BuildingSMART International Summit 2019
Düsseldorf │25th - 29th March 2019
Opening Plenary Railway Room

Tuesday, 26th March 2019

IFCRAIL®
Railway Room

RWR1 |
Opening Plenary:
Progress in IFC Rail Project Status Presentation of Domains

Hilton Düsseldorf
Georg-Glock-Straße 20
40474 Düsseldorf

Venue: Room Aristoteles 1

Time		Content	Presenter
09:00	09:10	Welcome and opening the Session	Winfried / Christian / Suo Ning
09:10	09:20	Progress of IFC Rail Project until now	Chi
09:20	09:30	Main topics until end 2019	Christian
09:30	09:40	Main topics for Düsseldorf Summit 2019	Suo Ning
09:40	10:30	Presentations of the status of the domain working groups	Domain Leaders
10:30	11:00	Break	

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364

Founding Railway Room ...
... starting IFC Rail Project ... 2018/2019
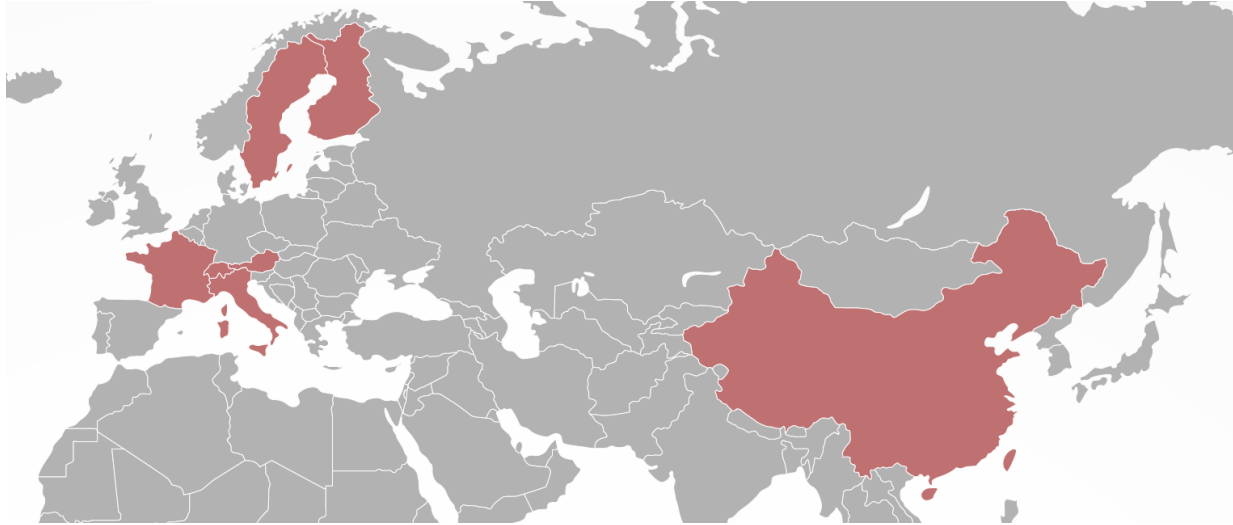
Founding RWR at bSI Summit Paris 03/2018

Railway Infrastructure Owners
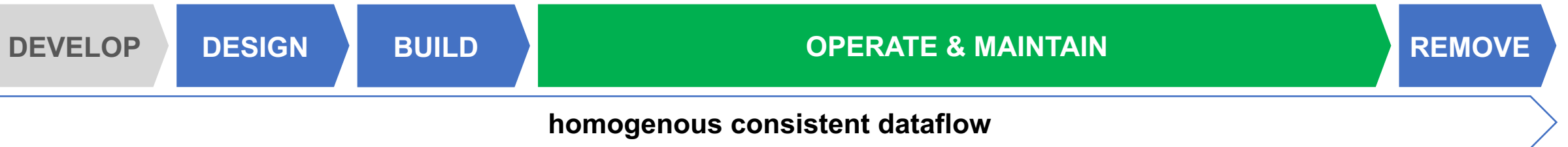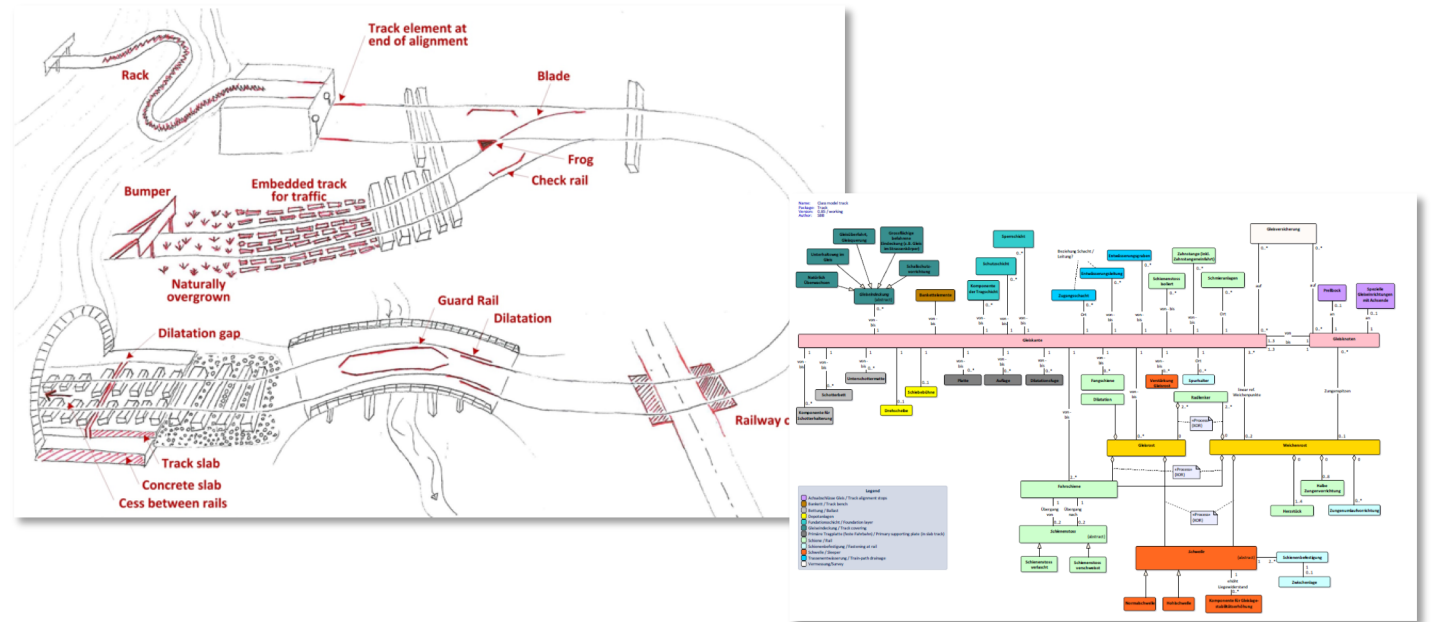
Research Group of French Transport Sector

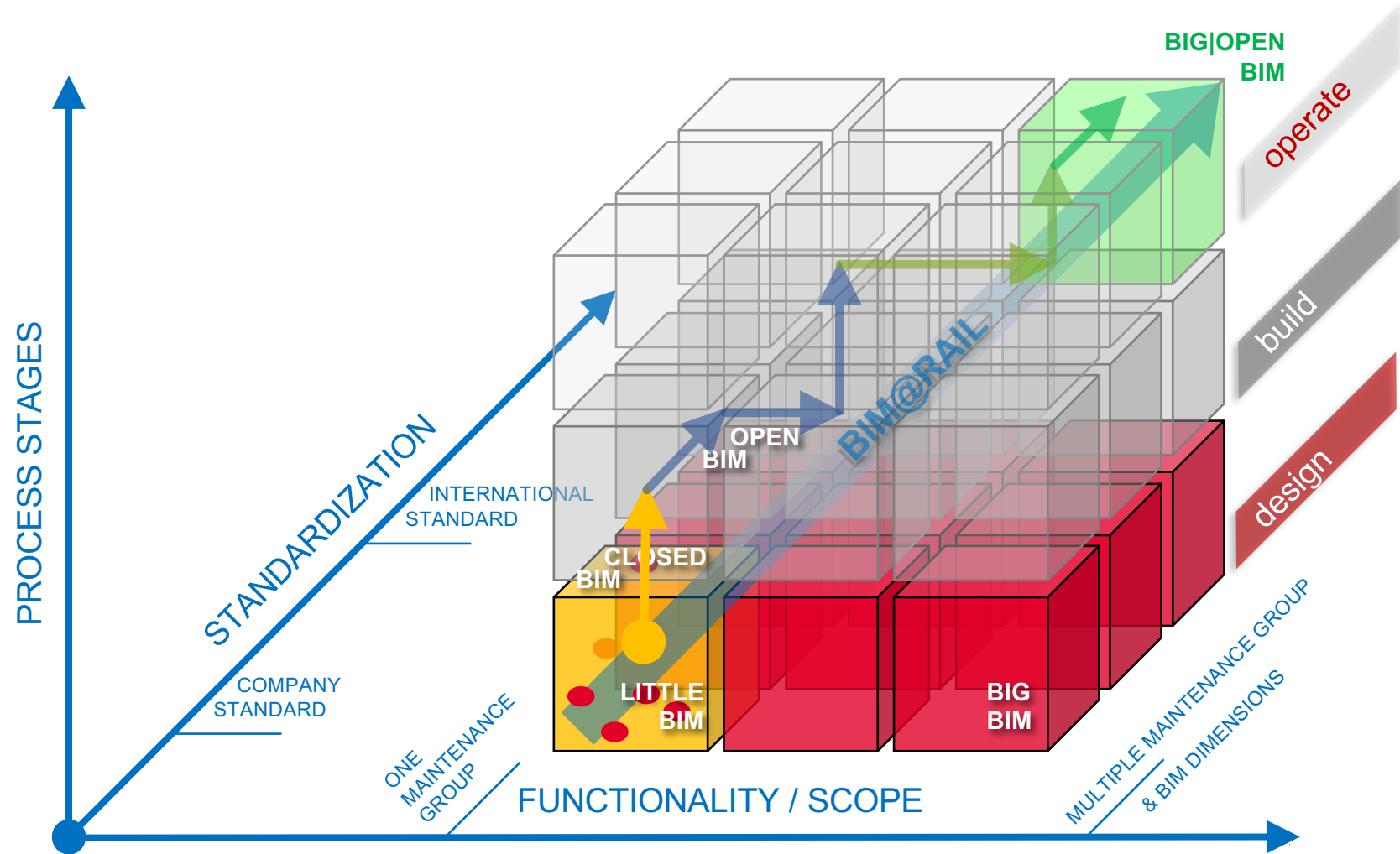# Goal of IFC Rail Project

… on our way to a digital twin

Create and provide :

- **Digital representation**
  complete | comprehensive | applicable

- Entire **railway eco-system**

- Whole **system life cycle**

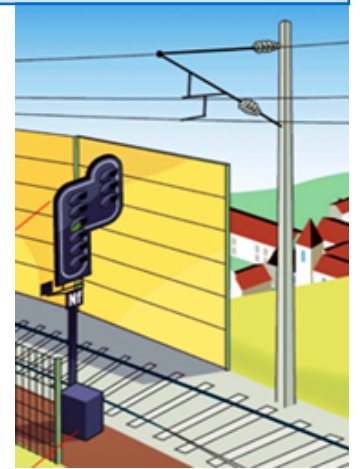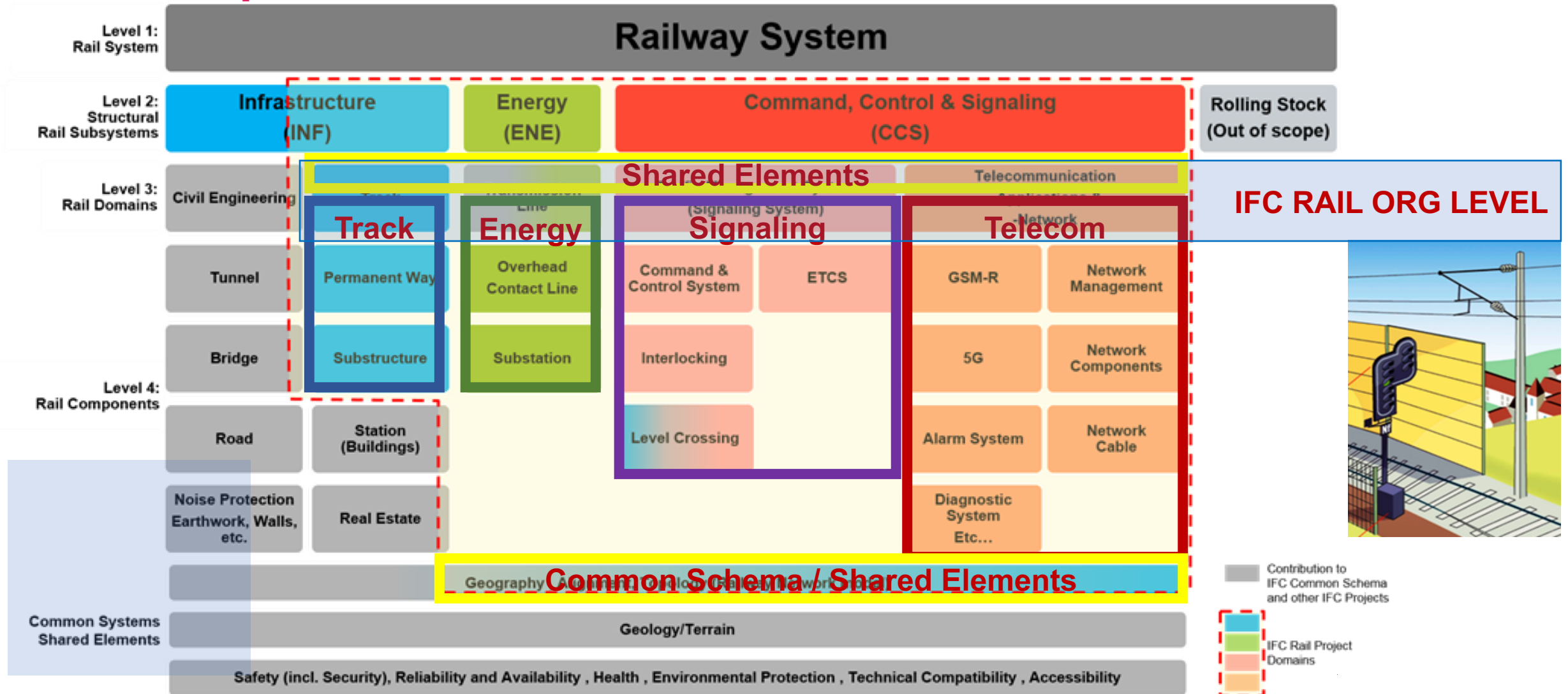| DEVELOP | DESIGN | BUILD | OPERATE & MAINTAIN | REMOVE |

homogenous consistent dataflow

BIM@rail Maturity Dice

IFC Rail will provide a Basis to:

- Develop **interoperable support systems**

- **Reduce complexity** of a rail eco system

- Assure **secure & safe** solutions

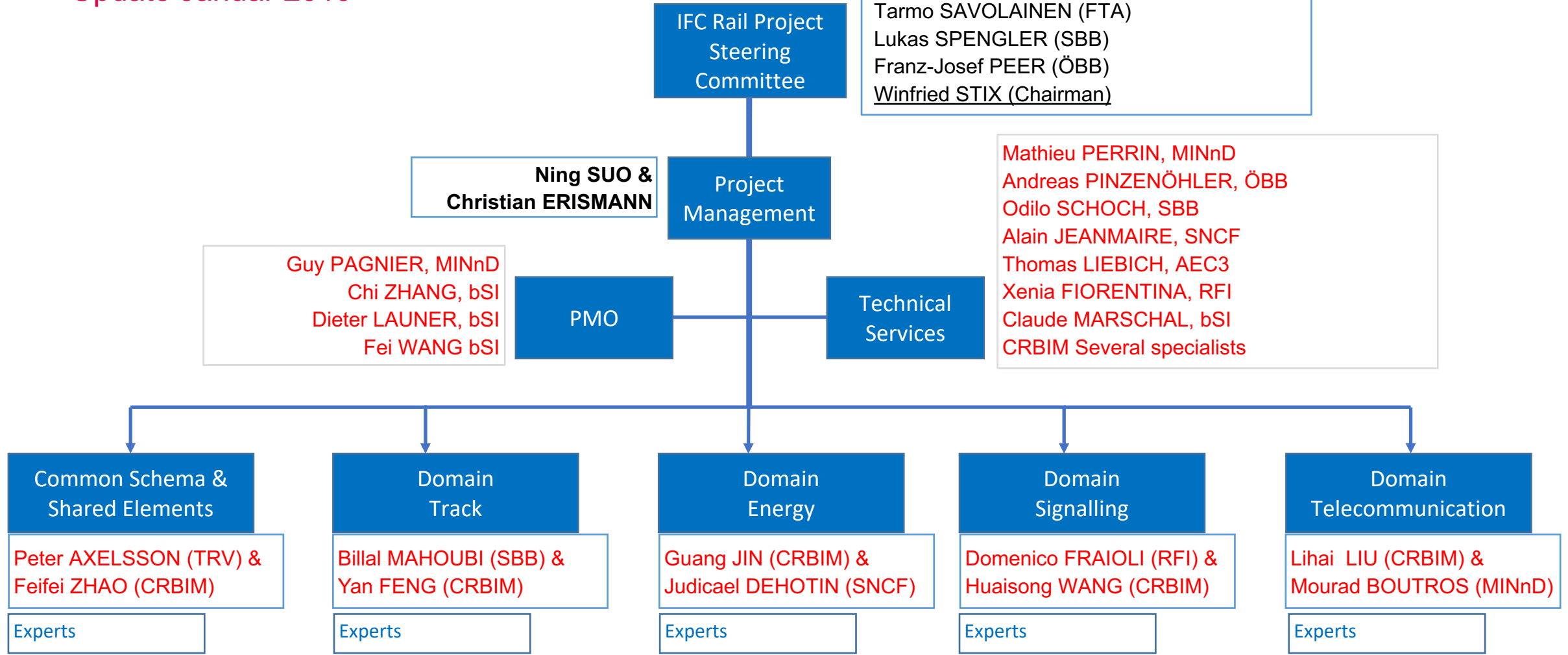- Reduce Project **cost & delay** for all partners

Scope Railway Domain Subsystems

Organization

Update Januar 2019

IFC Rail Project Steering Committee

Peter AXELSSON (TRV)
Christophe CASTAING (MINnD)
Modestino FERRARO, (RFI)
Pierre-Etienne GAUTIER,(SNCF)
Liming SHENG (CRBIM)
Tarmo SAVOLAINEN (FTA)
Lukas SPENGLER (SBB)
Franz-Josef PEER (ÖBB)
Winfried STIX (Chairman)

Ning SUO & Christian ERISMANN

Project Management

Mathieu PERRIN, MINnD
Andreas PINZENÖHLER, ÖBB
Odilo SCHOCH, SBB
Alain JEANMAIRE, SNCF
Thomas LIEBICH, AEC3
Xenia FIORENTINA, RFI
Claude MARSCHAL, bSI
CRBIM Several specialists

Guy PAGNIER, MINnD
Chi ZHANG, bSI
Dieter LAUNER, bSI
Fei WANG bSI

PMO

Technical Services

Common Schema & Shared Elements

Peter AXELSSON (TRV) & Feifei ZHAO (CRBIM)

Experts

Domain Track

Billal MAHOUBI (SBB) & Yan FENG (CRBIM)

Experts

Domain Energy

Guang JIN (CRBIM) & Judicael DEHOTIN (SNCF)

Experts

Domain Signalling

Domenico FRAIOLI (RFI) & Huaisong WANG (CRBIM)

Experts

Domain Telecommunication

Lihai LIU (CRBIM) & Mourad BOUTROS (MINnD)

Experts

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Working Mode so far

- **Workshops**
  2018
  - 9 IFC Rail Workshops
    Peking | Paris | Zurich | Chengdu | Xi'An | Wuhan | Vienna | Rome | Tokyo
 - 64 days of technical service received during workshops
  2019
  - 5 IFC Rail Workshops in Jan. 2019
    Helsinki | Paris | Xi'An | Tampere | Milano
  - Technical Service Workshop in Feb. 2019, Paris
  - +500 days of technical service planned in 2019!
  - Domains, CS/SE & PMO + Contributions to Common Schema

  - bSI Summits : 03/2019 in Dusseldorf + 10/2019 Beijing

- **Online meetings**
  - Domain Groups and Technical Services have regular online meetings

General Workflow and Deliverables
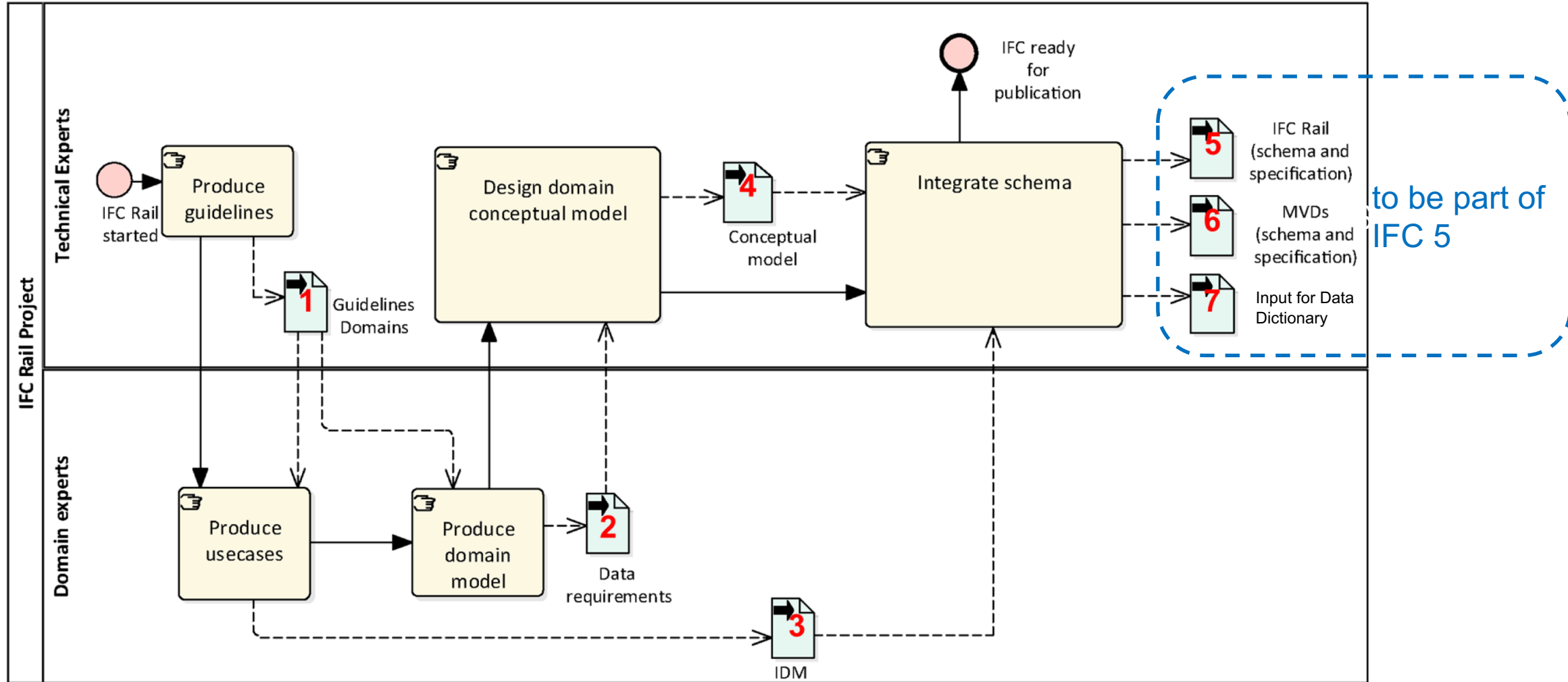
IFC Rail Progress

- **Requirement Analysis—WP2 major tasks**
  - **Data Requirements** -> Domain groups are finalizing work. First round reviewed by Technical Service. To be harmonized by CS/SE. ✅
  - **IDM**
    - Use Cases -> General use cases and domain use cases are defined and combined. To be reviewed by CS/SE. ✅
    - Process Maps -> IFC Rail Reference Process Map defined. To be reviewed by domains and CS/SE. To do more detailed domain process maps if needed. ✅
    - Exchange Requirements -> To-Do after Dusseldorf Summit.

IFC Rail Progress

- **Data modeling and IFC standard—WP3 major tasks**
 - **Conceptual Model ->** Some domains defined. To be done and revised by core modeling team.
  - **IFC extended schema and specification ->** To be done by core modeling team.
  - **MVDs ->** To be done by core modeling team.
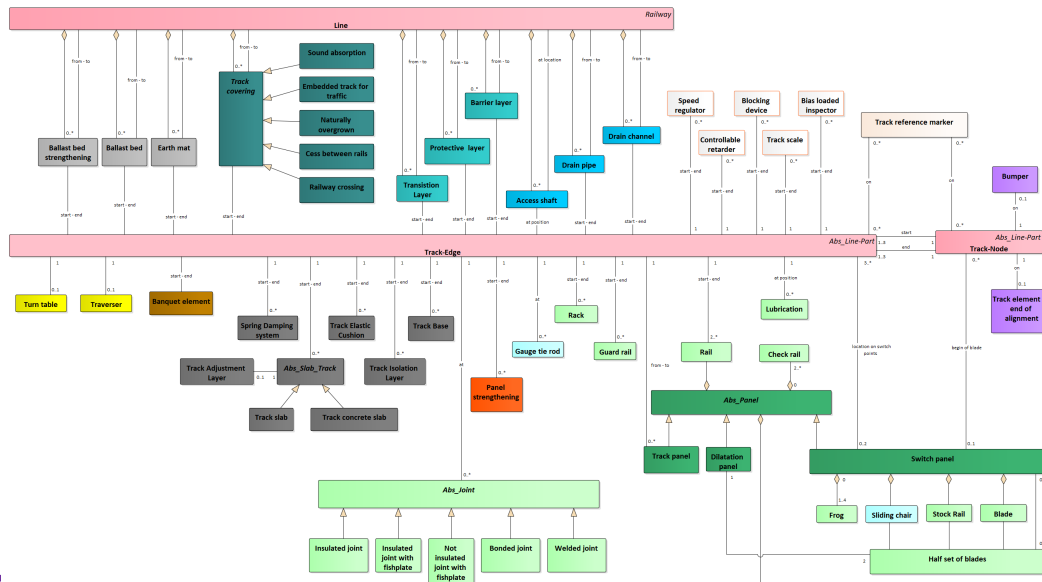
Methodology & Guidelines

- Tool-chain defined

- 2nd release delivered

- Addtional documents:
  - Feedback to Domain for Data Requirements
  - Recommendation for property groups
  - Common modeling guidelines => To data modellers
  - Key IFC relationships => To domains
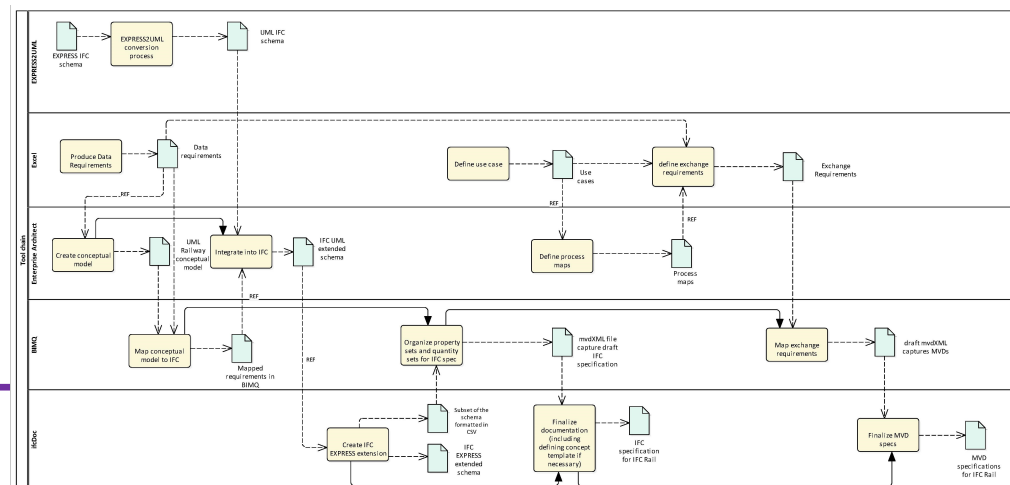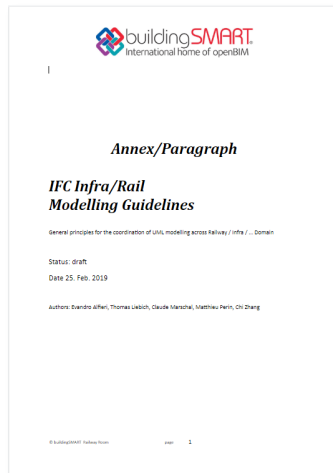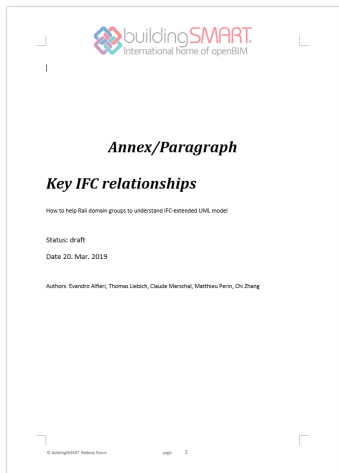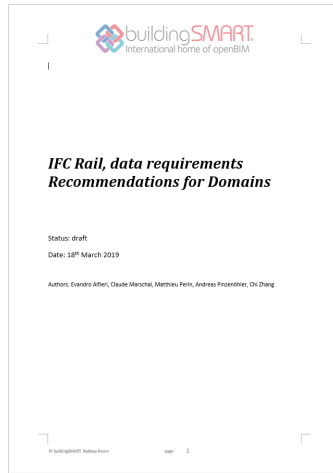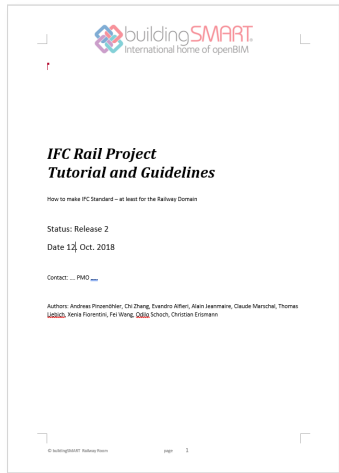
Technical Service – pilot project

- Data requirements => Conceptual model => IFC extended schema => Psets => PoC implementation => sample file

https://buildingsmart.sharefile.com/home/shared/fo109022-af77-4c47-a3c5-16708c68899f
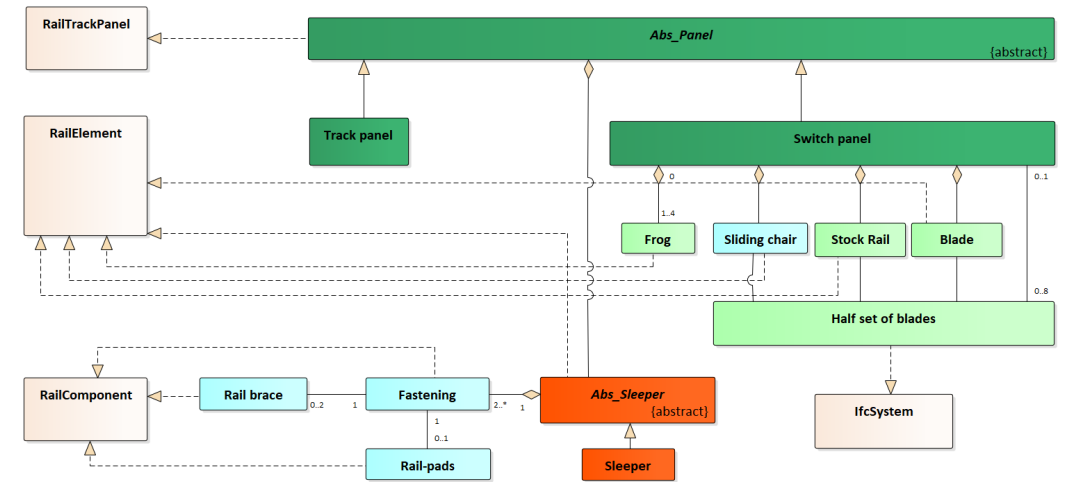
Use Cases: Logic sequence throughout Project Phases

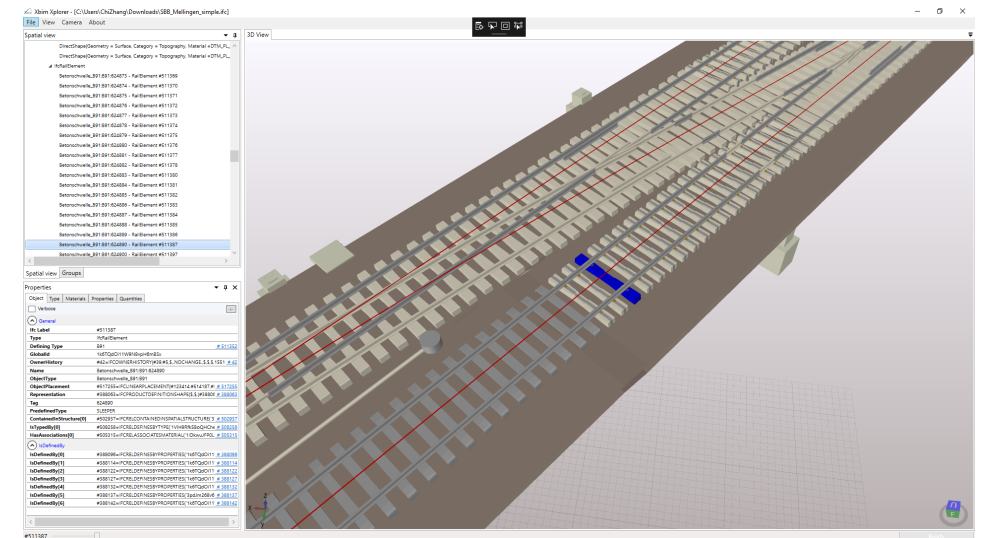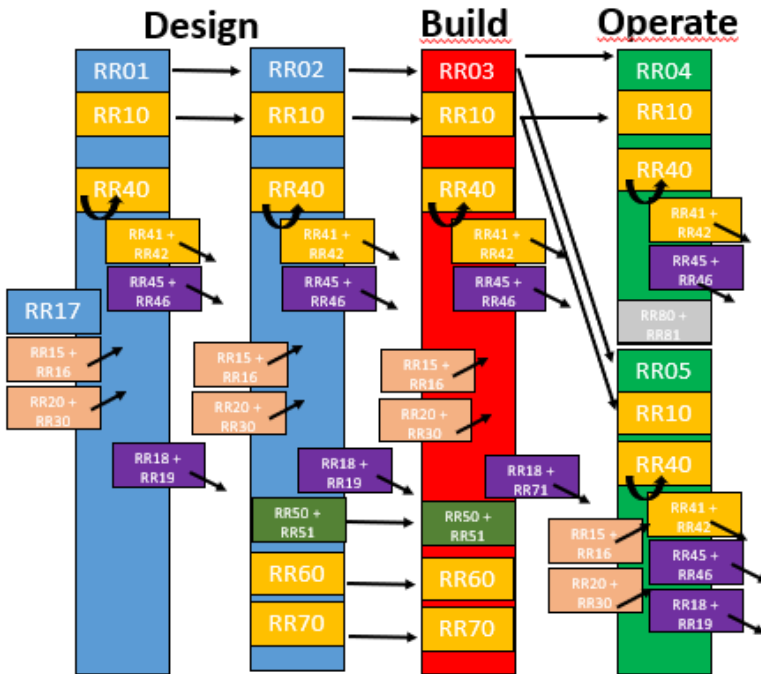- PMO =>TS & CS/SE Groups => Domains => PMO
- Combined and mapped all use cases (general and domain)
- Validation V.1 at Düsseldorf bSI Summit

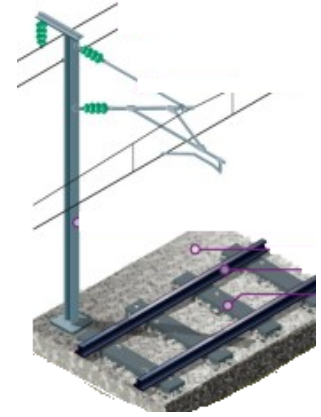| Id	Use case
RR17	Feasibility Studies (Railway Conceive Modeling (RCM))
RR01	Railway Preliminary Design Modeling (RPDM)
RR02	Railway Detailled Design Modeling (RDDM)
RR03	Railway Procurement & Construction Modeling (RPCM)
RR04	Railway Operator Modeling (ROPM)
RR05	Railway Maintainer Modeling (RMAM)
RRXX	Railway Undertaking Modeling (RUM)
RR10	Project Monitoring
RR15	Existing Situation Model
RRXX	Related projects Modeling
RR16	Alignment & Functional Railway Requirements
RR18	Other analysis, simulations…
RR19	3D Visualization
RR20	Infrastructure Design (all infra domains)
RR30	Superstructure Design (all Super domains)
RR40	Coordination & Integration
RR41	Compliance & Review
RR42	Functional Demonstration (ie. RAMS)
RR45	Drawings & Documents Production
RR46	CAPEX Cost control
RRxx	OPEX Cost control
RR50	Construction Staging
RR51	Managament & Design for temporary situation
RR60	Procurement
RR70	Testing & Commisionning
RR71	As-built Documents
RR80	Maintenance and operation programme
RR81	Training Model for Operation & Maintenance

IFC Rail Reference Process Map
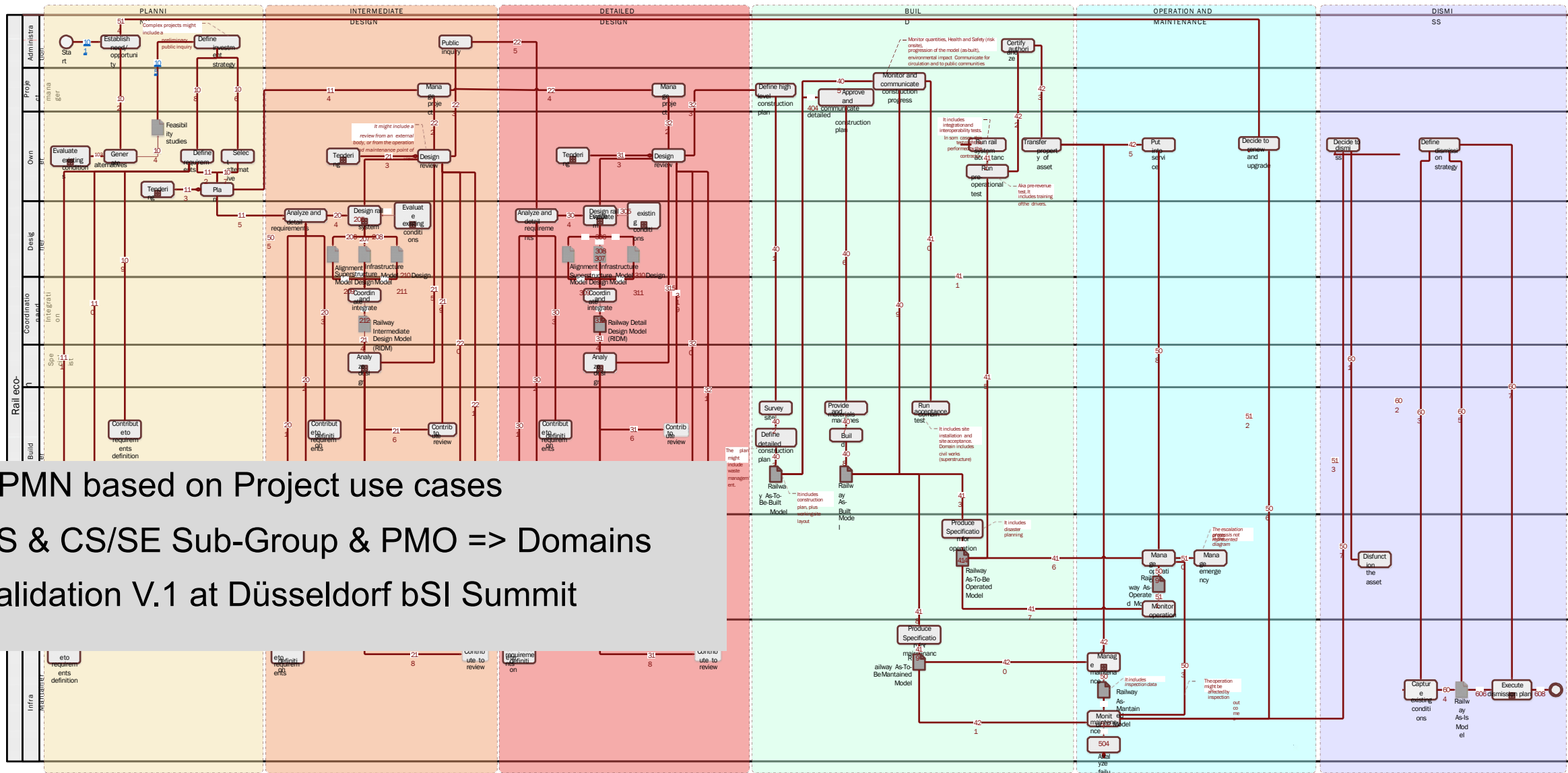
- BPMN based on Project use cases
- TS & CS/SE Sub-Group & PMO => Domains
- Validation V.1 at Düsseldorf bSI Summit

2019 Objectives & Drivers

- **Deliver to project plan – extremely ambitious**

- **Training & Collaboration**
Enhance the technical Knowledge in the Domain Groups for modelling work
(Joint sessions with Experts and Domain Members)
Technical Rail-Experts and data modelers collaborate closely

- **Preparation next steps beyond IFC-Rail**
Construction and Operation – common Data Dictionary
Assuring and testing the Interopability with other Infrastructure Standards and Hybrid Assets

Objectives

1) **Extend IFC Infrastructure Schema**
   rail domain construction and maintenance

2) Contribute to **IFC Common Schema** development

3) Build on **international consensus**

4) Take into account **iterative works** with complementary data and IFC developments

5) **Early deployment** & **testing** in **software**
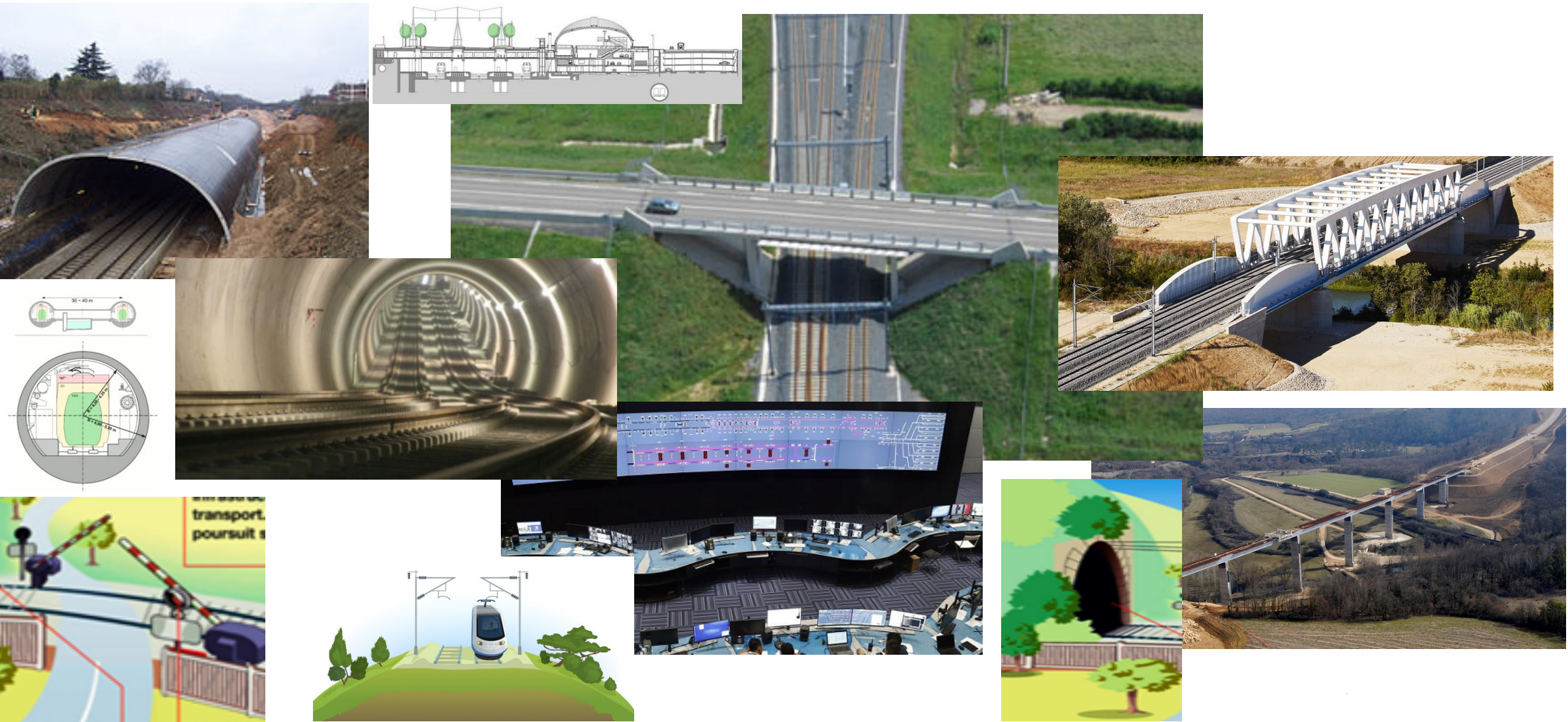   by providing the deliverables publicly available and open

Work Plan 2019

- https://buildingsmart.sharefile.com/home/shared/foaf1854-345a-4e16-ac02-ddbfbddf2d58

What do we need to continue… after 2019… there is more

Next Steps | Beyond ifcRail 2019

- Interoperability between IFC-Projects
    - Specify interoperation and interfaces between other domains
    - Common Schema
    - IFC Rail
    - IFC Road
    - IFC Bridge
    - IFC Tunnel
    - IFC Building

- SWV / ISG further actions

- Create and validate models [MVDs]
    - Step-by-step
    - Involve SWV
    - From simple to more complex and complete railway projects

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- **Use Case Management**

  - **Life Cycle Processes**
    - New construction
    - Modernization
    - Renewals

  - **Asset Management vs. Project Structures**

- **DD Support / Business model**

  - bSDD
  - Linked Data
  - Semantik Web
  - Ontology

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- Alignment

- Time / Space / Network / Status

- Same description over all object classes

- Object Identification —> GS1

- Showcase how to address

- Graphical setup

- ... tbc ...

Our goals and expectations at Dusseldorf Summit 2019

- **This is a special summit**
  - Summit & Workshop   March 25 - March 29, 2019
- **Deliverables & Review & Definition**

RWR2 |
**Methodology
Process and
Use Case**

Tuseday, 26th March

Hilton Düsseldorf.
Georg-Glock-Straße 20
40474 Düsseldorf

Venue: Room Aristoteles 1

Time		Content	Presenter
11:00	11:20	Workflow and toolchain for developing the IFC Rail Standard (IFC Rail Tutorial)	Andreas
11:20	11:45	Definition and priority of general use cases	Results	Guy
11:45	12:15	Definition and highlevel process	Xenia
12:15	12:30	Feedback/Recommendations for domain groups for the Data Requirements deliverable	Claude
12:30	13:30	Lunch	

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Our goals and expectations at Dusseldorf Summit 2019

- **Collaboration**
  - UIC——Rail Ontology | Common Rail Data Dictionary
  - Infra ROOM ——

  - Other ROOM——Rail and Linked Data

Our goals and expectations at Dusseldorf Summit 2019

- **Collaboration**
  - IFC Rail Project——TS & Domains

Our goals and expectations at Dusseldorf Summit 2019

- **Looking to the future**

RWR3 |
IFC Rail Project Pilot
Information,
Ontology and
Linked Data
Future Trends

Tuseday, 26th March

Hilton Düsseldorf.
Georg-Glock-Straße 20
40474 Düsseldorf

Venue: Room Aristoteles 1
Parallel Session
Room Leibniz 3

Time		Content	Presenter
13:30	15:00	Expert meeting: Railway Access, Passenger Station Services Parallel Session bG3	Alexander Schmidt [SBB]
13:30	14:00	Evaluating the Processes | IFC Rail Pilot	Matthieu/Evandro
14:00	14:20	Rail Ontology | Common Rail Data Dictionary	Airy
14:20	14:50	Rail and Linked Data	Pieter Pauwels
14:50	15:00	Open Discussion	
15:00	15:30	Break	

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Our goals and expectations at Dusseldorf Summit 2019

- **Guidance & Confidence & Milestones**
  - Domain leaders will get face-to-face work guidance
  - Project participants will gain strong confidence and hope for the digital railway
  - We hope that this summit will become an important stage and milestone of the IFC Rail project

Presentation of the Status of Each Domain Workgroups

thank you
xiè xiè ni
grazie
merci
kiitos
tack
dankeschön

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bSI Awards Program

Submission Information

Submission Period - NOW OPEN

Email your completed submission form to
websupport@buildingsmart.org

Key Dates

Deadline Date –APRIL 12, 2019 (Stage One
– Registration Form);

APRIL 30, 2019 (All Stage Two
Documentation)

Awards Ceremony

The Awards Ceremony will take place at the
Bejing Summit Meeting 29 October - 1st
November 2019

Further details here

susan.keenliside@buildingsmart.org

https://www.buildingsmart.org/news/bsi-awards-2019/

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40474 Düsseldorf

Venue: Room Aristoteles 1

coming up next

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