



EUROPEAN  
SPALLATION  
SOURCE



# Naming Convention Tool

Exploring refactoring

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# Agenda



- 1 Motivation
- 2 Introduction to Naming data landscape
- 3 Storage & application
- 4 Exploring options
- 5 Live demo & performance
- 6 Discussion
- 7 What's next?

# Motivation

## 1 (1)



Naming application is stable but difficult to understand.

This makes for long time to understand enough before enough knowledge is acquired to work comfortably with application and database.

Complexity makes it difficult to handle maintenance.

- What you see in application is not what you get from database
- Distance between storage and usage of data
- Need of caches to have acceptable performance. Caches re-read after each change.

UI

REST API, import

- Complex business logic

# Introduction to Naming data land



## 1 (2) Background

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

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

# Introduction to Naming data land

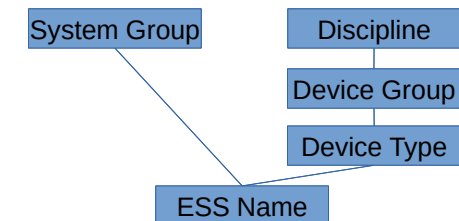
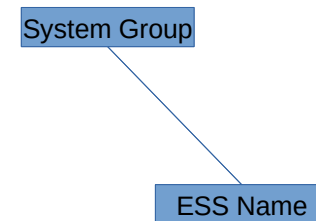


## 2 (2) Visualization

ESS names and name part structures

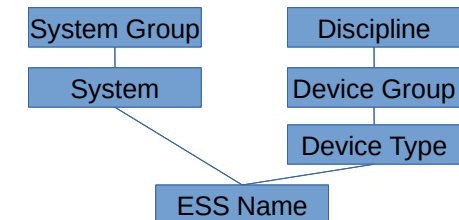
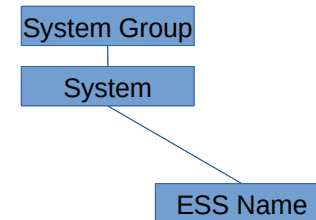
Acc

Acc:RFS-PrITap-054



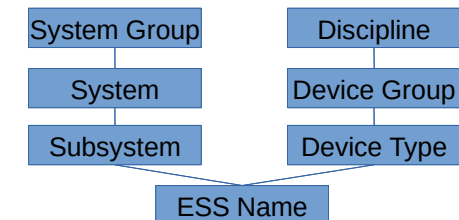
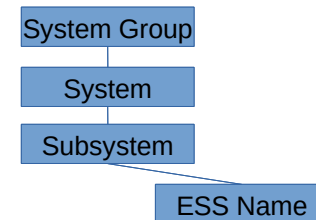
A2T

A2T:RFS-PrITap-054



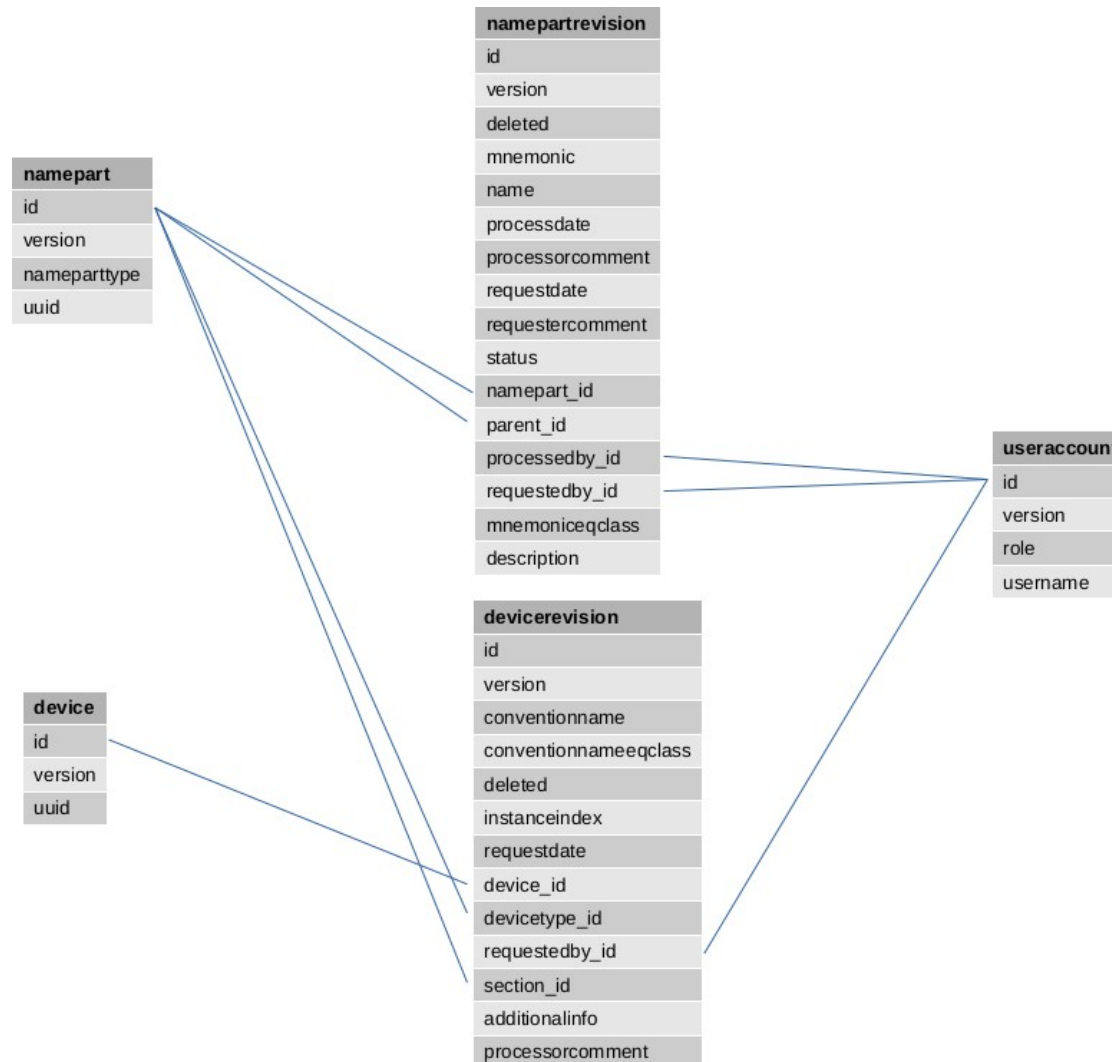
A2T-010PRL

A2T-010PRL:RFS-PrITap-054



# Storage & application

## 1 (3) Current database, tables



# Storage & application

## 2 (3) Current database, example



Acc  
Acc:RFS-PRLTap-054  
A2T  
A2T:RFS-PRLTap-054  
A2T-010PRL  
A2T-010PRL:RFS-PRLTap-054

namepart		
id	nameparttype	uuid
1	SECTION	4262e1e7-2444-412e-83d7-aeabf58262c6
16	SECTION	e67a497c-9c55-4942-97fc-700c8ec56031
1359	SECTION	c2fce615-ed5d-40f9-8fb5-0b91502536e5
242	DEVICE_TYPE	e9b859d8-5c49-4098-9332-988edb898eef
1349	DEVICE_TYPE	5b5e1400-a390-4b39-ac3e-dd48a40cb073
1350	DEVICE_TYPE	bb1e68a6-e233-4595-ae88-f9186b6760c6

device	
id	uuid
70662	d5931a5d-d908-4bfd-b0a2-9dde66ad5f84
70663	ac408fb9-739c-4a00-aed5-855d09d8dbee
70664	b9d16c9f-71a2-4c06-90f6-76682188904d
70665	5e9778da-9ed0-4f2f-b8e2-f2be7be0e416
70666	06ecb437-de5b-41d7-9c02-6a6a35956e21
3957	07bce0ae-0947-47c8-941e-cc76678fd29a

namepartrevision								
id	deleted	mnemonic	name	status	namepart_id	parent_id	mnemoniceqclass	
1		Acc	Accelerator	APPROVED	1		ACC	
1050			Accelerator	APPROVED	1			
5007		Acc	Accelerator	APPROVED	1		ACC	
16		A2T	Accelerator to Target	APPROVED	16	1	A2T	
1708		A2T	Accelerator to Target	APPROVED	16	1	A2T	
2292		010PRL	01 Phase Reference Line	APPROVED	1359	16	10PR1	
242		RFS	RF Systems	APPROVED	242		RFS	
2282			Phase Reference Line	APPROVED	1349	242		
2283		PRLTAP	Phase Reference Line Tap	APPROVED	1350	1349	PR1TAP	
2692		PRLTap	Phase Reference Line Tap	APPROVED	1350	1349	PR1TAP	

devicerevision								
id	conventionname	conventionnameeqclass	deleted	instanceindex	device_id	devicetype_id	section_id	
122708	Acc	ACC			70662		1	
122709	Acc:RFS-PRLTap-054	ACC:RFS-PR1TAP-54		054	70663	1350	1	
122710	A2T	A2T			70664		16	
122711	A2T:RFS-PRLTap-054	A2T:RFS-PR1TAP-54		054	70665	1350	16	
122712	A2T-010PRL	A2T-10PR1			70666		1359	
32540	A2T-010PRL:RFS-PRLTap-054	A2T-10PR1:RFS-PR1TAP-54		054	3957	1350	1359	





# Storage & application

## 3 (3) Caches

Two caches used

1. names together with name part structures. Used in UI.

2. names. Used in REST API and import from Excel.

Caches prepared by reading all database content and looping through each entry to determine if content to be inserted into cache.

- Tree structure of business objects
- Flat structure of business objects
- Latest and pending content in caches. As looping progresses, content replaced in cache.
- Names cache may have obsolete content.



# Exploring options

## 1 (5) Core of model and storage

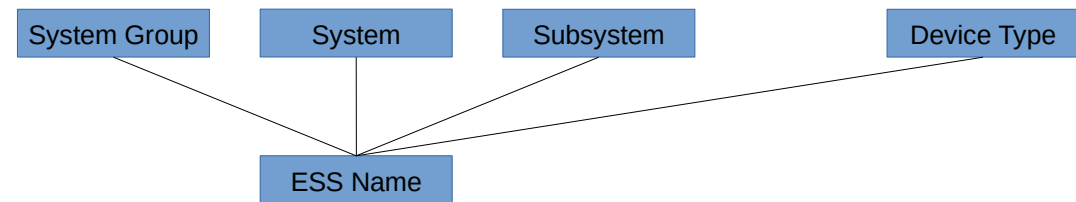
A data model and storage that is easier to understand

Flatter structure

ESS name

Must refer either of System Group,  
System, Subsystem

May refer Device Type



# Explore options

## 2 (5) Database suggestion, tables





# Explore options

## 3 (5) Database suggestion, example

Acc  
Acc:RFS-PRLTap-054  
A2T  
A2T:RFS-PRLTap-054  
A2T-010PRL  
A2T-010PRL:RFS-PRLTap-054

namepartrevision_systemgroup							
id	uuid	name	mnemonic	mnemonicEquivalence	status	latest	deleted
1	4262e1e7-2444-412e-83d7-aeabf58262c6	Accelerator	Acc	ACC	APPROVED	false	
1050	4262e1e7-2444-412e-83d7-aeabf58262c6	Accelerator			APPROVED	false	
5007	4262e1e7-2444-412e-83d7-aeabf58262c6	Accelerator	Acc	ACC	APPROVED	true	

namepartrevision_system								
id	uuid	parent_uuid	name	mnemonic	mnemonicEquivalence	status	latest	deleted
16	e67a497c-9c55-4942-97fc-700c8ec56031	4262e1e7-2444-412e-83d7-aeabf58262c6	Accelerator to Target	A2T	A2T	APPROVED	false	
1708	e67a497c-9c55-4942-97fc-700c8ec56031	4262e1e7-2444-412e-83d7-aeabf58262c6	Accelerator to Target	A2T	A2T	APPROVED	true	

namepartrevision_subsystem								
id	uuid	parent_uuid	name	mnemonic	mnemonicEquivalence	status	latest	deleted
2292	c2fce615-ed5d-40f9-8fb5-0b91502536e5	e67a497c-9c55-4942-97fc-700c8ec56031	01 Phase Reference Line	010PRL	10PR1	APPROVED	true	

namepartrevision_discipline							
id	uuid	name	mnemonic	mnemonicEquivalence	status	latest	deleted
242	e9b859d8-5c49-4098-9332-988edb898eef	RF Systems	RFS	RFS	APPROVED	true	

namepartrevision_devicegroup								
id	uuid	parent_uuid	name	mnemonic	mnemonicEquivalence	status	latest	deleted
2282	5b5e1400-a390-4b39-ac3e-dd48a40cb073	e9b859d8-5c49-4098-9332-988edb898eef	Phase Reference Line			APPROVED	true	

namepartrevision_devicetype								
id	uuid	parent_uuid	name	mnemonic	mnemonicEquivalence	status	latest	deleted
2283	bb1e68a6-e233-4595-ae88-f9186b6760c6	5b5e1400-a390-4b39-ac3e-dd48a40cb073	Phase Reference Line Tap	PRLTAP	PR1TAP	APPROVED	false	
2692	bb1e68a6-e233-4595-ae88-f9186b6760c6	5b5e1400-a390-4b39-ac3e-dd48a40cb073	Phase Reference Line Tap	PRLTAP	PR1TAP	APPROVED	true	

devicerevision_device								
id	uuid	namepartrevision_systemgroup_uuid	namepartrevision_system_uuid	namepartrevision_subsystem_uuid	namepartrevision_devicetype_uuid	Instance index	conventionname	conventionname equivalence
122707	5a9f7f3a-5bac-443e-9fe2-ca51e8a5cc68	4262e1e7-2444-412e-83d7-aeabf58262c6					Acc	ACC
122708	d9249c6b-a7b3-4cef-8f7b-fc995e75c47b	4262e1e7-2444-412e-83d7-aeabf58262c6			bb1e68a6-e233-4595-ae88-f9186b6760c6	054	Acc: RFS-PRLTap-054	ACC: RFS-PR1TAP-54
122709	00cc4bd6-1b0a-4f2f-893c-08fec86dee1f		e67a497c-9c55-4942-97fc-700c8ec56031				A2T	A2T
122710	85719dfe-a07e-4e1a-9445-cc4497fc2eb6		e67a497c-9c55-4942-97fc-700c8ec56031		bb1e68a6-e233-4595-ae88-f9186b6760c6	054	A2T: RFS-PRLTap-054	A2T: RFS-PR1TAP-54
122711	501f8c39-26c2-48dc-a35d-7e8f54121bb5						A2T-010PRL	A2T-10PR1
32540	07bce0ae-0947-47c8-941e-cc76678fd29a			c2fce615-ed5d-40f9-8fb5-0b91502536e5	bb1e68a6-e233-4595-ae88-f9186b6760c6	054	A2T-010PRL: RFS-PRLTap-054	A2T-10PR1: RFS-PR1TAP-54



# Explore options

## 4 (5) Expectations

What you see in application is closer to what you get from database

Less distance between storage and usage of data

Less complex business logic

Less resource allocation

No need for caches



# Explore options

## 5 (5) Not to forget

In exploring Naming refactoring, shortcuts have been taken. It's both possible and suitable to handle shortcuts if work for explored option is to proceed.



# Live demo & performance



# Discussion





What's next?



*“Let’s do it to them before they  
do it to us”*

Sergeant Stan Jablonski  
Hill Street Blues