



The purpose of Naming

Handle Naming of ESS wide physical and logical devices according to ESS Naming Convention

ESS name	System structure	Device structure
	Which part of the facility does the device provide service to?	What kind of service does the device provide?
Must refer to System structure	1 System Group	1 Discipline
May refer to Device structure	2 System	2 Device Group
May have index for instance	3 Subsystem	3 Device Type

Rules for structures

Structures

System, Subsystem, Discipline, Device Type must have mnemonic
System Group may have mnemonic
Device Group must not have mnemonic

A mnemonic is a string of characters and numbers that must be unique in its namespace (rules apply)

Rules for names

Names

- 1) System structure
- 2) System structure + Device structure + Index

A name

system structure mnemonic path
system structure mnemonic path : device structure mnemonic path – index

System structure mnemonic path

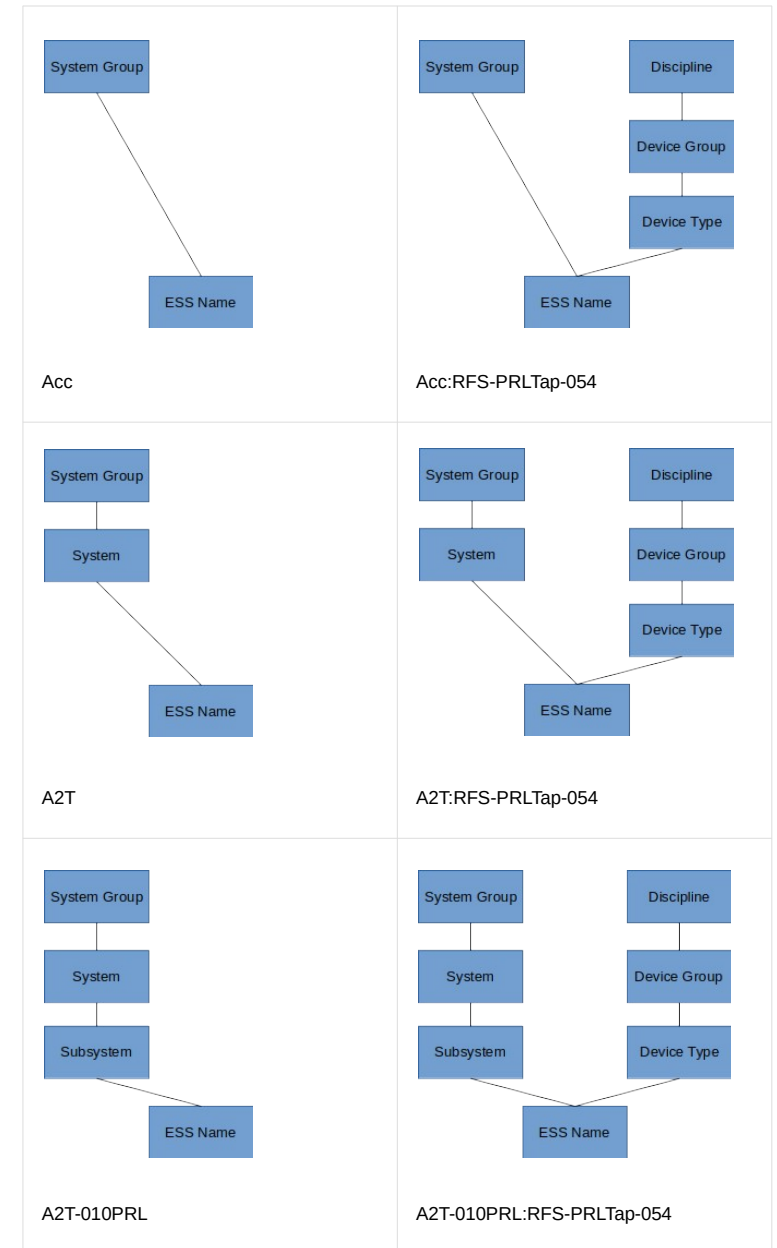
- if System Group then System Group mnemonic
- if System then System mnemonic
- if Subsystem then System mnemonic – Subsystem mnemonic

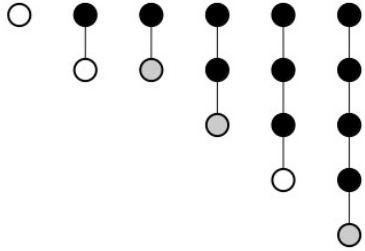
Device structure mnemonic path

- if Device Type then Discipline mnemonic – Device Type mnemonic

Index

- a string of characters and numbers (rules apply)



What	Description	Example
Concepts & Terminology		
ESS Naming Convention	Rules for naming ESS Systems and Devices and Components in EPICS-based control system.	https://chess.esss.lu.se/enovia/link/ESS-0000757/21308.51166.45568.45993/valid
Authentication & authorization	ESS username and password. None - Read-only. User - All operations for names. Administrator - All operations for names and structures.	
Equivalence	Derived from name or mnemonic by taking similar-looking characters into account and helps to ensure that name and mnemonic is unique within its namespace.	o, O, 0 - considered same from equivalence point-of-view i, I, l, L, 1 - considered same from equivalence point-of-view leading 0 numerical characters removed
Lifecycle of names and structures	The lifecycle of ESS name and structure entries. Each entry has a unique identifier throughout its lifecycle. The lifecycle is governed by attribute deleted.	An entry that is deleted may no longer be updated (or revived).
Line of uuid	A collection of ESS name or structure entries that share the same identifier and together make up an entry's history.	
Namespace	Line of uuid from top level to bottom level, for system structure and device structure, respectively. An index or a mnemonic or mnemonic equivalence may exist only once in a namespace for entries that are not deleted. Namespace for a name entry is all valid names. Namespace for a structure entry is its hierarchy.	
Lifecycle		
<div> <div>ESS names & structures</div> <ul style="list-style-type: none"> unique identifier throughout its lifecycle – line of uuid lifecycle governed by attribute deleted <div> <div>● obsolete</div> <div>● valid</div> <div>○ valid</div> </div> <div> <div>other valid entry available</div> <div>deleted last in line of uuid</div> <div>active</div> </div> </div> 		<p>Examples of lines of uuid with different history.</p> <p>Names</p> <p>Lifecycle handled by attribute deleted. User may add, update, delete entry.</p> <p>Structures</p> <p>Lifecycle handled by attribute deleted. Administrator may add, update, delete entry.</p> <p>Non-deleted structure entries that are latest in line of uuid may be used for names. Non-deleted name entries are considered active names.</p>



What	Description	Example
REST API		
		API handles names and structures data. Data is sent and received as JSON unless otherwise stated. Operations require authorization depending on scope.
REST API schemas		Required fields (Optional fields) for kind of operation
Name element	A collection of fields that represent an ESS name entry (comprehensive). From server to client.	
Name command element	A collection of fields that represent an ESS name entry (minimum). From client to server. Purpose to simplify communication client to server.	Create – parentSystemStructure, description (optional: parentDeviceStructure, index) Update – uuid, parentSystemStructure, description (optional: parentDeviceStructure, index) Delete – uuid
Structure element	A collection of fields that represent an ESS system structure or device structure entry (comprehensive). From server to client.	
Structure command element	A collection of fields that represent an ESS system structure or device structure entry (minimum). From client to server. Purpose to simplify communication client to server.	Create – type, description (optional: parent, mnemonic, ordering) Update – uuid, type, description (optional: parent, mnemonic, ordering) Delete – uuid, type
REST API fields (sub-selection)		
Type	Kind of structure.	SYSTEMGROUP, SYSTEM, SUBSYSTEM, DISCIPLINE, DEVICEGROUP, DEVICETYPE
Index (Instance index)	"Mnemonic for a name". To distinguish devices of the same type in the same system. Two different set of rules for index are identified for the Scientific and P&ID disciplines.	
Mnemonic	A set of characters and numbers to identify an entry in system structure and device structure.	
Deleted	To show if entry is deleted in its line of (uuid) entries.	true, false
REST API usage		
<ul style="list-style-type: none">Observe which fields to use for operations client to server.Obsolete values are not shown unless history is requested.Regular expressions are not supported for searches. Regex-like behavior is available with _ underscore, 0 or 1 occurrences of any character, % percent, any number of any character.		