

REFERENCE DESIGNATION SYSTEM

Få et fælles sprog med ISO/IEC 81346

DS Webinar - 27. oktober 2022

/ AGENDA

1. **Forudsætninger** for ISO/IEC 81346
2. En ny forståelse for den **referencemodel**, som ISO/IEC 81346 skaber, samt dens anvendelse til bl.a. digitalisering
3. Praktiske **eksempler** på anvendelse af ISO/IEC 81346 samt diverse hjælpekanaler
4. Gode råd til **implementeringsstrategi** i din virksomhed, der rent faktisk virker
5. **Q&A**



Henrik Balslev
B.Eng. Electrical Engineering
CEO, Expert SE Specialist

SYSTEMS ENGINEERING A/S

Udvalgte referencer



Chevron

Tetra Pak

Vestas

Ørsted

Hafslund

Energy Norway

PRÆMISSEN: ALT ER SYSTEMER!



/ SYSTEM DEFINITION

3.2 system

set of interrelated *objects* (3.1) considered in a defined context as a whole and separated from their environment

Note 1 to entry: A system is generally defined with the view of achieving a given objective, e.g. by performing a definite function.

Note 2 to entry: Elements of a system may be natural or man-made material objects, as well as modes of thinking and the results thereof (e.g. forms of organisation, mathematical methods, programming languages).

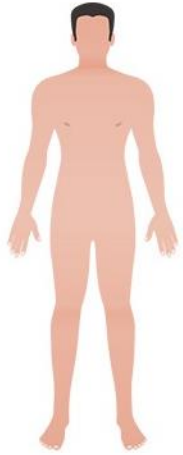
Note 3 to entry: The system is considered to be separated from the environment and from the other external systems by an imaginary boundary, through which the system is related to the external systems.

Note 4 to entry: The term "system" should be qualified when it is not clear from the context to what it refers, e.g. control system, colorimetric system, system of units, transmission system.

Note 5 to entry: When a system is part of another system, it may be considered as an object as defined in this document.

Source: ISO/IEC 81346-1:2022

/ THE HUMAN BODY CONSIST OF 11 SYSTEMS



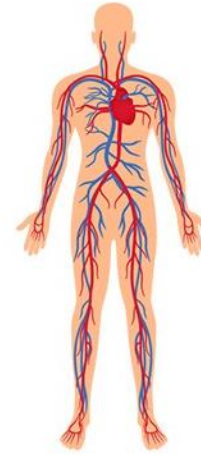
Integumentary System



Muscular System



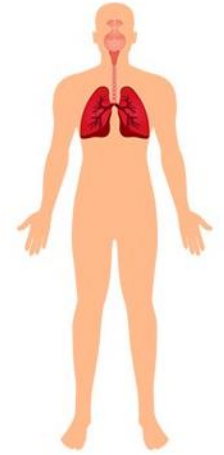
Skeletal System



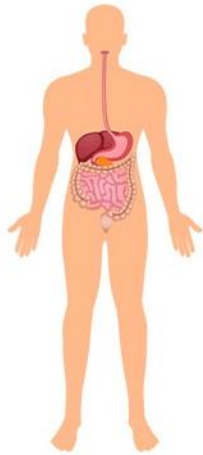
Cardiovascular System



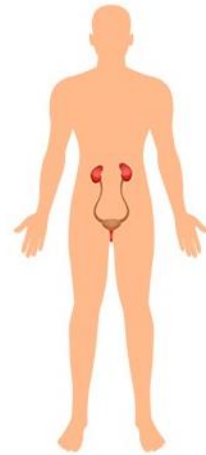
Nervous System



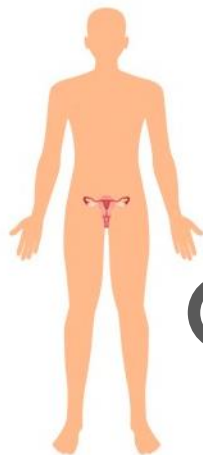
Respiratory System



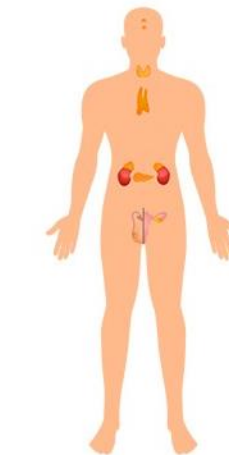
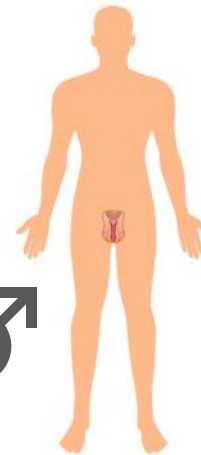
Digestive System



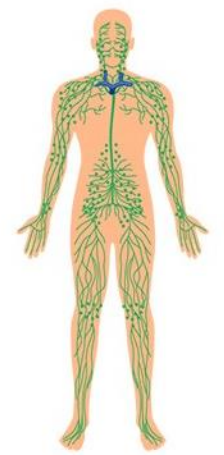
Urinary System



Reproductive System

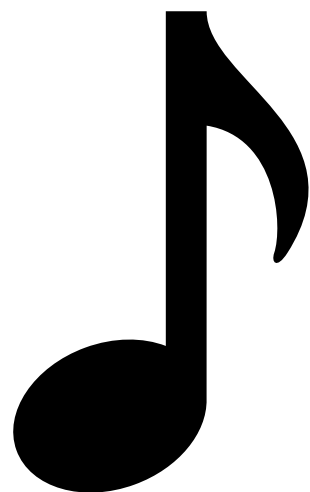


Endocrine System



Lymphatic/Immune System

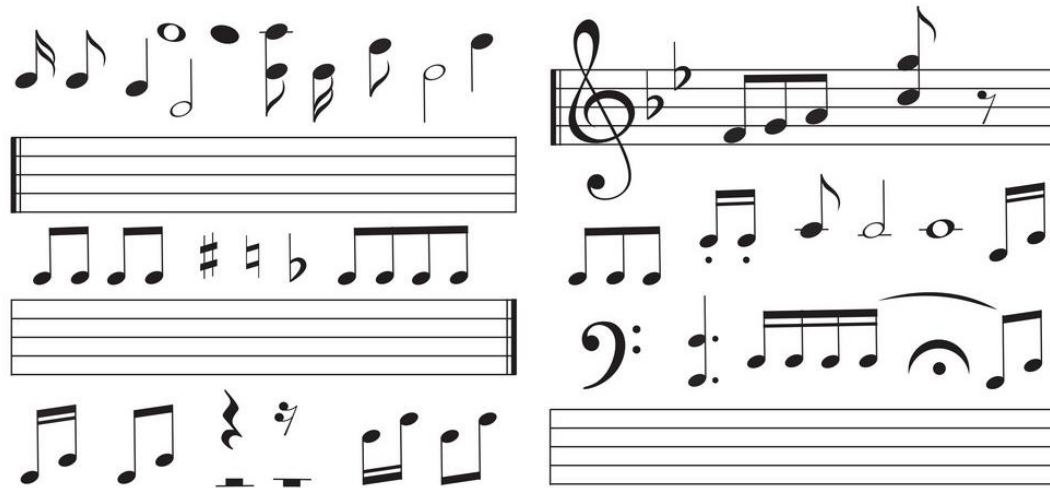
et fælles sprog



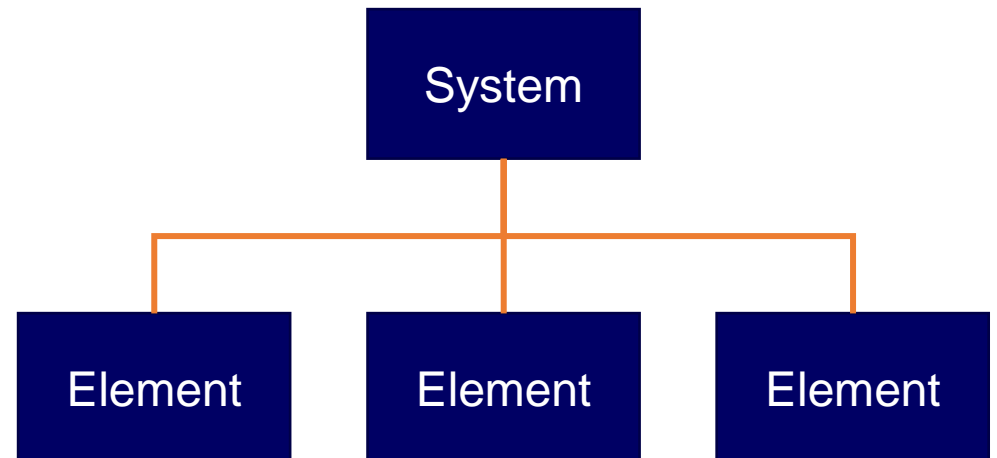
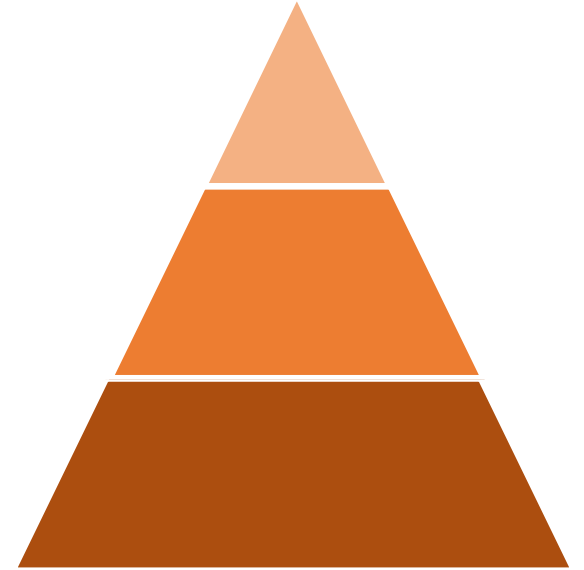


THE COMMON LANGUAGE FOR SYSTEMS

The ISO/IEC 81346 standard series



- = Functional aspect
- Product aspect
- + Location aspect
- % Type aspect



THE RDS 81346 SYSTEM LIBRARIES

Your new best friend

LEGO
products

LEGO CITY: Fire station
(60125)



LEGO CITY: Police station
(7498)

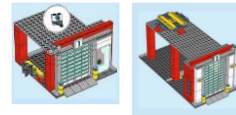


LEGO CITY: Fire truck
(7239)



(Overall process)

Vehicle storage
system



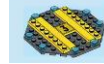
Facility system



Mobile extinguishing
system



Helipad system



Revolving door
system



Gate system



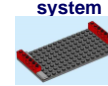
Staircase
system



Communication
system



Foundation
system



Fire pole
system



Cabin
system



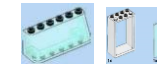
Baseframe
system



Gate



Window



Wheel



Staircase



Cable drum



Roof



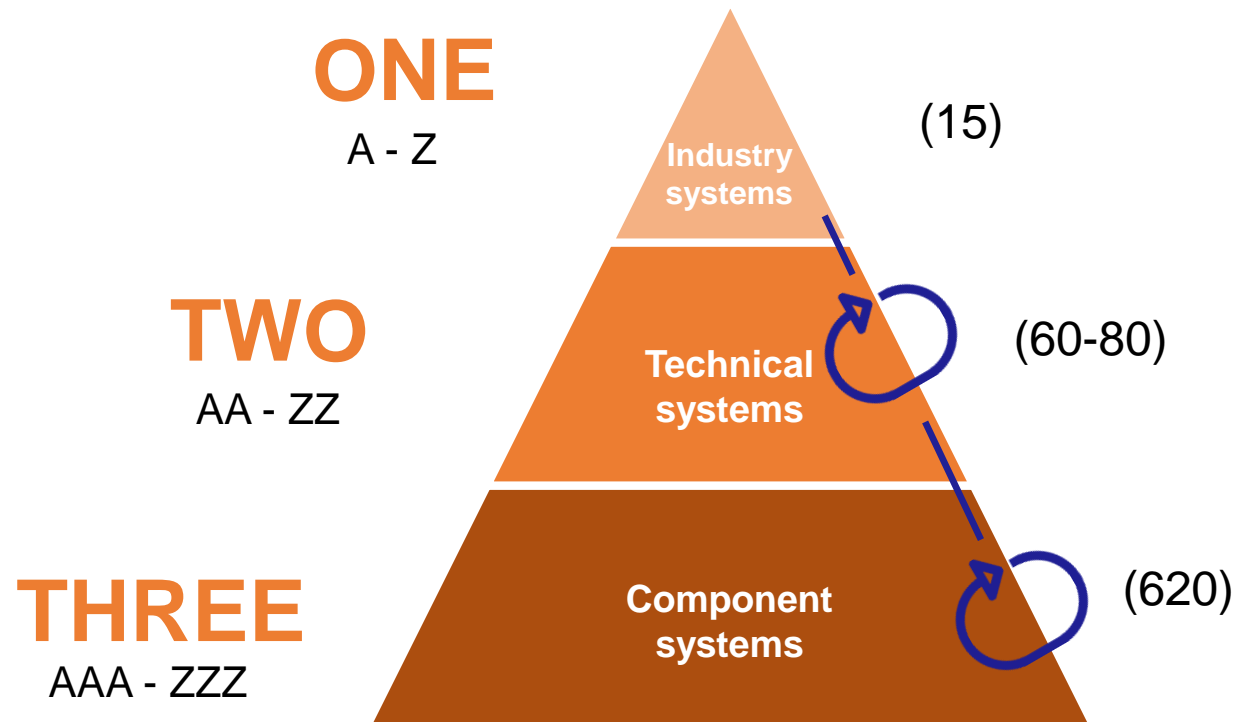
Pump



Illustrations used with kind permission from LEGO System A/S

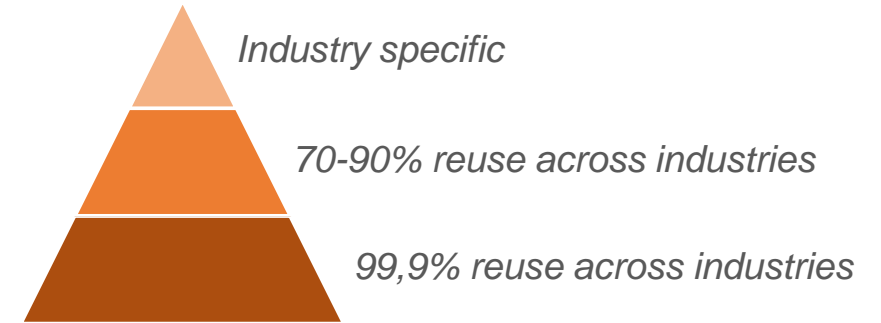
THE RDS SYSTEM LIBRARIES

The system elements to create a model from




THE RDS SYSTEM LIBRARIES

Different tables for different industries




Power systems



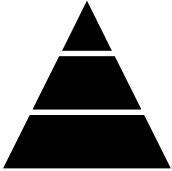
Part 10

Construction works



Part 12

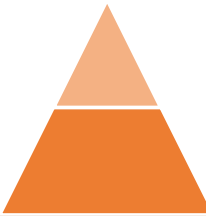
General classification




Part 2

THE RDS SYSTEM LIBRARIES

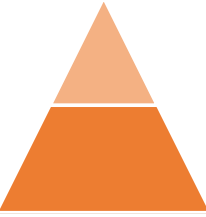
Different tables for different industries




Power systems




Part 10



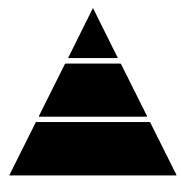
Construction works



Part 12



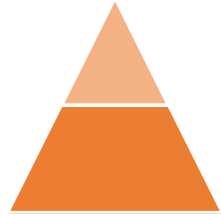
General classification



Part 2

THE RDS SYSTEM LIBRARIES

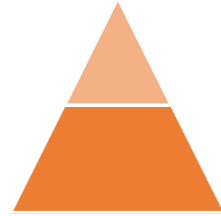
Different tables for different industries



Aircrafts



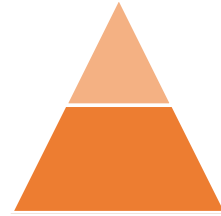
Part
TBD



Oil & Gas



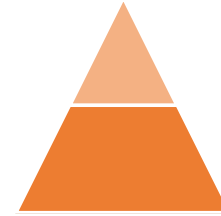
Part
TBD



Infrastructure



Part
TBD



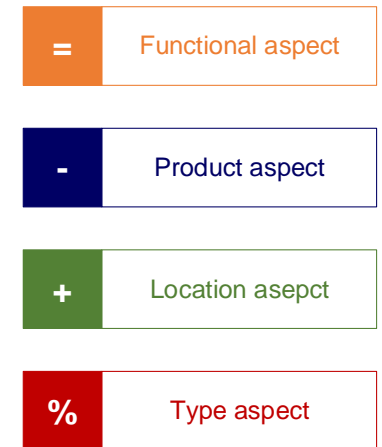
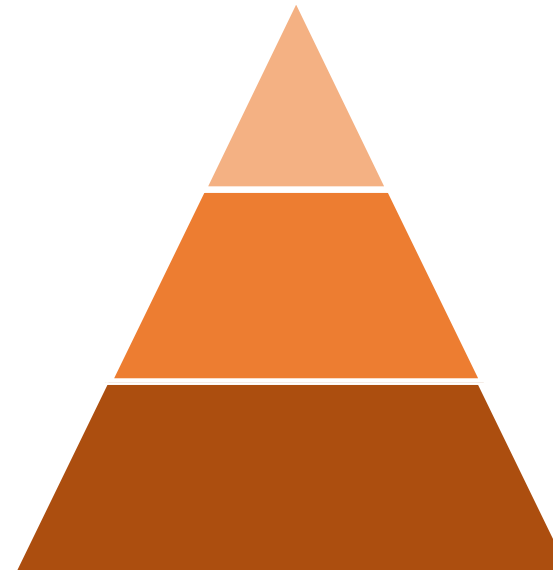
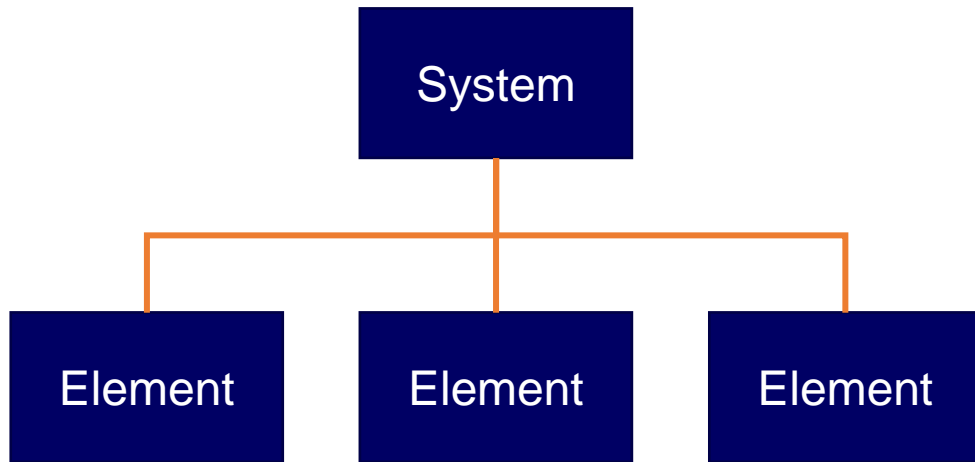
Manufacturing
systems



Part 14
Pending

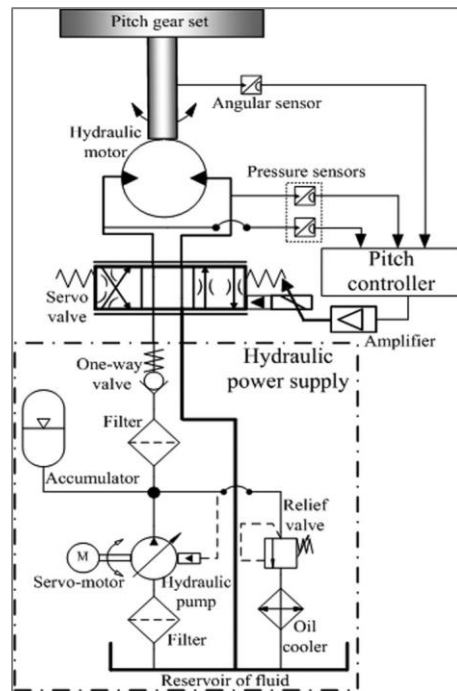
RDS 81346 REFERENCE MODEL

The neutral infrastructure model for all disciplines



DIGITAL MODELS

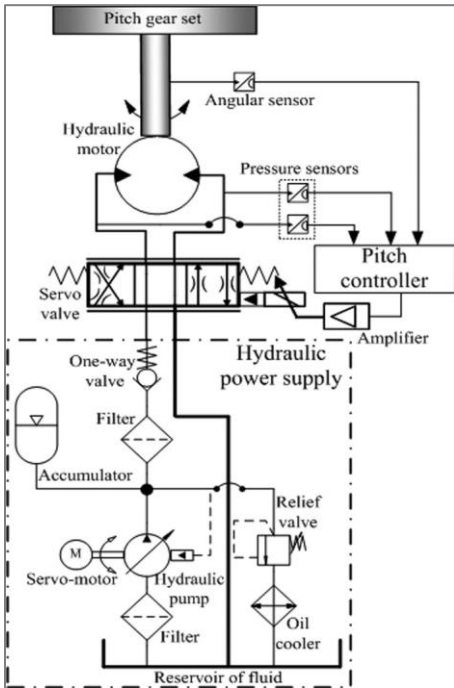
Piping & instrumentation
perspective



Model A

DIGITAL MODELS

Piping & instrumentation perspective



Process engineering

Model A

Designed for flow information

3D modeling perspective



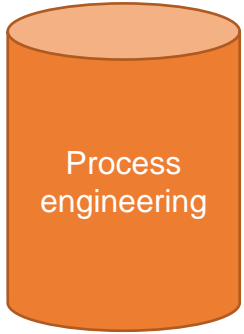
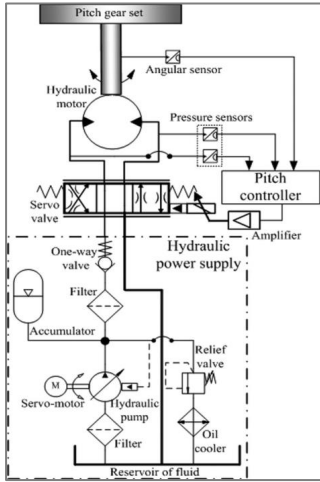
Mechanical engineering

Model B

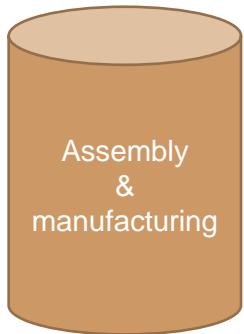
Designed for physical dimension information



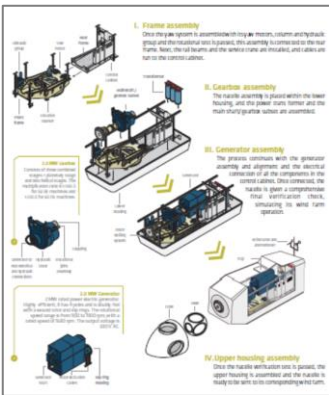
DIGITAL MODELS



Model A



Model C

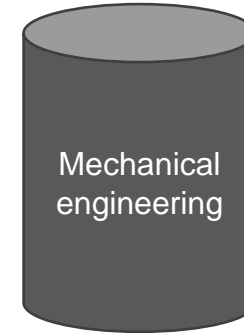


Pump, hydraulic

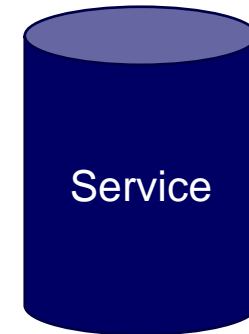
H-pump

Pump, Hyd. St.

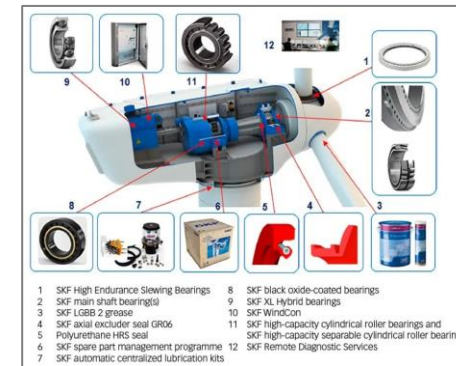
Hyd. Power unit



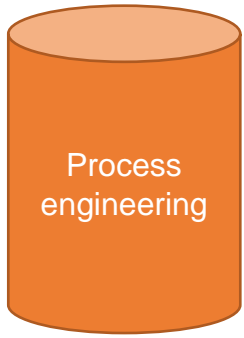
Model B



Model D

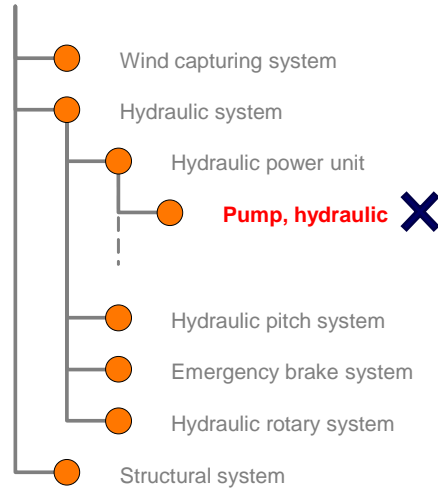


RDS 81346 TECHNIQUE

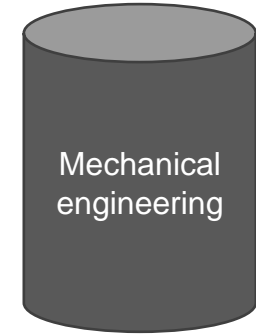
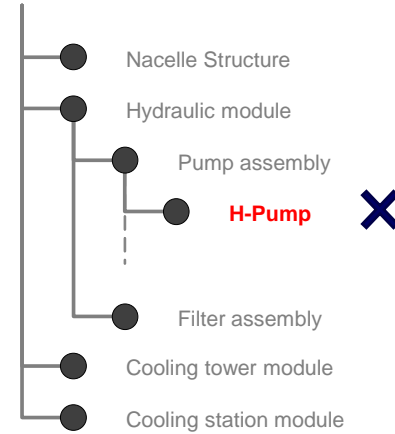


Model A

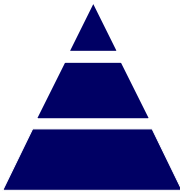
Functional structure



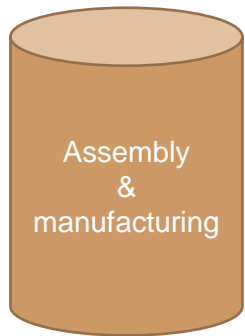
Product structure



Model B

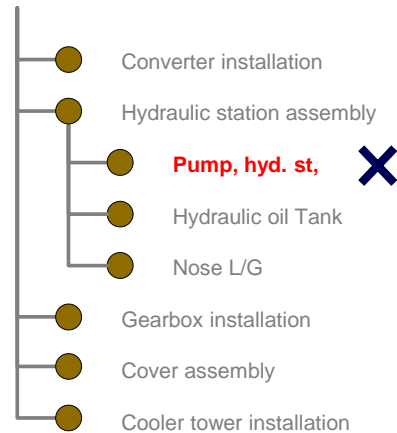


RDS 81346

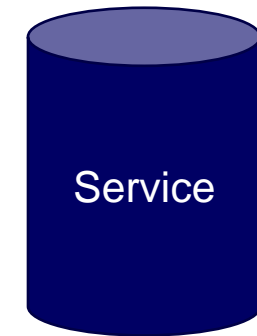
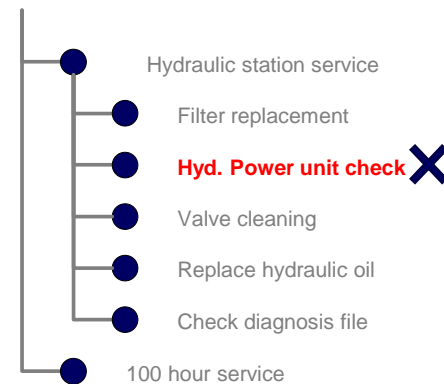


Model C

Assembly structure



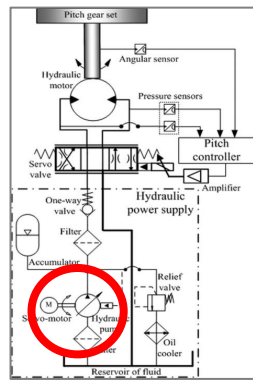
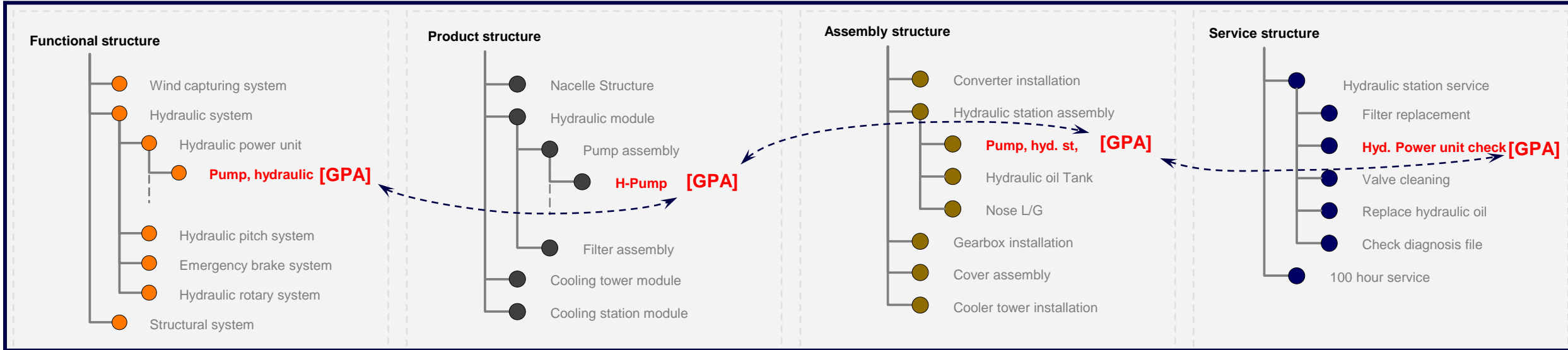
Service structure



Model D



REFERENCE MODEL



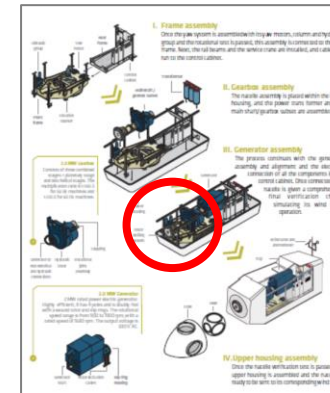
Model A

Process engineering



Model B

Mechanical engineering



Model C

Assembly and manufacturing



Model D

Service manual

- | | |
|--|--|
| 1 SKF High Endurance Slewing Bearings | 8 SKF black oxide-coated bearings |
| 2 SKF main shaft bearing(s) | 9 SKF XL Hybrid bearings |
| 3 SKF LGBB 2 grease | 10 SKF WindCon |
| 4 SKF axial excluder seal GRO6 | 11 SKF high-capacity cylindrical roller bearings and SKF high-capacity separable cylindrical roller bearings |
| 5 Polyurethane HRS seal | 12 SKF Remote Diagnostic Services |
| 6 SKF spare part management programme | |
| 7 SKF automatic centralized lubrication kits | |

A REFERENCE MODEL LINKS MODELS

Control and manage the hydraulic pump in each model it is represented

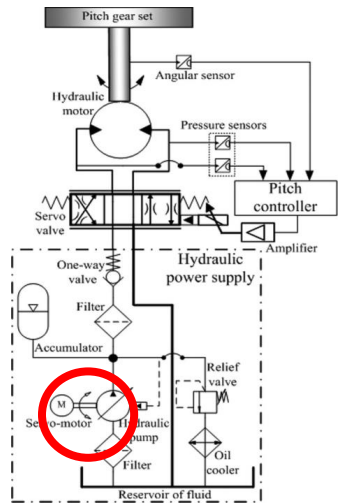
[GPA]



REFERENCE MODEL

Functional view

The function of creating hydraulic oil pressure =GPA



=A1=AA1=AA1=GPA1

Module view

The function =GPA is realized by a hydraulic pump –GPA in the hydraulic station



-A1-AA1-GPA1

Service view

The hydraulic pump -GPA shall be serviced every XXX hours

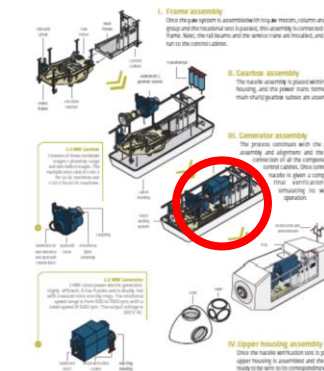


- 1 SKF High Endurance Slewing Bearings
- 2 SKF main shaft bearings
- 3 SKF LOBB 2 grease
- 4 SKF axial excuder seal GR06
- 5 Polyurethane HRS seal
- 6 SKF spare part management programme
- 7 SKF automatic centralized lubrication kits
- 8 SKF black oxide-coated bearings
- 9 SKF XL Hybrid bearings
- 10 SKF WindCon
- 11 SKF high-capacity cylindrical roller bearings and SKF high-capacity separable cylindrical roller bearings
- 12 SKF Remote Diagnostic Services

-A1-AA1-GPA1

Assembly view

The hydraulic pump -GPA is part of the nacelle assembly process #AA1



#A1#AA1#AA1#AAA1#GPA1

Configuration view

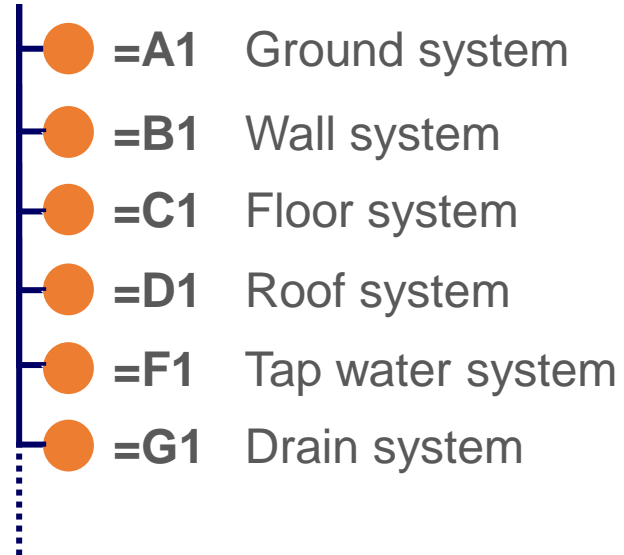
The hydraulic pump -GPA comes in X variants

- %GPA1
- %GPA2
- %GPA3
- %GPA4

EXAMPLE: CONSTRUCTION SYSTEMS

The reference model in construction works (RDS-CW)

<E>

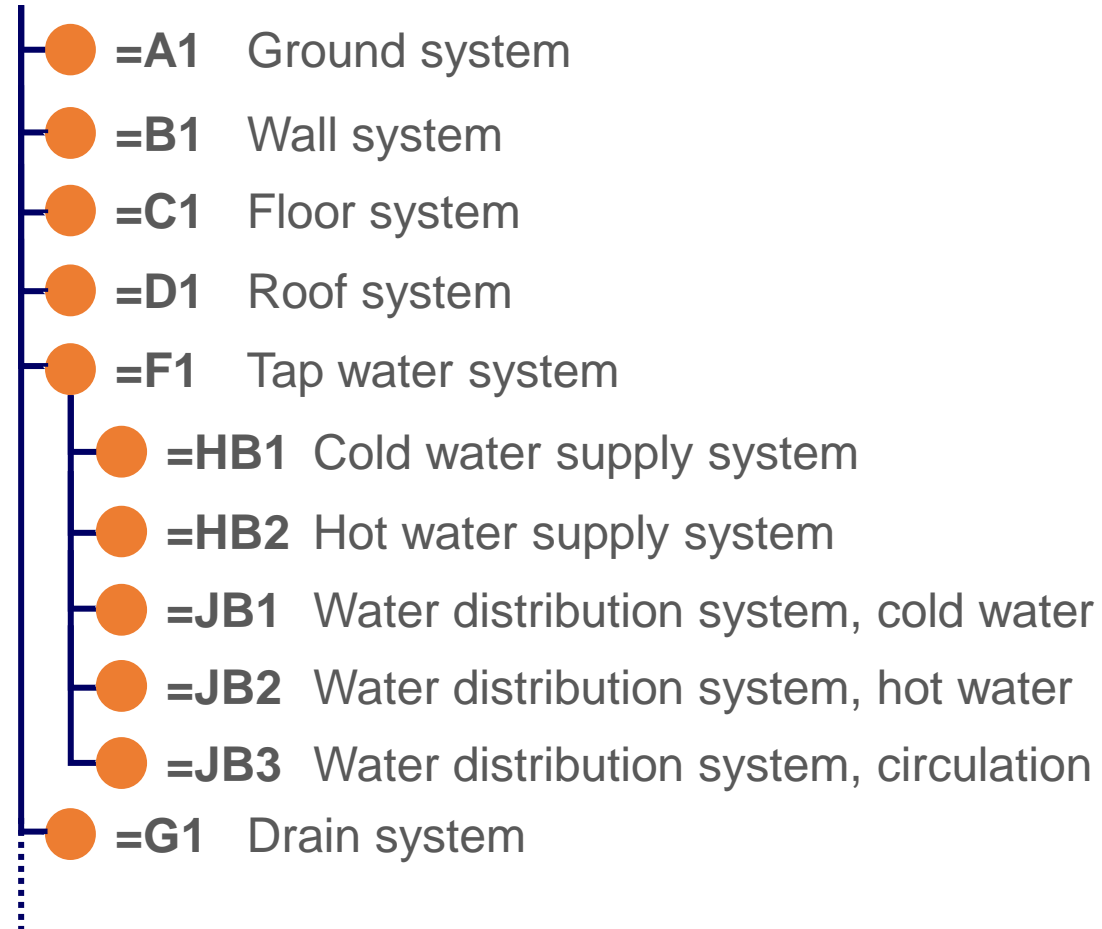


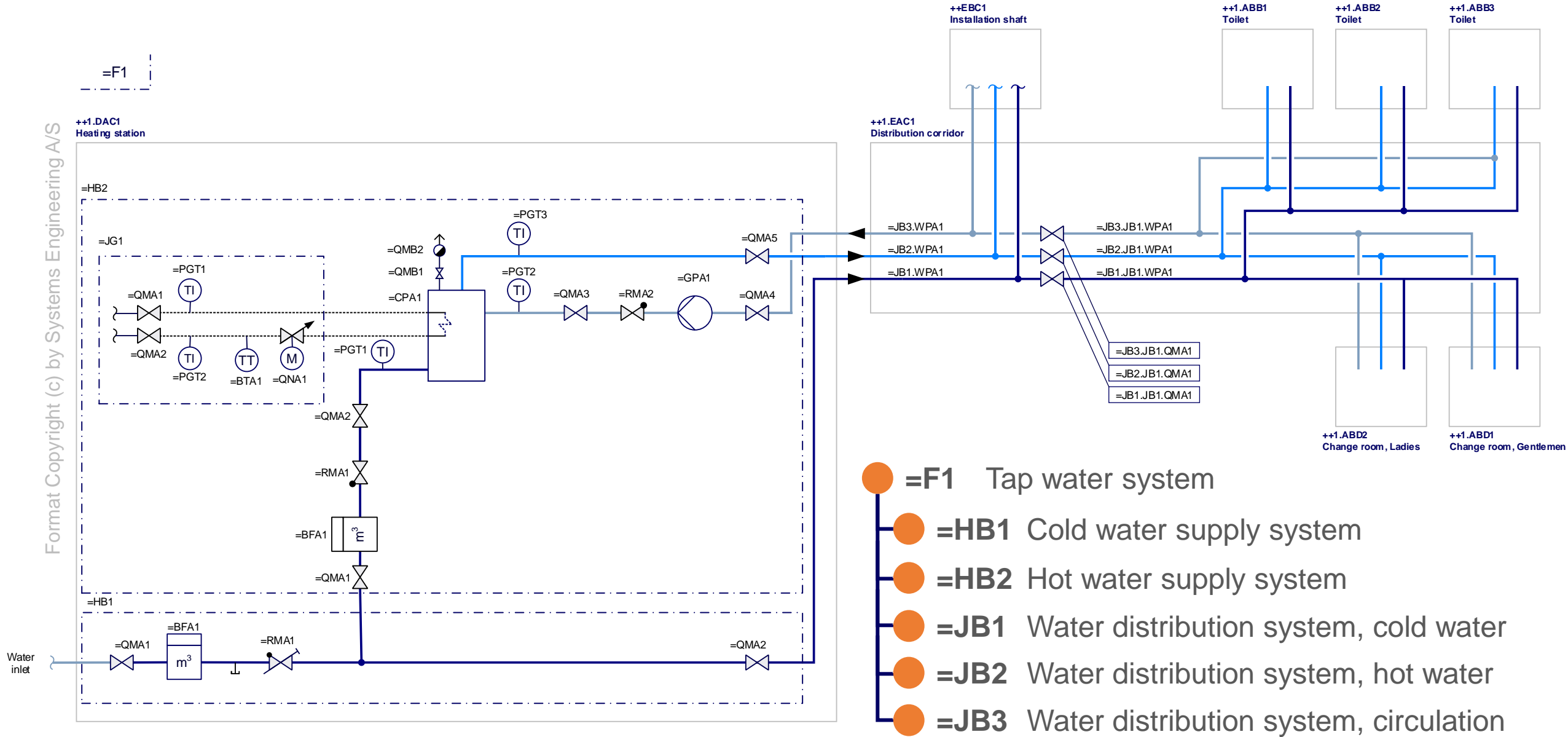
EXAMPLE: TAP WATER SYSTEM



Need for common language in construction

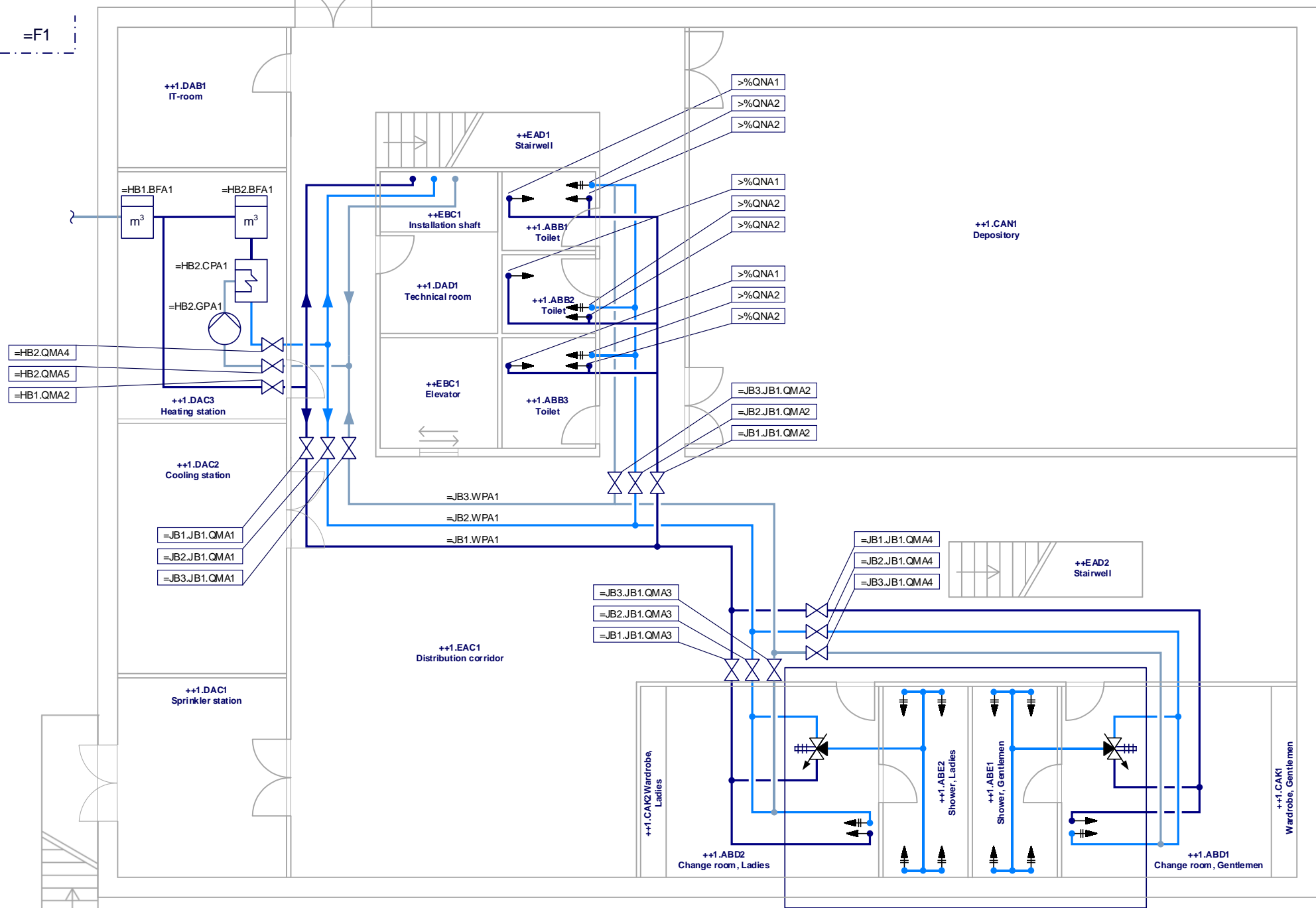
<E>





- =F1 Tap water system
- =HB1 Cold water supply system
- =HB2 Hot water supply system
- =JB1 Water distribution system, cold water
- =JB2 Water distribution system, hot water
- =JB3 Water distribution system, circulation

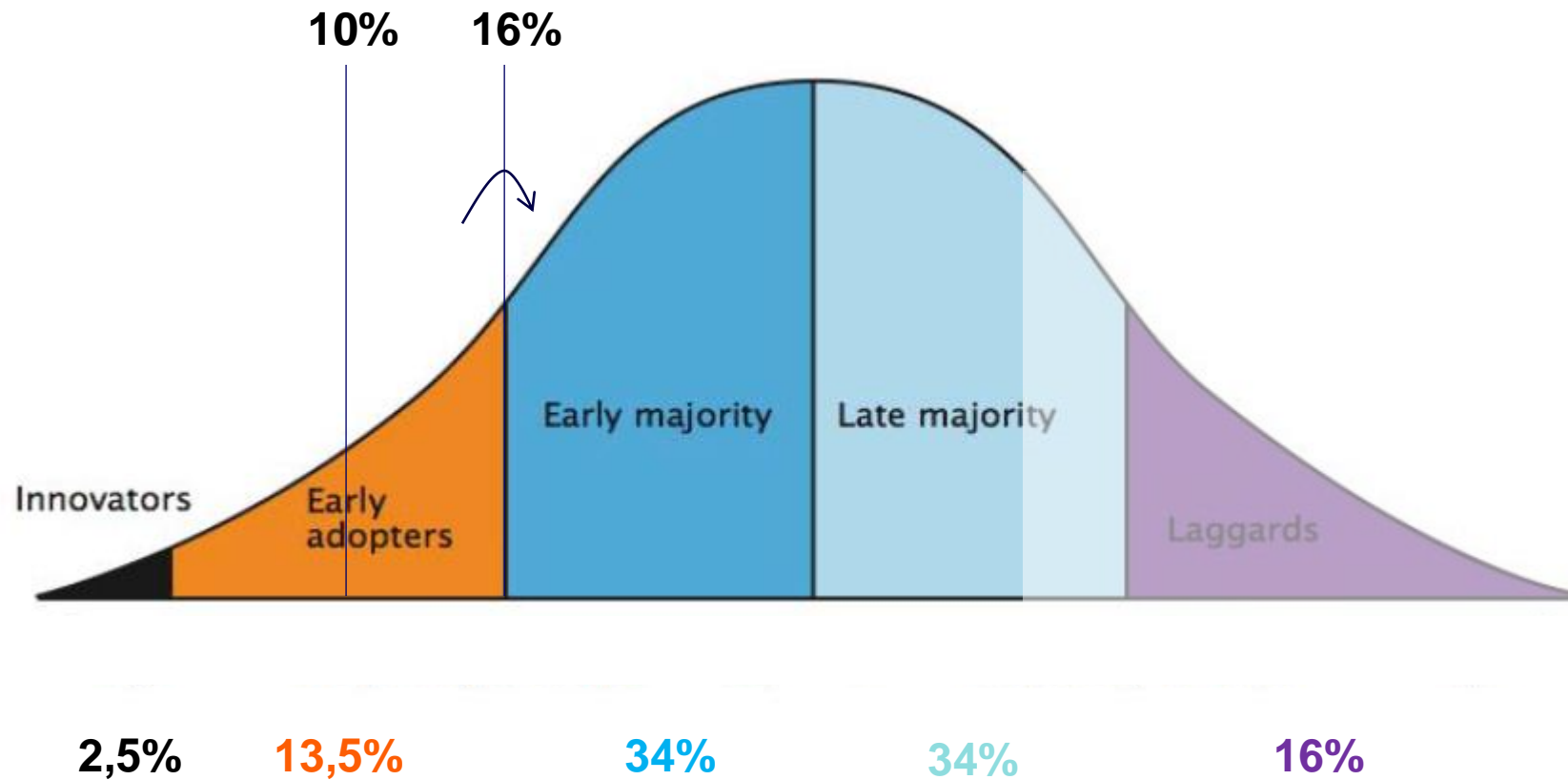
=F1



See detailed drawing p. 7

LOVEN OM DIFFUS INNOVATION

Implementeringsstrategien der rent faktisk virker!



FRA 10% -> 16%

1. **Fælles** for mindst 2 discipliner
2. Relevante **eksempler**
3. **Super let** at tilgå

Electrical diagram DS/EN/IEC 61082

P&ID DS/ISO 15519

RDS-Håndbog

Eksempler køleforsyningssystem

Systemnedbrydningen for NAU Køleforsyning

Figur 1: Electrical diagram example

Figur 19: Eksempel på søvandsveksler referencebetegnelser

mpel på fuld referencebetegnelse: =H1=HC2=QMA4 Afspærringsventil 4

Systems

Search code or text

All tags

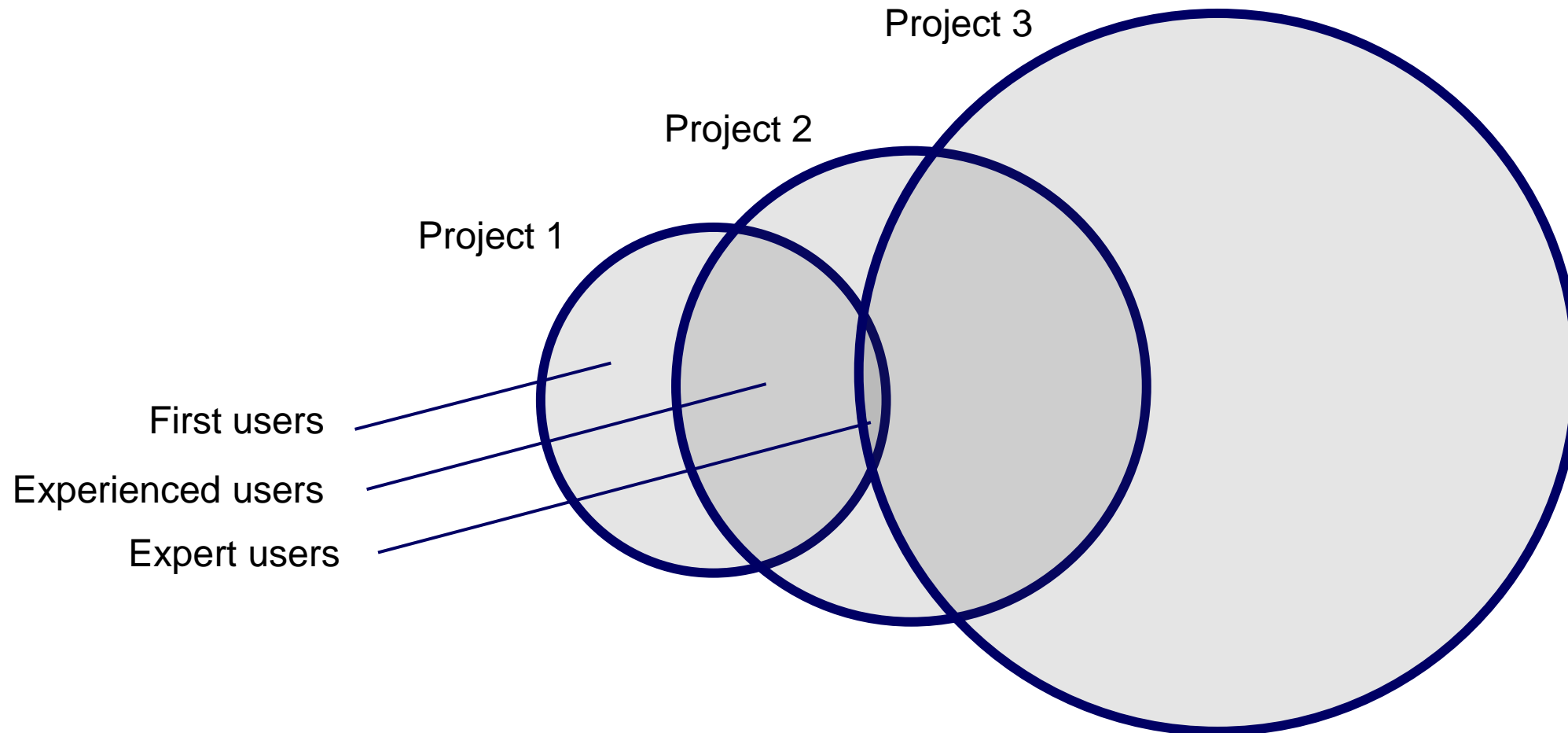
All classification tables

RDS Component systems

- B - Sensing object
- C - Storing object
- E - Emitting object
- F - Protecting object
- G - Generating object
- H - Matter processing object
- K - Information processing object

Systems Recents More

/ PULL FROM ORGANISATION



81346 HÅNDBOGEN

Komplementerer 81346

En håndbog om at tænke i systemer, hvordan de kan struktureres og hvordan de kan betegnes.

Flere end 100 eksempler og alle tabeller på dansk.

Køb i **DS Webshop**
eller via www.81346.com

NB! Findes også på tysk og engelsk.

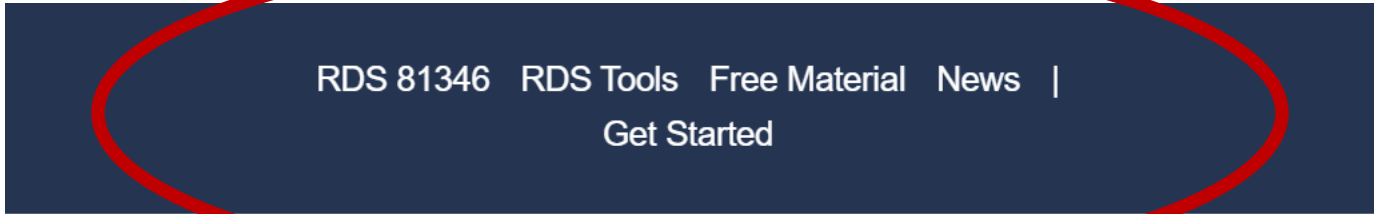


Vejledning i RDS – Referencebetegnelsessystemer

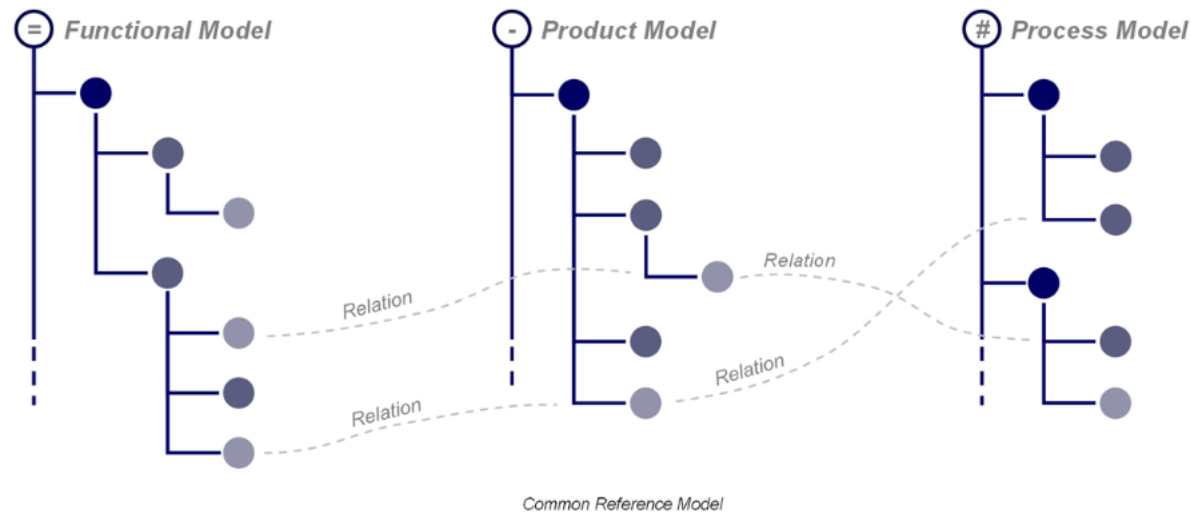
**TAG-nummerering til
systemer iht. ISO/IEC 81346-serien**



DS-håndbog
166:2022



The RDS 81346 Standard Series



MERE INFORMATION PÅ YOUTUBE.COM

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RDS Technique

199 abonnenter

ABONNERER



START

VIDEOER

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KANALER

OM



Uploads ▶ AFSPIL ALLE

Introduction to RDS-PS

The New Standard for the Energy Sector

8.56

Introduction to RDS-PS - The New Standard for the Energ...

Introduction to RDS - Step 3

Best Practices & Rule of Thumb

8.27

Introduction to RDS 81346 - Best Practices & Rule of...

Introduction to RDS - Step 2

Aspects & Multiple Views

8.03

Introduction to RDS 81346 - Aspects & Multiple Views...

Introduction to RDS - Step 1

Structure & Classification

6.39

Introduction to RDS 81346 - Structure & Classification...

Introduction Reference Designation System

6.13

Introduction to RDS 81346 - The Reference Designation...

MERE INFORMATION

Besøg os eller skriv til os



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mail@81346.com

**”Only complexity
can reduce complexity”**

Niklas Luhmann (1927 – 1998)