

# SAP Universal Naming Schema

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# Universal M-SAP / C-SAP Naming Schema

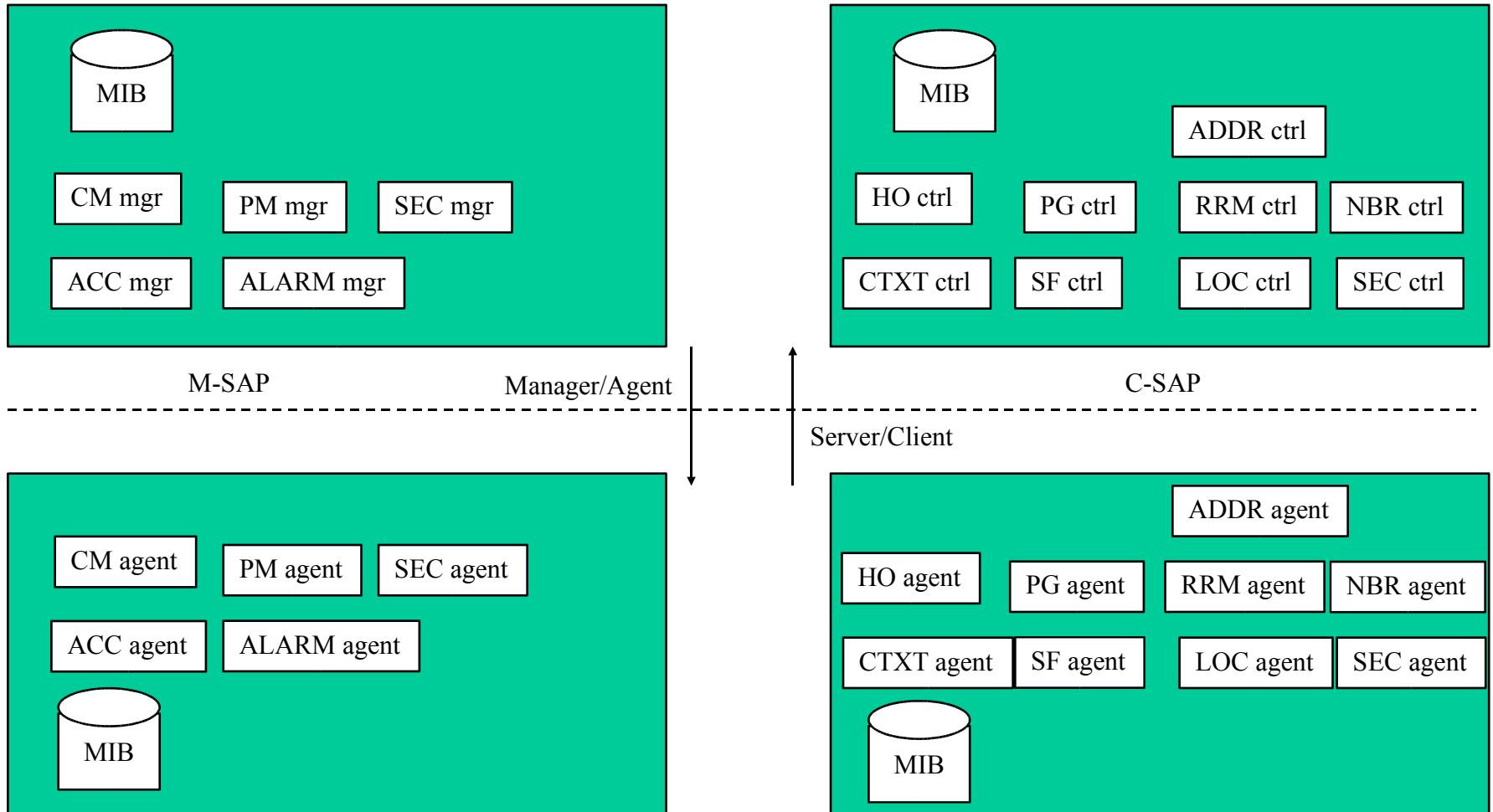
Nortel

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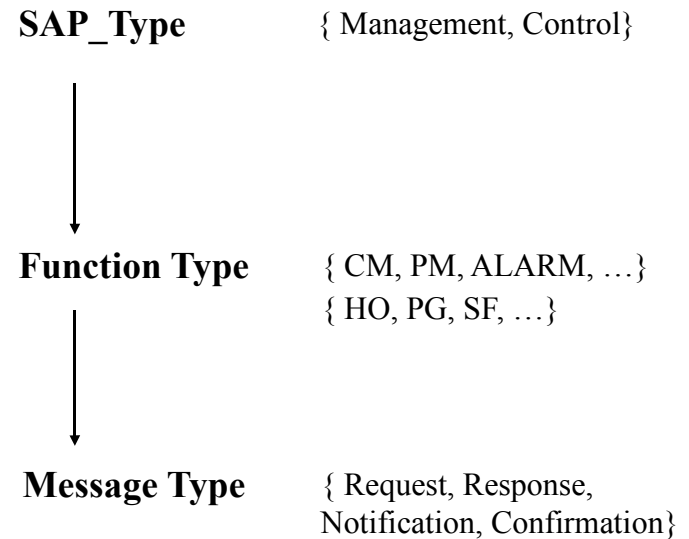
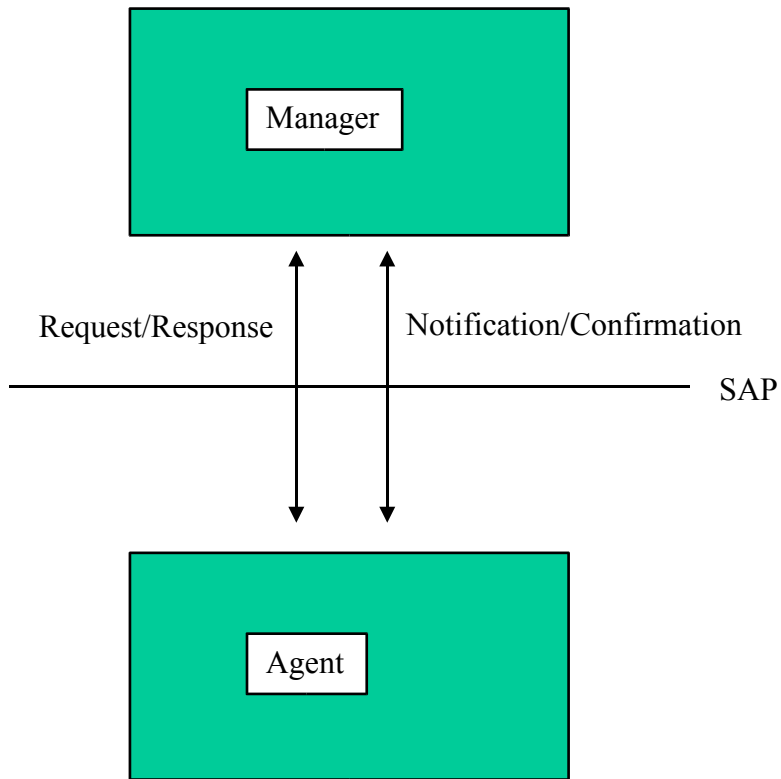
ZTE

HuaWei

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



# Universal Naming Schema: Primitive Types



# 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

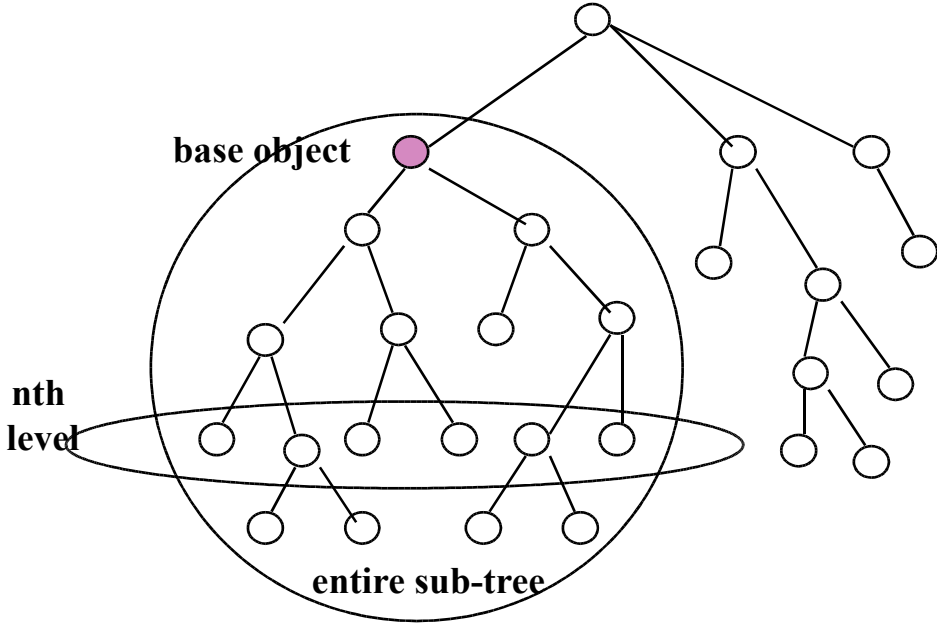
# M-SAP / C-SAP Notification Service Primitives

Primitive\_name (      Msg\_ID,  
                          Event\_type, Event\_info,  
                          Object\_ID, Attribute\_List,  
                          Time, SAP\_Error\_code      )

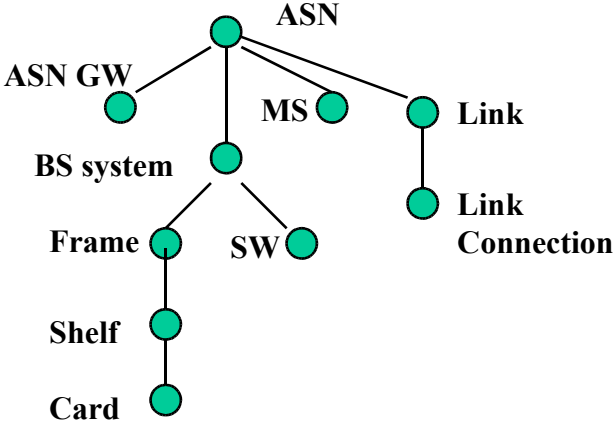
Parameter name	Mandatory / Optional	Definition
Msg_id	M	Integer uniquely identifies the primitive message
Event_Type	M	Specify the type of occurring event
Event_info	O	used in event request. Pass reported event info
Object_id	M	DN / RDN of managed objects which perform the operation
Attribute_list	M	Array of pair (Attribute_ID, Attribute_value).
Event_replay	O	used in event confirmation to pass event info
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

Containment (Naming) tree



ASN Example



## 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 )**

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**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 )**

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**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 )**

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**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, ..)