

# About

|       |                               |
|-------|-------------------------------|
| About | Note!<br><br>Work in progress |
|-------|-------------------------------|

| Content   |  |   |  |         |
|---|--|---|--|---------|
|   |  |   |  | Page    |
| About   |  | This page                                 |  | 1       |
|   |  |   |  |         |
| Domain model and ESS names                            |  | Examples of structures and ESS names      |  | 2       |
|   |  |   |  |         |
| Existing – Data models                                |  | Hierarchies of model content with example |  | 3       |
| Existing – Database                                   |  | Database tables & diagram                 |  | 4       |
| Existing – Overview                                   |  | Overview together with integrations       |  | 5       |
|   |  |   |  |         |
| Refactoring – Data models                             |  | Hierarchies of model content with example |  | 6       |
| Refactoring – Database                                |  | Database tables                           |  | 7       |
| Refactoring – Database                                |  | Database diagram                          |  | 8       |
| Refactoring – Overview                                |  | Overview together with integrations       |  | 9       |
| Refactoring – UI – ESS names                          |  | Naming UI sketch for ESS names            |  | 10      |
| Refactoring – UI – System structure                   |  | Naming UI sketch for System structure     |  | 11      |
| Refactoring – REST API – High-level flow              |  | Naming backend                            |  | 12      |
| Refactoring – REST API – Drilling down                |  | Naming backend                            |  | 13      |
| Refactoring – REST API – Areas, endpoints, parameters |  | Naming backend                            |  | 14 – 16 |
|   |  |   |  |         |
|   |  |   |  |         |
|   |  |   |  |         |
|   |  |   |  |         |
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|   |  |   |  |         |
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## Thoughts / Conclusion

When going from design to implementation for refactoring of Naming, some thoughts and choices are in mind.

- Naming client
- Javascript

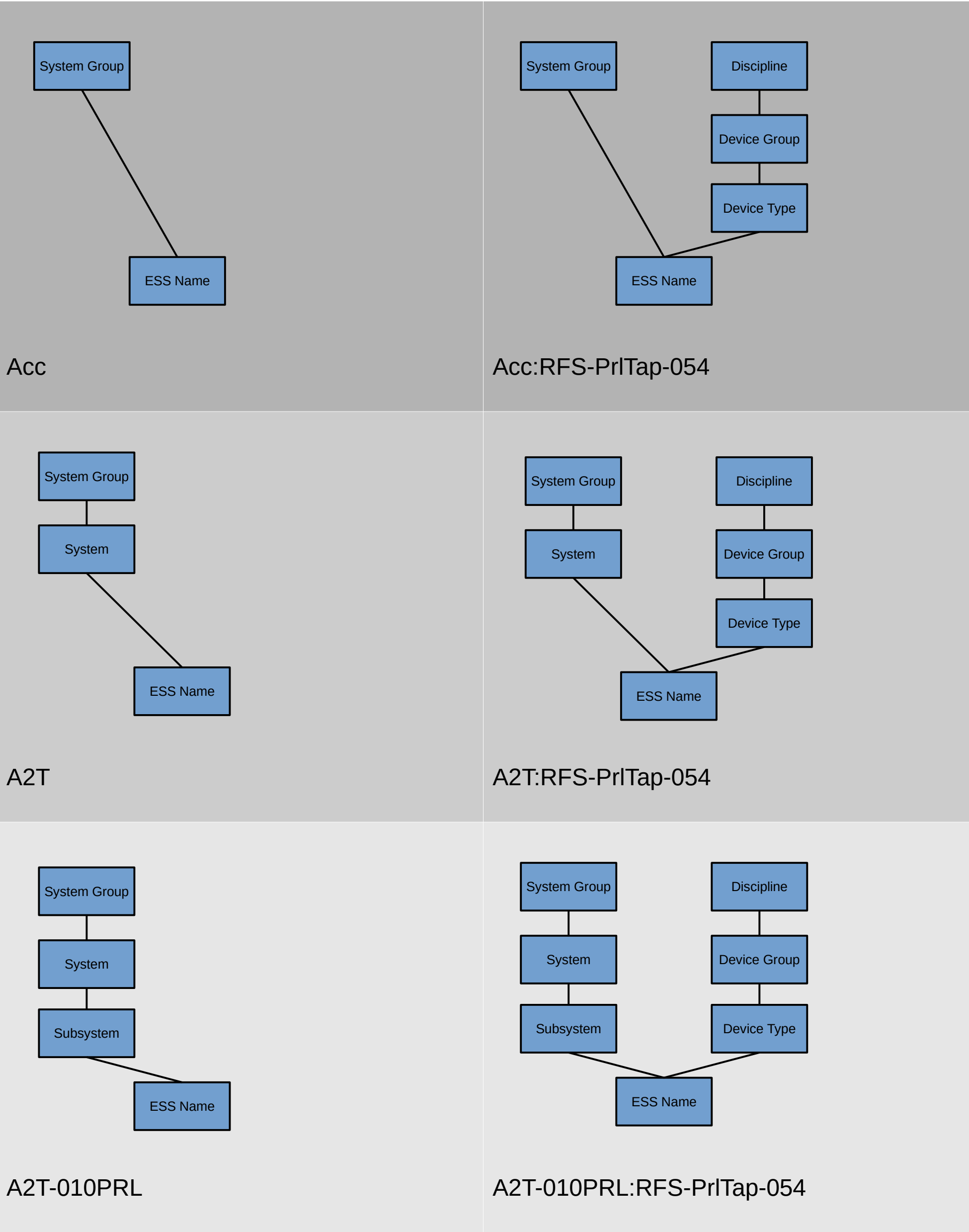
– REACT
- Naming backend
- Java

– Spring Boot REST API

**Recommendation to proceed with Spring Boot REST API.**

# Domain model and ESS names

Examples of structures and ESS names



ESS name is considered legacy name if any parent is deleted.

# Existing – Data models

Hierarchies of model content with example

## Models

- Database model

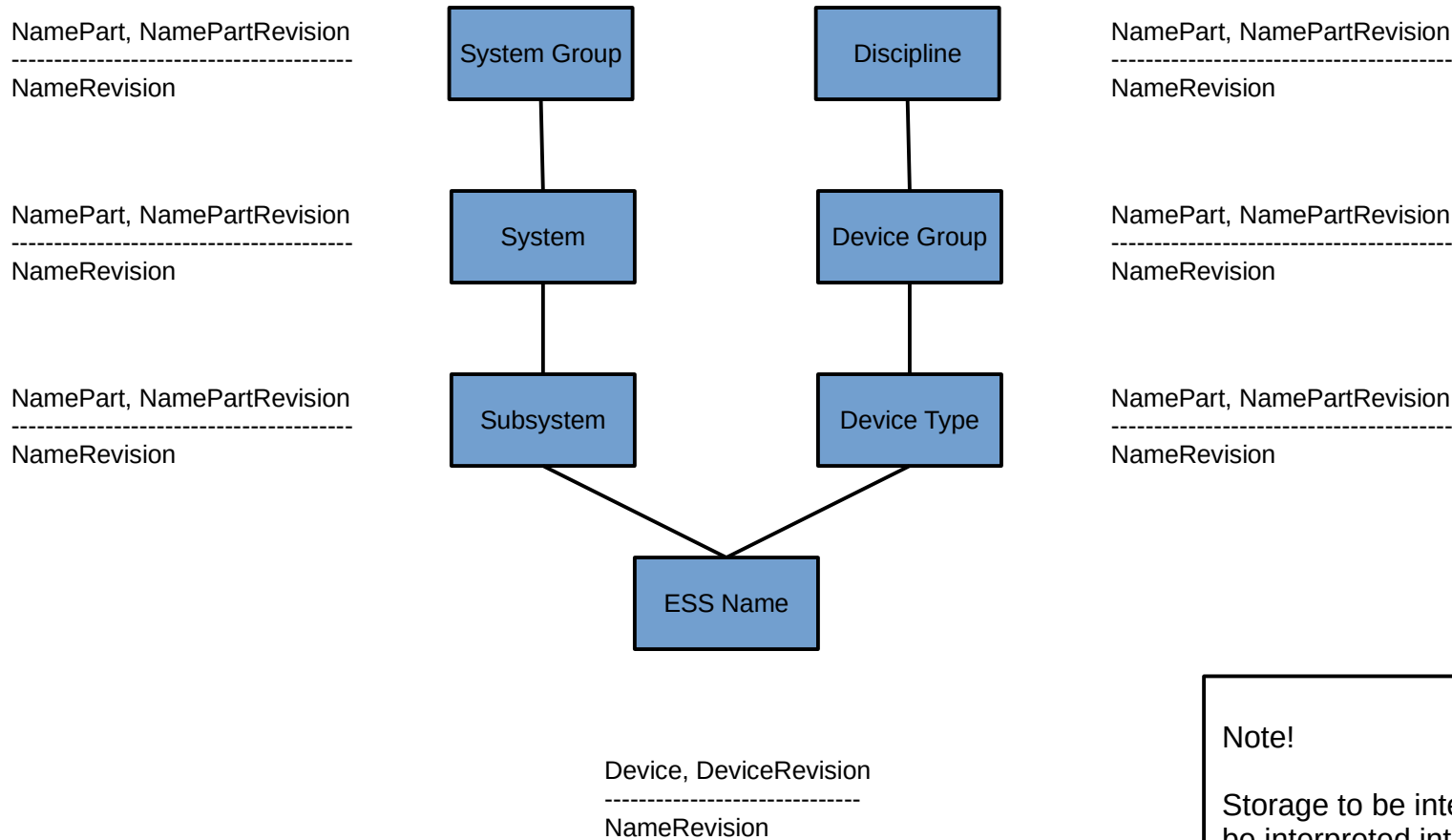
Business model

Domain model
- –

–
- NamePart, NamePartRevision, Device, DeviceRevision

NameRevision, NameView

System Group, System, Subsystem, Discipline, Device Group, Device Type, ESS Name



Note!

Storage to be interpreted into business model to be interpreted into other business model to be interpreted into cache and then used.

## Domain model & Example

- System structure

Device structure

ESS name
- –

–
- System Group

System

Subsystem

Discipline

Device Group

Device Type

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

– Accelerator to Target

– 01 Phase Reference Line

– RF System

– Phase Reference Line

– Phase Reference Line Tap
- (level 1)

(level 2)

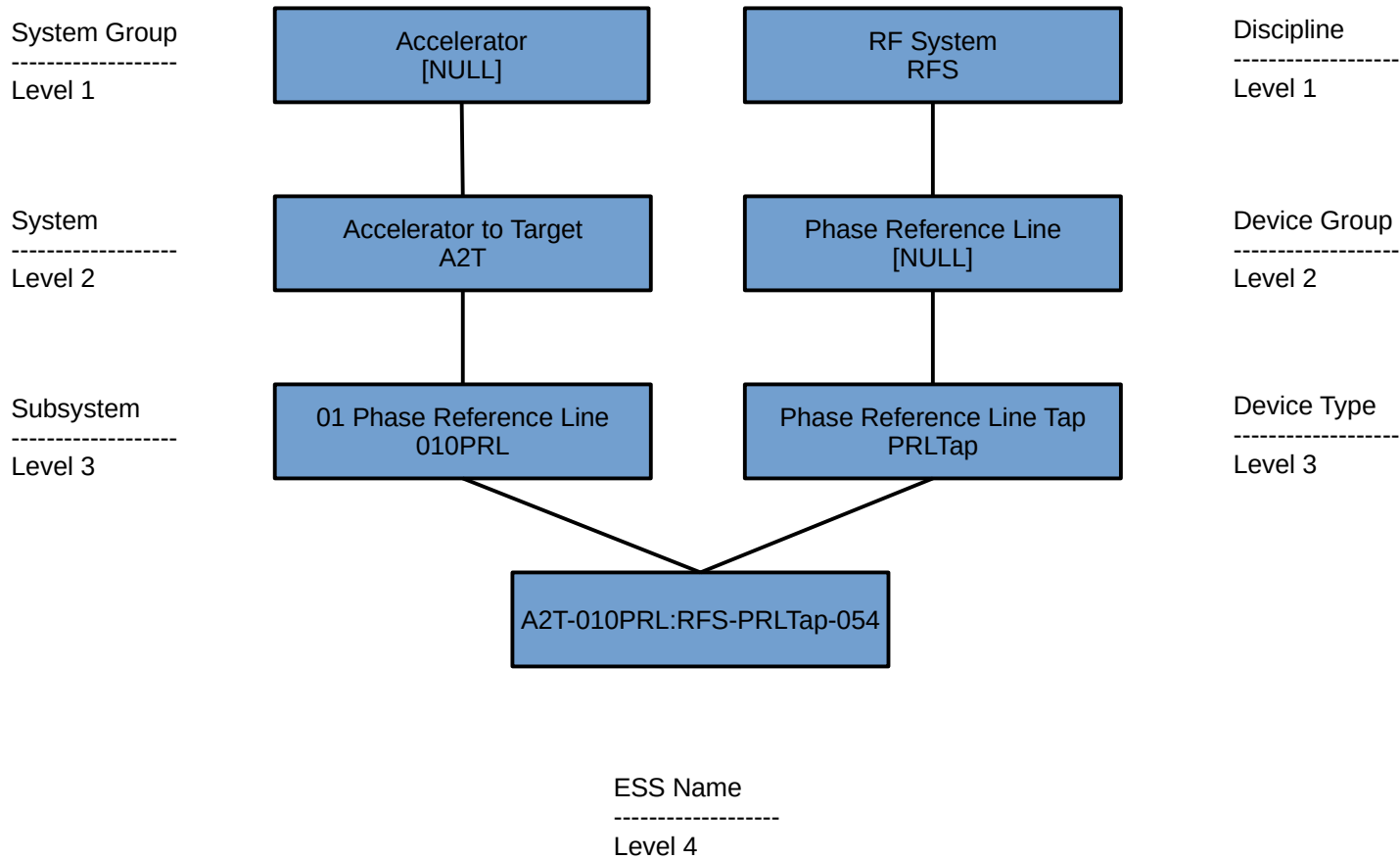
(level 3)

(level 1)

(level 2)

(level 3)

(level 4)



# Existing – Database

Database tables & diagram

| appinfo       |
|---------------|
| id            |
| version       |
| schemaversion |

| flyway_schema_history |
|-----------------------|
| installed_rank        |
| version               |
| description           |
| type                  |
| script                |
| checksum              |
| installed_by          |
| installed_on          |
| execution_time        |
| success               |

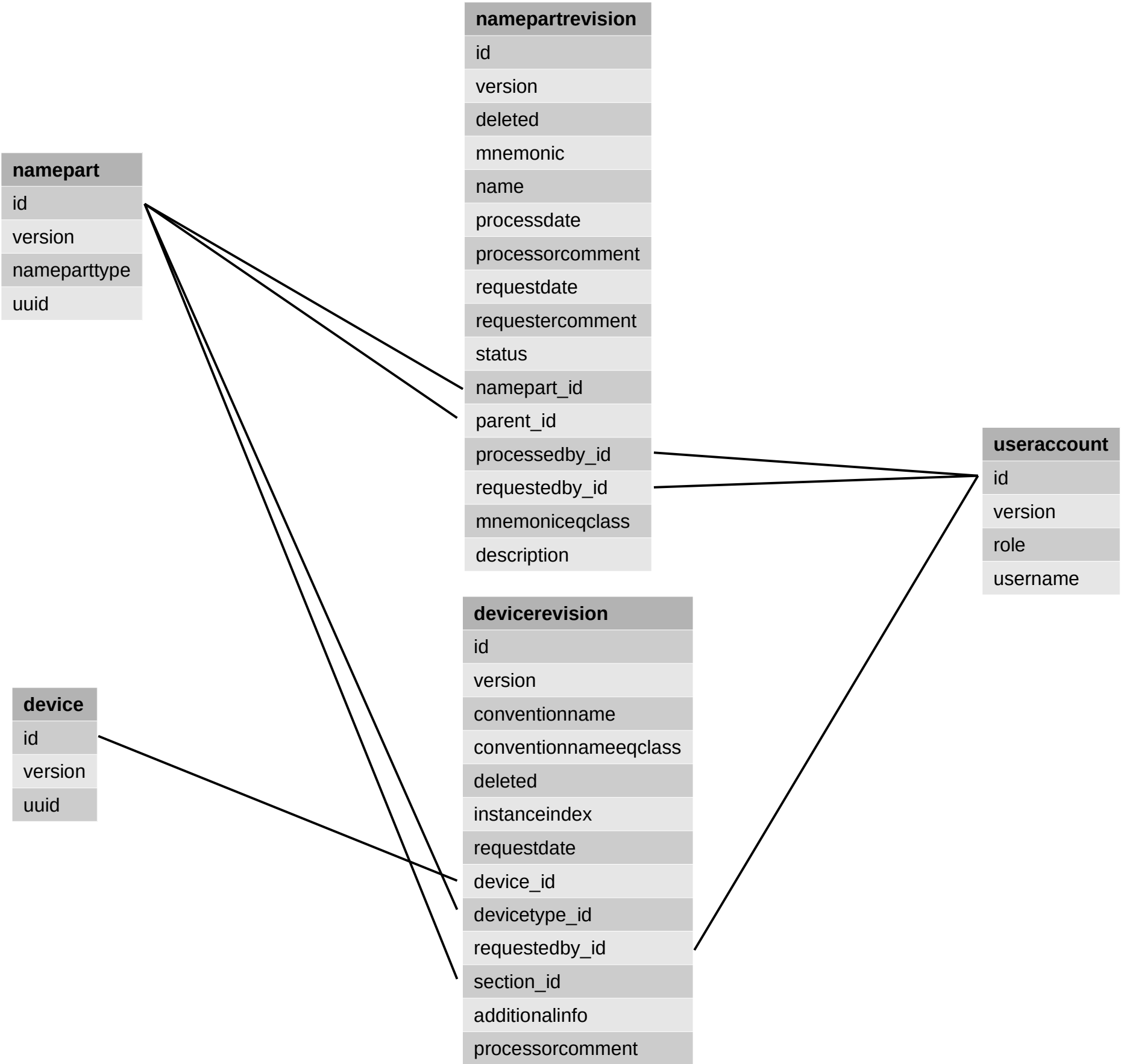
| namepart     |
|--------------|
| id           |
| version      |
| nameparttype |
| uuid         |

| namepartrevision |
|------------------|
| id               |
| version          |
| deleted          |
| mnemonic         |
| name             |
| processdate      |
| processorcomment |
| requestdate      |
| requestercomment |
| status           |
| namepart_id      |
| parent_id        |
| processedby_id   |
| requestedby_id   |
| mnemoniceqclass  |
| description      |

| device  |
|---------|
| id      |
| version |
| uuid    |

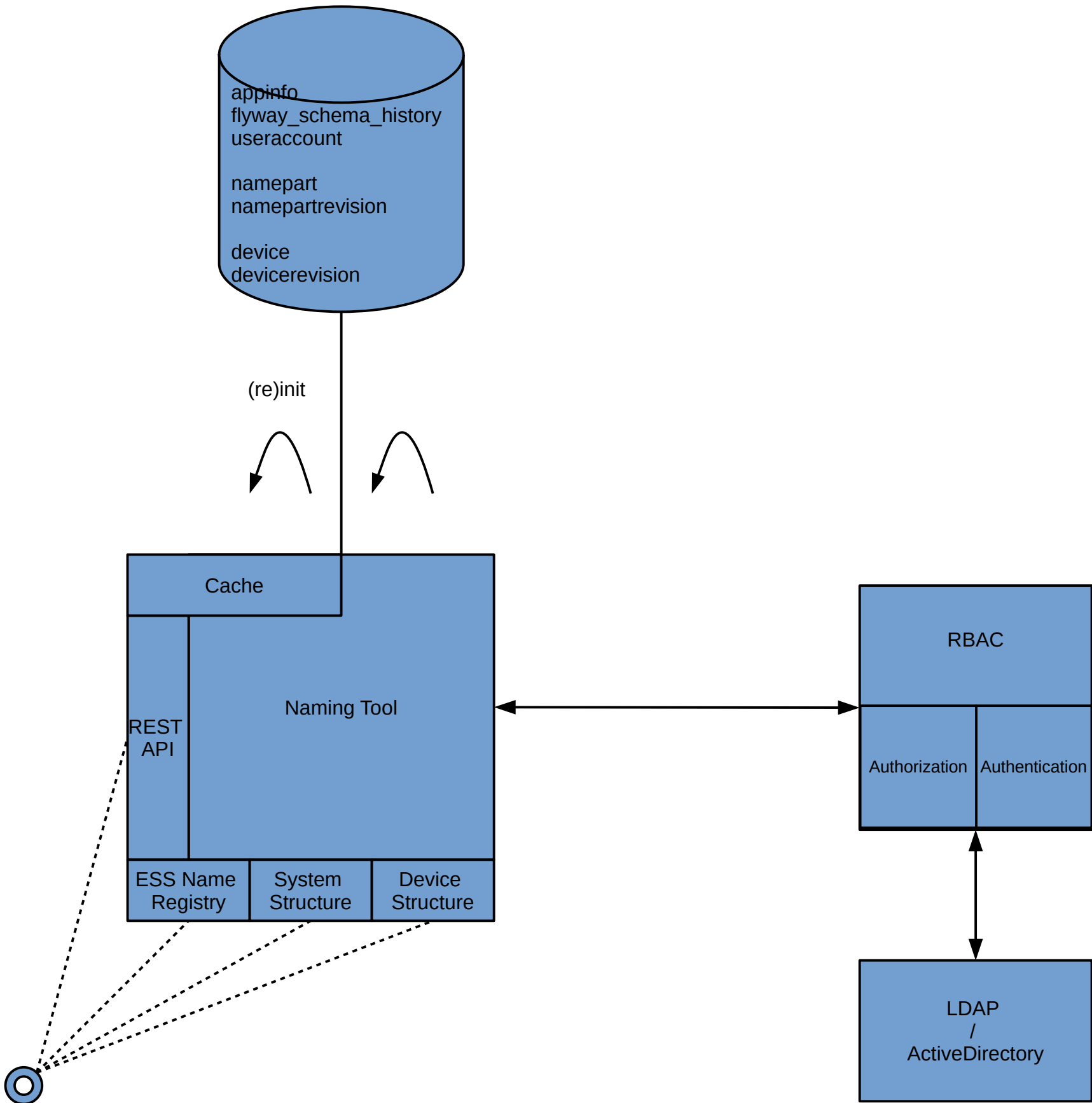
| devicerevision        |
|-----------------------|
| id                    |
| version               |
| conventionname        |
| conventionnameeqclass |
| deleted               |
| instanceindex         |
| requestdate           |
| device_id             |
| devicetype_id         |
| requestedby_id        |
| section_id            |
| additionalinfo        |
| processorcomment      |

| useraccount |
|-------------|
| id          |
| version     |
| role        |
| username    |



# Existing – Overview

Overview together with integrations



Browser

Integrations

tool to other

- RBAC
- CHESS
- Jira
- LDAP
- LOGGING
- Mail

other to tool

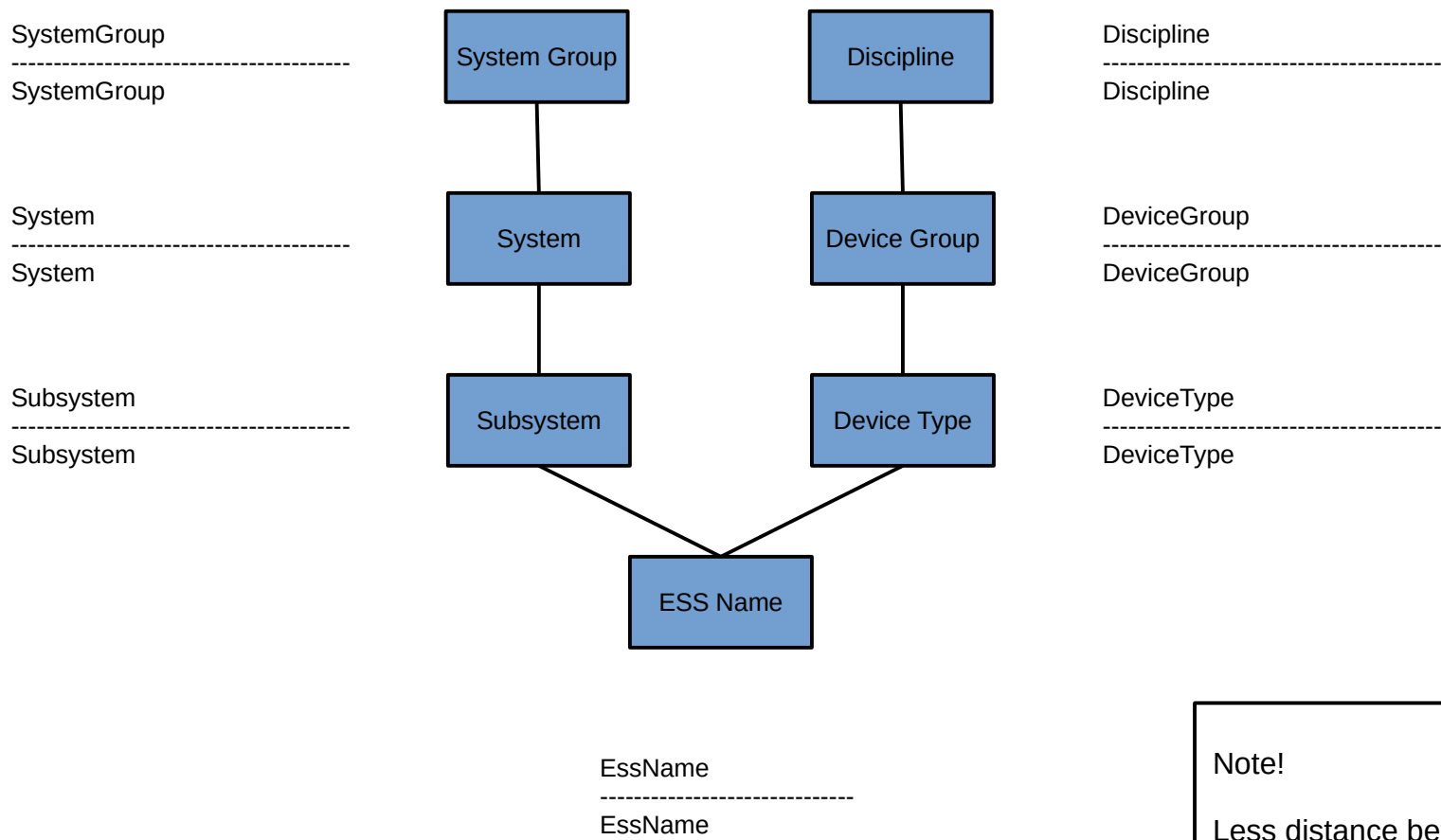
- Cable
- CCDB
- IOC Factory
- Awesome Naming Tool
- Device viewer
- CHESS
- PVValidator

# Refactoring – Data models

Hierarchies of model content with example

## Models

|                |   |  |
|----------------|---|--|
| Database model | – | SystemGroup, System, Subsystem, Discipline, DeviceGroup, DeviceType, EssName     |
| Domain model   | – | System Group, System, Subsystem, Discipline, Device Group, Device Type, ESS Name |

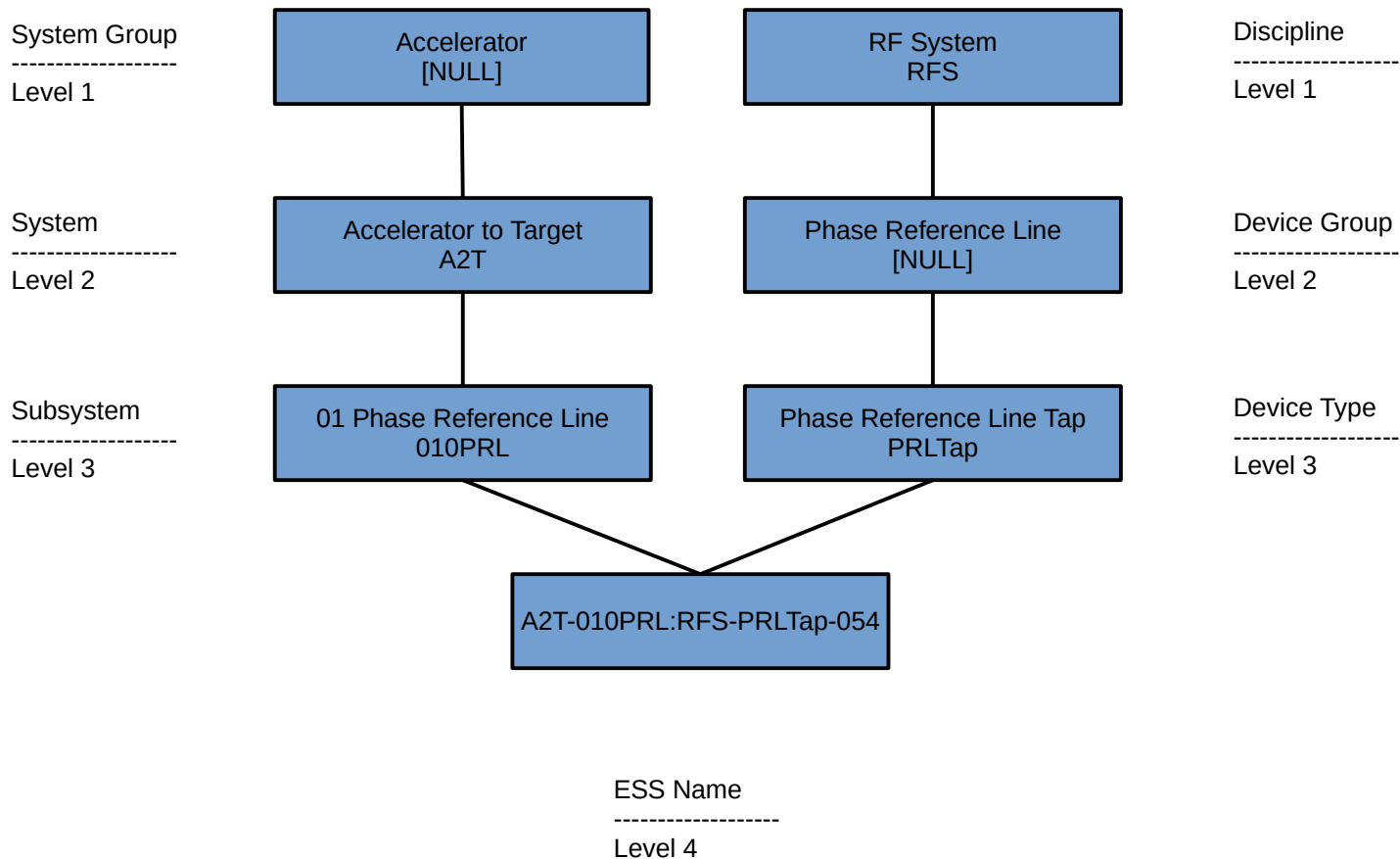


Note!

Less distance between storage and domain model (real world)

## Domain model & Example

|                  |   |                           |   |                          |                    |
|------------------|---|---------------------------|---|--------------------------|--------------------|
| System structure | – | System Group              | – | Accelerator              | (level 1)          |
|                  |   | System                    | – | Accelerator to Target    | – A2T (level 2)    |
|                  |   | Subsystem                 | – | 01 Phase Reference Line  | – 010PRL (level 3) |
| Device structure | – | Discipline                | – | RF System                | – RFS (level 1)    |
|                  |   | Device Group              | – | Phase Reference Line     | (level 2)          |
|                  |   | Device Type               | – | Phase Reference Line Tap | – PRLTap (level 3) |
| ESS name         | – | A2T-010PRL:RFS-PRLTap-054 |   |                          | (level 4)          |



Database tables

| appinfo       |
|---------------|
| id            |
| version       |
| schemaversion |

| flyway_schema_history |
|-----------------------|
| installed_rank        |
| version               |
| description           |
| type                  |
| script                |
| checksum              |
| installed_by          |
| installed_on          |
| execution_time        |
| success               |

| systemgroup          |
|----------------------|
| id                   |
| version              |
| uuid                 |
| name                 |
| mnemonic             |
| mnemonic_equivalence |
| description          |
| status               |
| latest               |
| deleted              |
| requested            |
| requested_by         |
| requested_comment    |
| processed            |
| processed_by         |
| processed_comment    |

| system               |
|----------------------|
| id                   |
| version              |
| uuid                 |
| parent_uuid          |
| name                 |
| mnemonic             |
| mnemonic_equivalence |
| description          |
| status               |
| latest               |
| deleted              |
| requested            |
| requested_by         |
| requested_comment    |
| processed            |
| processed_by         |
| processed_comment    |

| subsystem            |
|----------------------|
| id                   |
| version              |
| uuid                 |
| parent_uuid          |
| name                 |
| mnemonic             |
| mnemonic_equivalence |
| description          |
| status               |
| latest               |
| deleted              |
| requested            |
| requested_by         |
| requested_comment    |
| processed            |
| processed_by         |
| processed_comment    |

| discipline           |
|----------------------|
| id                   |
| version              |
| uuid                 |
| name                 |
| mnemonic             |
| mnemonic_equivalence |
| description          |
| status               |
| latest               |
| deleted              |
| requested            |
| requested_by         |
| requested_comment    |
| processed            |
| processed_by         |
| processed_comment    |

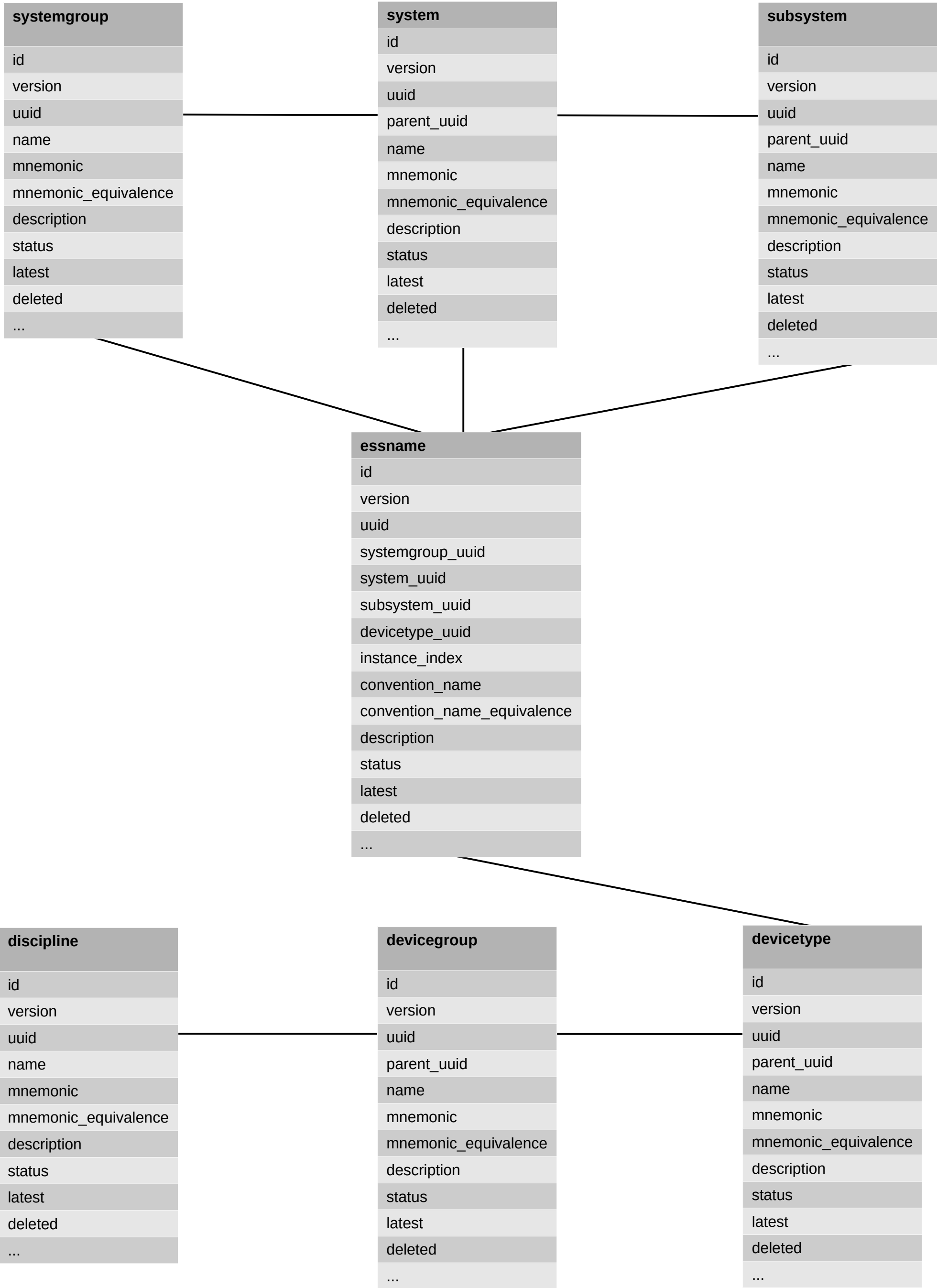
| devicegroup          |
|----------------------|
| id                   |
| version              |
| uuid                 |
| parent_uuid          |
| name                 |
| mnemonic             |
| mnemonic_equivalence |
| description          |
| status               |
| latest               |
| deleted              |
| requested            |
| requested_by         |
| requested_comment    |
| processed            |
| processed_by         |
| processed_comment    |

| devicetype           |
|----------------------|
| id                   |
| version              |
| uuid                 |
| parent_uuid          |
| name                 |
| mnemonic             |
| mnemonic_equivalence |
| description          |
| status               |
| latest               |
| deleted              |
| requested            |
| requested_by         |
| requested_comment    |
| processed            |
| processed_by         |
| processed_comment    |

| essname                     |
|-----------------------------|
| id                          |
| version                     |
| uuid                        |
| systemgroup_uuid            |
| system_uuid                 |
| subsystem_uuid              |
| devicetype_uuid             |
| instance_index              |
| convention_name             |
| convention_name_equivalence |
| description                 |
| status                      |
| latest                      |
| deleted                     |
| requested                   |
| requested_by                |
| requested_comment           |
| processed                   |
| processed_by                |
| processed_comment           |

# Refactoring – Database

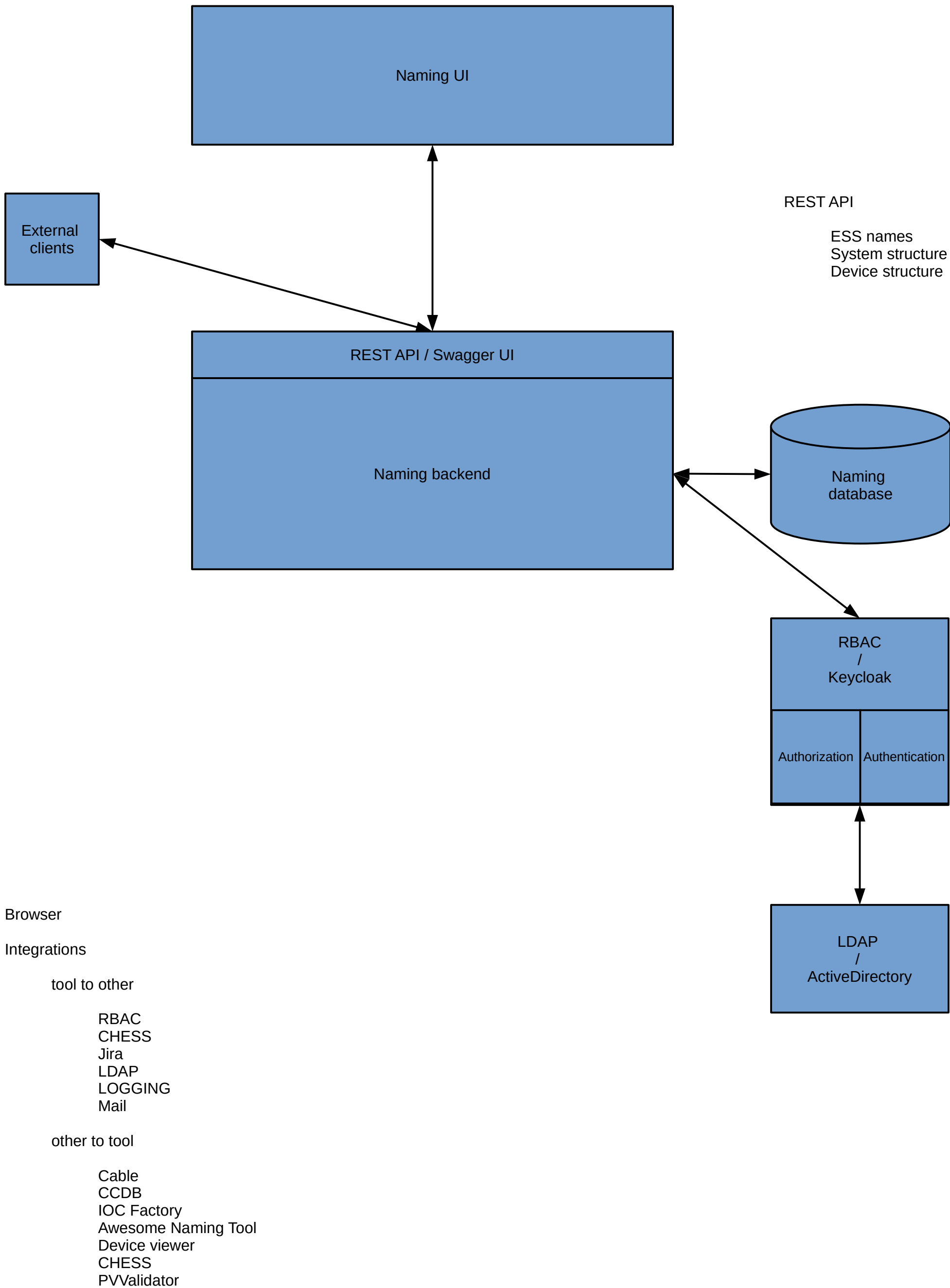
Database tables





# Refactoring – Overview

Overview together with integrations



# Refactoring – UI – ESS names

Naming UI sketch for ESS names

- ESS names <--
- System structure
- Device structure
- Help

Naming

ESS Names

System structure

Device structure

Help

≡ username

+ Actions

| ESS Name                 | System structure | Device structure | Description |
|--------------------------|------------------|------------------|-------------|
| AccPSS-AcSy              | AccPSS-AcSy      |                  |             |
| AccPSS                   | AccPSS           |                  |             |
| AccPSS: Ctrl-IOC-1       | AccPSS           | Ctrl-IOC         |             |
| AccPSS: PSS-Area-1       | AccPSS           | PSS-Area         |             |
| AccPSS: PSS-IOC-1        | AccPSS           | PSS-IOC          |             |
| AccPSS-HBL1              | AccPSS-HBL1      |                  |             |
| AccPSS-HBL1: Ctrl-D1-110 | AccPSS-HBL1      | Ctrl-D1          |             |
| AccPSS-HBL1: Ctrl-D1-111 | AccPSS-HBL1      | Ctrl-D1          |             |



# Refactoring – UI – System structure

Naming UI sketch for System structure

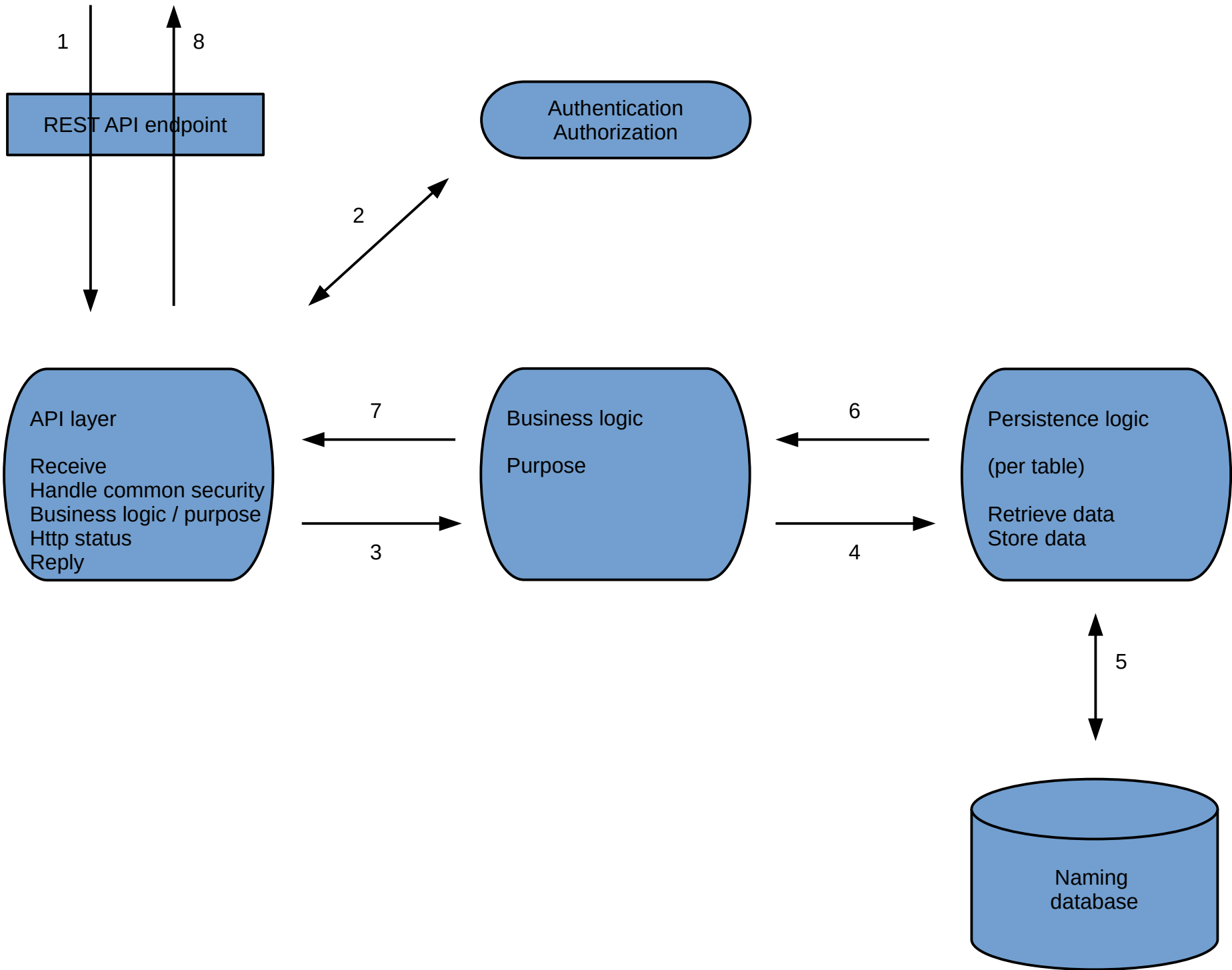
- ESS names
- System structure <--
- Device structure (as System structure)
- Help (as today)

| Naming                     |   |          |   |               | ESS Names | <u>System structure</u> | Device structure | Help     | ≡ Username |
|----------------------------|---|----------|---|---------------|-----------|-------------------------|------------------|----------|------------|
|                            |   |          |   |               | + Actions |                         |                  |          |            |
| Name                       | ↕ | Mnemonic | ↕ | Mnemonic path | ↕         | Description             | ↕                | Status   |            |
| ▶ Accelerator              |   | Acc      |   | Acc           |           |                         |                  | Approved |            |
| ▶ Central Services         |   |          |   |               |           |                         |                  | Approved |            |
| ▶ Medicon Village Sandbox  |   |          |   |               |           |                         |                  | Approved |            |
| ▶ Neutron Instruments      |   |          |   |               |           |                         |                  | Approved |            |
| ▼ Personnel Safety Systems |   |          |   |               |           |                         |                  | Approved |            |
| ▼ Accelerator PSS          |   | AccPSS   |   | AccPSS        |           |                         |                  | Approved |            |
| Access System              |   | AcSy     |   | AccPSS - AcSy |           |                         |                  | Approved |            |
| High Beta Line Part1       |   | HBL1     |   | AccPSS - HBL1 |           |                         |                  | Approved |            |
| High Beta Line Part2       |   | HBL2     |   | AccPSS - HBL2 |           |                         |                  | Approved |            |

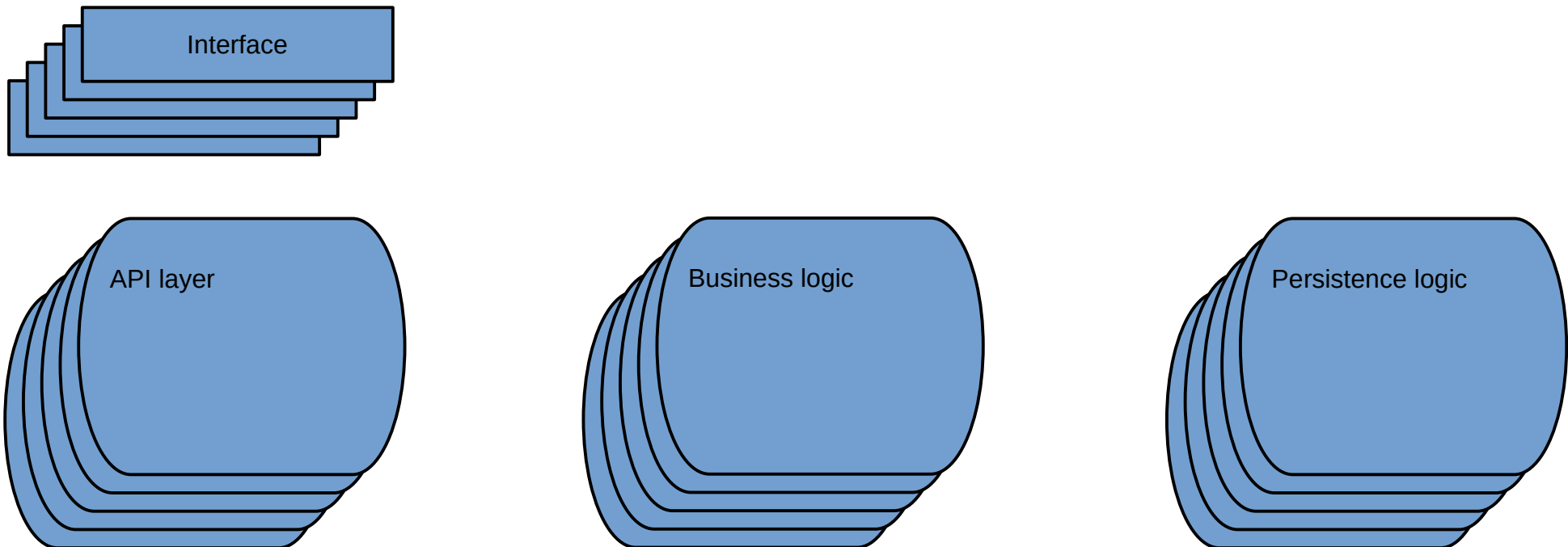
# Refactoring – REST API – High-level flow

Naming backend

Split handling of REST API endpoint into areas with various responsibilities.



REST API endpoints are divided into areas that each define related endpoints. Each area with its endpoints are to be defined as an interface. Each interface is to be implemented by corresponding classes that divide responsibilities.



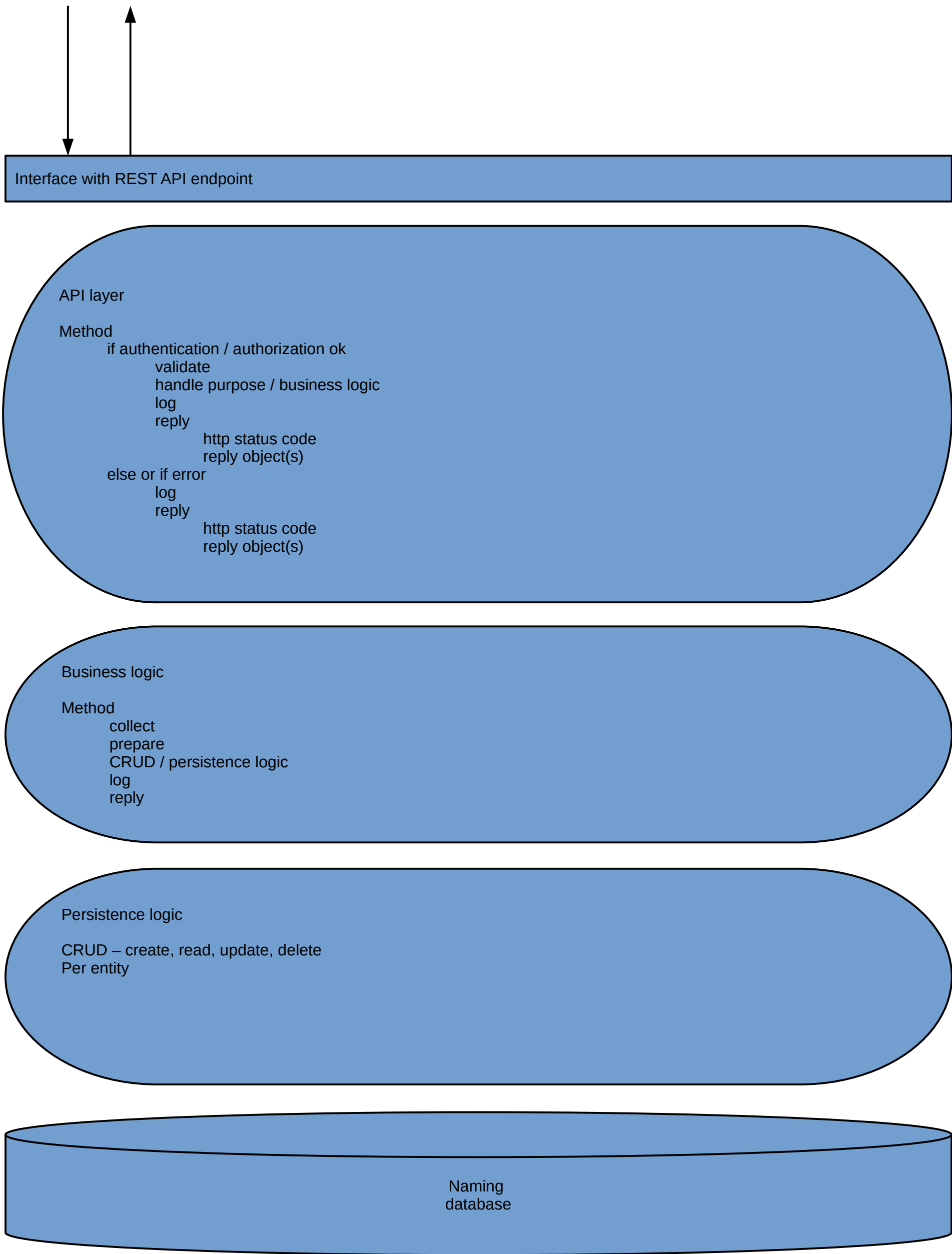
# Refactoring – REST API – Drilling down

Naming backend

Split handling of call to REST API endpoint into areas with various responsibilities.

Note!

Outline of what implementation is to handle.



# Refactoring – REST API – Areas, endpoints, parameters

Naming backend

Split handling of REST API endpoint into areas with various responsibilities.

Idea is to have capabilities for refactoring of REST API that capture what is available in current REST API together with what is needed in order to produce a Naming UI based on REST API.

Areas of REST API

- Healthcheck
- History
- Verification
- ESS names
- Structures

Note!

CRUD through REST API – create, read, update, delete. No authentication/authorization for read operations.

Healthcheck – provides healthcheck of Naming application

|        | method | path         | parameter(s) | description |
|--------|--------|--------------|--------------|-------------|
| create |        |              |              |             |
| read   | GET    | /healthcheck |              |             |
| update |        |              |              |             |
| delete |        |              |              |             |

History – provides history for ESS names and structure data for Naming application

| parameters | uuid   | SYSTEMGROUP, SYSTEM, SUBSYSTEM, DISCIPLINE, DEVICEGROUP, DEVICETYPE |                         |             |
|------------|--------|---|-------------------------|-------------|
|            | type   |   |                         |             |
|            | method | path  | parameter(s)            | description |
| create     |        |   |                         |             |
| read       | GET    | /history/names/{uuid}   | uuid                    | single      |
|            | GET    | /history/structures/{uuid}  | uuid<br>type (optional) | single      |
| update     |        |   |                         |             |
| delete     |        |   |                         |             |

Verification – provides verification of data migration for Naming application

|        | method | path                                     | parameter(s) | description |
|--------|--------|--|--------------|-------------|
| create |        |  |              |             |
| read   | GET    | /verification/migration_devicerevision   |              | single      |
|        | GET    | /verification/migration_namepartrevision |              | single      |
| update |        |  |              |             |
| delete |        |  |              |             |

# Refactoring – REST API – Areas, endpoints, parameters

Naming backend

Split handling of REST API endpoint into areas with various responsibilities.

Note!

CRUD through REST API – create, read, update, delete. No authentication/authorization for read operations.

ESS names – provides ESS name data for Naming application

```
parameters
  type
    SYSTEMGROUP, SYSTEM, SUBSYSTEM, DISCIPLINE, DEVICEGROUP, DEVICETYPE
  query field
    ess name, system structure mnemonic path, device structure mnemonic path, description
  query
  orderBy
    ess name, system structure mnemonic path, device structure mnemonic path, description
  isAsc
    true, false
  offset
    page
  limit
    page size
  authentication/authorization
    3 levels - no, user, administrator
    no - read
    user - create, update, delete
    ( administrator )
```

may need possibility to query backend about mnemonic equivalence

|        | method | path                   | parameter(s)   | description |
|--------|--------|------------------------|--|-------------|
| create |        |                        |  |             |
|        | POST   | /names/{name}          | [data]   | single      |
|        | POST   | /names                 | [data]   | multiple    |
| read   |        |                        |  |             |
|        | GET    | /names/{ <u>uuid</u> } | <u>uuid</u> /name  | single      |
|        | GET    | /names                 | type (optional)<br>orderBy (optional)<br>isAsc (optional)<br>offset (optional)<br>limit (optional) | multiple    |
|        | GET    | /names/search/{name}   | type (optional)<br>orderBy (optional)<br>isAsc (optional)<br>offset (optional)<br>limit (optional) | multiple    |
| update |        |                        |  |             |
|        | PUT    | /names/{ <u>uuid</u> } | [data]   | single      |
|        | PUT    | /names                 | [data]   | multiple    |
| delete |        |                        |  |             |
|        | DELETE | /names/{ <u>uuid</u> } | <u>uuid</u>  | single      |



# Refactoring – REST API – Areas, endpoints, parameters

Naming backend

Split handling of REST API endpoint into areas with various responsibilities.

Note!

CRUD through REST API – create, read, update, delete. No authentication/authorization for read operations.

Structures – provides structure data for Naming application

```
parameters
  type
    SYSTEMGROUP, SYSTEM, SUBSYSTEM, DISCIPLINE, DEVICEGROUP, DEVICETYPE
  query field
    name, mnemonic, mnemonic path, description
  query
  orderBy
    name, mnemonic, mnemonic path, description
  isAsc
    true, false
  offset
    page
  limit
    page size
  authentication/authorization
    3 levels - no, user, administrator
    no      - read
    user    - create, update, delete
    ( administrator )
```

may need possibility to query backend about mnemonic equivalence

|        | method | path  | parameter(s)  | description |
|--------|--------|---|---|-------------|
| create | POST   | /parts/{mnemonic}   | [data]<br>type (required)   | single      |
|        | POST   | /parts  | [data]<br>type (required)   | multiple    |
| read   | GET    | /parts/{ <u>uuid</u> }                                      | <u>uuid</u> /mnemonic<br>type (optional)<br>orderBy (optional)<br>isAsc (optional)<br>offset (optional)<br>limit (optional) | single      |
|        | GET    | /parts  | type (optional)<br>orderBy (optional)<br>isAsc (optional)<br>offset (optional)<br>limit (optional)                          | multiple    |
|        | GET    | /parts/search/{mnemonic}                                    | type (optional)<br>orderBy (optional)<br>isAsc (optional)<br>offset (optional)<br>limit (optional)                          | multiple    |
|        | GET    | /parts/ <u>mnemonic</u> path/search/{ <u>mnemonic</u> path} | type (optional)<br>orderBy (optional)<br>isAsc (optional)<br>offset (optional)<br>limit (optional)                          | multiple    |
| update | PUT    | /parts/{ <u>uuid</u> }                                      | [data]<br>type (required)   | single      |
|        | PUT    | /parts  | [data]<br>type (required)   | multiple    |
|        | PATCH  | /parts/{ <u>uuid</u> }/approve                              | type (required)   | single      |
|        | PATCH  | /parts/{ <u>uuid</u> }/reject                               | type (required)   | single      |
|        | PATCH  | /parts/{ <u>uuid</u> }/cancel                               | type (required)   | single      |
| delete | ( POST | /parts/ <u>check</u> devices                                |   | multiple )  |
|        | DELETE | /parts/{ <u>uuid</u> }                                      |   | single      |