SAP Universal Naming Schema

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Author Name: Guo Qiang, Wang		Voice:	613-765-4195
Company: Nortel	Fax:	[Fax Number]	
Address: 3500 Carling Ave, Ottawa Ontario, Canada K2H 8E9		E-mail:	guoqiang@nortel.com

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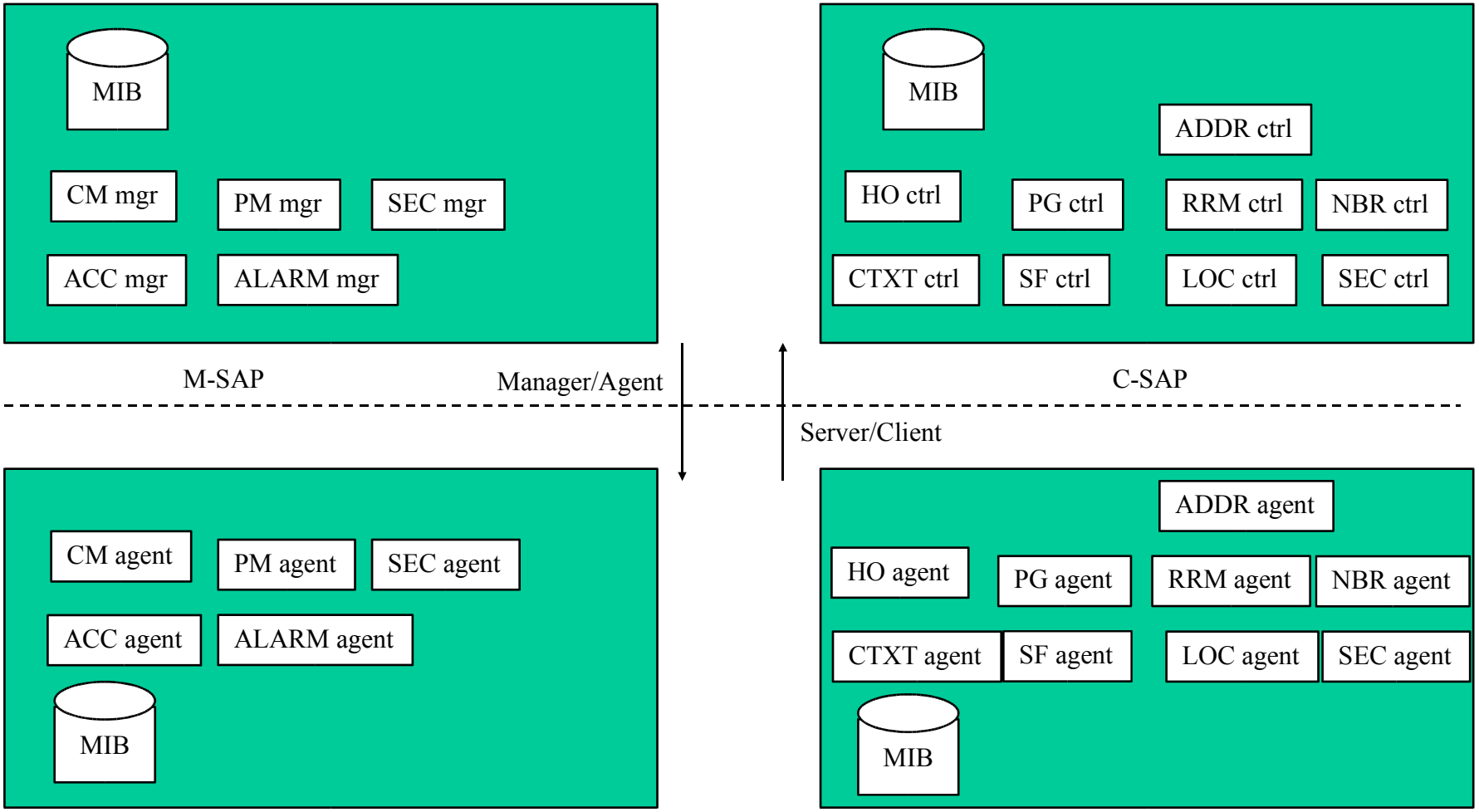
Purpose:

[Description of what the author wants 802.16 to do with the information in the presentation.]

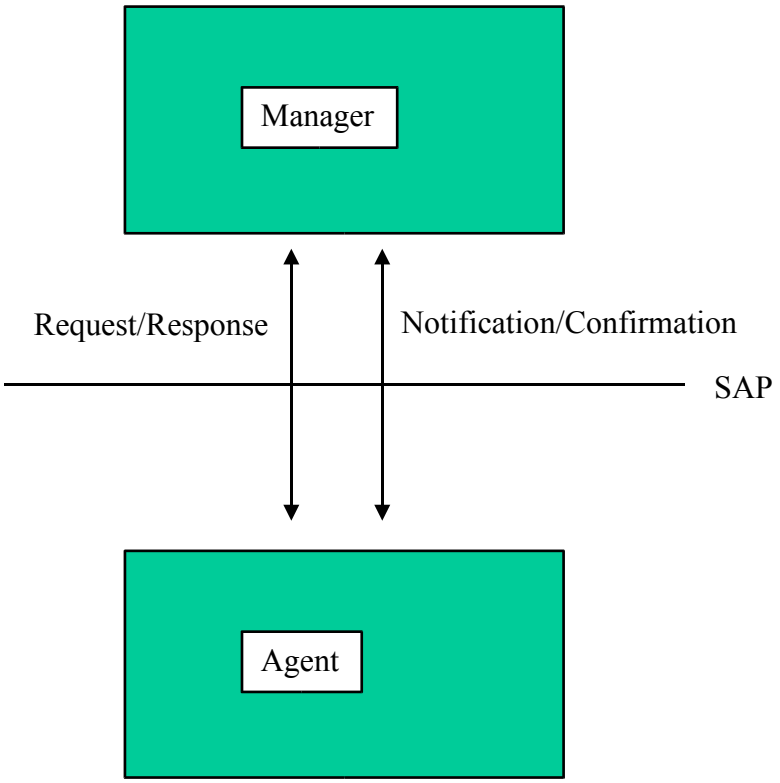
Universal M-SAP / C-SAP Naming Schema

Nortel
Intel
ZTE
HuaWei

Bi-Relationship: Manager/Agent vs. Server/Client



Universal Naming Schema: Primitive Types



SAP_Type { Management, Control}

Function Type { CM, PM, ALARM, …}
{ HO, PG, SF, …}

Message Type { Request, Response, Notification, Confirmation}

M-SAP / C-SAP Operation Service Primitives

Primitive_name (Msg_ID, Operation_type, Action_type,
Object_ID, Attribute_List,
Filter, Scope,
Action_info, Action_replay_info,
Time, SAP_error_code)

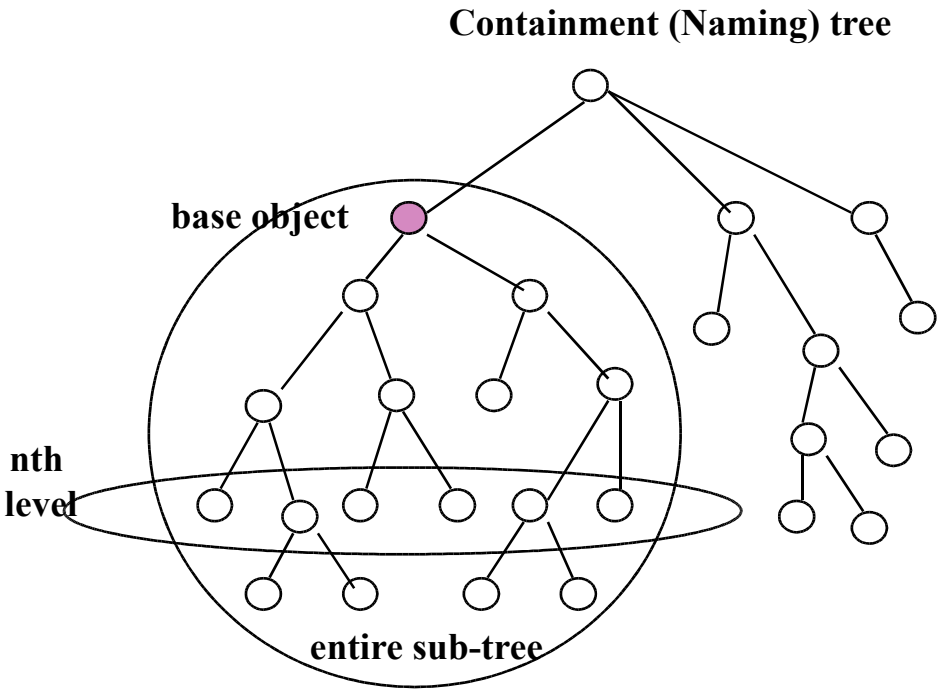
Parameter name	Mandatory / Optional	Definition
Msg_id	M	Integer uniquely identifies the primitive message
Operation_Type	M	Create, Delete, Get, Set, Action, Cancel-Get
Action_type	O	When operation type is Action, it Specifies a particular action such as Start, End, Download, Reset, etc
Object_id	M	DN / RDN of managed objects which perform the operation
Attribute_list	M	Array of pair (Attribute_ID, Attribute_value). In Get request operation, Attribute_value is Null
Filter	O	Boolean expression involving attribute value to be evaluated for all selected objects.
Scope	O	Specify the sub-tree level of the naming tree for potentially objects to be selected.
Action_info	O	used in Action request about the action to perform
Action_replay_info	O	used in Action response about action replay
Time	O	Time info about an operation
SAP_error_code	O	used in error service to give the reason of the error

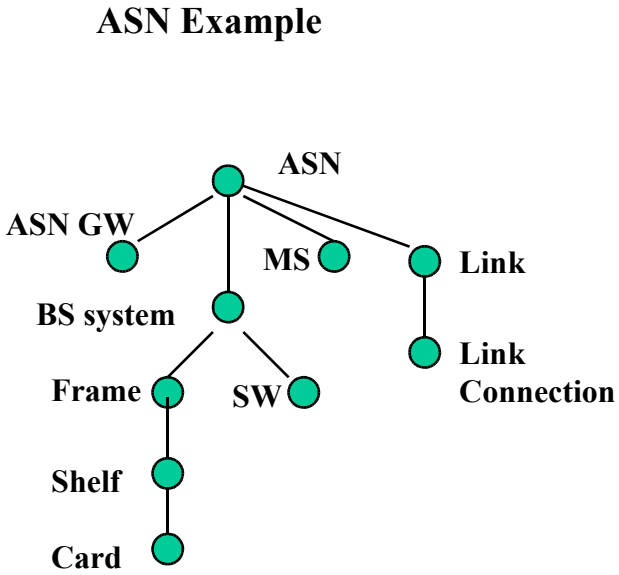
M-SAP / C-SAP Notification Service Primitives

Primitive_name (Msg_ID,
Event_type, Event_info,
Object_ID, Attribute_List,
Time, SAP_Error_code)

Parameter name	Mandatory / Optional	Definition
Msg_id	M	Integer uniquely identifies the primitive message
Event_Type	M	Specify the type of occurring event
Event_info	O	used in event request. Pass reported event info
Object_id	M	DN / RDN of managed objects which perform the operation
Attribute_list	M	Array of pair (Attribute_ID, Attribute_value).
Event_replay	O	used in event confirmation to pass event info
Action_replay_info	O	used in Action response about action replay
Time	O	Time info about an event
SAP_error_code	O	used in error service to give the reason of the error

Scoping and Filtering





C-SAP Operation/Notification Service Primitive Examples

C-SAP Primitive Examples: HO (1)

Serving-BS → ASN GW :

C-HO-Request (Operation_type: Action, Action_type: SHO/FBSS,
Object_ID: NCMS
Attribute_List: serving-BS, MS-ID, Mode, target-BS-list, SF-info, CS-para-info)

C-HO-Response(Operation_type: Action, Action_type: SHO/FBSS,
Object_ID: NCMS
Attribute_List: serving-BS, MS-ID, Mode, target-BS-list)

C-HO-Notification(Event_type: SHO/FBSS,
Object_ID: Serving-BS
Attribute_List: serving-BS, MS-ID, Mode, SF-info, CS-para-info)

ASN GW → Target-BS :

C-HO-Request (Operation_type: Action, Action_type: SHO/FBSS
Object_ID: Target-BS
Attribute_List: serving-BS, MS-ID, Mode, HO-Quality, SF-info, CS-para-info)

C-HO-Response(Operation_type: Action, Action_type: SHO/FBSS
Object_ID: Target-BS
Attribute_List: serving-BS, MS-ID, Mode, MS-Access, New-access, HO-quality)

C-SAP Primitive Examples: HO (2)

C-HO-Request (Operation_type: Action, Action_type: HO-Start,
Object_ID: Target-BS
Attribute_List: MS-ID, HO-type, Mode)

C-HO-Response(Operation_type: Action, Action_type: HO-Start,
Object_ID: Target-BS
Attribute_List: MS-ID, HO-type, Mode)

C-HO-Request (Operation_type: Action, Action_type: HO-Cancel,
Object_ID: Target-BS
Attribute_List: MS-ID, HO-type, Mode)

C-HO-Response(Operation_type: Action, Action_type: HO-Cancel,
Object_ID: Target-BS
Attribute_List: MS-ID, HO-type, Mode)

C-HO-Request (Operation_type: Action, Action_type: HO-Directive,
Object_ID: Serving-BS
Attribute_List: MS-ID, HO-type, Mode)

C-HO-Response(Operation_type: Action, Action_type: HO-Directive,
Object_ID: Serving-BS
Attribute_List: MS-ID, HO-type, Mode)

C-SAP Primitive Examples: Service Flow Provisioning

C-SF-Request (Operation_type: Create,
Object_ID: BS-ID
Attribute_List: MS-ID, SF-descriptor, SF-info, CS-para-info)

C-SF-Response(Operation_type: Create,
Object_ID: BS-ID
Attribute_List: MS-ID, SF-ID, SF-descriptor, SF-info, CS-para-info)

C-SF-Request (Operation_type: Delete,
Object_ID: BS-ID
Attribute_List: SF-ID)

C-SF-Response(Operation_type: Delete,
Object_ID: BS-ID
Attribute_List: SF-ID, SF-error-info)

Summary

- Universal primitive naming schema for both M-SAP and C-SAP
- Symmetrical messaging between BS and NCMS
- Generic syntax and semantics
- Aligned with IRP model.
- Easy to map to all implementation-specific platforms (SNMP, CORBA, JAVA, Web, API, ..)