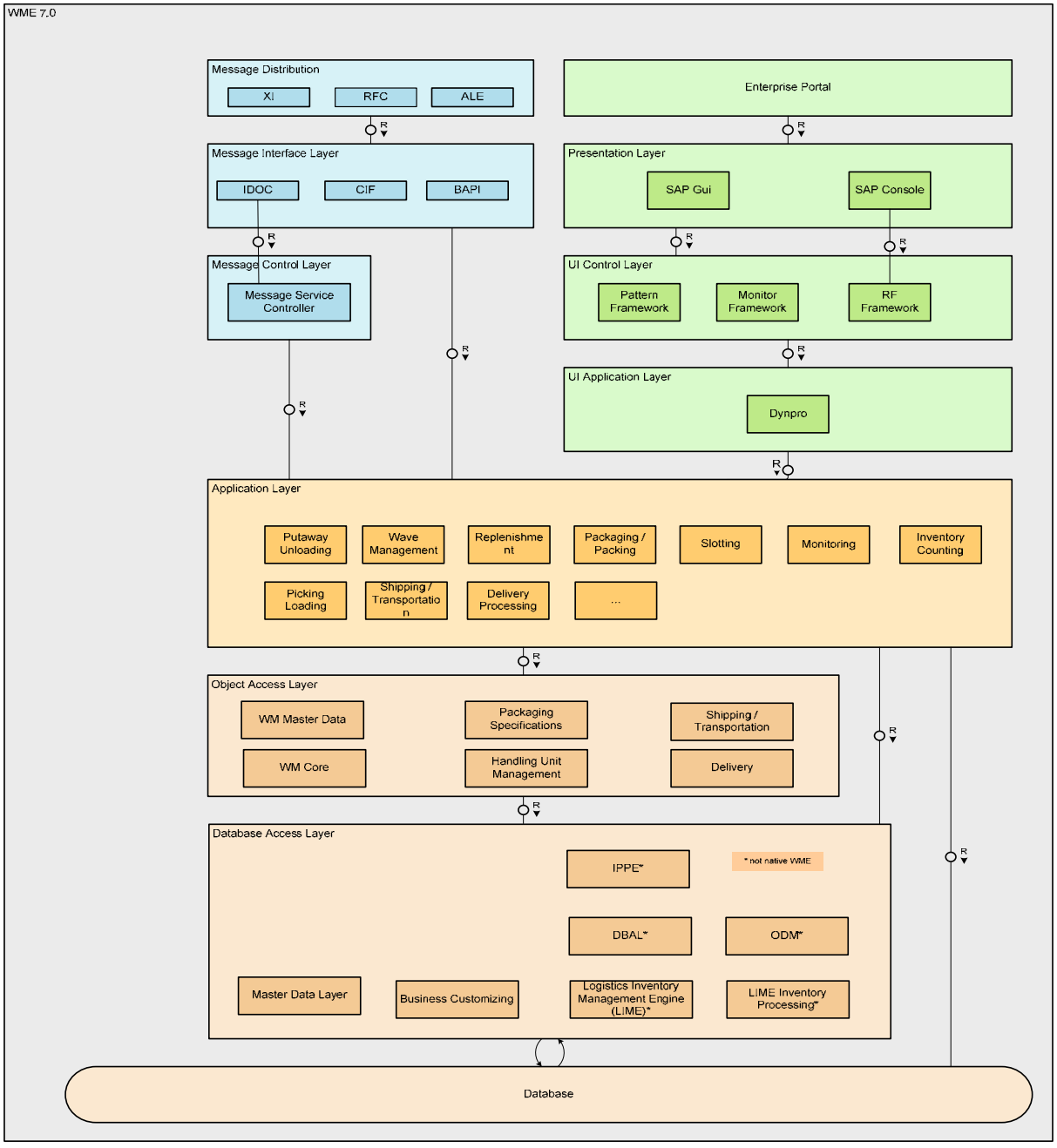

Figure 17: Block Diagram SCM 2008 EWM

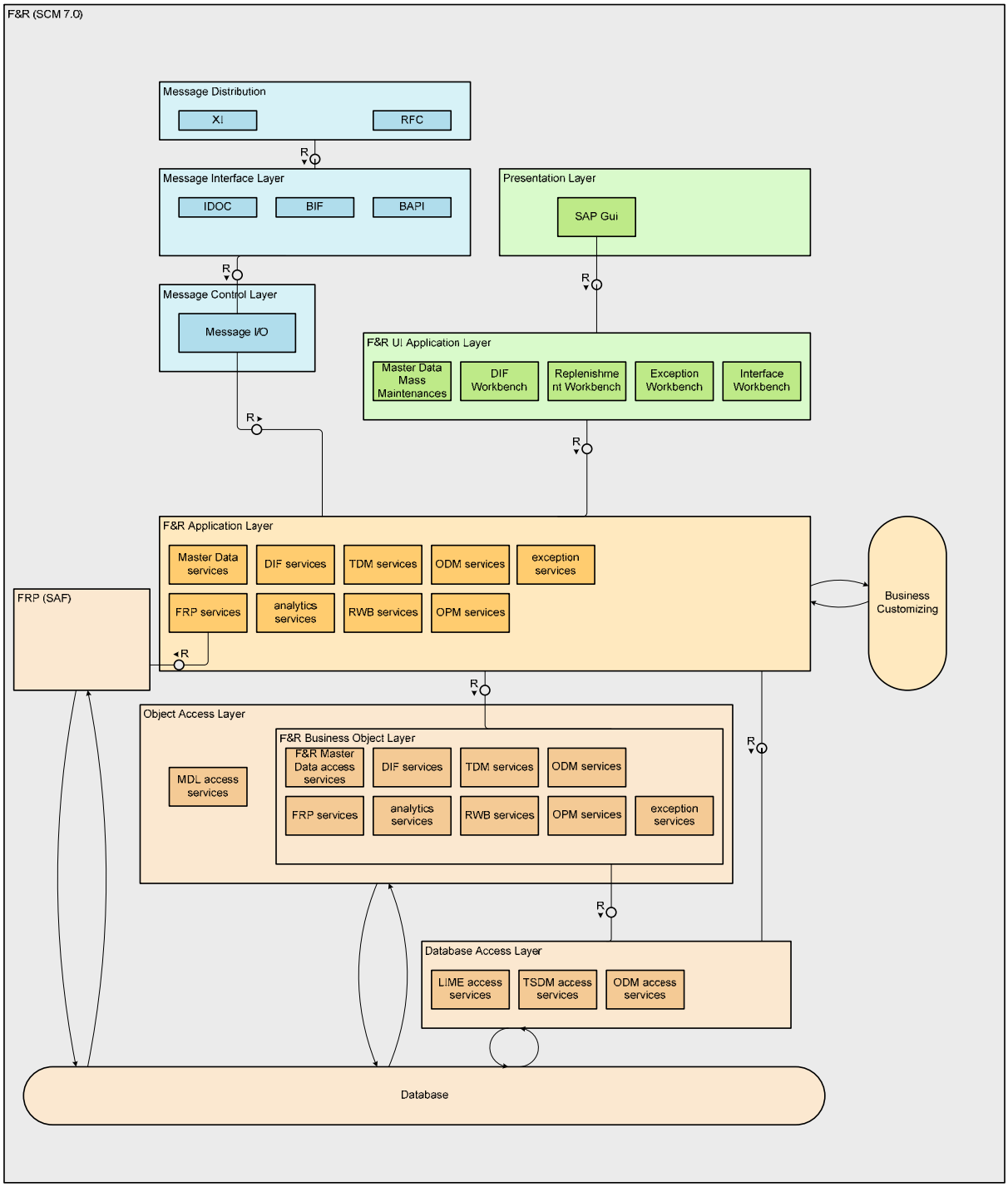

Figure 18: Block Diagram SCM 2008 F&R

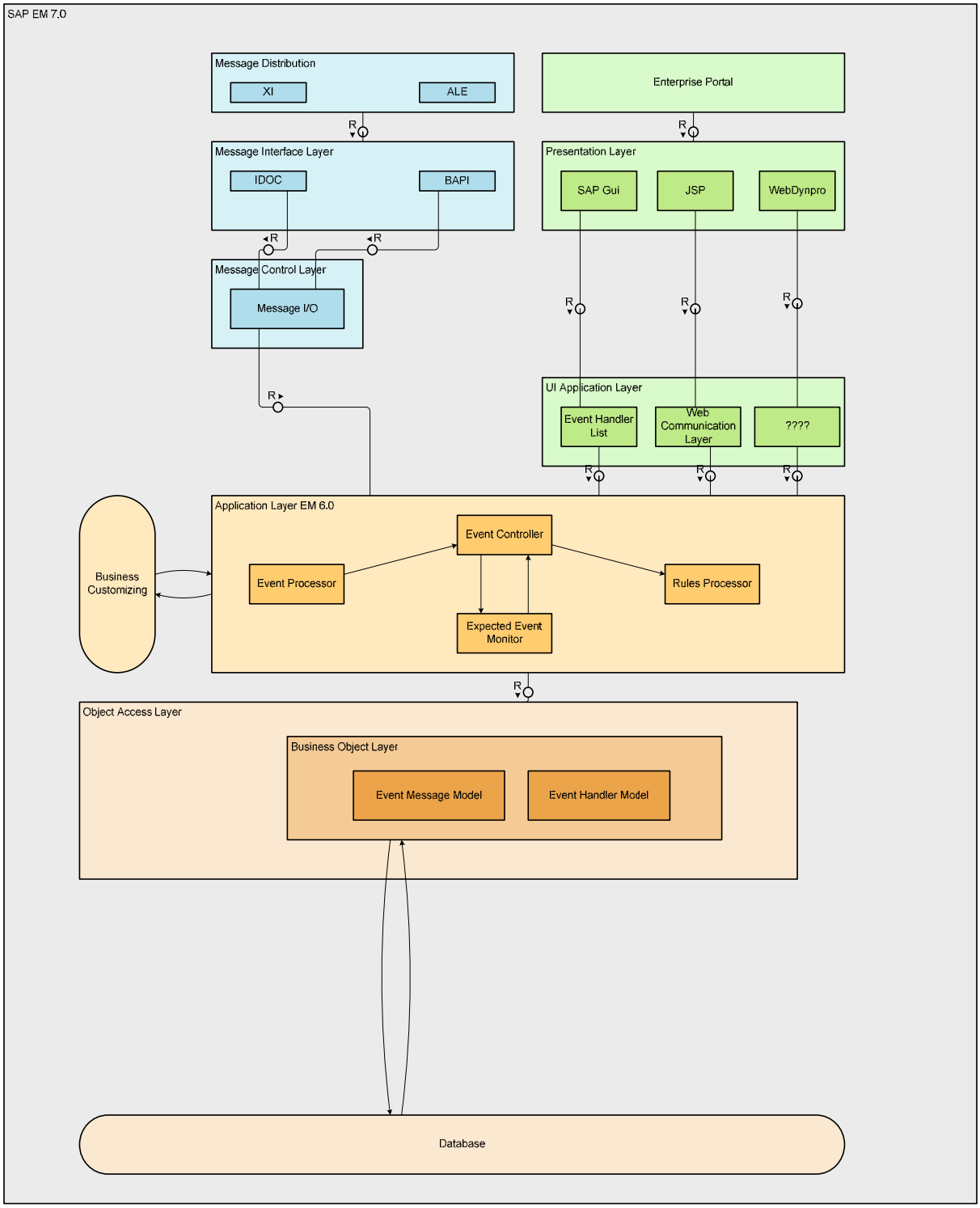
SAP EM 7.0
Message Distribution
XI
ALE
Enterprise Portal
Message Interface Layer
IDOC
BAPI
Presentation Layer
SAP Gui
JSP
WebDynpro
Message Control Layer
Message I/O
UI Application Layer
Event Handler List
Web Communication Layer
????
Application Layer EM 6.0
Event Controller
Event Processor
Rules Processor
Expected Event Monitor
Business Customizing
Object Access Layer
Business Object Layer
Event Message Model
Event Handler Model
Database

Figure 19: Block Diagram SCM 2008 EM

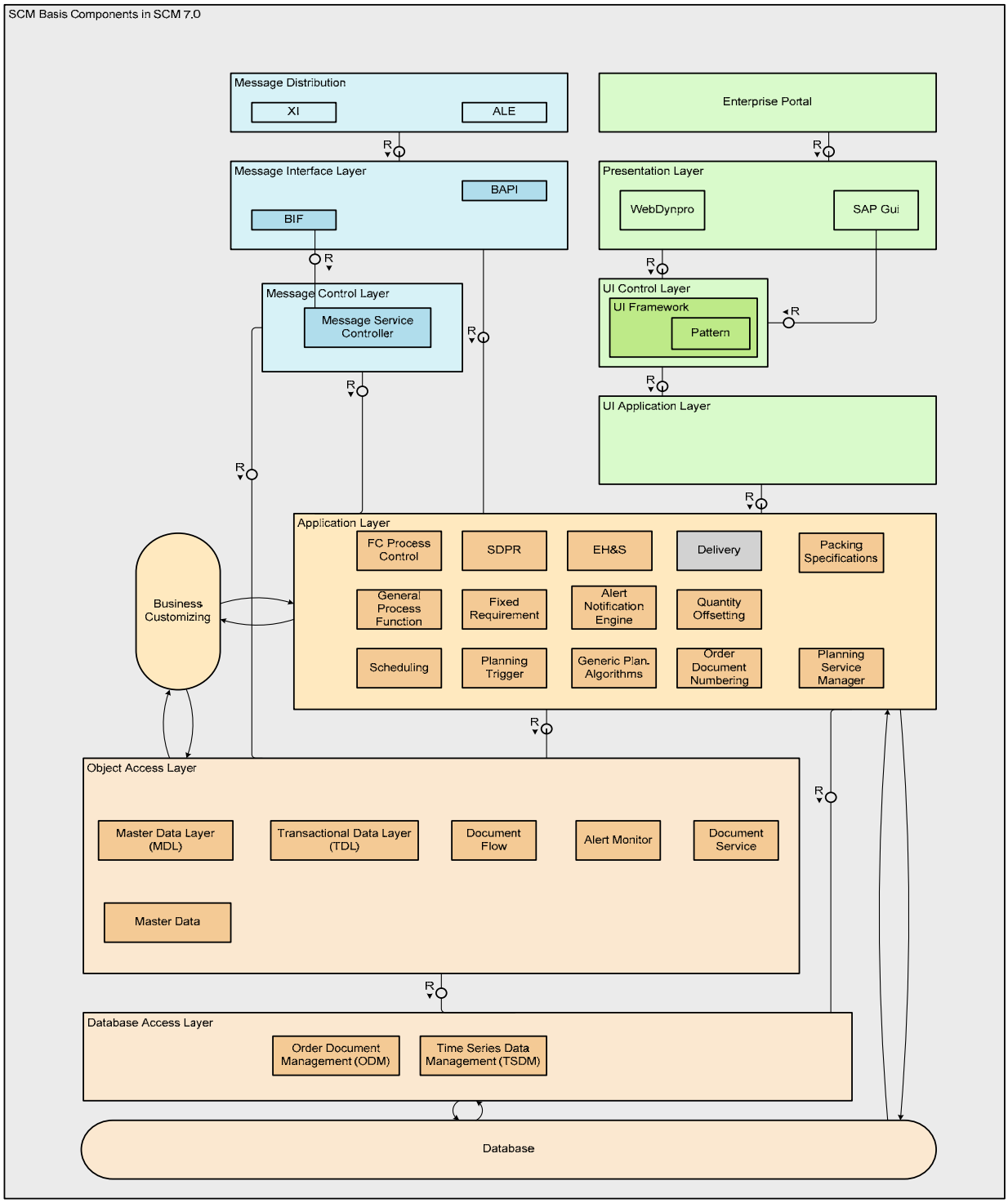

Figure 20: Block Diagram SCM 2008 SCM Basis

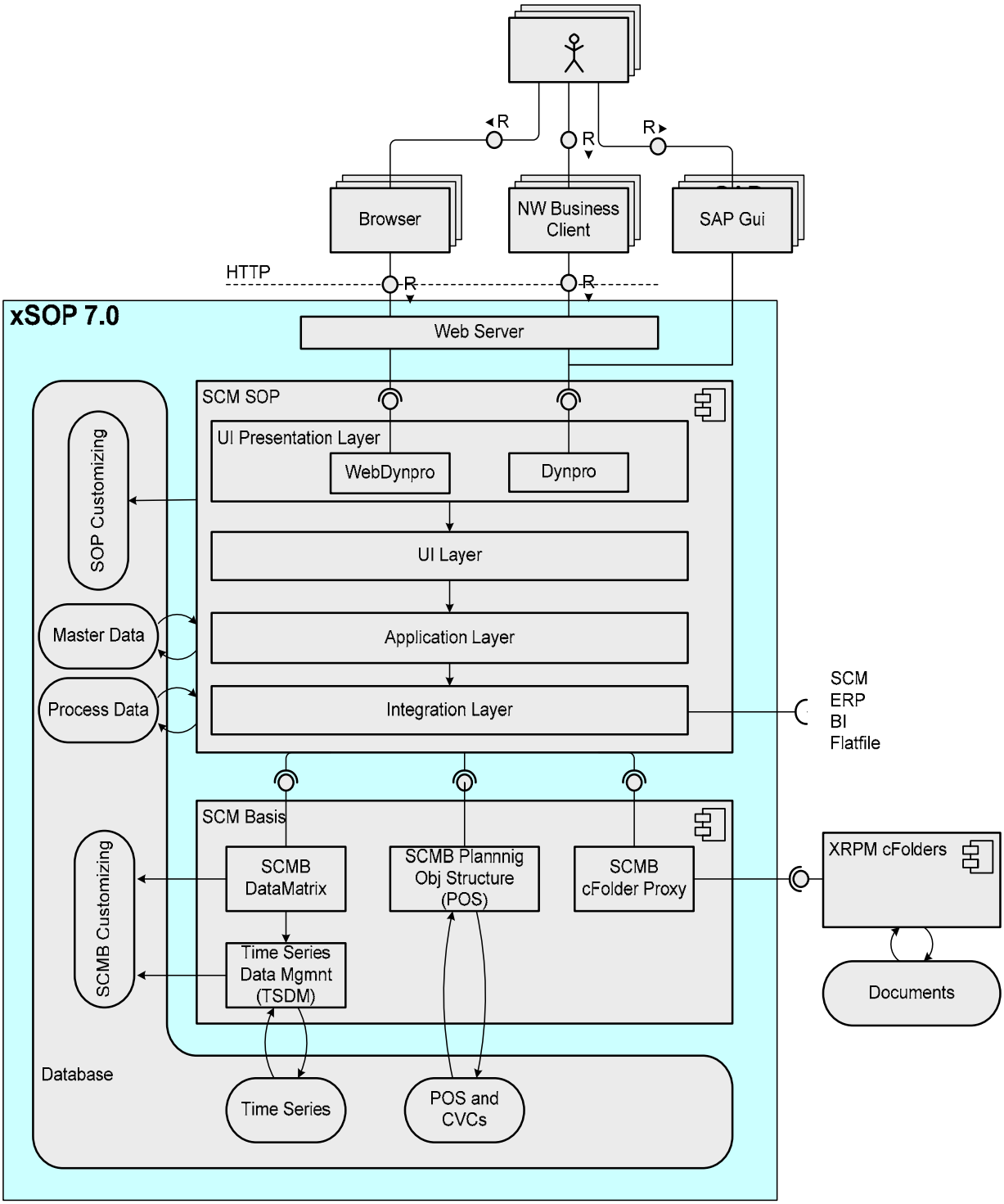
R
R
R
Browser
NW Business Client
SAP Gui
HTTP
R
R
xSOP 7.0
Web Server
SCM SOP
UI Presentation Layer
WebDynpro
Dynpro
UI Layer
Application Layer
Integration Layer
SOP Customizing
Master Data
Process Data
SCM
ERP
BI
Flatfile
SCM Basis
SCMB Customizing
SCMB DataMatrix
SCMB Plannnig Obj Structure (POS)
SCMB cFolder Proxy
XRPM cFolders
Time Series Data Mgmnt (TSDM)
Documents
Database
Time Series
POS and CVCs

Figure 21: Block Diagram SCM 2008 xSOP

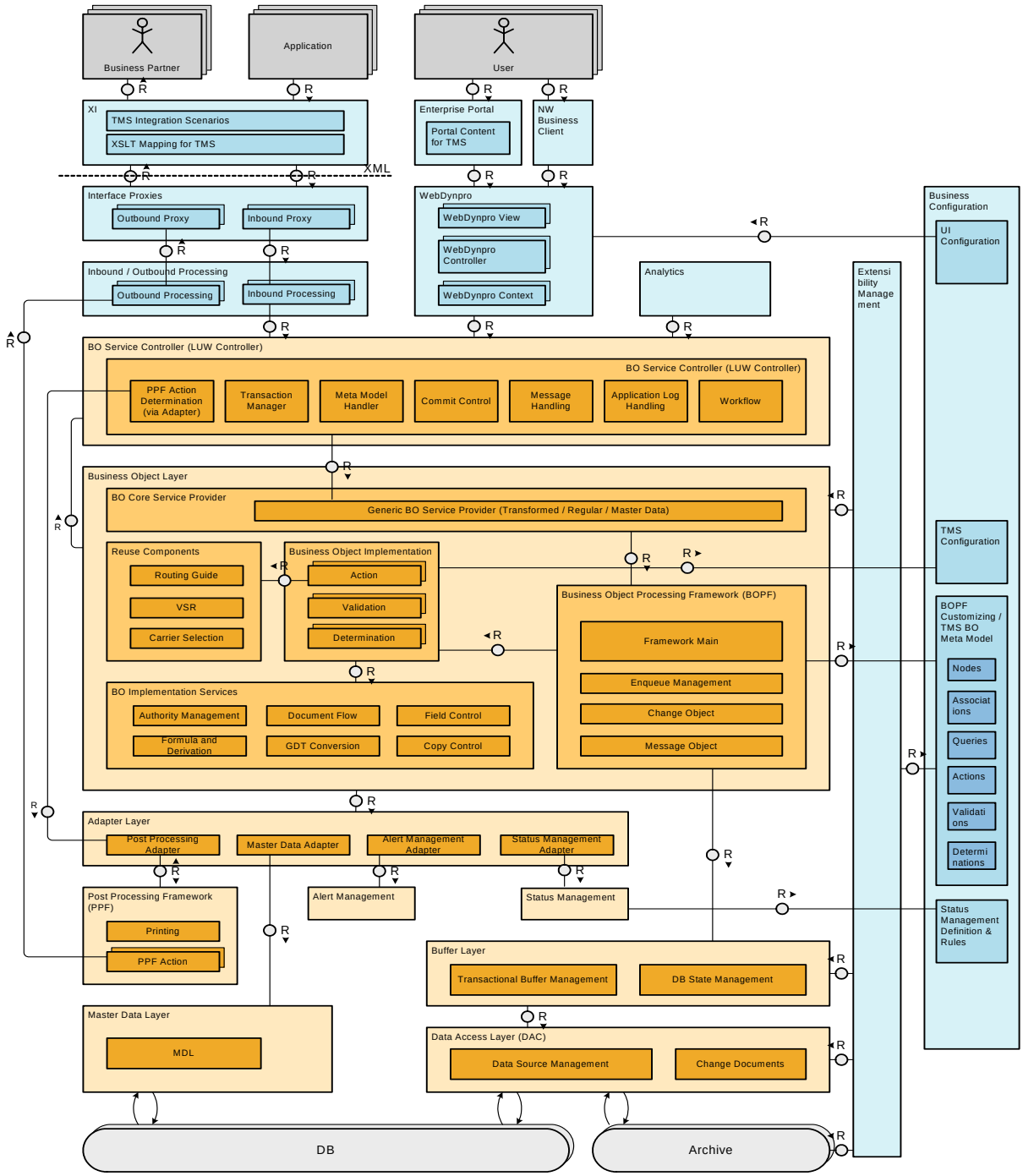

Figure 22: Block Diagram SCM 2008 TM

The following picture gives an overview over the SAP SCM integration channels that are used in SAP SCM integration scenarios:

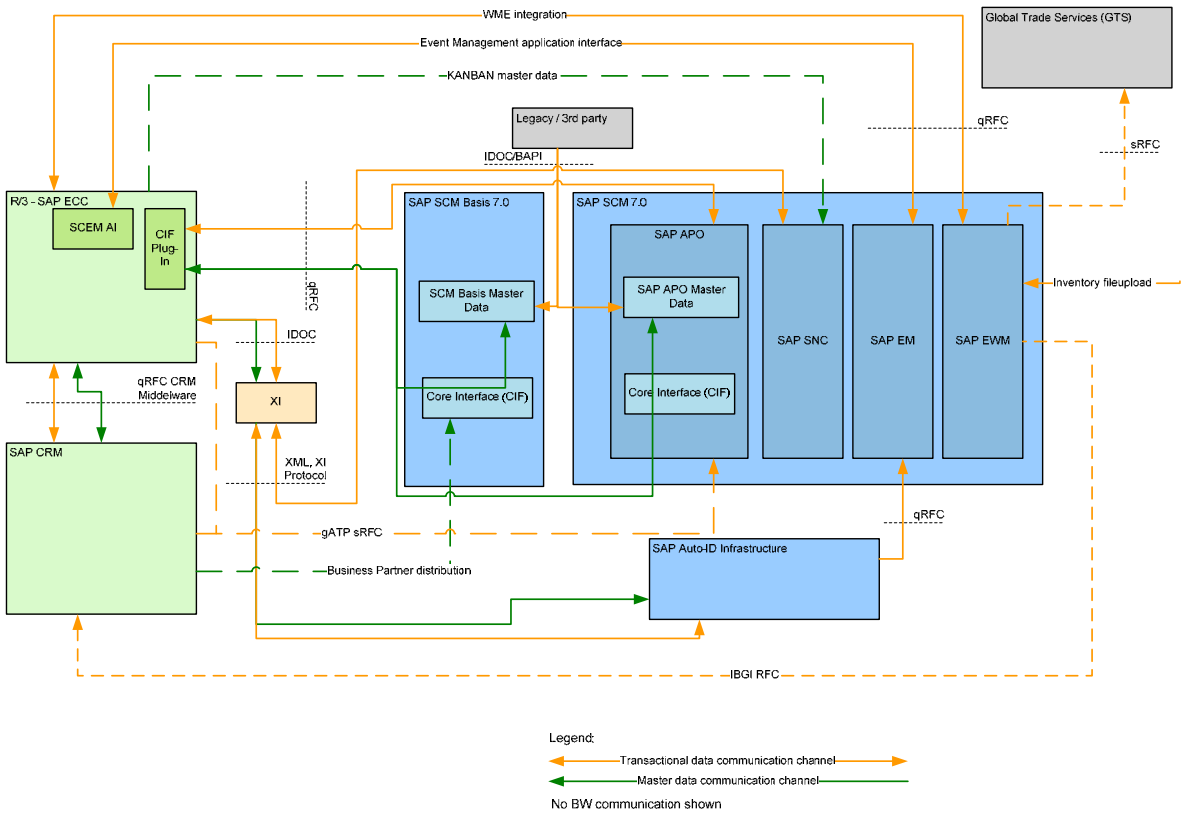

Figure 23: SCM Integration Architecture

7.2 List of Components

7.2.1 Own Application and Software Components

For integration rules between software components refer to chapter 4.2.4.2.

See the following diagram for the software component hierarchy in SCM 2008:

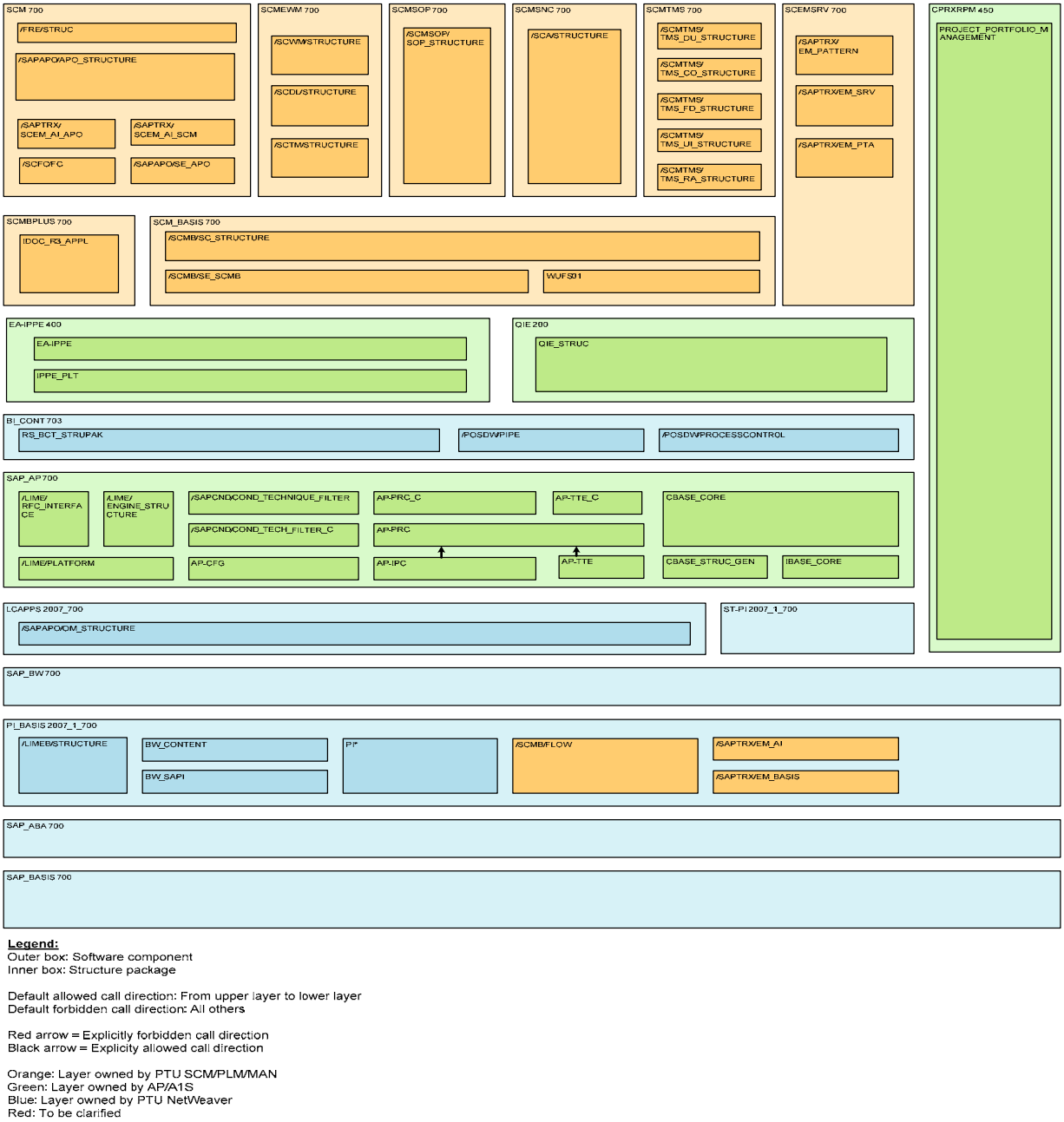

Figure 24: SCM 2008 Software Component Architecture

The following table provides an overview on the planned software components of SAP SCM 2008. There are still some decision pending – this information is preliminarily.

The following software stack is valid for SCM 7.0:

Application Component	Required Underlying Application Release and Application Component	Owner	Remark
ABAP Components			
BI_CONT 703	SAP NetWeaver 2007 – BW	TP/NW	
CPRXRPM 400	SAP NetWeaver 2004s	SAP PLM	cFolders
SCMTMS 700	SCM_BASIS 700	SAP SCM	TM 7.0
SCMSOP 700	SCM_BASIS 700	SAP SCM	S&OP 7.0
SCEMSRV 700	SAP_ABA 700	SAP SCM	EM 7.0
SCMSNC 700	SCM_BASIS 700	SAP SCM	SNC 7.0
SCMEWM 700	SCMBPLUS 700	SAP SCM	EWM 7.0
SCM 700	SCMBPLUS 700	SAP SCM	SCM software component
SCMBPLUS 700	SCM_BASIS 700	SAP SCM	IDOC_R3_APPL
SCM_BASIS 700	EA-IPPE 400	SAP SCM	SCM-Basis software component
EA-IPPE 400	SAP_AP 700	AP	
QIE 200	SAP_AP 700	AP	
SAP_AP 700	SAP_ABA 700	AP	
PI_BASIS 2007_1_700	SAP_BASIS 700	TP/NW	
SAP_BW 700	SAP_BASIS 700	TP/NW	
SAP_ABA 700	SAP_BASIS 700	TP/NW	Component belonging to TP but contains AP coding
SAP_BASIS 700		TP/NW	NetWeaver 2004s
Non ABAP Components			
SCM_OPTIMIZER 700	SAP NetWeaver 2004s	SAP SCM	SCM-Optimizer for 7.0
EM_WCL 700	SAP NetWeaver 2004s	SAP SCM	Web Communication Layer for Event Management 7.0
XI_CONT SCM 700	SAP NetWeaver 2004s – XI	SAP SCM	XI Content for SCM 7.0
XI_CONT SCM_BASIS 700	SAP NetWeaver 2004s – XI	SAP SCM	XI Content for SCM_BASIS 7.0
XI_CONT SCEMSRV _700	SAP NetWeaver 2004s – XI	SAP SCM	XI Content for SCEMSRV 7.0

XI_CONT SNC 700	SAP NetWeaver 2004s – XI	SAP SCM	XI Content for SNC 7.0
XI_CONT EWM 700	SAP NetWeaver 2004s – XI	SAP SCM	XI Content for EWM 7.0
BP EXT USERS SERV PARTS 1.0	SAP NetWeaver 2004s	SAP SCM	Portal Content for SPP 7.0
SAP_GUI 7.10	SAP NetWeaver 2004s	TP/NW	
NW Business Client 2.0	SAP NetWeaver 2004s	TP/NW	
ST_PI 2007_1_700	SAP NetWeaver 2004s	TP/NW	
LC/APPS 2007_700	SAP NetWeaver 2004s	TP/NW	
J2EE 700	SAP NetWeaver 2004s	TP/NW	
SAP_KERNEL 700	SAP NetWeaver 2004s	TP/NW	

Figure 25: Software Component Stack SCM 7.0

Please note that this figure describes a logical software component stack and not a deployment option, i.e. the SCM server does not contain software components SCMTMS 700 and SCMSOP 700.

Figure 26: Architecture & Delivery Options for SCM 2008

The original version of this slide can be found at this location: \\dwdf034\grm\Public\SCM\SCM_700

7.2.2 Non-SAP Software Components

Software Component Version	Classification	Remark	Requires Legal Changes?
PTV_GEOCODING	<3rd party / open source> <3rd party supplier>		Yes / No
SAF Software (F+R)	<3rd party / open source>		Yes / No

	<3rd party supplier>		

7.2.3 XI Namespaces

The following picture shows the structure of the XI namespaces in SCM 2008:

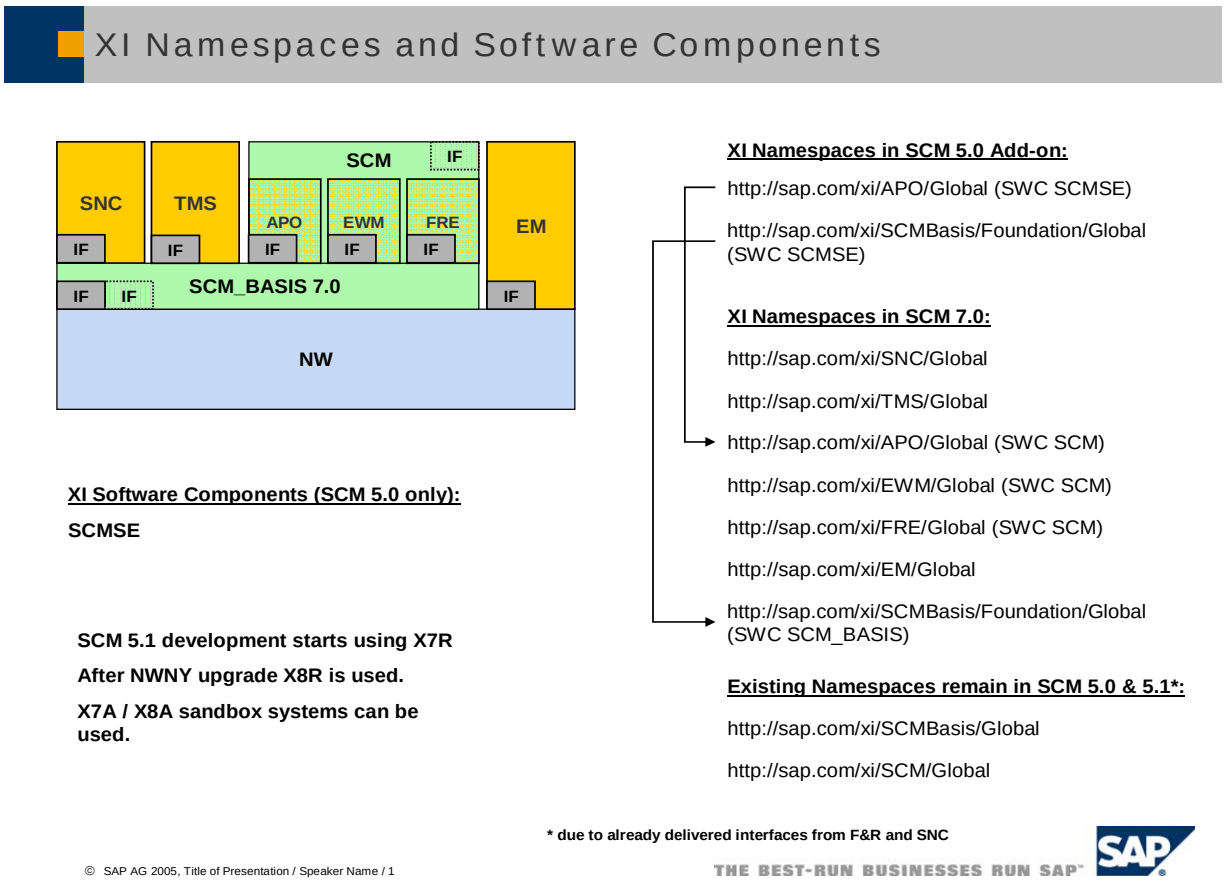

Figure 27: XI Namespaces in SCM 7.0

7.3 Deployment Options

The following chapter describes the deployment options for SCM 2008.

With the decoupling projects (EWM, SNC, SCM Basis) and the new SCM products (TM, xSOP) of SCM 5.1 there are a plenty of possible deployment options.

The following slide gives an overview over all possible SCM 7.0 deployment options:

Deployment Option	Will be supported	Shall be possible (technically)	Products						Prerequisite product version			Software Components									Optional			
			SCM 7.0 Server	SOP	EWM	SNC	TMS	AII	NW 2004s	ERP 2005 incl. EA-IPPE 400	SRM 2005	SAP SCM BASIS 7.0 (inkl. EM)	SCMB PLUS 7.0	SCM 7.0	SCM SOP 7.0	EWM 7.0	SAP TMS 7.0	SAP SNC 7.0	SAP AII 7.0	EA-IPPE 400	QIE 200	GEOCODING	WCL	CPRXRPM 400	SAP SCM OPTIMIZER 7.0
SCM 7.0 Server	X	X	X									X	X	X		X		X		X	X	X	X	X	X
xSOP 7.0 Standalone	X	X		X					X			X			X					X				X	
EWM 7.0 on ERP 2005	X	X			X					X		X				X					X				
SNC 7.0 Standalone	X	X				X			X			X						X		X				X	
TMS 7.0 Standalone	X	X					X		X			X					X			X		X	X		X
AII 7.0 with EM	X	X						X	X			X							X	X					
SCM 7.0 Server with xSOP 7.0		X	X	X								X	X	X	X	X		X		X	X	X	X	X	X
SCM 7.0 Server with TMS 7.0		X	X				X					X	X	X		X	X	X		X	X	X	X	X	X
SCM 7.0 Server with AII 7.0		X	X					X				X	X	X		X		X	X	X	X	X	X	X	X
SCM 7.0 Server with xSOP 7.0 and TMS 7.0		X	X	X			X					X	X	X	X	X	X	X		X	X	X	X	X	X
SCM 7.0 Server with xSOP 7.0 and AII 7.0		tbd	X	X				X				X	X	X	X	X		X	X	X	X	X	X	X	X
SCM 7.0 Server with AII 7.0 and TMS 7.0		tbd	X				X	X				X	X	X		X	X	X	X	X	X	X	X	X	X
SCM 7.0 Server with AII 7.0 and TMS 7.0 and xSOP 7.0		tbd	X	X			X	X				X	X	X	X	X	X	X	X	X	X	X	X	X	X
SNC 7.0 on SRM 2005						X					X	X						X		X			X		
SNC 7.0 on ERP 2005						X				X		X						X		X			X		
SNC 7.0 and TMS 7.0 on NW 2004s		X				X	X		X			X					X	X		X		X	X	X	X
SNC 7.0 and xSOP 7.0 on NW 2004s	tbd	X		X		X			X			X			X			X		X				X	
TMS 7.0 and xSOP 7.0 on NW 2004s		X		X		X			X			X			X		X			X		X	X	X	X
TMS 7.0 and xSOP 7.0 and SNC 7.0 on NW 2004s		X		X		X	X		X			X			X		X	X		X		X	X	X	X
EWM 7.0 Standalone		X			X				X			X	X			X				X	X				
EWM 7.0 and SNC 7.0 on ERP 2005					X	X				X		X				X					X				
TMS 7.0 on ERP 2005							X			X		X				X		X			X			X	
xSOP 7.0 on ERP 2005				X						X		X			X									X	

Figure 28: Deployment Options for SCM 2008

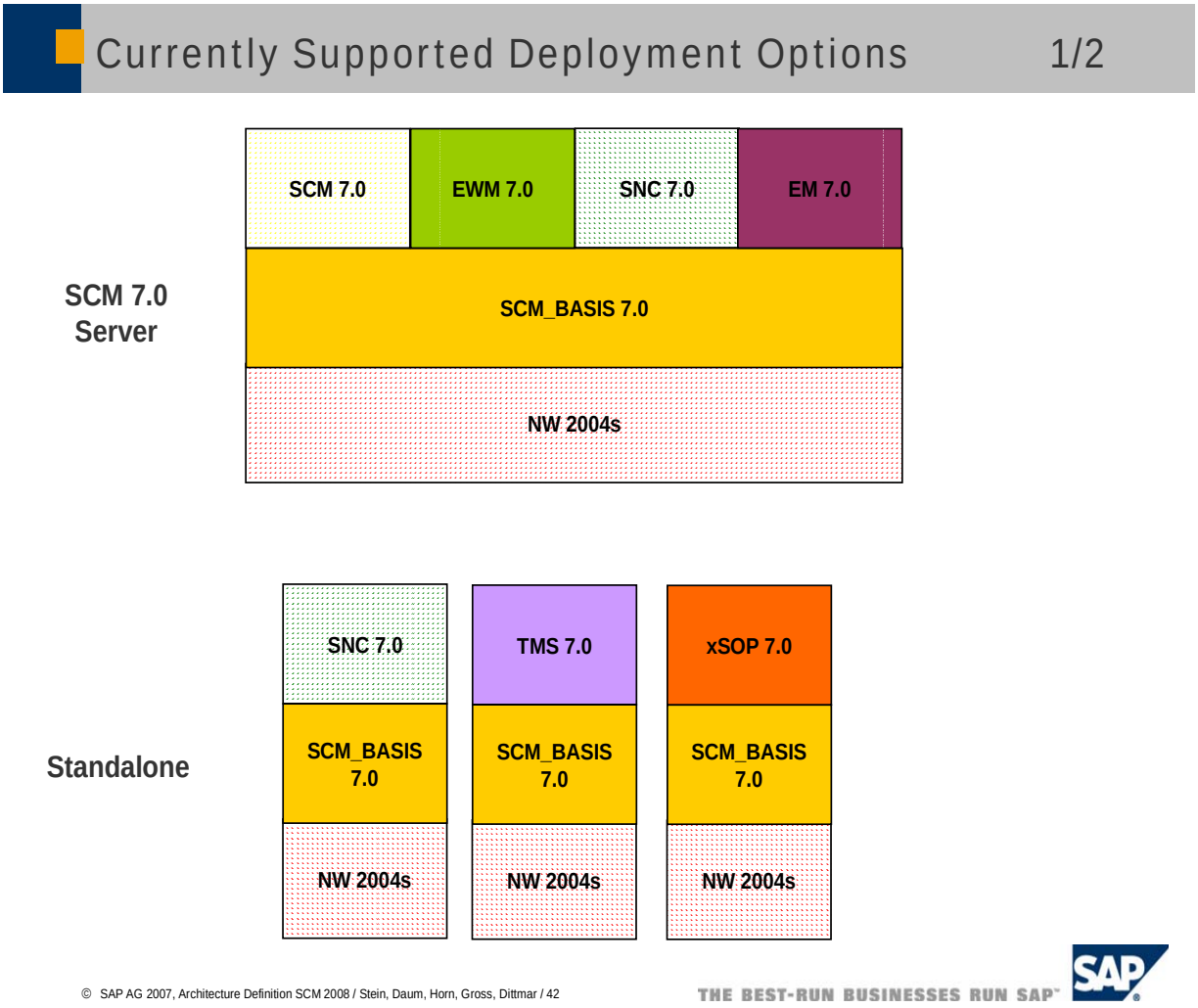

Figure 29: Deployment Options SCM 7.0 (1)

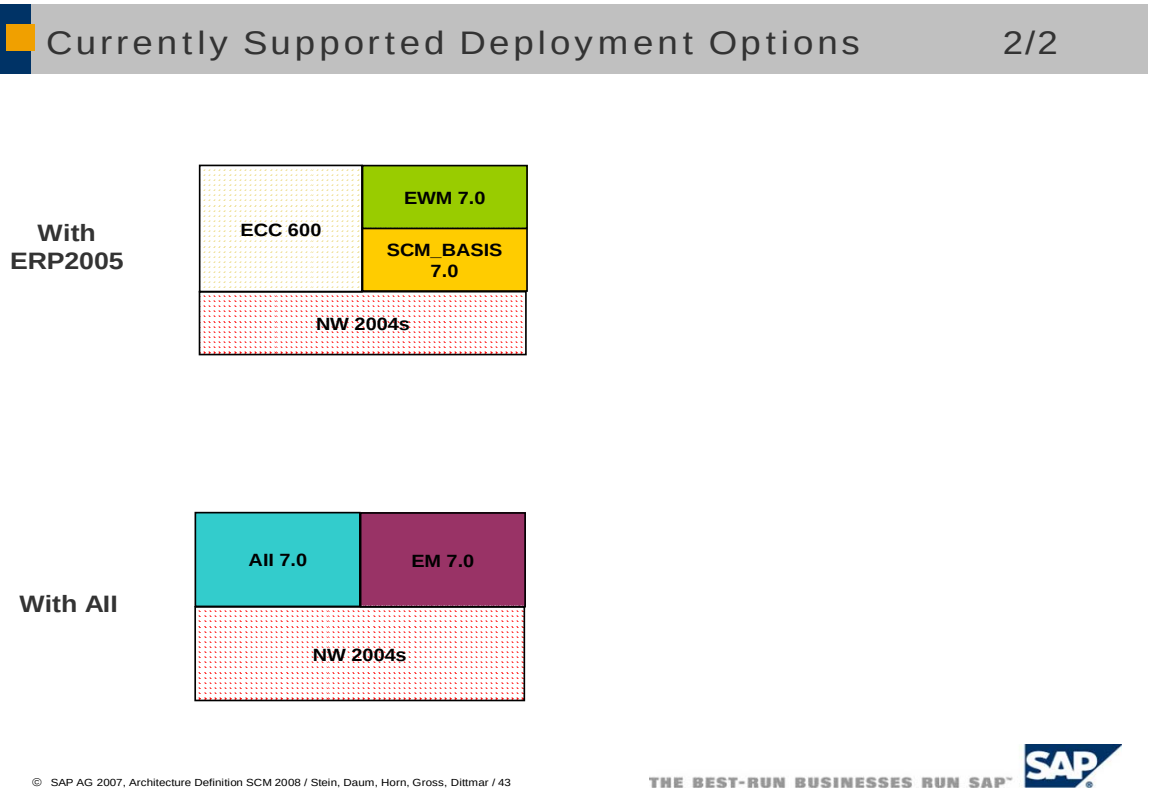

Figure 30: Deployment Options SCM 7.0 (2)

The following deployment options will be supported for SCM 7.0, unless no further decisions are made:

1. SCM 7.0 server deployment
2. SOP 7.0 standalone on NW 2004s with SCM Basis 7.0
3. SNC 7.0 standalone on NW 2004s with SCM Basis 7.0
4. TM 7.0 standalone on NW 2004s with SCM Basis 7.0
5. EWM 7.0 on ERP 2005 with SCM Basis 7.0
6. AII 7.0 with EM 7.0 on NW 2004s
7. TM 7.0 on ERP 2005 with SCM Basis 7.0 (to be evaluated)

Additional options are not considered and might have an impact on the overall architecture. Thus, additional development effort might be required.

Most likely a separate test system, SIT, validation etc. is necessary for each new deployment option.

8 Relations to Standards and Guidelines

8.1 Related Program Architecture Guidelines / Impact from SAP architecture adoption guidelines

Adoption Guideline	Impact on Architecture / Deviations from guideline
Stable Core/EhP for Business Suite 2008: Detail Product Roadmap document 1.0	As described in chapter 4.3
ERP EhP Development Guidelines Version 1.7	As described in chapter 4.3
Rules for downward compatible development	As described in chapter 4.3
ERP 2005 Program Architecture Guidelines	Relevant for integration scenarios

8.2 SAP Programming Guidelines

The Helios Project has been initiated by Henning and Werner beginning of 2006 and is addressing opportunities for productivity gains at SAP. One aspect of Helios was the setup of global Programming Guidelines for ABAP development.

These Programming Guidelines are integral part of the PIL 2.0 process, therefore mandatory for all new developments.

Currently the following aspects are addressed:

- Naming Conventions
- Code Complexity
- Technical Documentation
- Technical Program Architecture

Guideline items designated as “mandatory,” shall be used by all ABAP Developers when writing code for new development. For old coding it is up to the Program / Project Lead to define which parts of the guideline are mandatory. It is encouraged that the items marked “strongly recommended” or “recommended” also be used.

This will lead to better product quality and reduce SAP’s costs by making coding easy to understand. The time required for problem analysis is reduced; improved maintainability reduces message processing times and increases development speed. In addition the effort for code handovers from team to team (e.g. to IMS) can be significantly reduced.

For background information and also for a discussion forum take a look at the WIKI or attend the training APRGL1.

The Programming Guidelines are mandatory for SCM development starting after February 2007, the birthday of PIL 2.0. Details can be found within the WIKI.

8.3 Technical Architecture Modeling (TAM)

TAM stands for Technical Architecture Modeling. TAM defines a common language and a graphical notation for communication on model level. The main target is to replace the ubiquitous free-style notations by a UML standard-based set of diagram types.

- TAM can be used on conceptual and on design level
- TAM defines a set of seven UML diagram types
- TAM defines the features to be used for each diagram type
- TAM diagram types are mandatory in PIL 2.0 specification and design documents

AM extends the UML 2.0 metamodel to incorporate FMC (www.f-m-c.org) block diagrams.

TAM is mandatory for PIL 2.0 specification and design documents.

Getting Started with TAM

- Visit TAM Homepage (http://ency.wdf.sap.corp:1080/Modeling/Standard)
- Download TAM compliant Microsoft Visio Shapes (http://ency.wdf.sap.corp:1080/Visio)

8.4 Product Standards

The compliance with product standards is crucial for the quality of SAP's applications. Product standard compliance is not a testing task. It has to be assured during the design phase that the product standards are applied.

Product Standard	Impact on Architecture
Accessibility (see link)	Accessibility has an impact on the usage of SmartForms and Adobe as it is described in chapter 4.2.8. Accessibility is the main driver for the UI technology red list described in chapter 4.2.2.
Application Integration & Interfaces (see link)	The guidelines described in chapters 4.2.4 and 4.2.13 are compliant with the Application Integration & Interfaces standard.
Customizing & Configuration (see link)	The guidelines described in chapter 4.2.9 are compliant with the Application Integration & Interfaces standard.
Data Archiving (see link)	Not explicitly mentioned in this document. The standard is to be applied as described.
Development Environments (see link)	See chapter 5 for Technology Decisions and Constraints

Product Standard	Impact on Architecture
Documentation (see link)	See chapter 8.3 Technical Architecture Modeling and 8.2 SAP Programming Guidelines for guidelines on technical documentation and modeling
Functional Correctness (see link)	See chapter 4.1.3 for details on the SAP Quality Excellence initiative
Globalization (see link)	Not explicitly mentioned in this document. The standard is to be applied as described.
Multiple Clients (see link)	BI violates the product standard Multiple Clients
Opensource /Third Party (see link)	Not explicitly mentioned in this document. The standard is to be applied as described.
Performance (see link)	Make sure that resource consumption of existing functions does not increase when new functions are added or the architecture is changed, assuming that the existing functions are used in the same way. This means that the following values may not increase by upgrading from one release to the next: - Number of accesses to the persistence layer - Net data volume transferred per request - Peak memory consumption - CPU consumption of functions / methods - Number of round trips between front-end and application layer - Amount of bytes transferred between front-end and application layer For more information see Performance Checklist for Planning in SAP-Net Quick Link /pil → Product Standards → Performance.
Security (see link)	Not explicitly mentioned in this document. The standard is to be applied as described.
IT Service/Appl. Management (see link)	Not explicitly mentioned in this document. The standard is to be applied as described.
Technical Implementation and Change Management (TICM) (see link)	Not explicitly mentioned in this document. The standard is to be applied as described.
Usability (see link)	See chapter **Error! Reference source not found.** for SCM guidelines regarding User Centered Design and UX Standard and Guidelines

9 Development landscape

The following slides show the development system landscape for SCM 7.0 and the respective AddOns:

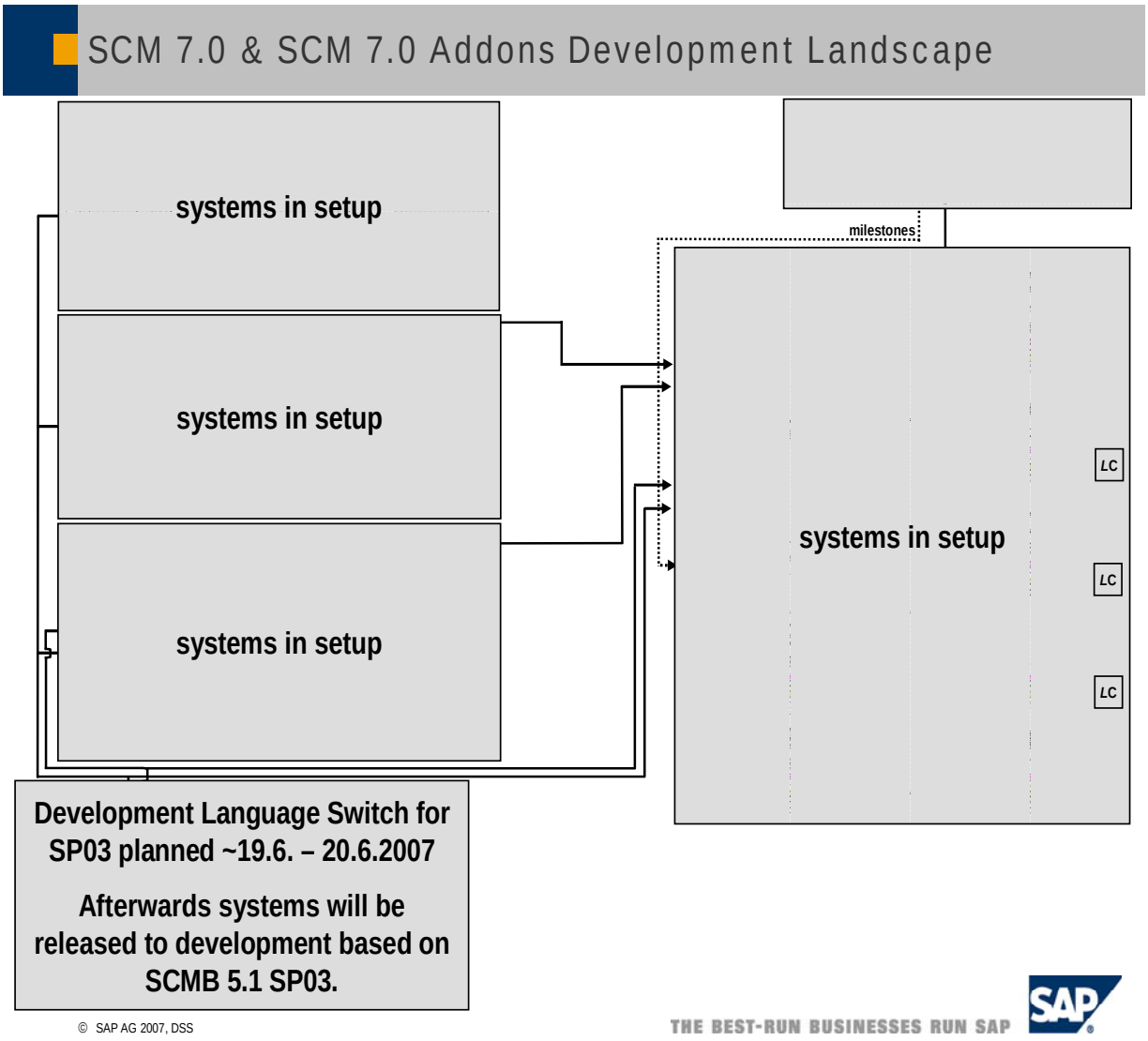

Figure 31: SCM 7.0 Development Landscape

The original version of this slide can be found at this location: \\dwdf034\grm\Public\SCM\SCM_700

10 Glossary

Term	Definition
Application	A collection of *business processes* required to address specific business needs, implemented via a set of *application* and *software components* running on a platform. Example: mySAP CRM 2005
Application Component	From the software development point of view an application component is constructed of *software components*. From the runtime instance point of view, common persistency and transactional behavior are guaranteed in an application component instance. From the customer point of view, the application component forms the unit of operation and running business functionality. Example: SAP CRM Server
Application Platform	A software platform that provides a foundation of pre-integrated components, processes, engines, and *business objects* covering aspects of various business areas, supporting *business process management* of core processes, and enabling their reuse. SAP's Application Platform is an integral part of the Business Process Platform.
Application Release	Release of an application. Consists of application components. Example: SAP ERP 2005
Business Configuration	Business Configuration is the adaptation of software to specific business needs in a easy and effective way
Business Object	A representation of a uniquely identifiable business entity described by a structural model, an internal process model, and one or more *service interfaces*. *Business processes* operate on business objects.
Business Object Node	A semantically-related set of attributes of a *business object*. Usually business object nodes provide *core services*. Example for business object: sales order, sales order header and sales order item are business object nodes.
Business Process	A business process is a set of activities transforming a defined business input into a defined business outcome.
Business Process Management	Business Process Management describes the modeling and analysis of *business scenarios* and *business processes*, orchestration, automation and deployment of these scenarios, and active monitoring of the performance of these *business scenarios*. BPM is an integral part of *ESA* and will be the basis for composition of new *services* and many *composite applications*
Business Process Platform	The combination of SAP's *Application Platform* with SAP's technology platform, which supports the creation, enhancement, and seamless execution of *business processes* and *business scenarios*.
Business Scenario	A business scenario is a sequence of *business processes* to achieve key business objectives. A business scenario is either specific to one industry (in which case it is called industry-specific scenario) or could be applicable to multiple industries (in which case it is called cross-industry scenario).
Business Process Step	A task or an interaction performed by a *process component* either with or without human interaction and together with other steps forming a *business process*.
Component	A modular piece of software, offering *services* accessible via *interfaces*.
Composite Application	An *application* making use of data and functions provided as *services* by underlying *applications* and combining these into a coherent *business scenario*, supported by its

	own business logic and specific user interfaces.
Control Center	The Control Center is the user's home area in SAP NetWeaver. It consists of a set of pages organizing the user's activities across, and beyond roles. It summarizes and combines all information the user needs for structuring, organizing, and monitoring daily work.
Core Service	An elementary service based on standard sets of *interfaces* which completely encapsulates and controls the state and behavior of a *business object node*. Example: Create, update, delete, or query services for sales order item or sales order header.
Compound Service	An application service, using two or more *core services* to operate on multiple nodes of one or more related *business objects*, and which can be used in *business processes*.
Engine	A *component* that offers a specific *service* on request, such as computation, analysis, or search, and thereupon performs the *service* with little or no human intervention.
Enterprise Service	A *compound service* used in the execution of *business processes*, having a significant meaning and impact for the business of the enterprise, fulfilling strict standards regarding version compatibility and stability, and built on *Web service* technology.
Enterprise Services Architecture (ESA)	SAP's blueprint of a service-oriented architecture (SOA).
Enterprise Services Infrastructure (ESI)	SAP NetWeaver's environment for defining, developing, identifying, invoking and managing *services* according to the *Enterprise Services Architecture*.
Enterprise Services Inventory	The list of *Enterprise Services* and associated definitions that are being published by SAP in order to help SAP's partners and customers plan their own *Enterprise Services Architecture* road map.
Enterprise Services Repository (ESR)	The central repository in SAP NetWeaver where *Enterprise Services*, *Business objects* and *Business Processes* are modeled and their metadata is stored. This repository is an integral part of the *Enterprise Services Infrastructure*.
Floor Plan	A floor plan defines the composition of *user interface building blocks* on the screen. Depending on the floor plan, only certain user interface building blocks and sequences are allowed.
Interface	The procedures, codes, and protocols that enable two entities to interact for a meaningful exchange of information.
Interface Pattern	An interface pattern describes standardized *interfaces* with a standardized behavior.
iView	Program that retrieves data from content sources located inside or outside an organization via a Web protocol and displays it in the SAP Enterprise Portal content area.
Logical Deployment Unit (LDU)	A Logical Deployment Unit is a piece of software that can be operated on a separate system isolated from other pieces of software.
Message	A message is information conveyanced from one instance to another with the expectation that activity will ensue.
Model	An isomorphic description of a physical, abstract, or hypothetical aspect of reality which serves to communicate, to construct, and analyze that aspect. Within software engineering models are created, on the one hand, to represent reality in a way that supports the construction of software, and, on the other hand, to act as abstract descriptions of certain aspects of software systems. In certain cases, models can be used to generate software or be interpreted directly at runtime.
(Service) Operation	An operation is the abstract description of a method with a set of *messages* assigned as

	signature. A *service interface* consists of a set of operations.
Object Work List	The Object Work List (OWL) is a list of *business object* instances which are displayed in the content area of a *Work Center*. The set of instances is relevant to the current activity. Each item in the list contains a link to various details about that *business object* instance. An example is: Open Purchase Order Requests.
Pattern	A description of a standard solution to a common problem in software engineering and design. Example: User interface pattern, design pattern, program interface pattern
Process Agent	Process agents are system components, which are called by the event handler to trigger subsequent process steps. Based on the object's status, process agents may launch local workflows or initiate cross-component and B2B communication by sending messages via well-defined outbound services.
Process Component	A modular, context independent, reusable piece of software which exposes its functionality as services. Usually a process component realizes one *business process*. A *business object* is assigned to exactly one process component.
Process Component Interaction Model	A Process Component Interaction Model represents the semantically closed set of interactions between two *Process Components*. The involved *business objects*, *process agents*, *interfaces*, *operations* and messages are shown.
Process Model	Process Model is the abstract description of possible business process flows.
Role	The collection of activities that a person performs to participate in one or more *business scenarios*
Service	A task or an interaction performed by a provider upon request by a consumer.
Service Interface	An *interface* by which a provider offers functions to a *service* consumer.
Services-Oriented Architecture	Service-Oriented Architecture is the organization of a system in a way that *components* can be invoked and *interface* descriptions can be published and discovered.
(Service) Operation	See *operation*
Signature	Signature describes the parameters (*messages*) of an *operation*.
Software Component	A software component is composed of development components and is the building block for one or more *application components*. It is the unit of versioning, upgrade and installation. Example: SAP BBPCRM 5.0
Software Component Version	Release of a software component. Building block for application components. Example: SAP KERNEL 6.40 32Bit
UI Pattern	A general design solution for an interaction problem in a context of a specific user task, such as searching for and editing a *business object*, and which is implemented by a *user interface building block*.
UI Building Block	A modular piece of software which implements a *user interface pattern* with a specific semantic meaning and a defined interaction behavior, allowing users to accomplish tasks such as searching for and editing a *business object*. A UI pattern building block is the implementation of a *UI pattern* and has to be configured for specific applications.
UWL	Abbreviation of Universal Worklist
Web Service	A Web Service is a software system identified by a URI [RFC 2396], whose public interfaces and bindings are defined and described using XML. Its definition can be discovered by other software systems. These systems may then interact with the Web service in a manner prescribed by its definition, using XML based messages conveyed by Internet protocols.

Work Center	A Work Center organizes data and activities of a specific task domain (for example, purchase order management, invoice management), and is a logical unit of semantic user interaction, administration, authorization management, packaging, and deployment. It consists of a set of pages organizing and supporting the user's activities in this area (workset).
Workflow	Workflow processes are a specific type of *business process* which typically requires user interaction. Typical use cases for workflow are process automation, assignment of tasks to users and adding new process steps.
SAP xApp	SAP xApps are packaged *composite applications* that are sold separately from mySAP Business Suite, mySAP All-in-one, and SAP Business One, with their own release schedule. SAP xApps deliver business innovation by enabling new *business processes* or significantly enhancing existing *business processes*.