JETIR.ORG ISSN: 2349-5162 | ESTD Year : 2014 | Monthly Issue
JOURNAL OF EMERGING TECHNOLOGIES AND INNOVATIVE RESEARCH (JETIR)
An International Scholarly Open Access, Peer-reviewed, Refereed Journal

Material Master Creation using PLM-SAP interface.

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1. Introduction

Material Master is central master record for logistics. Its data is maintained in various view to support various departments in organization for example sales department purchase department, production department. Factors that affect field selection for material master are

- Material Type
- Transaction
- Procurement Indicator
- Plant
- Industrial sector
- Several units of measures
- Base UOM (Stock keeping unit)

Each material belongs to one material type. Material type decides which view are available. For example, finished goods do not have purchase view.

Data is maintained in material master to support various functions within a company.

- Sales and Distribution
- Inventory Management
- Production
- Quality Management
- Purchasing/Invoice Verification
- Material Requirements Planning

Material can create in SAP system using t-code mm01.
Material can change in SAP system using t-code mm02.
Material display in SAP system using t-code mm03.

2. Background

Designers, Planers create part in PLM (Product Life cycle Management). In PLM part has various attributes. These attributes values need to be maintained manually using above t-code mm01/mm02 in SAP system for material create or material change. These materials have various views and various fields, which need to maintain. Then this material can be used for customer master data, vendor master data, conditions/pricing master data etc.

It is very time consuming to fill all fields in all view of material. We have implemented inhouse interface for material create / extend and change in SAP using which fields which are mapped in PLM-SAP are transferred and material is created in SAP.

There are various types of fields we used here some fields data is transferred as it is like part no is transferred as material no, part description is transferred as material description. Part revision is transferred as material revision in SAP.

Some fields are plant specific for MRP/Accounting and Costing view like profit center, plant calendar, origin group, overhead group are hard coded for each plant.

Some fields having conversion logic like if PLM having some value, then we made conversion logic to represent SAP values in code.

Some fields have default values, and some are having blank values.

We considered various views here to populate like

- Basis Data 1 View this information is common to all plant.

- Basic Data 2 View this information is common to all plant.
- Classification View this information is common to all plant which used for attribute value maintain.
- MRP 1 View these views are plant specific.
- MRP 2 View these views are plant specific.
- MRP 3 View these views are plant specific.
- MRP 4 View these views are plant specific.
- Quality View these views are plant specific.
- Accounting 1 View these views are plant specific.
- Accounting 2 view these views are plant specific.
- Costing 1 View these views are plant specific.
- Costing 2 View these views are plant specific.

3. Overview of Implementation

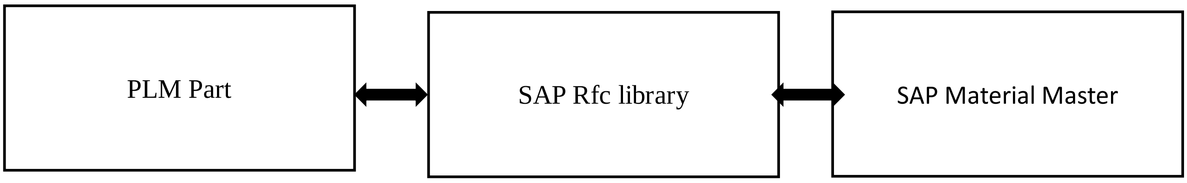
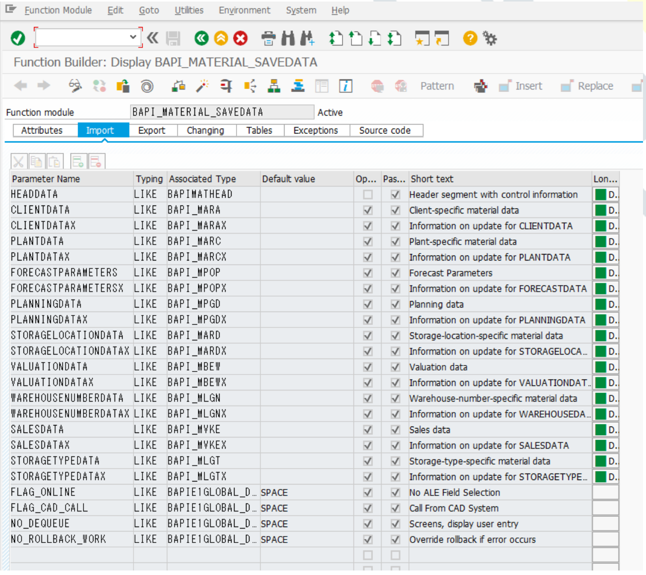


Figure 1.1

As per block diagram Figure 1.1 material data is transferred to SAP and Fetched from SAP to PLM. Designer creates part in PLM and maintain its attribute values. These parts after release need to transfer to SAP and create material master for that part. Using RFC library provided by SAP for C language we called RFC API. RFC API takes input as import parameters, table parameters and return result in export parameters and table parameters. For Material creation we used OOTB BAPI BAPI_MATERIAL_SAVEDATA.
This BAPI having various structure in import parameters as below.
HEADDATA which allows us to select for material creation.
CLIENTDATA structure is used to maintain BASIC DATA1 and BASIC DATA2 views fields.
CLIENTDATAX is used to selection of BASIC DATA1 and BASIC DATA2 views fields.
PLANTDATA structure is used to maintain MRP1, MRP2, MRP3 and MRP4 views fields.
PLANTDATAX structure is used to selection of MRP1, MRP2, MRP3 and MRP4 views fields.
PLANNINGDATA structure is used to maintain Costing 1 and Costing 2 views fields.
PLANNINGDATAX structure is used to selection of Costing 1 and Costing 2 views fields.
VALUATIONDATA structure is used to maintain Accounting 1 and Accounting 2 views fields.
VALUATIONDATAX structure is used to selection of Accounting 1 and Accounting 2 views fields.
In this we are calling SAP RFC (Remote Function Call) functions / BAPI (Business application programming Interface).
Below are import structures are present in BAPI_MATERIAL_SAVEDATA.



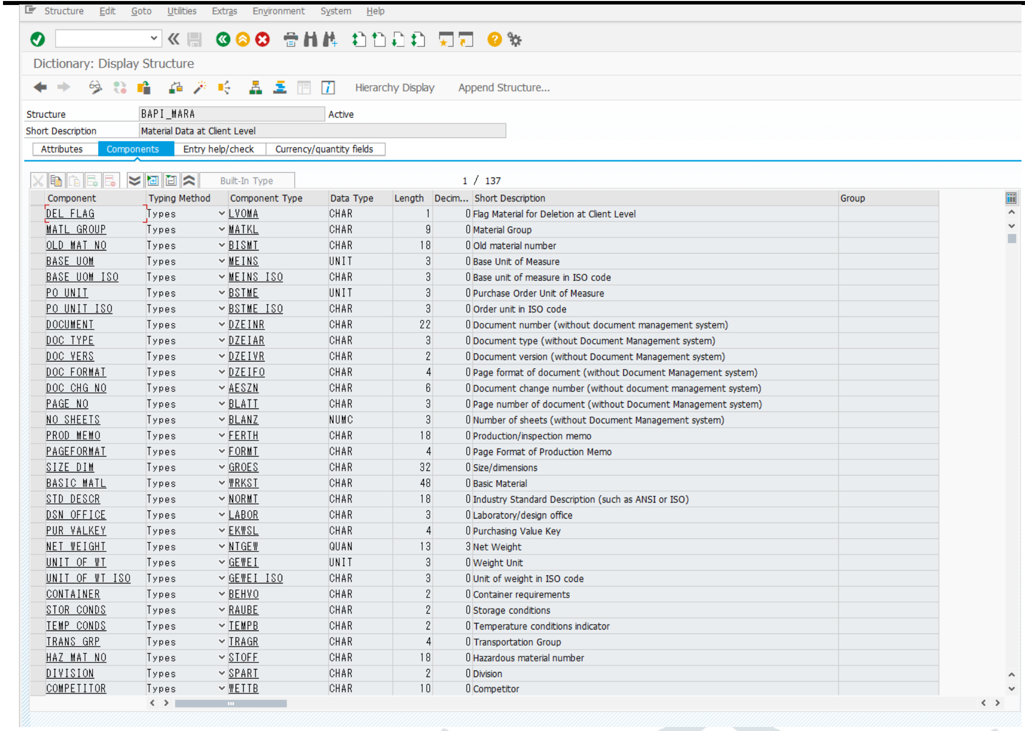
Function Builder: Display BAPI_MATERIAL_SAVEDATA

Function module BAPI_MATERIAL_SAVEDATA Active

Parameter Name	Typing	Associated Type	Default value	Op...	Pas...	Short text	Lon...
HEADDATA	LIKE	BAPIMATHEAD		□	☑	Header segment with control information	🟩 D..
CLIENTDATA	LIKE	BAPI_MARA		☑	☑	Client-specific material data	🟩 D..
CLIENTDATAX	LIKE	BAPI_MARAX		☑	☑	Information on update for CLIENTDATA	🟩 D..
PLANTDATA	LIKE	BAPI_MARC		☑	☑	Plant-specific material data	🟩 D..
PLANTDATAX	LIKE	BAPI_MARCX		☑	☑	Information on update for PLANTDATA	🟩 D..
FORECASTPARAMETERS	LIKE	BAPI_MPOP		☑	☑	Forecast Parameters	🟩 D..
FORECASTPARAMETERSX	LIKE	BAPI_MPOPX		☑	☑	Information on update for FORECASTDATA	🟩 D..
PLANNINGDATA	LIKE	BAPI_MPGD		☑	☑	Planning data	🟩 D..
PLANNINGDATAX	LIKE	BAPI_MPGDX		☑	☑	Information on update for PLANNINGDATA	🟩 D..
STORAGELOCATIONDATA	LIKE	BAPI_MARD		☑	☑	Storage-location-specific material data	🟩 D..
STORAGELOCATIONDATAX	LIKE	BAPI_MARDX		☑	☑	Information on update for STORAGELOCA...	🟩 D..
VALUATIONDATA	LIKE	BAPI_MBEW		☑	☑	Valuation data	🟩 D..
VALUATIONDATAX	LIKE	BAPI_MBEWX		☑	☑	Information on update for VALUATIONDAT...	🟩 D..
WAREHOUSENUMBERDATA	LIKE	BAPI_MLGN		☑	☑	Warehouse-number-specific material data	🟩 D..
WAREHOUSENUMBERDATAX	LIKE	BAPI_MLGNX		☑	☑	Information on update for WAREHOUSEDA...	🟩 D..
SALESDATA	LIKE	BAPI_MVKE		☑	☑	Sales data	🟩 D..
SALESDATAX	LIKE	BAPI_MVKEX		☑	☑	Information on update for SALESDATA	🟩 D..
STORAGETYPEDATA	LIKE	BAPI_MLGT		☑	☑	Storage-type-specific material data	🟩 D..
STORAGETYPEDATAX	LIKE	BAPI_MLGTX		☑	☑	Information on update for STORAGETYPE...	🟩 D..
FLAG_ONLINE	LIKE	BAPIE1GLOBAL_D...	SPACE	☑	☑	No ALE Field Selection	
FLAG_CAD_CALL	LIKE	BAPIE1GLOBAL_D...	SPACE	☑	☑	Call From CAD System	
NO_DEQUEUE	LIKE	BAPIE1GLOBAL_D...	SPACE	☑	☑	Screens, display user entry	
NO_ROLLBACK_WORK	LIKE	BAPIE1GLOBAL_D...	SPACE	☑	☑	Override rollback if error occurs	
				□	□		

Figure 1.2 import structure list.

Below screenshot having BAPI_MARA attribute with its data types to transfer attributes value



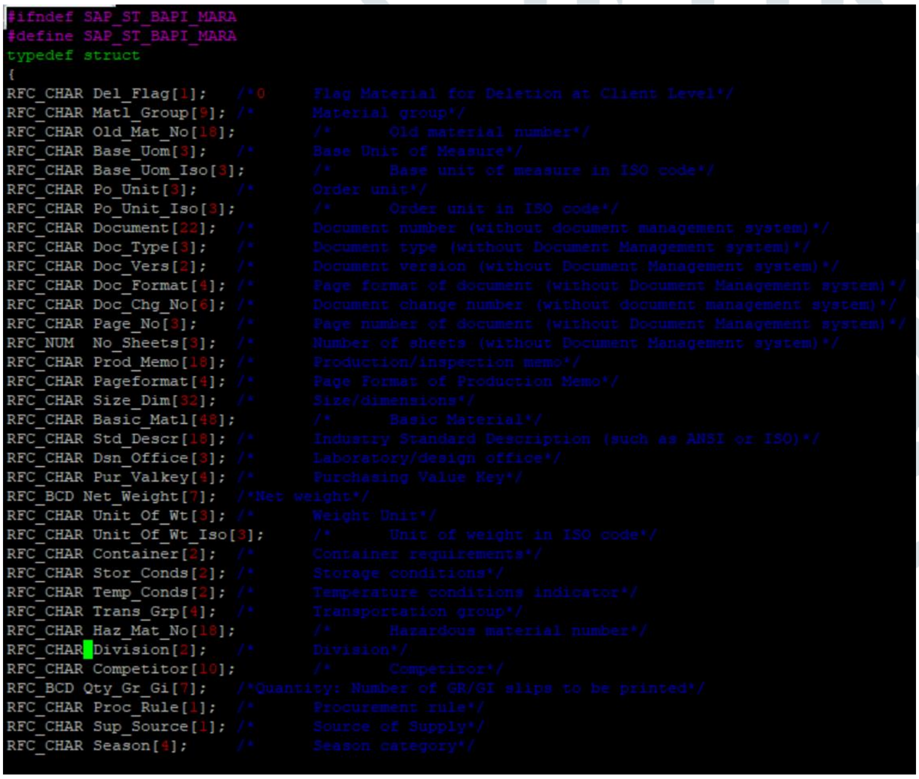
Structure BAPI_MARA Active

Short Description Material Data at Client Level

Component	Typing Method	Component Type	Data Type	Length	Decim...	Short Description	Group
DEL_FLAG	Types	LVOMA	CHAR	1	0	Flag Material for Deletion at Client Level	
MATL_GROUP	Types	MATKL	CHAR	9	0	Material Group	
OLD_MAT_NO	Types	BISMT	CHAR	18	0	Old material number	
BASE_UOM	Types	MEINS	UNIT	3	0	Base Unit of Measure	
BASE_UOM_ISO	Types	MEINS_ISO	CHAR	3	0	Base unit of measure in ISO code	
PO_UNIT	Types	BSTME	UNIT	3	0	Purchase Order Unit of Measure	
PO_UNIT_ISO	Types	BSTME_ISO	CHAR	3	0	Order unit in ISO code	
DOCUMENT	Types	DZEINR	CHAR	22	0	Document number (without document management system)	
DOC_TYPE	Types	DZEIAR	CHAR	3	0	Document type (without Document Management system)	
DOC_VERS	Types	DZEIVR	CHAR	2	0	Document version (without Document Management system)	
DOC_FORMAT	Types	DZEIFO	CHAR	4	0	Page format of document (without Document Management system)	
DOC_CHG_NO	Types	AESZN	CHAR	6	0	Document change number (without document management system)	
PAGE_NO	Types	BLATT	CHAR	3	0	Page number of document (without Document Management system)	
NO_SHEETS	Types	BLANZ	NUMC	3	0	Number of sheets (without Document Management system)	
PROD_MEMO	Types	FERTH	CHAR	18	0	Production/inspection memo	
PAGEFORMAT	Types	FORMT	CHAR	4	0	Page Format of Production Memo	
SIZE_DIM	Types	GROES	CHAR	32	0	Size/dimensions	
BASIC_MATL	Types	WRKST	CHAR	48	0	Basic Material	
STD_DESCR	Types	NORMT	CHAR	18	0	Industry Standard Description (such as ANSI or ISO)	
DSN_OFFICE	Types	LABOR	CHAR	3	0	Laboratory/design office	
PUR_VALKEY	Types	EKWSL	CHAR	4	0	Purchasing Value Key	
NET_WEIGHT	Types	NTGEW	QUAN	13	3	Net Weight	
UNIT_OF_WT	Types	GEWEI	UNIT	3	0	Weight Unit	
UNIT_OF_WT_ISO	Types	GEWEI_ISO	CHAR	3	0	Unit of weight in ISO code	
CONTAINER	Types	BEHVO	CHAR	2	0	Container requirements	
STOR_CONDS	Types	RAUBE	CHAR	2	0	Storage conditions	
TEMP_CONDS	Types	TEMPB	CHAR	2	0	Temperature conditions indicator	
TRANS_GRP	Types	TRAGR	CHAR	4	0	Transportation Group	
HAZ_MAT_NO	Types	STOFF	CHAR	18	0	Hazardous material number	
DIVISION	Types	SPART	CHAR	2	0	Division	
COMPETITOR	Types	WETTB	CHAR	10	0	Competitor	

Figure 1.3 Import parameters BAPI_MARA SAP structure.

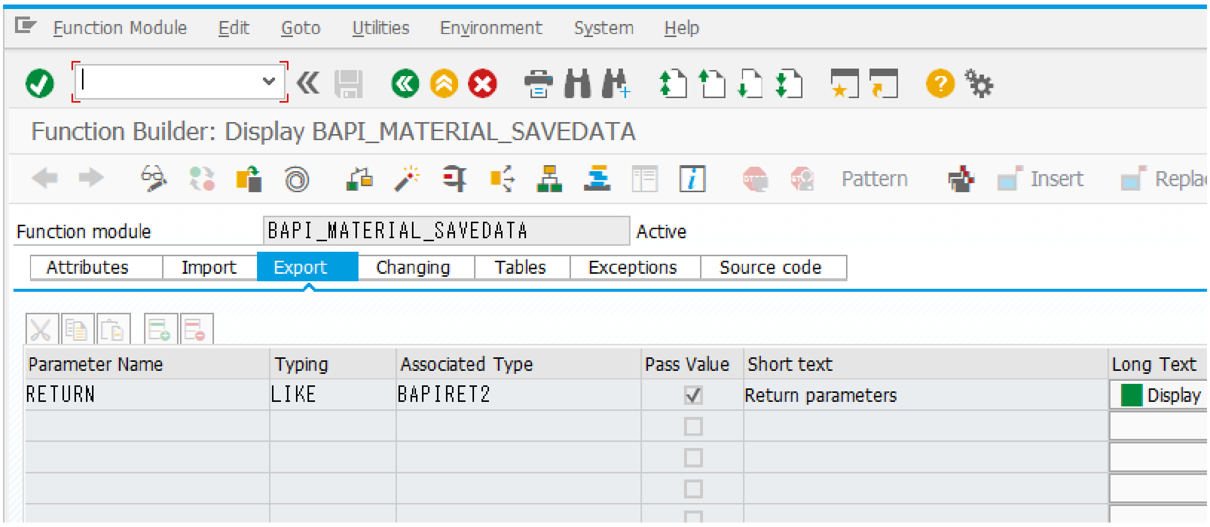
Equivalent C Language structure is created for BAPI_MARA



```
#ifndef SAP_ST_BAPI_MARA
#define SAP_ST_BAPI_MARA
typedef struct
{
RFC_CHAR Del_Flag[1];    /*0     Flag Material for Deletion at Client Level*/
RFC_CHAR Matl_Group[9]; /*      Material group*/
RFC_CHAR Old_Mat_No[18];        /*      Old material number*/
RFC_CHAR Base_Uom[3];   /*      Base Unit of Measure*/
RFC_CHAR Base_Uom_Iso[3];       /*      Base unit of measure in ISO code*/
RFC_CHAR Po_Unit[3];    /*      Order unit*/
RFC_CHAR Po_Unit_Iso[3];        /*      Order unit in ISO code*/
RFC_CHAR Document[22];  /*      Document number (without document management system)*/
RFC_CHAR Doc_Type[3];   /*      Document type (without Document Management system)*/
RFC_CHAR Doc_Vers[2];   /*      Document version (without Document Management system)*/
RFC_CHAR Doc_Format[4]; /*      Page format of document (without Document Management system)*/
RFC_CHAR Doc_Chg_No[6]; /*      Document change number (without document management system)*/
RFC_CHAR Page_No[3];    /*      Page number of document (without Document Management system)*/
RFC_NUM  No_Sheets[3];  /*      Number of sheets (without Document Management system)*/
RFC_CHAR Prod_Memo[18]; /*      Production/inspection memo*/
RFC_CHAR Pageformat[4]; /*      Page Format of Production Memo*/
RFC_CHAR Size_Dim[32];  /*      Size/dimensions*/
RFC_CHAR Basic_Matl[48];        /*      Basic Material*/
RFC_CHAR Std_Descr[18]; /*      Industry Standard Description (such as ANSI or ISO)*/
RFC_CHAR Dsn_Office[3]; /*      Laboratory/design office*/
RFC_CHAR Pur_Valkey[4]; /*      Purchasing Value Key*/
RFC_BCD Net_Weight[7];  /*Net weight*/
RFC_CHAR Unit_Of_Wt[3]; /*      Weight Unit*/
RFC_CHAR Unit_Of_Wt_Iso[3];     /*      Unit of weight in ISO code*/
RFC_CHAR Container[2];  /*      Container requirements*/
RFC_CHAR Stor_Conds[2]; /*      Storage conditions*/
RFC_CHAR Temp_Conds[2]; /*      Temperature conditions indicator*/
RFC_CHAR Trans_Grp[4];  /*      Transportation group*/
RFC_CHAR Haz_Mat_No[18];        /*      Hazardous material number*/
RFC_CHAR Division[2];   /*      Division*/
RFC_CHAR Competitor[10];        /*      Competitor*/
RFC_BCD Qty_Gr_Gi[7];   /*Quantity: Number of GR/GI slips to be printed*/
RFC_CHAR Proc_Rule[1];  /*      Procurement rule*/
RFC_CHAR Sup_Source[1]; /*      Source of Supply*/
RFC_CHAR Season[4];     /*      Season category*/
```

Figure 1.4 Import parameter BAPI_MARA structure in header file in C

Below screenshot shows Export parameters

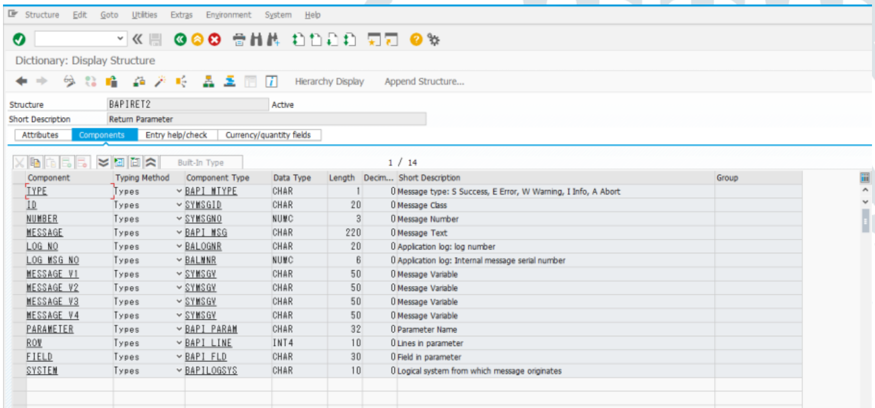


Function module BAPI_MATERIAL_SAVEDATA Active

Parameter Name	Typing	Associated Type	Pass Value	Short text	Long Text
RETURN	LIKE	BAPIRET2	☑	Return parameters	🟩 Display
			□		
			□		
			□		

Figure 1.5 RETURN Export parameters list

Below BAPIRET2 structure attributes which returns success / failure details from SAP



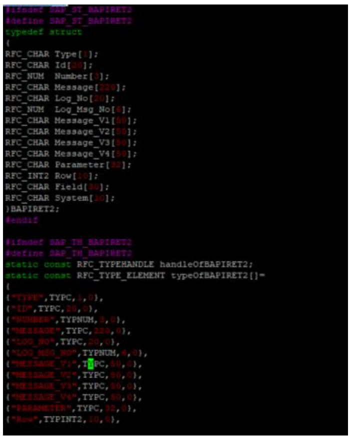
Structure BAPIRET2 Active

Short Description Return Parameter

Component	Typing Method	Component Type	Data Type	Length	Decim...	Short Description	Group
TYPE	Types	BAPI_MTYPE	CHAR	1	0	Message type: S Success, E Error, W Warning, I Info, A Abort	
ID	Types	SYMSGID	CHAR	20	0	Message Class	
NUMBER	Types	SYMSGNO	NUMC	3	0	Message Number	
MESSAGE	Types	BAPI_MSG	CHAR	220	0	Message Text	
LOG_NO	Types	BALOGNR	CHAR	20	0	Application log: log number	
LOG_MSG_NO	Types	BALMNR	NUMC	6	0	Application log: Internal message serial number	
MESSAGE_V1	Types	SYMSGV	CHAR	50	0	Message Variable	
MESSAGE_V2	Types	SYMSGV	CHAR	50	0	Message Variable	
MESSAGE_V3	Types	SYMSGV	CHAR	50	0	Message Variable	
MESSAGE_V4	Types	SYMSGV	CHAR	50	0	Message Variable	
PARAMETER	Types	BAPI_PARAM	CHAR	32	0	Parameter Name	
ROW	Types	BAPI_LINE	INT4	10	0	Lines in parameter	
FIELD	Types	BAPI_FLD	CHAR	30	0	Field in parameter	
SYSTEM	Types	BAPILOGSYS	CHAR	10	0	Logical system from which message originates	

Figure 1.6 Export parameter BAPIRET2 structure in SAP

Equivalent BAPIRETURN2 C Language structure created to get success and failure details returned by SAP BAPI while material create or maintain.

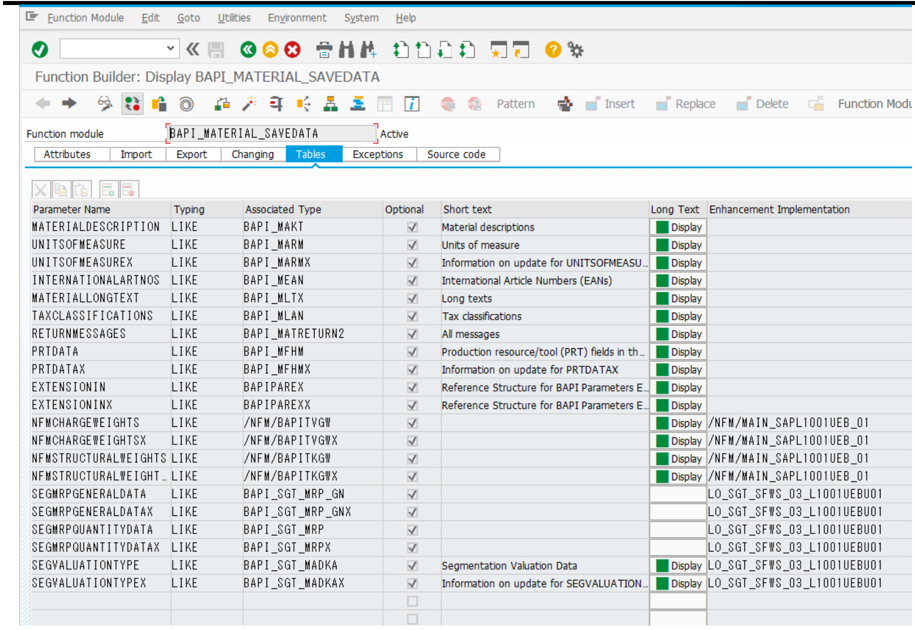


```
#ifndef SAP_ST_BAPIRET2
#define SAP_ST_BAPIRET2
typedef struct
{
RFC_CHAR Type[1];
RFC_CHAR Id[20];
RFC_NUM  Number[3];
RFC_CHAR Message[220];
RFC_CHAR Log_No[20];
RFC_NUM  Log_Msg_No[6];
RFC_CHAR Message_V1[50];
RFC_CHAR Message_V2[50];
RFC_CHAR Message_V3[50];
RFC_CHAR Message_V4[50];
RFC_CHAR Parameter[32];
RFC_INT2 Row[10];
RFC_CHAR Field[30];
RFC_CHAR System[10];
}BAPIRET2;
#endif

#ifndef SAP_TH_BAPIRET2
#define SAP_TH_BAPIRET2
static const RFC_TYPEHANDLE handleOfBAPIRET2;
static const RFC_TYPE_ELEMENT typeOfBAPIRET2[]=
{
{"TYPE",TYPC,1,0},
{"ID",TYPC,20,0},
{"NUMBER",TYPNUM,3,0},
{"MESSAGE",TYPC,220,0},
{"LOG_NO",TYPC,20,0},
{"LOG_MSG_NO",TYPNUM,6,0},
{"MESSAGE_V1",TYPC,50,0},
{"MESSAGE_V2",TYPC,50,0},
{"MESSAGE_V3",TYPC,50,0},
{"MESSAGE_V4",TYPC,50,0},
{"PARAMETER",TYPC,32,0},
{"Row",TYPINT2,10,0},
```

Figure 1.7 Export parameter BAPIRET2 structure in header file in C

SAP Table parameters can import as well as export data like description BAPI_MAKT structure, BAPI_MARM

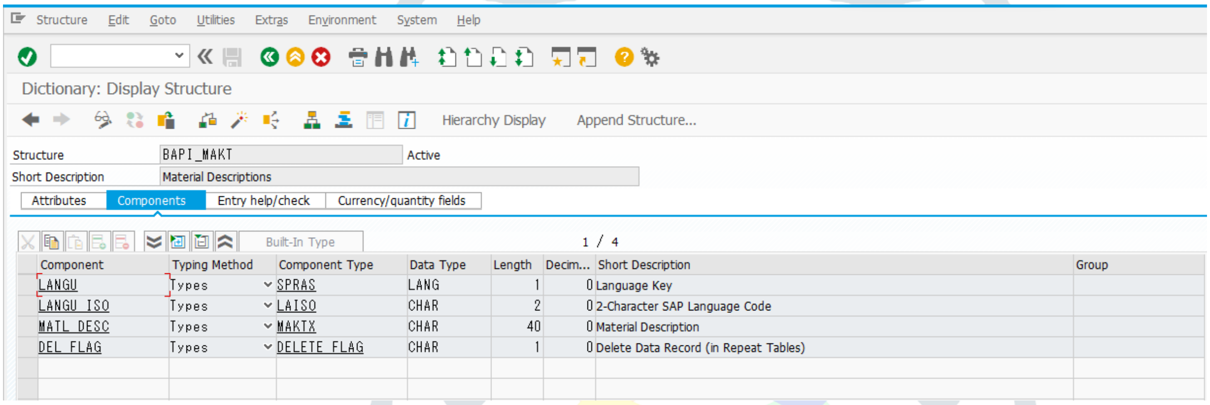

Function Module Edit Goto Utilities Environment System Help
Function Builder: Display BAPI_MATERIAL_SAVEDATA
Pattern
Insert
Replace
Delete
Function Modu
Attributes
Import
Export
Changing
Tables
Exceptions
Source code

Function module BAPI_MATERIAL_SAVEDATA Active

Parameter Name	Typing	Associated Type	Optional	Short text	Long Text	Enhancement Implementation
MATERIALDESCRIPTION	LIKE	BAPI_MAKT	☑	Material descriptions	🟩 Display	
UNITSOFMEASURE	LIKE	BAPI_MARM	☑	Units of measure	🟩 Display	
UNITSOFMEASUREX	LIKE	BAPI_MARMX	☑	Information on update for UNITSOFMEASU...	🟩 Display	
INTERNATIONALARTNOS	LIKE	BAPI_MEAN	☑	International Article Numbers (EANs)	🟩 Display	
MATERIALLONGTEXT	LIKE	BAPI_MLTX	☑	Long texts	🟩 Display	
TAXCLASSIFICATIONS	LIKE	BAPI_MLAN	☑	Tax classifications	🟩 Display	
RETURNMESSAGES	LIKE	BAPI_MATRETURN2	☑	All messages	🟩 Display	
PRTDATA	LIKE	BAPI_MFHM	☑	Production resource/tool (PRT) fields in th...	🟩 Display	
PRTDATAX	LIKE	BAPI_MFHMX	☑	Information on update for PRTDATAX	🟩 Display	
EXTENSIONIN	LIKE	BAPIPAREX	☑	Reference Structure for BAPI Parameters E...	🟩 Display	
EXTENSIONINX	LIKE	BAPIPAREXX	☑	Reference Structure for BAPI Parameters E...	🟩 Display	
NFMCHARGEWEIGHTS	LIKE	/NFM/BAPITVGW	☑		🟩 Display	/NFM/MAIN_SAPL1001UEB_01
NFMCHARGEWEIGHTSX	LIKE	/NFM/BAPITVGWX	☑		🟩 Display	/NFM/MAIN_SAPL1001UEB_01
NFMSTRUCTURALWEIGHTS	LIKE	/NFM/BAPITKGW	☑		🟩 Display	/NFM/MAIN_SAPL1001UEB_01
NFMSTRUCTURALWEIGHT...	LIKE	/NFM/BAPITKGWX	☑		🟩 Display	/NFM/MAIN_SAPL1001UEB_01
SEGMRPGENERALDATA	LIKE	BAPI_SGT_MRP_GN	☑			LO_SGT_SFWS_03_L1001UEBU01
SEGMRPGENERALDATAX	LIKE	BAPI_SGT_MRP_GNX	☑			LO_SGT_SFWS_03_L1001UEBU01
SEGMRPQUANTITYDATA	LIKE	BAPI_SGT_MRP	☑			LO_SGT_SFWS_03_L1001UEBU01
SEGMRPQUANTITYDATAX	LIKE	BAPI_SGT_MRPX	☑			LO_SGT_SFWS_03_L1001UEBU01
SEGVALUATIONTYPE	LIKE	BAPI_SGT_MADKA	☑	Segmentation Valuation Data	🟩 Display	LO_SGT_SFWS_03_L1001UEBU01
SEGVALUATIONTYPEX	LIKE	BAPI_SGT_MADKAX	☑	Information on update for SEGVALUATION...	🟩 Display	LO_SGT_SFWS_03_L1001UEBU01
			□			
			□			

Figure 1.8 Table parameters list

Table parameter BAPI_MAKT used for material description and Language used to maintained.



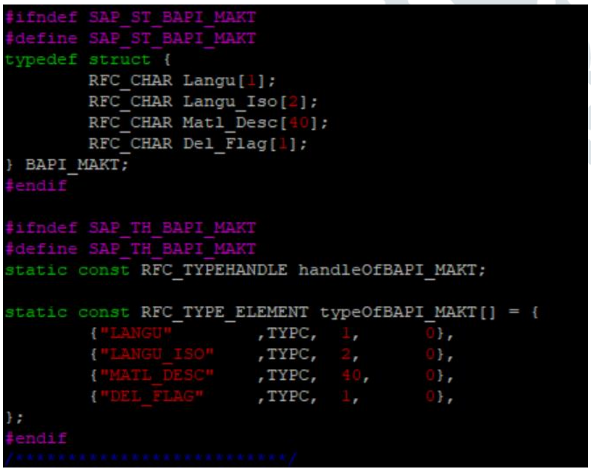
Structure BAPI_MAKT Active

Short Description Material Descriptions

Component	Typing Method	Component Type	Data Type	Length	Decim...	Short Description	Group
LANGU	Types	SPRAS	LANG	1	0	Language Key	
LANGU_ISO	Types	LAISO	CHAR	2	0	2-Character SAP Language Code	
MATL_DESC	Types	MAKTX	CHAR	40	0	Material Description	
DEL_FLAG	Types	DELETE_FLAG	CHAR	1	0	Delete Data Record (in Repeat Tables)	

Figure 1.9 Description table structure in Bapi

BAPI_MAKT C Language structure for description maintenance and selection of Language



```
#ifndef SAP_ST_BAPI_MAKT
#define SAP_ST_BAPI_MAKT
typedef struct {
        RFC_CHAR Langu[1];
        RFC_CHAR Langu_Iso[2];
        RFC_CHAR Matl_Desc[40];
        RFC_CHAR Del_Flag[1];
} BAPI_MAKT;
#endif

#ifndef SAP_TH_BAPI_MAKT
#define SAP_TH_BAPI_MAKT
static const RFC_TYPEHANDLE handleOfBAPI_MAKT;

static const RFC_TYPE_ELEMENT typeOfBAPI_MAKT[] = {
        {"LANGU"        ,TYPC,  1,      0},
        {"LANGU_ISO"    ,TYPC,  2,      0},
        {"MATL_DESC"    ,TYPC,  40,     0},
        {"DEL_FLAG"     ,TYPC,  1,      0},
};
#endif
/***************************/
```

Figure 1.10 Description table structure in C header file

Data types used in BAPI.

Data type	Typedef	Length in Bytes	Description
TYPC	RFC_CHAR[]	1-65535	Characters, blank padded at the end
TYPX	RFC_BYTE[]	1-65535	Binary data
TYPP	RFC_BCD[]	1-16	BCD numbers (Binary Coded Decimals)
TYPINT	RFC_INT	4	Integer
TYPFLOAT	RFC_FLOAT	8	Floating point
TYPDATE	RFC_DATE	8	Date ("YYYYMMDD")
TYPTIME	RFC_TIME	6	Time ("HHMMSS")

Table 1.1 Data Types

C Language structure to call BAPI is as below

Column1
RFC client program
rfc_rc = RfcOpen(...);
rfc_rc = RfcInstallFunction('XYZ', xyz_function,...);
rfc_rc = RfcCallReceive('ABC',...);
If(rfc_rc==RFC_CALL)
{
rfc_rc = RfcDispatch(...);
if(rfc_rc!=RFC_OK)
exit(1);
}
rfc_rc=RfcReceive(...);
...

Table 1.2 Client Program structure

Connection parameters

Below parameters are required to connectivity with SAP system.

```
RfcOptions.destination ="PP8";//system id
RfcOptions.client = "500";//client dev=250 prod=500
RfcOptions.user = "username";
RfcOptions.language = "EN";//Language
RfcOptions.password = "password";
RfcOptions.trace = 0;  //0=ON 1=OFF
RfcConnoptR3only.hostname="hostname";
RfcConnoptR3only.gateway_host="hostname";
RfcConnoptR3only.gateway_service="sapgw00";
RfcOptions.connopt = &RfcConnoptR3only;
```

Various RFC API used in C Language

RfcOpen
Open RFC connection (RFC client program)
RfcConnect
Open RFC connection to R/3 via LOAD BALANCING (Release 3.0 onwards)
RfcAccept
Accept RFC connection (RFC server program)
RfcClose
Close RFC connection.
RfcAbort
Terminate RFC connection and send error text to ABAP program.
RfcConnArgv

Set the parameters required for RfcOpen.

RfcConnArgv3

Set the parameters required for RfcOpen.

RfcEnvironment

Set RFC parameters for RFC library.

RfcLastError

Get extended error specification after an RFC error.

Functions for an RFC Client Program

RFCOpen

Open an RFC connection.

RFCOpenExt

Another way to open an RFC connection, more appropriate for non-C environments than Visual Basic

RFCOpenExtV3

Another way to open an RFC connection, more appropriate for non-C environments than Visual Basic (using RFC Version 3)

RfcCall

Call an ABAP function module without waiting for the result.

RfcReceive

Wait for execution of an RFC function called and receive the return values from the ABAP function module.

RfcCallReceive

Call a function module and receive the return values in one step.

RFC Calls for Manipulating Internal Tables

ItCreate

creates a new internal table.

ITAB_H

handle of an internal table.

ItDelete

deletes the content of a complete internal table and frees storage.

ItGetLine

reads a line from an internal table.

ItInsLine

inserts a line into the given position of an internal table.

ItAppLine

appends a line at the end of an internal table.

ItDelLine

deletes a line from an internal table.

ItGupLine

reads a line for update.

ItFree

resets an internal table to initial state.

ItFill

returns the number of lines in a table.

ItLeng

returns the width of a table, i.e., the size of a row of the table.

Material All views

Basic Data 1/ 2

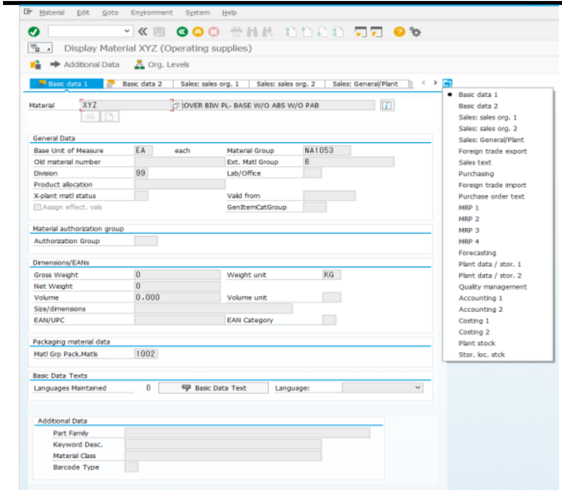
MRP 1/2/3/4

Accounting 1/ 2

Costing 1/ 2

Plant Data Store 1/ 2

Quality view



Display Material XYZ (Operating supplies)

Material XYZ :OVER BIW PL- BASE W/O ABS W/O PAB

General Data

Base Unit of Measure EA each
Material Group NA1053
Old material number
Ext. Matl Group 6
Division 99
Lab/Office
Product allocation
X-plant matl status
Valid from
□ Assign effect. vals
GenItemCatGroup

Material authorization group

Authorization Group

Dimensions/EANs

Gross Weight 0
Weight unit KG
Net Weight 0
Volume 0.000
Volume unit
Size/dimensions
EAN/UPC
EAN Category

Packaging material data

Matl Grp Pack.Matls 1002

Basic Data Texts

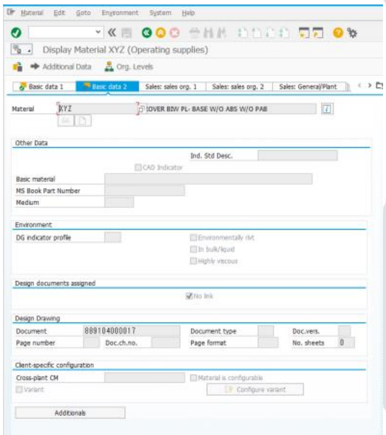
Languages Maintained 0
Language:

Additional Data

Part Family
Keyword Desc.
Material Class
Barcode Type

Figure 1.11 Basic Data 1 View

Basic Data 1/ 2 view are common for all plants and its attributes values are shared across plant.
Material no – Part No
Description – Description
Base Unit of Measure – Unit of Measure
Revision – Part Revision
Gross Weight- weight
Volume-volume
Weight unit – Weight unit
Document- Drawing no
No of sheets
Doc version - Drawing Revision



Display Material XYZ (Operating supplies)

Material XYZ :OVER BIW PL- BASE W/O ABS W/O PAB

Other Data

Ind. Std Desc.
□ CAD Indicator
Basic material
MS Book Part Number
Medium

Environment

DG indicator profile
□ Environmentally rlvt
□ In bulk/liquid
□ Highly viscous

Design documents assigned

☑ No link

Design Drawing

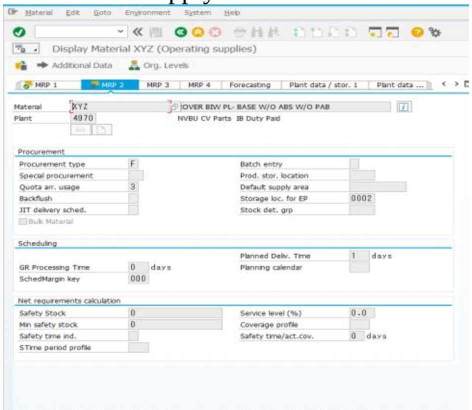
Document 889104000017
Document type
Doc.vers.
Page number
Doc.ch.no.
Page format
No. sheets 0

Client-specific configuration

Cross-plant CM
□ Material is configurable
□ Variant

Figure 1.12 Basic Data 2 view

MRP 1/ MRP 2 / MRP 3/ MRP 4 view are plant specific.
Condition of supply is maintained in MRP 2 view in procurement and special procurement field. Store location is also maintained.



Display Material XYZ (Operating supplies)

Material XYZ :OVER BIW PL- BASE W/O ABS W/O PAB
Plant 4970 NVBU CV Parts IB Duty Paid

Procurement

Procurement type F
Batch entry
Special procurement
Prod. stor. location
Quota arr. usage 3
Default supply area
Backflush
Storage loc. for EP 0002
JIT delivery sched.
Stock det. grp
□ Bulk Material

Scheduling

Planned Deliv. Time 1 days
GR Processing Time 0 days
Planning calendar
SchedMargin key 000

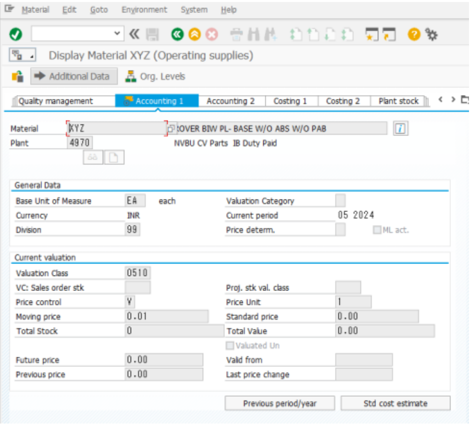
Net requirements calculation

Safety Stock 0
Service level (%) 0.0
Min safety stock 0
Coverage profile
Safety time ind.
Safety time/act.cov. 0 days
STime period profile

Figure 1.13 MRP 2 view

Accounting 1/ 2 view are also plant specific.
Valuation category
Valuation class
Moving price

Standard price are the fields maintained in this fields.



Display Material XYZ (Operating supplies)

Material XYZ :OVER BIW PL- BASE W/O ABS W/O PAB
Plant 4970 NVBU CV Parts IB Duty Paid

General Data
Base Unit of Measure EA each
Valuation Category
Currency INR
Current period 05 2024
Division 99
Price determ.
□ ML act.

Current valuation
Valuation Class 0510
VC: Sales order stk
Proj. stk val. class
Price control V
Price Unit 1
Moving price 0.01
Standard price 0.00
Total Stock 0
Total Value 0.00
□ Valuated Un
Future price 0.00
Valid from
Previous price 0.00
Last price change

Figure 1.14 Accounting view

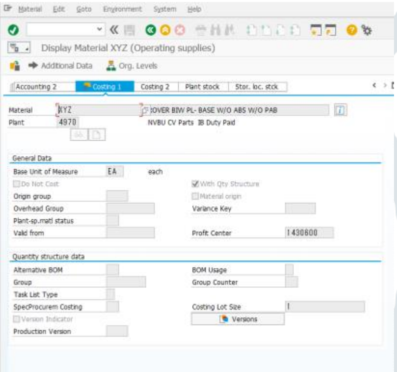
Costing 1 / 2 view is plant specific views.

Origin group

Overhead group

Profit center

Plant specific material status is maintained in these views.



Display Material XYZ (Operating supplies)

Material XYZ :OVER BIW PL- BASE W/O ABS W/O PAB
Plant 4970 NVBU CV Parts IB Duty Paid

General Data
Base Unit of Measure EA each
□ Do Not Cost
☑ With Qty Structure
Origin group
□ Material origin
Overhead Group
Variance Key
Plant-sp.matl status
Valid from
Profit Center 1430800

Quantity structure data
Alternative BOM
BOM Usage
Group
Group Counter
Task List Type
SpecProcurem Costing
Costing Lot Size 1
□ Version Indicator
Production Version

Figure 1.15 Costing View

4. Conclusions

- Developed inhouse PLM-SAP interface for material master creation in SAP.
- This will automatically create material data after Parts get released in PLM.
- Save license cost required for third party connector to develop this interface.
- This can be used with any version of Teamcenter.
- Save Designers time to again create material in SAP.
- Creates material in SAP within seconds with default values for which manually could have required 10 to 15 minutes.
- Reduced typo error while entering material details.

5. References

[1] The RFC Api © Copyright 2001 SAP AG. Alle Rechte vorbehalten

[2] https://help.sap.com/saphelp_snc700_ehp01/helpdata/en/22/04250b488911d189490000e829fbbd/content.htm?no_cache=true