

IS01

NASA Enterprise Applications Competency Center (NEACC)

Advanced Business Application Programming (ABAP) Development Naming Standards

REVISION H

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	Effective Date: 01/31/2014	Page 2 of 41

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NASA Enterprise Applications Competency Center IS01		
Title: ABAP Development Naming Standards	Document No. IS01-NEACC-CF_ABAP-STD-SW- 001	Revision: H
	Effective Date: 01/31/2014	Page 3 of 41

TABLE OF CONTENTS

1.0 INTRODUCTION.....	6
1.1 PURPOSE	6
1.2 APPLICABILITY	6
1.3 APPLICABLE DOCUMENTS.....	6
1.4 DEFINITIONS	6
1.5 ACRONYMS/ABBREVIATIONS.....	7
2.0 STANDARD NAMING PROCEDURES.....	7
2.1 APPLICATION HIERARCHY	7
2.2 PACKAGES	8
2.2.1 <i>Custom Packages</i>	8
2.3 DICTIONARY OBJECTS	10
2.3.1 <i>Custom Database Tables</i>	10
2.3.2 <i>Custom Indices for Database Tables</i>	10
2.3.3 <i>Custom Views</i>	10
2.3.4 <i>Custom Tables Types</i>	11
2.3.5 <i>Custom Structures</i>	11
2.3.6 <i>Custom Data Elements</i>	12
2.3.7 <i>Custom Domains</i>	12
2.3.8 <i>Custom Search Helps</i>	12
2.3.9 <i>Custom Lock Objects</i>	13
2.3.10 <i>Custom Type Groups</i>	13
2.4 ABAP PROGRAMS	14
2.4.1 <i>Executable Reports and Programs</i>	14
2.4.2 <i>INCLUDE Programs</i>	16
2.4.3 <i>Module Pool Programs</i>	16
2.4.4 <i>Subroutine Pools</i>	17
2.5 FUNCTIONS	17
2.5.1 <i>Custom Function Groups</i>	17
2.5.2 <i>Function Pool Includes</i>	18
2.5.3 <i>Function Module</i>	18
2.6 CLASS LIBRARY	19
2.6.1 <i>Naming Convention</i>	19
2.6.2 <i>General Remarks</i>	19
2.6.3 <i>Conventions for Object Types</i>	19
2.6.4 <i>Conventions for Components</i>	20
2.6.5 <i>Conventions for Concrete Methods</i>	21
2.6.6 <i>Local Naming Conventions Within Methods</i>	22
2.7 ABAP TYPES AND OBJECTS	23
2.7.1 <i>General Standards for the Declaration of ABAP Types and Objects</i>	23
2.7.2 <i>Variables</i>	24

--CHECK THE MASTER LIST—
VERIFY THAT THIS IS THE CORRECT VERSION BEFORE USE

NASA Enterprise Applications Competency Center IS01		
Title: ABAP Development Naming Standards	Document No. IS01-NEACC-CF_ABAP-STD-SW- 001	Revision: H
	Effective Date: 01/31/2014	Page 4 of 41

2.7.3 Selection Screens	25
2.7.4 Macros	26
2.8 TEXT ELEMENTS	26
2.8.1 Text Symbols	26
2.9 SCREEN NUMBERS	27
2.10 GRAPHIC USER INTERFACE (GUI)	27
2.10.1 GUI Statuses	27
2.10.2 GUI Titles.....	28
2.11 LOGICAL DATABASE.....	28
2.11.1 Customer Selection Views	29
2.12 SET/ GET PARAMETER IDs	29
2.13 AREA MENUS.....	29
2.14 MESSAGES	30
2.14.1 Message Classes	30
2.14.2 Message Numbers	30
2.15 AUTHORIZATION OBJECTS	30
2.16 BATCH NAMES.....	31
2.17 BDC SESSIONS	31
2.18 INBOUND FILES	32
2.19 OUTBOUND FILES	32
2.20 SAPSCRIPT	33
2.20.1 Layout Sets	33
2.20.2 Standard Text Names	33
2.21 TVARVC TABLE ENTRIES	33
2.22 CUSTOMER ENHANCEMENTS – ENHANCEMENT PROJECTS	34
3.0 RECORDS	35
APPENDIX A: SAP APPLICATION HIERARCHY	36
APPENDIX B: POINTS OF CONTACT	41

LIST OF TABLES

Table 1 – Programming Naming Standards Definitions.....	6
Table 2 – Acronyms/Abbreviations	7
Table 3 – Custom Packages Old Naming Convention.....	8
Table 4 – Custom Packages New Naming Convention	9
Table 5 – Custom Database Tables Naming Convention	10
Table 6 – Custom Index IDs Naming Convention.....	10
Table 7 – Custom Views Naming Convention	11
Table 8 – Custom Table Types Naming Convention.....	11
Table 9 – Custom Structures Naming Convention	11
Table 10 – Custom Data Elements Naming Convention	12
Table 11 – Custom Domains Naming Convention	12

--CHECK THE MASTER LIST—
VERIFY THAT THIS IS THE CORRECT VERSION BEFORE USE

NASA Enterprise Applications Competency Center IS01		
Title: ABAP Development Naming Standards	Document No. IS01-NEACC-CF_ABAP-STD-SW- 001	Revision: H
	Effective Date: 01/31/2014	Page 5 of 41

Table 12 – Custom Search Helps Naming Convention	13
Table 13 – Custom Lock Objects Naming Convention	13
Table 14 – Custom Type Groups Naming Convention	13
Table 15 – Custom Developed ABAP Programs Naming Convention	14
Table 16 – Temporary ABAP Programs Naming Convention	15
Table 17 – Variants Naming Convention	15
Table 18 – Custom Transactions Naming Convention	15
Table 19 – Module Pools Naming Convention.....	16
Table 20 – Custom Function Groups Naming Convention	17
Table 21 – Class Object Types Naming Convention.....	19
Table 22 – Class Components Naming Convention	20
Table 23 – Concrete Methods Naming Convention	21
Table 24 – Method Parameters Naming Convention.....	22
Table 25 – Method Exceptions Naming Convention.....	22
Table 26 – Variables Naming Convention.....	24
Table 27 – Constants Naming Convention	24
Table 28 – Field Symbols Naming Convention.....	24
Table 29 – Internal Tables Naming Convention.....	25
Table 30 – Types Naming Convention	25
Table 31 – Selection Screen Parameters Naming Convention	26
Table 32 – Select-Options Naming Convention	26
Table 33 – Macros Naming Convention	26
Table 34 – Text Symbols Naming Convention.....	27
Table 35 – Screens Naming Convention	27
Table 36 – GUI Statuses Naming Convention.....	28
Table 37 – GUI Titles Naming Convention.....	28
Table 38 – Logical Database Naming Convention	28
Table 39 – Set/Get Parameter IDs Naming Convention	29
Table 40 – Area Menus Naming Convention	29
Table 41 – Message Classes Naming Convention	30
Table 42 – Message Numbers Naming Convention	30
Table 43 – Authorization Objects Naming Convention	30
Table 44 – Batch Names Naming Convention	31
Table 45 – BDC Sessions Naming Convention	32
Table 46 – Inbound Files Naming Convention	32
Table 47 – Outbound Files Naming Convention	32
Table 48 – Layout Sets Naming Convention.....	33
Table 49 – Standard Text Names Naming Convention	33
Table 50 – TVARVC Entries Naming Convention	34
Table 51 – Customer Enhancements Naming Convention	34
Table 52 – Records Applicable to This Document	35
Table 53 – SAP Application Hierarchy	36
Table 54 – Points of Contact.....	41

--CHECK THE MASTER LIST—
VERIFY THAT THIS IS THE CORRECT VERSION BEFORE USE

NASA Enterprise Applications Competency Center IS01		
Title: ABAP Development Naming Standards	Document No. IS01-NEACC-CF_ABAP-STD-SW- 001	Revision: H
	Effective Date: 01/31/2014	Page 6 of 41

1.0 INTRODUCTION

In the realm of System Application and Product (SAP), the National Aeronautics and Space Administration (NASA) Enterprise Applications Competency Center (NEACC) Advanced Business Application Programming (ABAP) Team adheres to specific development naming standards. The ABAP Team has identified these development naming standards (i.e. “shall be in compliance) in IS01-NEACC-CF_ABAP-STD-SW-003, SAP ABAP Development Standards.

The official copy of this document is stored in Documentum. The ABAP Team and any other personnel can request a copy from the NEACC Documentation Management group. In addition, a *copy* of the latest document is located in the Standards folder of the ABAP project on the NEACC tab of bReady, file name: IS01-NEACC-CF_ABAP-STD-SW-003 ABAP Development Standards.docx.

In the case where a naming convention does not exist in this document for a new custom object, then the default naming convention is the guidelines provided by SAP for the customer namespace associated with that new object. Throughout this document, the ABAP Team refers to the SAP customer namespace as “standard SAP convention”. In most cases, SAP does not allow the developer to create a custom object with a name that violates the SAP customer namespace.

1.1 Purpose

The purpose of this document is to supplement the SAP ABAP Development Standards document with specific recommendations and guidelines when creating and naming custom programming objects during the development process.

1.2 Applicability

This document is applicable to ABAP programmers who are employed by, or under contract to, the NEACC.

1.3 Applicable Documents

- NEACC-CF-ABAP-STD-SW-002, ABAP Code Signoff Sheet
- IS01-NEACC-CF_ABAP-STD-SW-003, SAP ABAP Development Standards

1.4 Definitions

Table 1 – Programming Naming Standards Definitions

Term	Definition
Guidelines	Optional.
Program	ABAP development object.

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VERIFY THAT THIS IS THE CORRECT VERSION BEFORE USE

NASA Enterprise Applications Competency Center IS01		
Title: ABAP Development Naming Standards	Document No. IS01-NEACC-CF_ABAP-STD-SW- 001	Revision: H
	Effective Date: 01/31/2014	Page 7 of 41

Term	Definition
Recommended	A strong preference. The adherence of the statement is preferred.
Shall	An imperative. The statement will apply in every case. No exceptions.
Standards	Mandatory.

1.5 Acronyms/Abbreviations

Table 2 – Acronyms/Abbreviations

Acronym	Description
ABAP	Advanced Business Application Programming
BDC	Batch Data Communication
CA	Cross Application
CF	Core Financial
CMM	Contract Management Module
DB	Database
GUI	Graphical User Interface
IAM	Integrated Asset Management
ID	Identification
IEM	Integrated Enterprise Management
NASA	National Aeronautics and Space Administration
NEACC	NASA Enterprise Applications Competency Center
PAI	Process After Input
PBO	Process Before Output
PII	Personally Identifiable Information
PO	Purchase Order
SAP	Systems, Applications and Product
SBU	Sensitive But Unclassified
BAPI	Business Applications Programming Interface

2.0 STANDARD NAMING PROCEDURES

The naming conventions defined herein allow the ABAP Team to easily identify the function or meaning of an object based on the object's name. Additionally, this provides a distinction between SAP's supplied objects and user-defined, customized objects.

1. The ABAP Team assigns 'Permanent' customized objects to custom packages.
2. The ABAP Team assigns 'Temporary' customized objects to the local package \$TMP.

2.1 Application Hierarchy

SAP's application hierarchy can be viewed in the primary screen of the Object Navigator (transaction code SE80), or found in Appendix A of this document. Please make note of this

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VERIFY THAT THIS IS THE CORRECT VERSION BEFORE USE

NASA Enterprise Applications Competency Center IS01		
Title: ABAP Development Naming Standards	Document No. IS01-NEACC-CF_ABAP-STD-SW- 001	Revision: H
	Effective Date: 01/31/2014	Page 8 of 41

hierarchy as it is the top-level organizational element in the development workbench and is a critical component of the naming conventions.

2.2 Packages

Note: In newer versions of SAP, e.g. ECC 6.0, development classes are now called packages.

Packages are groupings of related developmental objects. The object directory (table TADIR) contains object assignment entries. The package determines the transport layer that defines the transport attributes of an object.

Whenever the developer creates a development workbench object, SAP prompts the developer to assign it to a package. The package chosen describes the area that the object belongs to.

SAP imposes the following naming conventions for custom developmental objects:

- Custom developed permanent objects use package names starting with Y or Z. SAP maintains new and changed objects in the Workbench Organizer, and transports these objects to target systems.
- Custom developed local objects use package names starting with \$. SAP does not record new or changed objects in the Workbench Organizer, and does not transport them.

2.2.1 Custom Packages

The ABAP Team adhered to the following Packages old naming convention until March 31, 2005.

Example of this naming convention:

- ZIPS_DEV – Development objects of Public Sector Component

Table 3 – Custom Packages Old Naming Convention

Position	Description	Values	Meaning
1	Custom Indicator	Z	Customized Package
2-4	Application Area (2-3 characters)	FI, SD, IPS, TM, etc.	SAP Application Area, refer to Appendix A
	Separator	' _ '	Separator
Suffix	Object types	DEV DDIC CONFIG	Classified the types of objects in the application area: DEV – Development objects such as ABAP, ABAP Query, SAPSCRIPT, etc. DDIC – Data Dictionary objects, such as table, view, structure, search help,

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VERIFY THAT THIS IS THE CORRECT VERSION BEFORE USE

NASA Enterprise Applications Competency Center IS01		
Title: ABAP Development Naming Standards	Document No. IS01-NEACC-CF_ABAP-STD-SW- 001	Revision: H
	Effective Date: 01/31/2014	Page 9 of 41

Position	Description	Values	Meaning
			etc. CONFIG – Configuration data

The following Packages new naming convention became effective beginning April 1, 2005:

Table 4 – Custom Packages New Naming Convention

Position	Description	Values	Meaning
1	Custom Indicator	Z	Customized Package
2	Object Types	I R E D S C F B Q O M	I – Interface R – Reports E – Extensions D – Data Dictionary Objects S – SAPscript/Smart forms C – Conversion F – Function Module B – BAPI/RFC Q – ABAP Query O – OSS Notes M – Methods or Classes
3-4	Project Area (2 characters)	CF AM CA CM PM	CF – Core Financial AM – Integrated Asset Management CA – Cross Application CM – Contract Management Module PM – Project Management Improvement Initiative
5	Separator	' _ '	Separator
6-8	Functional/Process Area (2-3 Characters)	GEN PR PP SC AIR LOG FAC EHS NOTE	Cross Application (CA) - GEN – General - NOTE – OSS Notes Contract Management Module (CMM) - GEN – General - NOTE – OSS Notes Core Financial (CF) - PR – PR to PO - PP – PO to Payment - SC – SO to Cash - GEN – General - NOTE – OSS Notes Integrated Asset Management (IAM) - AIR – Aircraft - LOG – Logistics - FAC – Facilities

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VERIFY THAT THIS IS THE CORRECT VERSION BEFORE USE

NASA Enterprise Applications Competency Center IS01		
Title: ABAP Development Naming Standards	Document No. IS01-NEACC-CF_ABAP-STD-SW- 001	Revision: H
	Effective Date: 01/31/2014	Page 10 of 41

Position	Description	Values	Meaning
			<ul style="list-style-type: none"> - EHS – EH&S - GEN – General - NOTE – OSS Notes <p>Project Management Improvement Initiative (PMII)</p> <ul style="list-style-type: none"> - GEN – General - NOTE – OSS Notes

2.3 Dictionary Objects

2.3.1 Custom Database Tables

Table names can be as many as 16 characters in length.

Example of this naming convention:

- ZSD_SLS_TO_LEGACY - Custom table for Sales interface with a LEGACY system.

Table 5 – Custom Database Tables Naming Convention

Position	Description	Values	Meaning
1	Custom Indicator	Z	Customized Table
	Application Area (5-8 characters)		SAP Application Area, refer to Appendix A
Suffix	Unique description (10 characters max)	alphanumeric	Distinguishes this table from others for the same application area.

2.3.2 Custom Indices for Database Tables

Index names in the SAP database comprise the name of the table and the index ID. The index ID can be as many as 3 characters in length.

Example of this naming convention:

- FMUSFGA~Z01 – Custom index Z01 for SAP table FMUSFGA.

Table 6 – Custom Index IDs Naming Convention

Position	Description	Values	Meaning
1	Custom Indicator	Z	Customized Index
2-3	Unique Identifier	00-ZZ	Uniquely identifies the index

2.3.3 Custom Views

--CHECK THE MASTER LIST--
VERIFY THAT THIS IS THE CORRECT VERSION BEFORE USE

NASA Enterprise Applications Competency Center IS01		
Title: ABAP Development Naming Standards	Document No. IS01-NEACC-CF_ABAP-STD-SW- 001	Revision: H
	Effective Date: 01/31/2014	Page 11 of 41

View names can be as many as 16 characters in length.

Example of this naming convention:

- ZS_A100 - A structure view of an Assets Accounting table.

Table 7 – Custom Views Naming Convention

Position	Description	Values	Meaning
1	Custom Indicator	Z	Custom created View
2	View Type	H D C P	Help View Database View Maintenance View Projection View
3	Separator	_	Underscore
4-16	Primary Table Name or modified table name	Primary table	Primary Table used in the View

2.3.4 Custom Tables Types

The table type name has a maximum length of 30 characters.

Example of this naming convention:

- ZFI_AR_TT - Custom table type to hold Accounts Receivable types.

Table 8 – Custom Table Types Naming Convention

Position	Description	Values	Meaning
1	Custom Indicator	Z	Customized Table
2	Application Area (5-8 characters)		SAP Application Area, refer to Appendix A
Suffix	Unique description (24 characters max) ending in ' TT'	Alphanumeric and '_TT'	Distinguishes this table type from others for the same application area.

2.3.5 Custom Structures

The structure name has a maximum length of 30 characters. However, if the structure is used as an *Include* in a transparent table at a later time, the component names are restricted to a maximum length of 16 characters.

Example of this naming convention:

- ZFI_AR_OVERDUE_INVOICES - Custom structure for Accounts Receivable

Table 9 – Custom Structures Naming Convention

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NASA Enterprise Applications Competency Center IS01			
Title: ABAP Development Naming Standards	Document No. IS01-NEACC-CF_ABAP-STD-SW- 001		Revision: H
	Effective Date: 01/31/2014		Page 12 of 41

Position	Description	Values	Meaning
1	Custom Indicator	Z	Customized Table
2	Application Area (5-8 characters)		SAP Application Area, refer to Appendix A
Suffix	Unique description (24 characters max, 10 if used as an include)	alphanumeric	Distinguishes this structure from others for the same application area.

2.3.6 Custom Data Elements

Data elements have a maximum length of 30 characters. Custom data element names begin with a 'Y' or 'Z' to distinguish them from SAP data elements.

Example of this naming convention:

- ZLOAN_NUMBER - Loan Number data element.

Table 10 – Custom Data Elements Naming Convention

Position	Description	Values	Meaning
1	Custom Indicator	Z	Customized data element
2-30	Unique description	alphanumeric	A meaningful name describing the data element

2.3.7 Custom Domains

Domains have a maximum length of 30 characters. As SAP uses all letters of the alphabet, including 'Y' and 'Z', custom domain names begin with a 'ZZ' to distinguish them from SAP domains.

Example of this naming convention:

- ZZOLD_CUSTOMER_NUMBER - domain for legacy system customer number.

Table 11 – Custom Domains Naming Convention

Position	Description	Values	Meaning
1-2	Custom Indicator	ZZ	Customized domain
3-30	Unique description	alphanumeric	A meaningful name describing the domain

2.3.8 Custom Search Helps

There are two types of search help objects:

- **Elementary Search Help** defines the standard flow of an input help.

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NASA Enterprise Applications Competency Center IS01		
Title: ABAP Development Naming Standards	Document No. IS01-NEACC-CF_ABAP-STD-SW- 001	Revision: H
	Effective Date: 01/31/2014	Page 13 of 41

- **Collective Search Help** combines several elementary search helps.

The naming convention applies to both types. Search Help names have a maximum length of 30 characters. Following the standard SAP convention, customer defined search help names begin with a 'Y' or 'Z'.

Example of this naming convention:

- Z_ZZOLD_CUSTOMER_NUMBER – Search help for legacy system customer number.

Table 12 – Custom Search Helps Naming Convention

Position	Description	Values	Meaning
1	Custom Indicator	Z	Customized search help
2-30	Unique description	alphanumeric	Field name or domain for which the help applies.

2.3.9 Custom Lock Objects

Lock Object names have a maximum length of 16 characters. Following the standard SAP convention, customer defined lock object names begin with an 'E'.

Example of this naming convention:

- EA100_X - A non-cumulative exclusive lock object for an Assets Accounting table.

Table 13 – Custom Lock Objects Naming Convention

Position	Description	Values	Meaning
1-2	Prefix	EZ	Prefix of a lock object
3-14	Unique description	Alphanumeric	Table or development object for which the lock applies.
15	Separator (optional)	' '	Separator
16	Lock mode (optional)	E S X	E – Exclusive, cumulative S – Shared X – Exclusive, not cumulative

2.3.10 Custom Type Groups

Type Group names have a maximum length of 5 characters. Following the standard SAP convention, customer defined search helps begin with a 'Y' or 'Z'.

Example of this naming convention:

- ZFIAR - Custom type to hold Accounts Receivable types.

Table 14 – Custom Type Groups Naming Convention

Position	Description	Values	Meaning
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VERIFY THAT THIS IS THE CORRECT VERSION BEFORE USE

NASA Enterprise Applications Competency Center IS01		
Title: ABAP Development Naming Standards	Document No. IS01-NEACC-CF_ABAP-STD-SW- 001	Revision: H
	Effective Date: 01/31/2014	Page 14 of 41

1	Custom Indicator	Z	Custom Developed Type Group
2	Application Hierarchy (abbreviated, 2-3 characters only)		SAP Application Area, refer to Appendix A
suffix	Unique Identifier	00-ZZ	Uniquely identifies the index

2.4 ABAP Programs

2.4.1 Executable Reports and Programs

2.4.1.1 Custom Developed ABAP Programs

Newly developed custom ABAP programming objects names begin with the letter ‘Z’. This character separates custom developed ABAP programs from SAP ABAP programs. The other characters indicate the functional area and program function. The ABAP name can be as many as 30 characters in length.

Example of this naming convention:

- ZRMM_PUR_LIST_OPEN_POS - Custom report program, listing open purchase orders (PO).

Table 15 – Custom Developed ABAP Programs Naming Convention

Position	Description	Values	Meaning
1	Custom Indicator	Z	Custom Developed ABAP Program / Report
2	Program type	Alphanumeric	R – Report C – Conversion I – Inbound Interface O – Outbound Interface M – Module Pool S – Subroutine Pool
3-7	Application Area	Alphanumeric and ‘_’	SAP Application Area, refer to Appendix A
8-30	Descriptive Text	Alphanumeric and ‘_’	ABAP function

2.4.1.2 Copies of SAP ABAP Programs

The ABAP Team can create a copy of an SAP ABAP program, if necessary. The developer saves it as a new custom program following the naming conventions described above.

--CHECK THE MASTER LIST--
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NASA Enterprise Applications Competency Center IS01		
Title: ABAP Development Naming Standards	Document No. IS01-NEACC-CF_ABAP-STD-SW- 001	Revision: H
	Effective Date: 01/31/2014	Page 15 of 41

2.4.1.3 Programmer Work, Temporary ABAP (local objects)

These naming conventions distinguish local objects that programmers use during development and analysis. If the ABAP Team ever transports these objects to a Production instance, they rename the objects using the custom developed ABAP program naming conventions.

Example of this naming convention:

- YRDJ_PP_ORDERS_WITH_OPEN_POS - Programmer RDJ's local ABAP program.

Table 16 – Temporary ABAP Programs Naming Convention

Position	Description	Values	Meaning
1	Custom Indicator	Y	Custom Developed ABAP Program / Report not for transport
2-4	Programmers Initials	alphabetic	
5-30	Descriptive Text	Alphanumeric and ‘_’	

2.4.1.4 Variants

Variants are associated with executable ABAP programs. A program may have multiple variants. The variant name may be 14 characters long and is unique for an ABAP program.

Example of this naming convention:

- FORECAST_CHECK.

Table 17 – Variants Naming Convention

Position	Description	Values	Meaning
1-14	Unique variant identifier	Alphanumeric and ‘_’	Consistent with the selection criteria for the program.

2.4.1.5 Custom Transaction Codes

The transaction code name may be up to 20 characters.

Example of this naming convention:

- ZCS_AG_LAUNCH_SCHED - Transaction for Customer Launch Schedules.

Table 18 – Custom Transactions Naming Convention

Position	Description	Values	Meaning
1	Type	Z	Customized Object
2	Application Area (5 to 8)	Alphanumeric	SAP Application Area, refer to

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NASA Enterprise Applications Competency Center IS01		
Title: ABAP Development Naming Standards	Document No. IS01-NEACC-CF_ABAP-STD-SW- 001	Revision: H
	Effective Date: 01/31/2014	Page 16 of 41

	characters)	and ‘ ’	Appendix A
suffix	Unique Identifier	Alphanumeric and ‘ ’	Descriptive text

2.4.2 INCLUDE Programs

The naming convention used for custom developed INCLUDEs is the same as that for custom developed executable reports and programs (See [Custom Developed ABAP Programs](#)) with the following suffixes:

- T or TOP Contain the report name and any data declaration
- T00 – TXX Contain additional data declarations
- F or F00 – FXX Contain all logic and subroutines of the program

Example of this naming convention:

- ZRMM_PUR_PO_REPORTINGT or ZRMM_PUR_PO_REPORTING_TOP
- Custom include for Materials Management, Purchasing, Purchase Order report program ZRMM_PUR_PO_REPORTING

2.4.3 Module Pool Programs

Module pools (also known as Dialog Modules) are associated with transaction screen flow.

Module pool program names are a maximum of 30 characters in length.

SAP recommends the traditional naming convention for module pool programs. This convention calls for the program name to have the prefix characters ‘SAPM’, and for the 5th character to be a ‘Z’ for custom module pools. The remaining 25 characters describe the application area and purpose. If the ABAP Team does not choose this naming convention, then the convention shall be the same as that for custom developed executable reports and programs (see [Custom Developed ABAP Programs](#)).

Example of this naming convention:

- SAPMZFI_AP_PAYMENTS - Module Pool for Financial Accounting, Accounts Payable Payments.

Table 19 – Module Pools Naming Convention

Position	Description	Values	Meaning
1-4	Prefix	‘SAPM’	Module Pool prefix
5	Custom Indicator	Z	Customized Module Pool
6	Application Area (5-8 characters)	Alphanumeric and ‘ ’	SAP Application Area, refer to Appendix A
Suffix	Descriptive Text	Alphanumeric	Module Pool purpose

--CHECK THE MASTER LIST--
VERIFY THAT THIS IS THE CORRECT VERSION BEFORE USE

NASA Enterprise Applications Competency Center IS01		
Title: ABAP Development Naming Standards	Document No. IS01-NEACC-CF_ABAP-STD-SW- 001	Revision: H
	Effective Date: 01/31/2014	Page 17 of 41

Position	Description	Values	Meaning
		and ‘ ’	

2.4.3.1 Module Pool Includes

The *Include* names used in module pools begin with ‘M’ followed by the name of the module pool and conclude with the following suffixes:

- ‘TOP’ for the TOP include where defined tables and data are used by the module pool
- ‘Oxx’ for PBO (Process Before Output) modules.
- ‘Ixx’ for PAI (Process After Input) modules
- ‘Fxx’ for subroutines called from the modules.

Examples of this naming convention: for the Module Pool SAPMZFI_AP_PAYMENTS:

- MZFI_AP_PAYMENTSTOP
- MZFI_AP_PAYMENTS001
- MZFI_AP_PAYMENTS101
- MZFI_AP_PAYMENTSF01

2.4.4 Subroutine Pools

Subroutine pools are not executable. Instead, they are containers for common subroutines, which the program can externally call from other ABAP programs.

The naming convention used for custom developed Subroutine Pools is the same as that for custom developed executable reports and programs (see [Custom Developed ABAP Programs](#)).

Example of this naming convention:

- ZSMM_PUR - Custom subroutine pool for Materials Management, Purchasing.

2.5 Functions

2.5.1 Custom Function Groups

Function group names begin with the letter ‘Z’. The function group name can be as many as 26 characters in length.

Example of this naming convention:

- ZFI_AP_PAYMENTS - Function Group for Financial Accounting, Accounts Payable Payments.

Table 20 – Custom Function Groups Naming Convention

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NASA Enterprise Applications Competency Center IS01			
Title: ABAP Development Naming Standards	Document No. IS01-NEACC-CF_ABAP-STD-SW- 001		Revision: H
	Effective Date: 01/31/2014		Page 18 of 41

Position	Description	Values	Meaning
1	Custom Indicator	Z	Customized Function Group
2	Application Area (5-8 characters)	Alphanumeric and ‘ ’	SAP Application Area, refer to Appendix A
Suffix	Descriptive Text	Alphanumeric and ‘ ’	

When a new function group is created, the system automatically creates a main program called a Function Pool, containing two *INCLUDE objects*. The system assigns the name of the Function Pool. Function groups contain the prefix “SAPL”, followed by the function group name.

2.5.2 Function Pool Includes

The *INCLUDE* names, automatically created within the function pool, begin with ‘L’ followed by the name of the function group, and conclude with ‘UXX’ or ‘TOP’ for the TOP include.

Example of this naming convention for function SAPLZFI_AP_PAYMENTS:

- LZFI_AP_PAYMENTSTOP
- LZFI_AP_PAYMENTSUXX

There may also be user defined includes in the function pool for common routines of the Function Group. These follow the same naming convention and contain the suffix ‘Fnn’ for FORM routines, ‘Inn’ for PAI Modules, or ‘Onn’ for PBO Modules, where ‘nn’ is a sequential number starting at 01.

FORM, PAI and PAO include names are:

- LZFI_AP_PAYMENTSF01
- LZFI_AP_PAYMENTSIO1
- LZFI_AP_PAYMENTSO01

2.5.3 Function Module

The Function Module name may be as many as 30 characters long and describes whichever function the system is performing. When a function module is created, a new include entry is automatically made in the ‘UXX’ include (described above). The entry has the same format as described for the ‘UXX’ include. However, the suffix changes to ‘Unn’ where ‘nn’ is a sequential number starting at 01.

Example of this naming convention:

- Z_CALCULATE_SPLIT_PAYMENT - the function module to calculate split payments.

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NASA Enterprise Applications Competency Center IS01		
Title: ABAP Development Naming Standards	Document No. IS01-NEACC-CF_ABAP-STD-SW- 001	Revision: H
	Effective Date: 01/31/2014	Page 19 of 41

- The included statement in program LZFI_AP_PAYMENTSUXX will be
INCLUDE LZFI_AP_PAYMENTSU01. "Z_CALCULATE_SPLIT_PAYMENT

2.6 Class Library

Class Builder creates, defines, and tests the tools within the ABAP Workbench, and the global ABAP classes and interfaces.

SAP defines the following naming convention for use within the SAP namespace. It is imperative that the ABAP Team observes the specific naming conventions for object types (classes and interfaces), or conflicts will occur when the system creates persistent classes since it will be unable to generate the necessary co-classes.

2.6.1 Naming Convention

The naming convention has been kept as general as possible to avoid adversely influencing the naming of objects.

As with other development objects, it is important to maintain a distinction between SAP objects and Customer objects. Following the standard convention, the ABAP Team uses 'Z_' characters to maintain the distinction between SAP and customer classes and interfaces. Local classes and interfaces do not need to follow this convention.

2.6.2 General Remarks

When choosing names for development objects:

- Use English names
- Use glossary terms when possible
For example, ZCL_COMPANY_CODE instead of ZCL_BUKRS
- Use the underscore character (_) as a separator in compound names. Since names are not case-sensitive, this is the only character used to separate names.
- Use names that describe the action, not the implementation of the action.
Example: PRINT_RECTANGLE, not RECTANGLE_TO_SPOOL

2.6.3 Conventions for Object Types

Class and interface names in the class library belong to the same namespace as data elements, tables, structures, and types. Table TADIR is the central maintenance location, where the conventions have a maximum length of 30 characters.

Table 21 – Class Object Types Naming Convention

Class in the class library	ZCL_<class name>
-----------------------------------	-------------------------------

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NASA Enterprise Applications Competency Center IS01		
Title: ABAP Development Naming Standards	Document No. IS01-NEACC-CF_ABAP-STD-SW- 001	Revision: H
	Effective Date: 01/31/2014	Page 20 of 41

	A class name consisting of singular nouns is preferred. ZCL_PCOMPANY_CODE, ZCL GENERAL LEDGER ACCOUNT
Interfaces in the class library	ZIF_<interface name> The same naming convention applies to interfaces as to classes. ZIF_STATUS_MANAGEMANT ZIF CHECKER
Local classes in programs (recommendation)	LCL_<class name> A class name consisting of singular nouns is preferred. LCL_TREE MANAGEMENT
Local interfaces in programs (recommendation)	LIF_<interface name> The same naming convention applies to interfaces as to classes. LIF_PRINTER

2.6.4 Conventions for Components

Only one class uses components of global classes and interfaces. All classes use methods and events. In cases where many classes use the component, the usual naming standard, ‘Z_’ is used to maintain distinction between SAP and Customer objects.

Table 22 – Class Components Naming Convention

Method name	<METHOD NAME> Method names beginning with a verb is preferred: Local method example: GET_STATUS, Global method example: Z_CREATE_ORDER
Events	<EVENT NAME> Event names having the form <noun>_<participle>: is preferred. Local event example: BUTTON_PUSHED Global event example: Z COMPANY_CODE CHANGED
Local type definitions within a class (recommendation)	TY_<type name>

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NASA Enterprise Applications Competency Center IS01		
Title: ABAP Development Naming Standards	Document No. IS01-NEACC-CF_ABAP-STD-SW- 001	Revision: H
	Effective Date: 01/31/2014	Page 21 of 41

	TY_INTERNAL_TYPE, TY_TREE_LIST
Data definitions (variables)	<variable name> When naming variables within a class (CLASS-DATA or DATA), avoid using verbs at the beginning of the name (to avoid conflicts with method names). LINE_COUNT, MARK_PRINTED, MARK_CHANGED, STATUS
Data definitions (constants) (recommendation)	CO_<constant name> CO_MAX_LINE, CO_DEFAULT_STATUS, CO_DEFAULT_WIDTH, CO_MAX_ROWS

Recommended naming conventions are not mandatory. Use the conventions listed above if there are prefixes for these class and interface names.

2.6.5 Conventions for Concrete Methods

Table 23 – Concrete Methods Naming Convention

Attribute access	SET_<attribute name>, GET_<attribute name> Prefacing methods that access attributes of any kind with GET_ or SET_ is preferred. GET_STATUS (local method) SET_Z USE COUNT (global method)
Event handler methods	ON_<event name> Methods that handle events begin with ON, followed by the name of the event that they handle, is preferred. ON_BUTTON_PUSHED (local method) ON_Z BUTTON_PUSHED (global method)
Methods that perform type conversions	AS_<new type> AS_STRING (local method) AS_Z_ISOCODE (global method)
Methods that return a Boolean value These methods may not return any exceptions.	IS_<adjective> IS_OPEN (local method) IS_Z_OPEN (global method)

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NASA Enterprise Applications Competency Center IS01		
Title: ABAP Development Naming Standards	Document No. IS01-NEACC-CF_ABAP-STD-SW- 001	Revision: H
	Effective Date: 01/31/2014	Page 22 of 41

Recommendation: Use SPACE and 'X' to represent false and true respectively.	
Check methods	CHECK_<objective> CHECK_AUTHORIZATION (local method) CHECK_Z_PROCESS_DATE (global method)

2.6.6 Local Naming Conventions Within Methods

2.6.6.1 For Parameters

The method-of-implementation point of view is what SAP and the ABAP Team uses to regard parameters. These parameters do not associate with other classes since no customer specific naming convention is required in order for be within parameters.

Table 24 – Method Parameters Naming Convention

IMPORTING parameters	IM_<parameter name>
EXPORTING parameters	EX_<parameter name>
CHANGING parameters	CH_<parameter name>
RESULT	RE_<result>

2.6.6.2 For Exceptions

The following table contains a series of possible generic exception names (for example, NOT_FOUND is synonymous with DATE_NOT_FOUND).

Table 25 – Method Exceptions Naming Convention

Exception	Meaning
ACTION_NOT_SUPPORTED	The requested action or function code is unsupportable.
CANCELLED	If a method uses a dialog to find out what has to be done (for example, a list of choices), and the user chooses "Cancel," set this exception.
EXISTING	A new object already exists in the DB.
FAILED	The current environment made it impossible for SAP to execute the method.
..._FAILED	Part of the method did not complete due to the current environment. Example OPEN_FAILED
FOREIGN_LOCK	Another user locked the data.
INCONSISTENT	Object data in the DB is inconsistent.

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Exception	Meaning
..._INCONSISTENT	The component data for ... of an object in the DB is inconsistent.
INVALID	The object data entered is incorrect (for example, company code does not exist).
..._INVALID	The component data entered for an object is incorrect. Compare NOT_QUALIFIED.
INTERNAL_ERROR	Last resort. Only use this exception if the nature of the error cannot be more precise.
NOT_AUTHORIZED	The user does not have the required authorization.
NOT_CUSTOMIZED	The user has not correctly customized the requested object.
..._NOT_CUSTOMIZED	The user has not correctly customized the component ... of the requested object.
NOT_FOUND	Unable to find the requested object.
..._NOT_FOUND	Unable to find component ... of the requested object.
NOT_QUALIFIED	The combination of input parameters is insufficient to run the method. Compare
..._NOT_QUALIFIED	One parameter of the method is not qualified.
NUMBER_ERROR	Error assigning a number.
SYSTEM_ERROR	This exception is set if the Basis system returns an unexpected error message.

2.7 ABAP Types and Objects

2.7.1 General Standards for the Declaration of ABAP Types and Objects

The names of objects and types consist of the characters “A - Z”, “0 – 9” and “_” and begin with an alphabetic character.

Data object names meaningfully describe the object the field represents, its use, and, where possible, reference a dictionary field name for the field type attributes. Use English terms for selection screen fields (example: S_USERID LIKE BKPF-USNAM instead of S_USNAM LIKE BKPF-USNAM).

Naming conventions used for data objects are consistent with SAP’s naming convention for CLASS-DATA objects, see [Class Library](#).

While long field names, with as many as 30 characters, are supportive of most field types, keep names as short as possible without losing their meaning.

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NASA Enterprise Applications Competency Center IS01		
Title: ABAP Development Naming Standards	Document No. IS01-NEACC-CF_ABAP-STD-SW- 001	Revision: H
	Effective Date: 01/31/2014	Page 24 of 41

2.7.2 Variables

Variable names meaningfully describe the purpose of the field. Within the CLASS BUILDER, avoid using verbs at the beginning of the name (to avoid conflicts with method names).

Examples of this naming convention:

- UPDATE_STATUS - UPDATE status flag
- LINE_COUNT - LINE counter

Note: *This naming convention applies to all variable types except for types with specific naming conventions documented in subsequent sections.*

Table 26 – Variables Naming Convention

Position	Description	Values	Meaning
1-30	Name	Alphanumeric and ‘_’	Variable name / usage

2.7.2.1 Constants

Prefix constant names with the characters ‘C_’ in order to stay consistent with the CLASS-DATA naming conventions.

Example of this naming convention:

- C_CENTURY - Constant for ‘Century’

Table 27 – Constants Naming Convention

Position	Description	Values	Meaning
1	Constant Identifier	C	Constant Identifier
2	Separator	‘_’	
3-30	Constant Label	Alphanumeric and ‘_’	Constant Label

2.7.2.2 Field Symbols

Field-Symbols are a distinct field type in ABAP enclosed by the ‘<’ and ‘>’ (less than and greater than) characters. While those are distinct, base the field-symbol names on the naming convention for the field type it represents.

Example of this naming convention:

- <ST_INPUT_TEXT> - Field-Symbol for INPUT_TEXT type string.

Table 28 – Field Symbols Naming Convention

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NASA Enterprise Applications Competency Center IS01			
Title: ABAP Development Naming Standards	Document No. IS01-NEACC-CF_ABAP-STD-SW- 001		Revision: H
	Effective Date: 01/31/2014		Page 25 of 41

Position	Description	Values	Meaning
1	Less than character	<	Beginning of Field-symbol Name
2	Name (28 characters maximum)	Alphanumeric and ‘ ’	Field-Symbol Name
Suffix	Greater than character	>	End of Field-symbol Name

2.7.2.3 Internal Tables

Example of this naming convention:

- I_GLPCA - Internal table for DB table GLPCA

Table 29 – Internal Tables Naming Convention

Position	Description	Values	Meaning
1-2	Identifier	I	Internal Table Identifier
3-30	Name	Alphanumeric and ‘ ’	Table Name

2.7.2.4 Types

Example of this naming convention:

- TY_PERSONNEL_INFO - a TYPES definition for personnel information which could reference Data Dictionary structures for name (last, first, middle), address (house no, street, city, state, ZIP), Phone Number, SSN, etc.

Table 30 – Types Naming Convention

Position	Description	Values	Meaning
1-3	Identifier	TY	Type Identifier
4-30	Name	Alphanumeric and ‘ ’	Type name

2.7.3 Selection Screens

The ABAP statements used to declare selection screens include:

- PARAMETERS – defines program selection screen parameters.
- SELECT-OPTIONS – defines program selection screen variables for DB tables accessed by the program.
- SELECTION_SCREEN – customizes the selection screen by the addition of comments, push buttons and the grouping of SELECT-OPTIONS and PARAMETERS.

2.7.3.1 Parameters

Parameter names are limited to 8 characters.

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NASA Enterprise Applications Competency Center IS01		
Title: ABAP Development Naming Standards	Document No. IS01-NEACC-CF_ABAP-STD-SW- 001	Revision: H
	Effective Date: 01/31/2014	Page 26 of 41

Example of this naming convention:

- P_BSTYP TYPE EKKO-BSTYP - Parameter for Purchasing Document Category

Table 31 – Selection Screen Parameters Naming Convention

Position	Description	Values	Meaning
1-2	Identifier	P	Parameter Identifier
3-8	Parameter Label	Alphanumeric and ‘ ’	Parameter Label

2.7.3.2 Select-Options

Select-Options names are limited to 8 characters.

Example of this naming convention:

- S_VNDRNO FOR EKKO-LIFNR – Select-Option for Vendor’s Account Number.

Table 32 – Select-Options Naming Convention

Position	Description	Values	Meaning
1-2	Identifier	S	Select-Option Identifier
3-8	Name	Alphanumeric and ‘ ’	Select-Option Label

2.7.4 Macros

Example of this naming convention:

- MAC_FORMAT_USER_MESSAGE – Macro ‘FORMAT_USER_MESSAGE’

Table 33 – Macros Naming Convention

Position	Description	Values	Meaning
1-4	Macro Identifier	mac	Macro Identifier
5-30	Macro Label	Alphanumeric and ‘_’	Macro label

2.8 Text Elements

2.8.1 Text Symbols

A text symbol is a named data object in an ABAP program. A three-character ID distinguishes each text symbol. Text symbols are referenced in the ABAP using the form TEXT-<tid> where <tid> is the 3 character text identification.

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NASA Enterprise Applications Competency Center IS01		
Title: ABAP Development Naming Standards	Document No. IS01-NEACC-CF_ABAP-STD-SW- 001	Revision: H
	Effective Date: 01/31/2014	Page 27 of 41

In custom designed programs, text symbols may be any 3 character string. However, when customizing a SAP ABAP program, it is recommended to only create text symbols in the 900 number range or text symbols prefixed with the ‘Z’ customized object indicator.

Examples of this naming convention:

- 039 – Text symbol ‘039’ in a custom program
- 901 – Text symbol ‘901’ in a customized SAP program
- Z01 – Text symbol ‘Z01’ in a customized SAP program

Table 34 – Text Symbols Naming Convention

Position	Description	Values	Meaning
1-3	Identifier	alphanumeric	Text ID

2.9 Screen Numbers

Screen numbers are unique within the program and can be any 4-digit number greater than 0. The number 1000 is reserved for table screens and report selection screens.

The SAP customer namespace for custom screens within a SAP module pool is the number range from 9000 to 9999. All other numbers are reserved for SAP.

Example of this naming convention:

- 0100 - Screen number 9000 for an SAP program
- 9000 - Screen number 100 for a customer developed program

Table 35 – Screens Naming Convention

Position	Description	Values	Meaning
1-4	Screen Number	9000-9999	Custom Screen number. Screen numbers per program will be incremented by 10.

2.10 Graphic User Interface (GUI)

2.10.1 GUI Statuses

GUI Status names may be as many as 20 characters long and are unique within the program.

For the creation of a customized GUI Status for a SAP program, prefix the status name with the ‘Z’ customized indicator.

Examples of this naming convention:

- LIST_SHOW – GUI Status ‘LIST_SHOW’ for a custom program /screen.

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NASA Enterprise Applications Competency Center IS01		
Title: ABAP Development Naming Standards	Document No. IS01-NEACC-CF_ABAP-STD-SW- 001	Revision: H
	Effective Date: 01/31/2014	Page 28 of 41

- Z_LIST_SHOW – GUI Status ‘Z_LIST_SHOW’ for a customized SAP program /screen.

Table 36 – GUI Statuses Naming Convention

Position	Description	Values	Meaning
1-20	GUI Status Name	Alphanumeric and ‘_’	Custom GUI Status name. Start with a ‘Z’ when adding a custom GUI Status to an SAP program.

2.10.2 GUI Titles

GUI Title names may be as many as 20 characters long and are unique within the program. For the creation of a customized GUI Title for a SAP program, prefix the status name with the ‘Z’ customized indicator.

Examples of this naming convention:

- LIST_SHOW – GUI Title ‘LIST_SHOW’ for a custom program /screen.
- Z_LIST_SHOW – GUI Title ‘Z_LIST_SHOW’ for a customized SAP program /screen.

Table 37 – GUI Titles Naming Convention

Position	Description	Values	Meaning
1-20	GUI Title Name	Alphanumeric and ‘_’	Custom GUI Title name. Start with a ‘Z’ when adding a custom GUI Status to an SAP program.

2.11 Logical Database

Logical DB names can be as many as 20 characters long. Custom logical DBs are distinct from SAP delivered ones. The standard naming convention of prefixing the name with a ‘Z’ is used. The SAP Application Area with unique identifier follows the prefix.

Example of this naming convention:

- ZLE_WMTRANSFRORDRS - Logical Database for Logistics Execution Warehouse Management Transfer Orders.

Table 38 – Logical Database Naming Convention

Position	Description	Values	Meaning
1	Custom Indicator	Z	Customized Logical DB
2	Application Area (5-8 characters)	Alphanumeric and ‘_’	SAP Application Area, refer to Appendix A
Suffix	Unique Identifier	Alphanumeric and ‘_’	Unique, descriptive text

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NASA Enterprise Applications Competency Center IS01		
Title: ABAP Development Naming Standards	Document No. IS01-NEACC-CF_ABAP-STD-SW- 001	Revision: H
	Effective Date: 01/31/2014	Page 29 of 41

2.11.1 Customer Selection Views

Logical DBs deliver with a SAP STANDARD selection view. Customers are able to create a custom view for a logical DB. The origin of the view is ‘CUS’ and the name of the view is ‘STANDARD’.

There are two selection views per logical DB, the SAP STANDARD one and the customer, CUS STANDARD one. If a customer specific view exists; it takes priority over the SAP view.

2.12 SET/ GET Parameter IDs

Custom SET/GET Parameter ID names may be as many as 20 characters long and follows the customized object naming convention, beginning with a ‘Y’ or ‘Z’ and followed by descriptive text.

An example of this naming convention is Z_MISSION_NUMBER – GET / SET Parameter ID for NASA Mission Number.

Table 39 – Set/Get Parameter IDs Naming Convention

Position	Description	Values	Meaning
1	Custom Indicator	Z	Customized indicator
2	Application Area (5-8 characters)	Alphanumeric and ‘_’	SAP Application Area, refer to Appendix A
Suffix	Unique Identifier	Alphanumeric and ‘_’	Unique, descriptive text

2.13 Area Menus

Area menu names may be as many as 30 characters long and follow the customized object naming convention, beginning with a ‘Z’ and followed by the application area and descriptive text.

Examples of this naming convention:

- ZCA_TS-TIME_REPORTING – Area menus for Cross-Application Time Reporting

Table 40 – Area Menus Naming Convention

Position	Description	Values	Meaning
1	Custom Indicator	Z	Customized indicator
2	Application Area (5-8 characters)	Alphanumeric and ‘_’	SAP Application Area, refer to Appendix A
Suffix	Unique Identifier	Alphanumeric and ‘_’	Unique, descriptive text

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NASA Enterprise Applications Competency Center IS01		
Title: ABAP Development Naming Standards	Document No. IS01-NEACC-CF_ABAP-STD-SW- 001	Revision: H
	Effective Date: 01/31/2014	Page 30 of 41

2.14 Messages

2.14.1 Message Classes

Messages Classes group user and system messages by specific application. A message class name, application area, can be as many as 20 characters long. Custom message classes start with a 'Z'.

Example of this naming convention:

- ZFI Custom Message Class for Financial

Table 41 – Message Classes Naming Convention

Position	Description	Values	Meaning
1	Custom Indicator	Z	Customized Message Class
2-4	Application Area (2-3 characters)		SAP Application Area, refer to Appendix A

2.14.2 Message Numbers

The standard SAP Messages do not change and the ABAP Team uses them whenever possible. Adding custom messages is an option within an SAP message class. When added to a custom message class, the numbers may range between 001 and 999.

Table 42 – Message Numbers Naming Convention

Position	Description	Values	Meaning
1-3	Number Range	001-999	Message Number

2.15 Authorization Objects

An authorization object name is as many as 10 characters long.

Example of this naming convention:

- ZPS_CAF000 - Project Systems, Payments Object 000

Table 43 – Authorization Objects Naming Convention

Position	Description	Values	Meaning
1	Custom Indicator	Z	Custom Developed Object
2	Application Area (5-8 characters)		SAP Application Area, refer to Appendix A
suffix	Unique id	alphanumeric	

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NASA Enterprise Applications Competency Center IS01		
Title: ABAP Development Naming Standards	Document No. IS01-NEACC-CF_ABAP-STD-SW- 001	Revision: H
	Effective Date: 01/31/2014	Page 31 of 41

2.16 Batch Names

The batch job name may be as many as 32 characters long.

Example of this naming convention:

- ZO_MM_PUR_FORECAST_CHECK_BDC

This job:

- Is custom developed (always)
- Is executed periodically but variable
- Is part of the Purchasing functional area
- Is used in the Forecast Check process
- Is a BDC session generator (no DB updates)

Table 44 – Batch Names Naming Convention

Position	Description	Values	Meaning
1	Custom developed	Z	Constant
2	Frequency (Schedule)	D, W, M, Q, Y	Daily, Weekly, Monthly, Quarterly, Yearly
		O	Other - Special dependencies
		A	Ad-hoc - One time
		C	Conversions
3	Separator		
4	Application area		SAP Application Area, refer to Appendix A This field varies in length from 5 to 8 characters (e.g. FI-AP, IS-PS-FM)
Suffix 1	Separator		
Suffix 2	Unique job Identifier	Alpha numeric	A description of the job's purpose. As many as 14 characters may be used. Spaces cannot be used as these are suppressed, use underscores instead (may not start or end with underscores). The ABAP Team uses this identifier for the batch job variant name.
27	Separator		
28-30	Batch type code	RPT	Creates a Report
		BDC	Generates a BDC session
		UPD	Updates DB(s)
		EXT	Extracts information

2.17 BDC Sessions

A BDC session name can be as many as 12 characters long.

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NASA Enterprise Applications Competency Center IS01		
Title: ABAP Development Naming Standards	Document No. IS01-NEACC-CF_ABAP-STD-SW- 001	Revision: H
	Effective Date: 01/31/2014	Page 32 of 41

Example of this naming convention:

- FI-AM_AS02 - A BDC session for the Asset Management change transaction.

Table 45 – BDC Sessions Naming Convention

Position	Description	Values	Meaning
1	Application Area		SAP Application Area, refer to Appendix A. This field varies in length from 5 to 8 characters (e.g. FI-AP, IS-PS-FM)
suffix	Free Form	0-Z	4-7 characters to provide uniqueness within application area

2.18 Inbound Files

Inbound files are files that contain data read by ABAP programs.

Example of this naming convention:

- ZSD_BIL_SYSTEMX.DAT - Contains update data for Sales Billing from System X.

Table 46 – Inbound Files Naming Convention

Position	Description	Values	Meaning
1	Custom Indicator	Z Y	Customized File Temporary File
2	Application area (5-8 characters)		SAP Application area, refer to Appendix A
Suffix 1	Unique identifier		Descriptive name
Suffix 2	File type extension	.DAT	

2.19 Outbound Files

Outbound files are files that contain data written by ABAP programs.

Example of this naming convention:

- ZIS_PS_BUDGET_2002.DAT - Contains BUDGET data extract for the Public Sector.

Table 47 – Outbound Files Naming Convention

Position	Description	Values	Meaning
1	Custom indicator	Z Y	Custom Developed, Permanent Temporary
2	Application area (5-8 characters)		SAP Application area, refer to Appendix A

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NASA Enterprise Applications Competency Center IS01		
Title: ABAP Development Naming Standards	Document No. IS01-NEACC-CF_ABAP-STD-SW- 001	Revision: H
	Effective Date: 01/31/2014	Page 33 of 41

Suffix 1	Unique identifier		Descriptive name
Suffix 2	File type extension	.DAT	

2.20 SAPScript

2.20.1 Layout Sets

Layout set names can be as many as 16 characters long.

Example of this naming convention:

- ZAR_CRSGRID - SAP Layout for Accounts Receivable named CRSGRID

Table 48 – Layout Sets Naming Convention

Position	Description	Values	Meaning
1	Custom Indicator	Z	Custom Indicator
2	Application Area (5-8 characters)		SAP Application area, refer to Appendix A
Suffix	Descriptive Identifier	Alphanumeric and ‘ ’	

2.20.2 Standard Text Names

The standard text name can be up to 70 characters in length; however, SAP recommends keeping the length shorter; therefore, for this naming convention, the maximum length has been shortened to 30 characters.

Example of this naming convention:

- Z_NASA_CONFIDENTIALITY_TERMS - Text Name

Table 49 – Standard Text Names Naming Convention

Position	Description	Values	Meaning
1	Custom Indicator	Z	Customized Text Name
2-30	Unique Identifier	Alphanumeric and special characters except ‘,’ and ‘*’	Unique Identifier

2.21 TVARVC TABLE Entries

The table TVARVC contains entries referenced by variants. Customized entries can enable variable parameters / selection options to be used in variants.

Example of this naming convention:

- ZPEND_OF_MONTH - A parameter variable for the end of month.

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NASA Enterprise Applications Competency Center IS01			
Title: ABAP Development Naming Standards	Document No. IS01-NEACC-CF_ABAP-STD-SW- 001	Revision: H	Effective Date: 01/31/2014

Table 50 – TVARVC Entries Naming Convention

Position	Description	Values	Meaning
1	Custom Indicator	Z	Identifies as custom developed
2	Variable type	P or S	Parameter or Selection Variable
3-30	Descriptive name	alphanumeric	

2.22 Customer Enhancements – Enhancement Projects

Customer enhancement project names are 8 characters long.

Example of this naming convention:

- ZLOMDMM0 - Material master data customer enhancement project

Table 51 – Customer Enhancements Naming Convention

Position	Description	Values	Meaning
1	Custom Indicator	Z	Customer project
2	Application area, condensed (exclude underscore characters) (4-6 characters)		SAP Application area, refer to Appendix A
suffix	Unique identifier	alphanumeric	

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NASA Enterprise Applications Competency Center IS01		
Title: ABAP Development Naming Standards	Document No.: IS01-NEACC-CF_ABAP-STD-SW- 001	Revision: H
	Effective Date: 01/31/2014	Page 35 of 41

3.0 RECORDS

Table 52 – Records Applicable to This Document

Name of Record	Storage Location	(SBU/PII)*	Retention Schedule	Responsible Party	E-mail	Phone No.
N/A						

*SBU = Sensitive but Unclassified / PII = Personally Identifiable Information

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800-53-CM

NASA Enterprise Applications Competency Center IS01		
Title: ABAP Development Naming Standards	Document No.: IS01-NEACC-CF_ABAP-STD-SW- 001	Revision: H
	Effective Date: 01/31/2014	Page 36 of 41

APPENDIX A: SAP APPLICATION HIERARCHY

The following list is from the SAP Application Hierarchy as seen in the Object Navigator. The hyphens ‘-’ in the Object Navigator are replaced with underscores ‘_’ to comply with SAP’s development object naming standard.

Table 53 – SAP Application Hierarchy

Application Hierarchy / Description		Application / Description	
AC	Accounting - General		
		AC_INT	Accounting Interface
BC	Basis Components		
		BC_CST	Client/Server Technology
		BC_CUS	Customizing
		BC_NET	Network Infrastructure
		BC_ABA	ABAP Runtime Environment
		BC_SRV	Basis Services / Communication Interfaces
		BC_CCM	Computing Center Management System
		BC_INS	Installation Tools
		BC_UPG	Upgrade - General
		BC_CTS	Change & Transport System
		BC_OP	Operating System Platforms
		BC_DB	DB Interface, DB Platforms
		BC_FES	Front-end Services
		BC_DWB	ABAP Workbench
		BC_DOC	Documentation and Translation Tools
		BC_SEC	Security
		BC_CI	Component Integration / Installation Windows Components
		BC_BMT	Business Management
		BC_MID	Middleware
		BC_CAT	CATT Computer Aided Test Tool
		BC_RRR	Ready-to-Run R/3
		BC_BW	SAP Business Information Warehouse Extractors
CA	Cross-Application Components		
		CA_DMS	Document Management System
		CA_CL	Classification System
		CA_CAD	CAD Integration
		CA_BFA	Business Framework Architecture
		CA_BP	SAP Business Partner

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**NASA Enterprise Applications Competency Center
IS01**

Title: ABAP Development Naming Standards	Document No.: IS01-NEACC-CF_ABAP-STD-SW- 001	Revision: H
	Effective Date: 01/31/2014	Page 37 of 41

Application Hierarchy / Description		Application / Description	
		CA_GTF	General Application Functions
		CA_EDI	IDoc Interfaces for EDI
		CA_CAT	Computer Aided Test Tool Applications
		CA_OIW	Open Information Warehouse
		CA_TS	Time Sheet
		CA_ARC	Archiving
		CA_CUS	Global Organization Customizing
CO	Controlling		
		CO_OM	Overhead Cost Controlling
		CO_PC	Product Cost Controlling
		CO_PA	Profitability Analysis
CS	Customer Service		
		CS_BD	Basic Data
		CS_IB	Installed Base Management
		CS_AG	Service Agreements
		CS_CI	Customer Interaction
		CS_CM	Call Management
		CS_SE	Service Processing
		CS_BS	Billing and Settlement
		CS_IS	Information System
EC	Enterprise Controlling		
		EC_PCA	Profit Center Accounting
		EC_BP	Business Planning
		EC_CS	Consolidation
		EC_EIS	Executive Information System
FI	Financial Accounting		
		FI_GL	General Ledger Accounting
		FI_LC	Consolidation
		FI_AP	Accounts Payable
		FI_AR	Accounts Receivable
		FI_BL	Bank Accounting
		FI_AA	Asset Accounting
		FI_SL	Special Purpose Ledger
		FI_FM	Funds Management
		FI_TM	Travel Management
		FI_ET	eTravel Management
IM	Investment Management		
		IM_FA	Capital Investments

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**NASA Enterprise Applications Competency Center
IS01**

Title: ABAP Development Naming Standards	Document No.: IS01-NEACC-CF_ABAP-STD-SW- 001	Revision: H
	Effective Date: 01/31/2014	Page 38 of 41

Application Hierarchy / Description		Application / Description	
IS_PS (IPS)	Public Sector Component		
		IS_PS_FM	Funds Management Government
LE	Logistics Execution		
		LE_IDW	Decentralized WMS integration
		LE_WM	Warehouse Management
		LE_SHP	Shipping
		LE_TRA	Transportation
LO	Logistics - General		
		LO_MD	Logistics Basic Data
		LO_PDM	Product Data Management
		LO_BM	Batches
		LO_PR	Forecast
		LO_VC	Variant Configuration
		LO_ECH	Engineering Change Management
		LO_LIS	Logistics Information System (LIS)
		LO_MDS	Merchandise Distribution
		LO_SCI	Supply Chain Planning Interfaces (SCPI)
		LO_SRS	Integration SAP Retail Store
		LO_ADMIN	Additional Management
		LO_RIS	Retail Information System (RIS)
		LO_MAP	Merchandise and Assortment Planning
		LO_TIM	Scheduling
		LO_AB	Agency Business (Global Trade)
MM	Materials Management		
		MM_CBP	Consumption-Based Planning
		MM_PUR	Purchasing
		MM_SRV	External Services Management
		MM_IM	Inventory Management
		MM_IV	Invoice Verification
		MM_IS	Information System
		MM_EDI	Electronic Data Interchange
PM	Plant Maintenance		
		PM_EQM	Technical Objects
		PM_PRM	Preventive Maintenance
		PM_WOC	Maintenance Order Management
		PM_PRO	Maintenance Projects
		PM_IS	Information System
PP	Production		

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**NASA Enterprise Applications Competency Center
IS01**

Title: ABAP Development Naming Standards	Document No.: IS01-NEACC-CF_ABAP-STD-SW- 001	Revision: H
	Effective Date: 01/31/2014	Page 39 of 41

Application Hierarchy / Description		Application / Description	
	Planning and Control		
		PP_BD	Basic Data
		PP_SOP	Sales and Operations Planning
		PP_MP	Master Planning
		PP_CRP	Capacity Requirements Planning
		PP_MRP	Material Requirements Planning
		PP_SFC	Production Orders
		PP_KAB	KANBAN
		PP_REM	Repetitive Manufacturing
		PP_ATO	Assembly Processing
		PP_PI	Production Planning for Process Industries
		PP_PDC	Plant Data Collection
		PP_FLW	Flow Manufacturing
		PP_IS	Information System
PS	Project System		
		PS_ST	Structures
		PS_DOC	Document
		PS_COS	Costs
		PS_REV	Revenues and Earnings
		PS_CAF	Payments
		PS_DAT	Dates
		PS_CRP	Resources
		PS_MAT	Material
		PS_CON	Confirmation
		PS_SIM	Simulation
		PS_VER	Versions
		PS_PRG	Progress
		PS_WFL	SAP Business Workflow Connection
		PS_IS	Information System
RE	Real Estate Enterprise Add-On		
		RE_BD	RE: Basis Data (Master Data)
		RE_BD_MS	RE: Measurement
		RE_BD_OA	RE: Object Assignment
		RE_BD_RO	RE: Rental Object Master Data
		RE_CA	RE: Cross Application (Cross-Application Functions)
		RE_CN	RE: Real Estate Contract
		RE_IS	RE: Information System
SD	Sales and		

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NASA Enterprise Applications Competency Center
IS01

Title: ABAP Development Naming Standards	Document No.: IS01-NEACC-CF_ABAP-STD-SW- 001	Revision: H
	Effective Date: 01/31/2014	Page 40 of 41

Application Hierarchy / Description		Application / Description	
	Distribution		
		SD MD	Master Data
		SD BF	Basic Functions
		SD SLS	Sales
		SD FT	Foreign Trade
		SD BIL	Billing
		SD CAS	Sales Support
		SD IS	Information System
		SD EDI	Electronic Data Interchange
		SD POS	POS Interface
SV	Service		
		SV ASA	Accelerated SAP
TR	Treasury		
		TR CM	Cash Management
		TR CB	Cash Budget Management
		TR TM	Treasury Management
		TR LO	Loans
		TR MRM	Risk Management
	NASA Custom Applications:		
LD		LD	Agency Labor Distribution System

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IS01

Title: ABAP Development Naming Standards	Document No.: IS01-NEACC-CF_ABAP-STD-SW- 001	Revision: H
	Effective Date: 01/31/2014	Page 41 of 41

APPENDIX B: POINTS OF CONTACT

Table 54 – Points of Contact

Name	Position	E-mail	Phone
[REDACTED]	ABAP Manager, Document Owner	[REDACTED]	[REDACTED]
	NEACC QA Lead	[REDACTED]	[REDACTED]
	ABAP Team Lead	[REDACTED]	[REDACTED]
	ABAP Team Lead	[REDACTED]	[REDACTED]

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