



Metra

Kick-off Meetings

SETUP THE PROJECT FOR SUCCESS

STADLER

Project Kick-off – 6/19/24

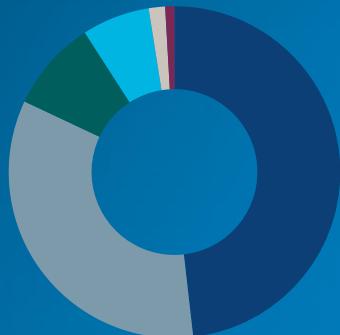
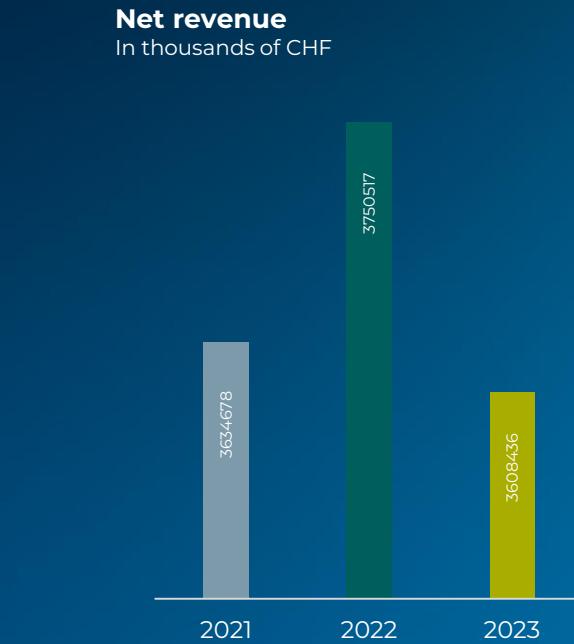
Topic	Presenter	Time
Introduction Round Metra & Stadler	Stadler / Metra	01:00pm
Introduction of Metra	Metra	01:20pm
Introduction of Stadler US	Stadler	01:30pm
New Schedule	Metra	01:40pm
Stadler's Metra Project Outline	Stadler	01:45pm
Challenges of the Schedule	Stadler	02:10pm
Break		02:45pm
Stadler's Proposal on Formal Communication Procedures, Reporting Channels	Stadler	03:00pm
Questions about Contract, Tech. Spec., CDRL, Schedule, Collaboration etc.	Stadler	03:30pm
End		04:00pm

02

Stadler US

Overview

2023 Results at a Glance



Net revenue by geographical market

- Germany, Austria, Switzerland
- Western Europe
- Eastern Europe
- America
- CIS
- Rest of the World

24.4

Order Backlog in CHF Billion
Previous Year: 22.0

5.1%

EBIT Margin
Previous Year: 5.5%

138.6

Net profit in CHF million
Previous Year: 75.1

13,944

Employees Worldwide
Previous Year: 13,431

6.8

Order Intake in CHF Billion
Previous Year: 8.6

37,159

Registered shareholders as at 31 December 2023

Previous Year: 38,943

183.3

EBIT in CHF million
Previous Year: 205.1

More than 9800 units sold in 43 countries



36

SMILE



2365

FLIRT / WINK



553

KISS



948

Tailor-made (multiple units /
locomotives / cars)



2480

Locomotives



155

Wagon



782

METRO



1725

LRV



497

Regional rail shuttle



611

GTW

Divisions 2024

Switzerland



– Bussnang



– Rheintal



– Salt Lake City (US)

Signaling



– Wallisellen
(Switzerland)

Germany



– Pankow



– Chemnitz

Central Europe



– Siedlce (PL)



– Prague (CZ)



– Minsk (BY)

Spain



– Valencia

– ERION

– ERION (FR)

Components



– Winterthur



– Biel/Bienne



– Szolnok (HU)



– Środa (PL)

Service



- Algeria
- Denmark
- Germany
- Finland
- France
- Italy
- Netherlands
- Norway
- Austria
- Poland
- Portugal
- Russia
- Serbia
- Sweden
- Switzerland
- Spain
- Turkey
- UK
- Hungary
- USA

Employees Worldwide: 13,944

Stadler Rail Group & Stadler US

Stadler Rail Group



Revenue: **3.8 billion USD**
Employees: **13,000+**
Locations: **15 all over the world**
Established: **1942**

Stadler US



Employees: **500**
Facility Size: **300,000+ sq ft**
Established: **2016**
Projects in progress: **8: Caltrain, DART, USU, Caltrans, Caltrain EMU, Caltrain BEMU, MARTA, & Metra**

Over 9,800 trains sold all over the world

Timeline and Map

Projects in North America

20 GTW NJT



2002

6 GTW CMTA



2007

11 GTW DCTA



2011

8 GTW eBART



2016

4 GTW CMTA



2017

10 Custom Coaches
Rocky Mountaineer



2018

8 FLIRT TEXRail

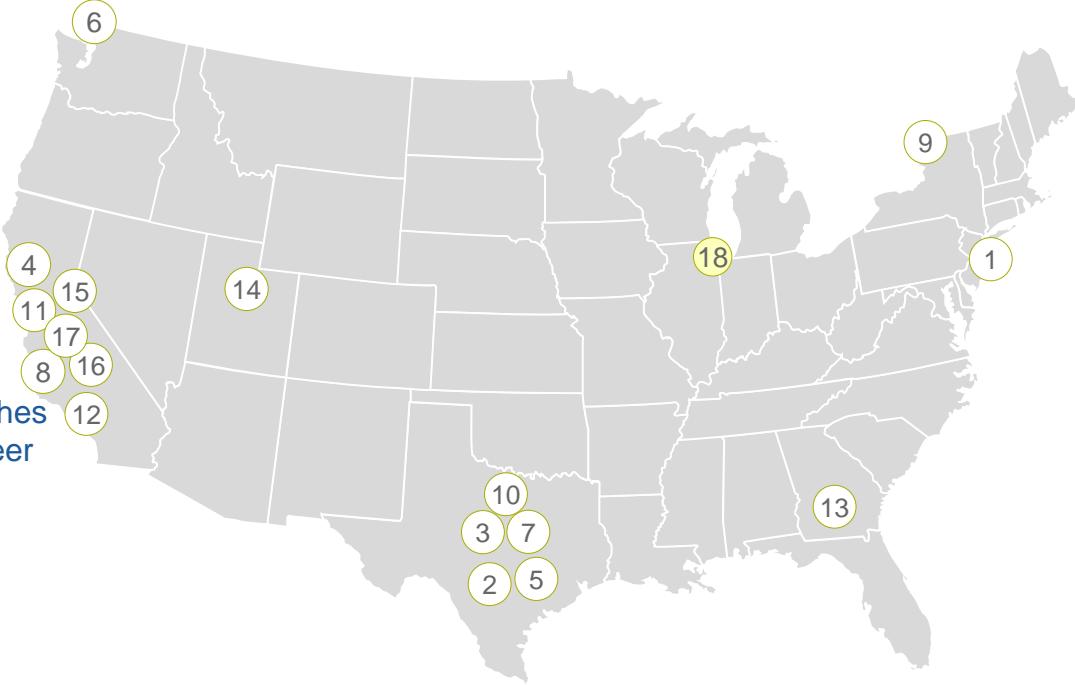


2019

3 FLIRT SBCTA



2020



8 FLIRT DMU



2022 - 2023

1 H₂ FLIRT
SBCTA



2024

1 FLIRT USU



2025

10 Caltrans H₂



2027- 2028

4 KISS Caltrain



2027-2028

8 FLIRT BEMU
Metra



2028

7 FLIRT Ottawa



2022

23 KISS Caltrain



2021 - 2026

Our Products in an Overview

FLIRT



Propulsion Systems:

- Battery
- Hydrogen
- Diesel
- Overhead Catenary

Seating Capacity – up to 480

Customizable Platform Height

KISS



Propulsion Systems:

- Diesel
- Overhead Catenary
- Battery

Seating Capacity – up to 800

Customizable Platform Height

METRO



Propulsion Systems:

- Battery
- Overhead Catenary

Seating Capacity – up to 350

Customizable Platform Height

LIGHT RAIL VEHICLES



Propulsion Systems:

- Overhead Catenary
- Off wire capabilities

Seating Capacity – up to 140

Customizable Platform Height:

- High Floor
- Low Floor
- 70 – 80% Low Floor

TAILOR MADE



Options:

- Cog Rail
- Coaches
- Shunting Locomotives
- Research & Development Projects

Stadler Rail Services (SRS)

- Full Service – Comprehensive maintenance
- TSSSA – Tailored service support
- Spare part management
- Modernization – Upgrade of existing vehicles
- Overhaul of vehicles and components
- Repair of vehicles
- Digital solutions – Remote monitoring and condition based maintenance

Stadler Signaling

- ETCS – EU Train Control System
- CBTC – Comm. Based Train Control
- ATO – Automated Train Operation
- Anti-Collision
- PZB & FRED – On Board & Wayside
- Interlocking – Control and Safety
- Subsystems
- Dynamic Passenger Information
- Services
- Smart Object Controller
- Field Elements

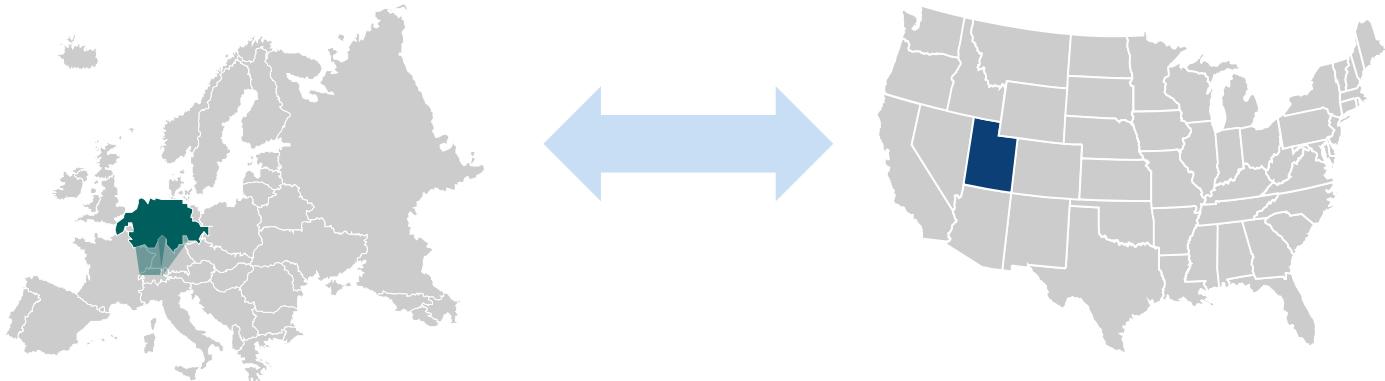
Stadler US Invests in Future Generations

TRAC – YOUTH APPRENTICESHIP PROGRAM



- Started in 2019 as the first apprenticeship program in Utah
- First class graduates in summer 2022
- Based on the Swiss model
- Program begins in senior year of high school
- Official associates degree from SLC Community College plus job-based education

KNOWLEDGE EXCHANGE SWITZERLAND AND USA



HOW IT WORKS

- Employees in various areas train with teams in Switzerland to learn and bring this knowledge back to their teams in the US
- Colleagues from Stadler locations around the world spend extended periods of times at Stadler US to teach or gain knowledge from here

WHAT WE GAIN IN ADDITION TO KNOW-HOW

- Vast cultural exchange throughout all areas of the company as well as knowledge transfer
- Establishing of international network for employees and departments

PROUD TO PARTNER WITH



03

Stadler's Metra Project Outline

Eight Trainsets of 2-car battery FLIRT with options for additional eight 3- to 4-car Trainsets

Summary of Program & Train Specifications



Train Specifications

Type	FLIRT BEMU 2-Car
Max Speed	79 mph
Axle Arrangement	Bo'+2'2'+Bo'
Power	1 MW at wheel
Charging System	DC Fast Charging Separate Contract
Size of Train	L 170' W TBD

Program Overview

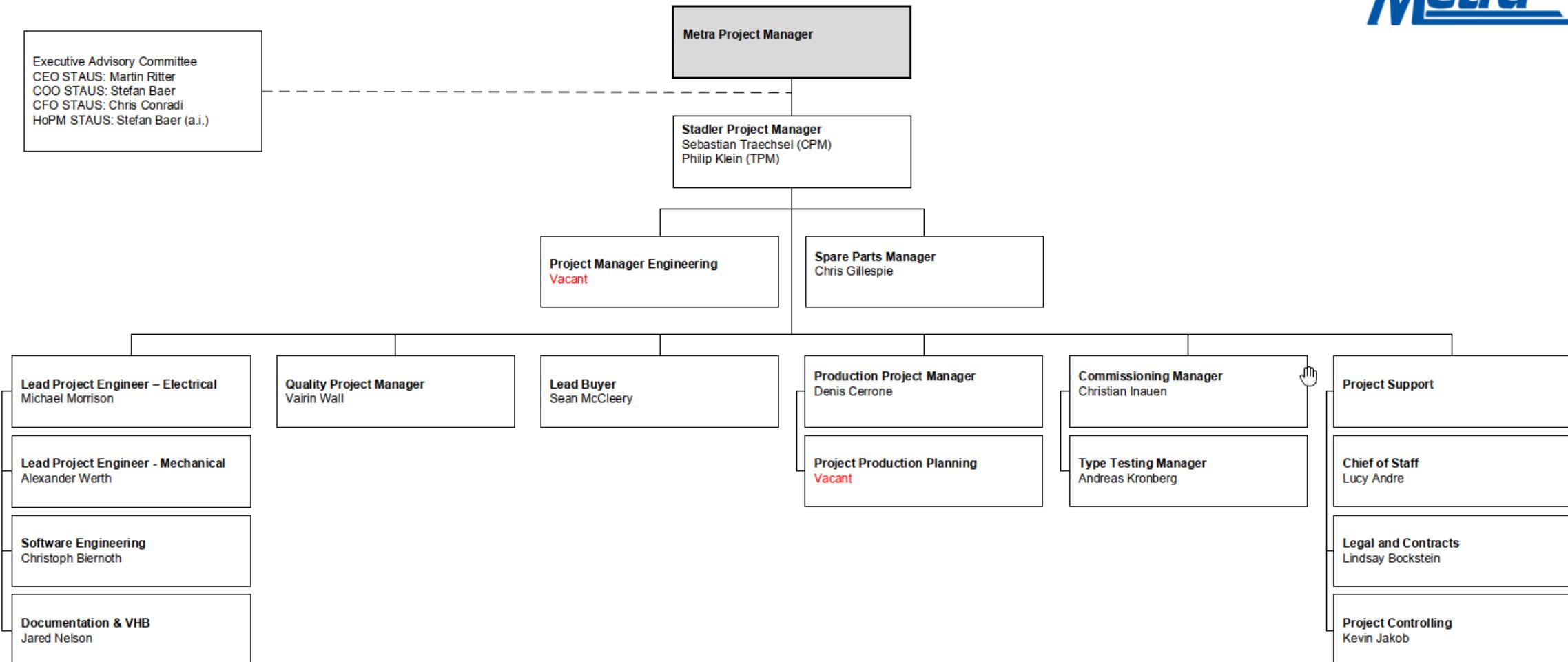
Customer	Metra
Award	February, 22 nd 2024
Notice to Proceed	June 4 th , 2024
Due Date	June 2028
Base Order	8 x FLIRT 2-cars
Options	8 x FLIRT 2-cars with optional Up to 16 x 3 rd car (w/o toilet) Up to 16 x 4 th car (with toilet)





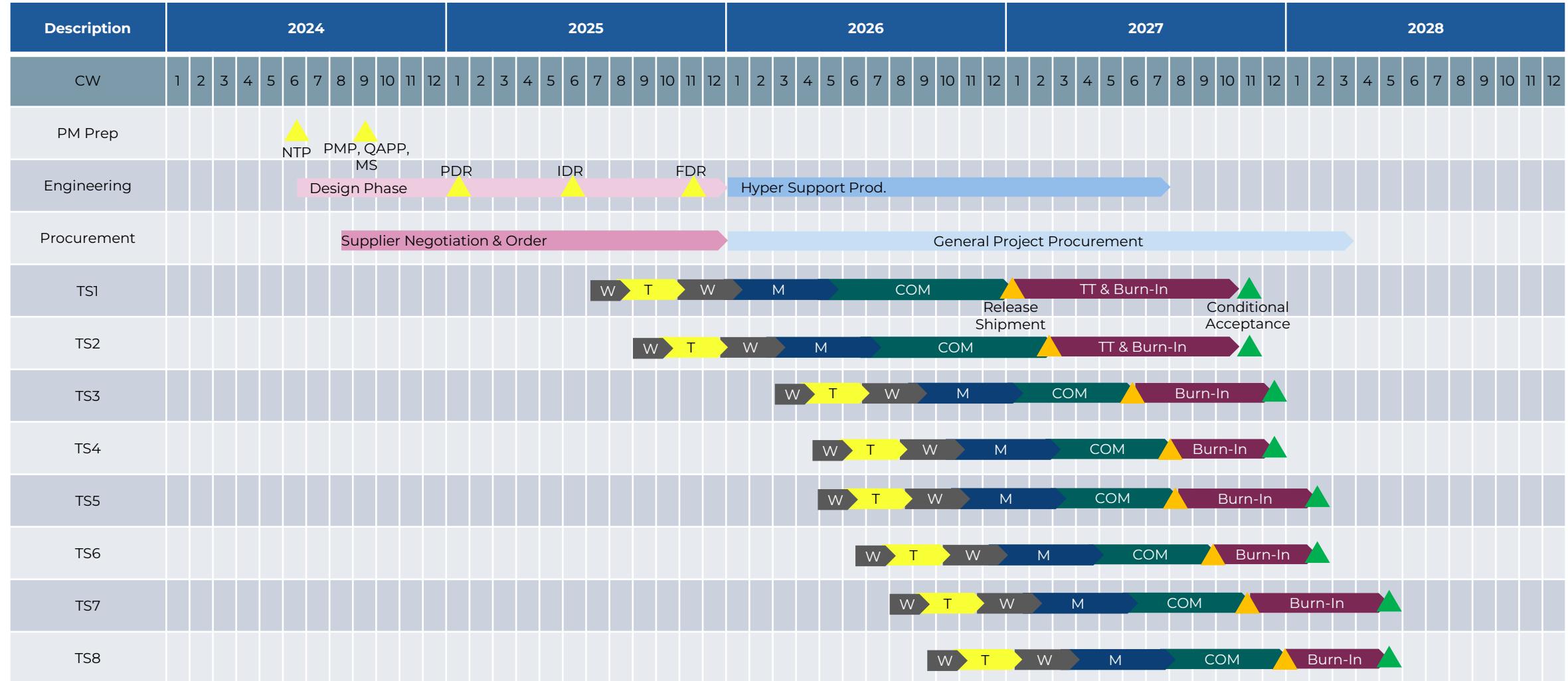
Organizational-Chart

L-4608 Metra Project Organization Chart



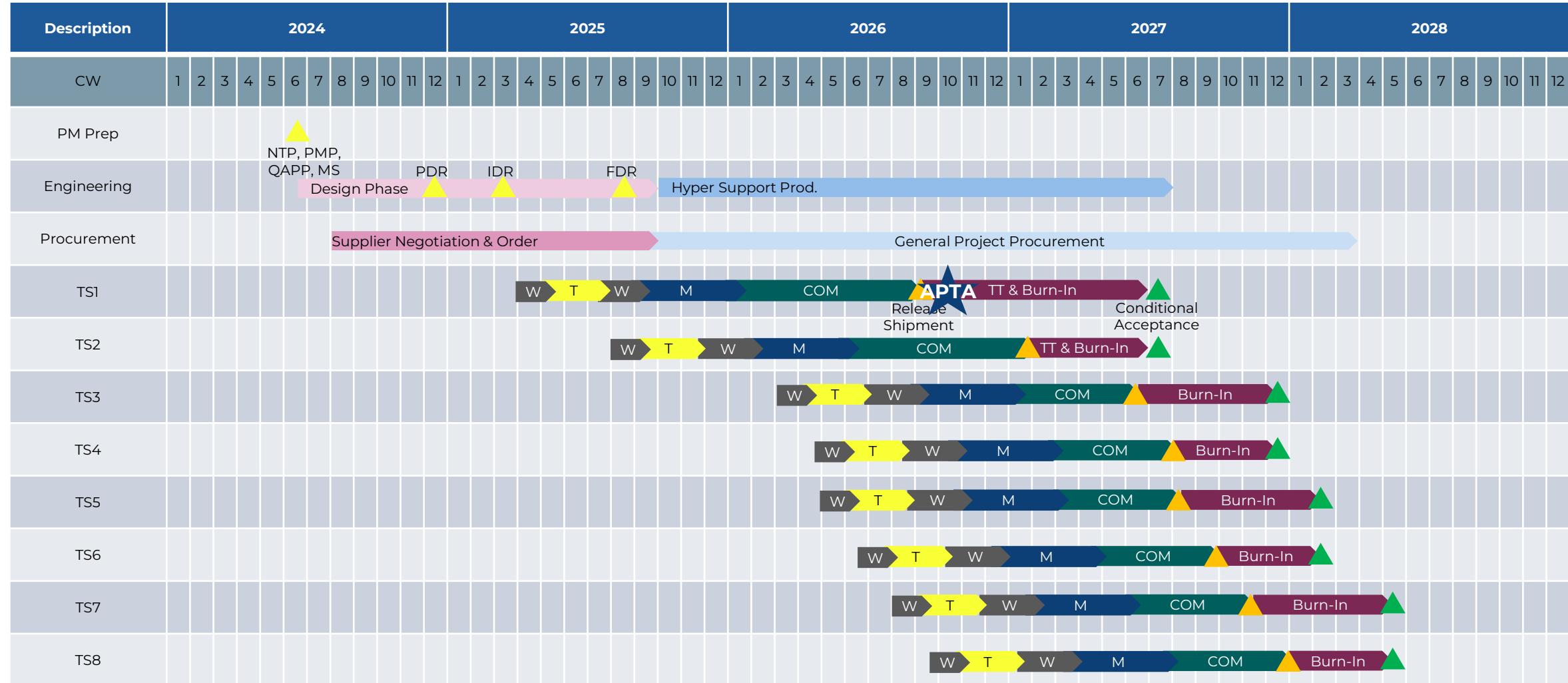
Stadler's Metra Project Outline

Program Schedule – Original

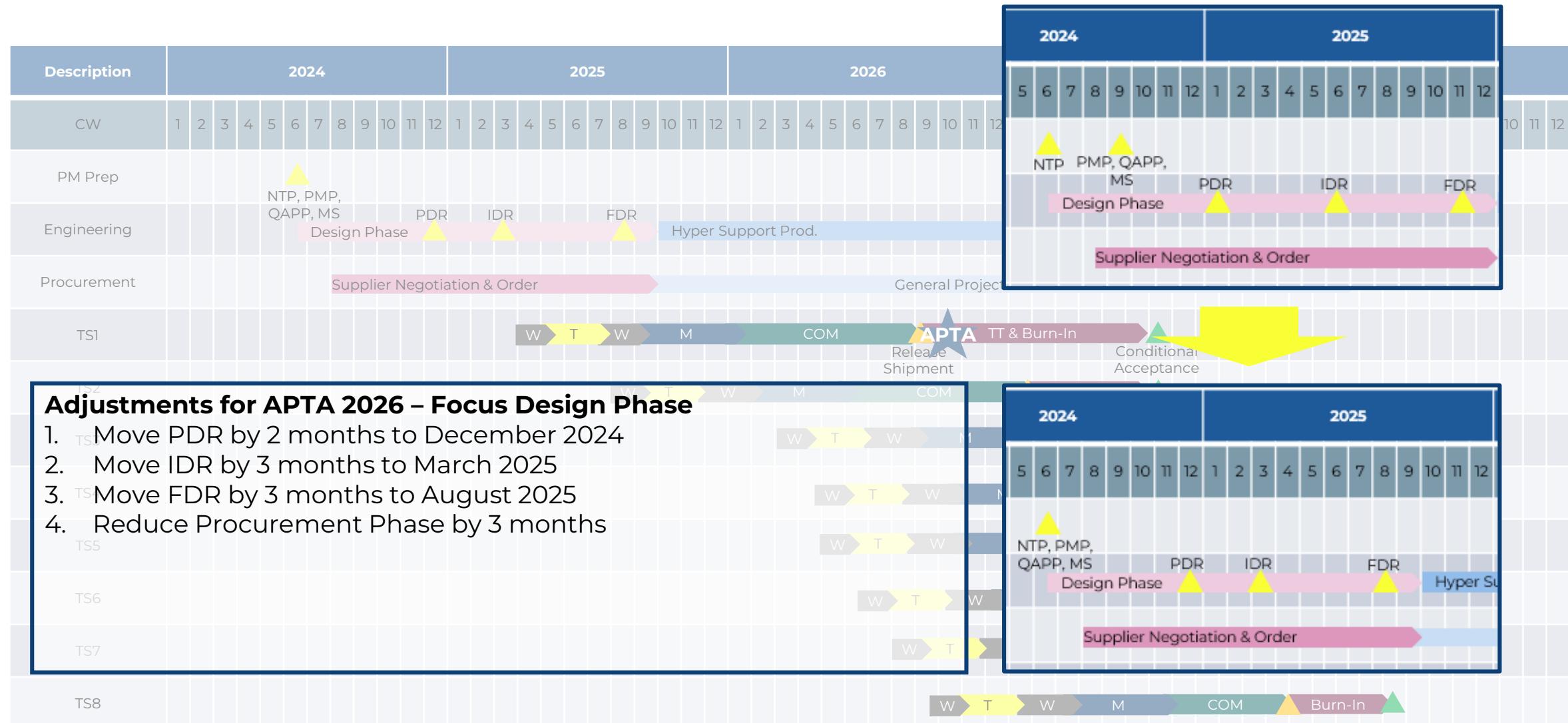


Stadler's Metra Project Outline

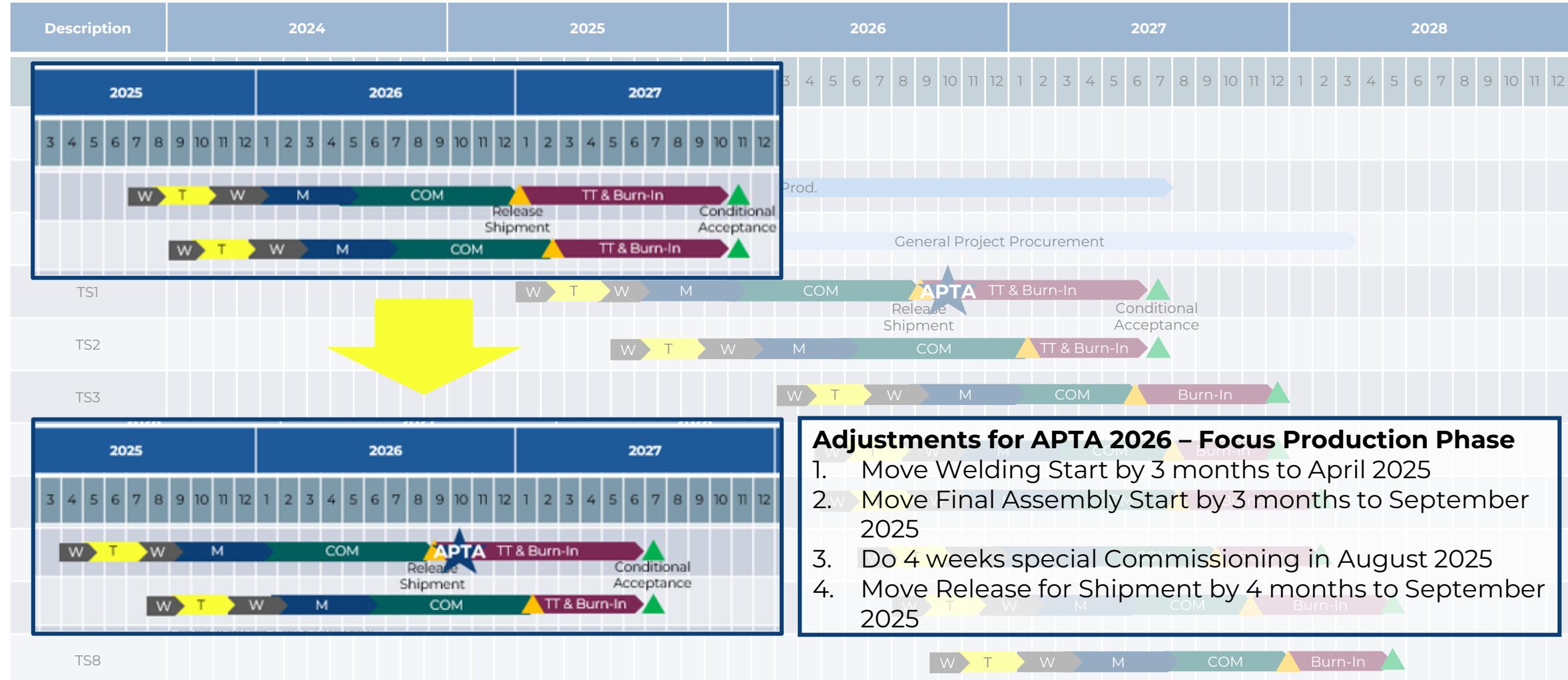
Program Schedule – FLIRT Running @ APTA



Program Schedule – FLIRT Running @ APTA



Program Schedule – FLIRT Running @ APTA



Challenges for the Schedule APTA 2026

Workshop Collection

ENGINEERING

- Positive that it is an of-the-shelf product
- Battery Design
- Give dates early to Metra to expedite schedule
- FAI schedule has to be defined early

PROCUREMENT

- Lead Time has to be managed carefully

PRODUCTION

- ...

TESTING

- Transportation to APTA can take up to 3-4 Weeks
- Infrastructure for TT is in place at Chicago

OPERATING

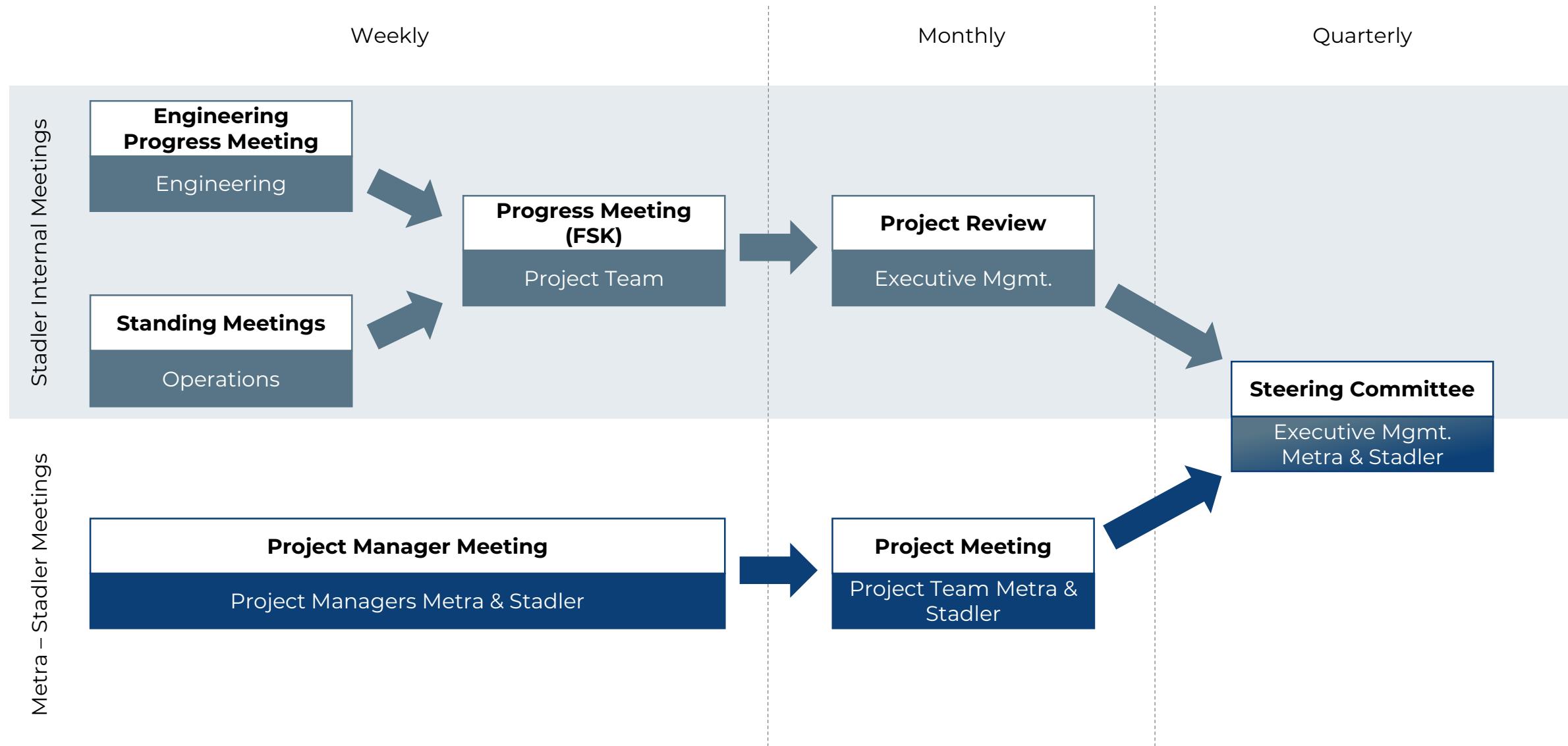
- Define operation and revenue service schedule after testing experiences
- Define interface of charging structure
- Shunting of the grading crossings

04

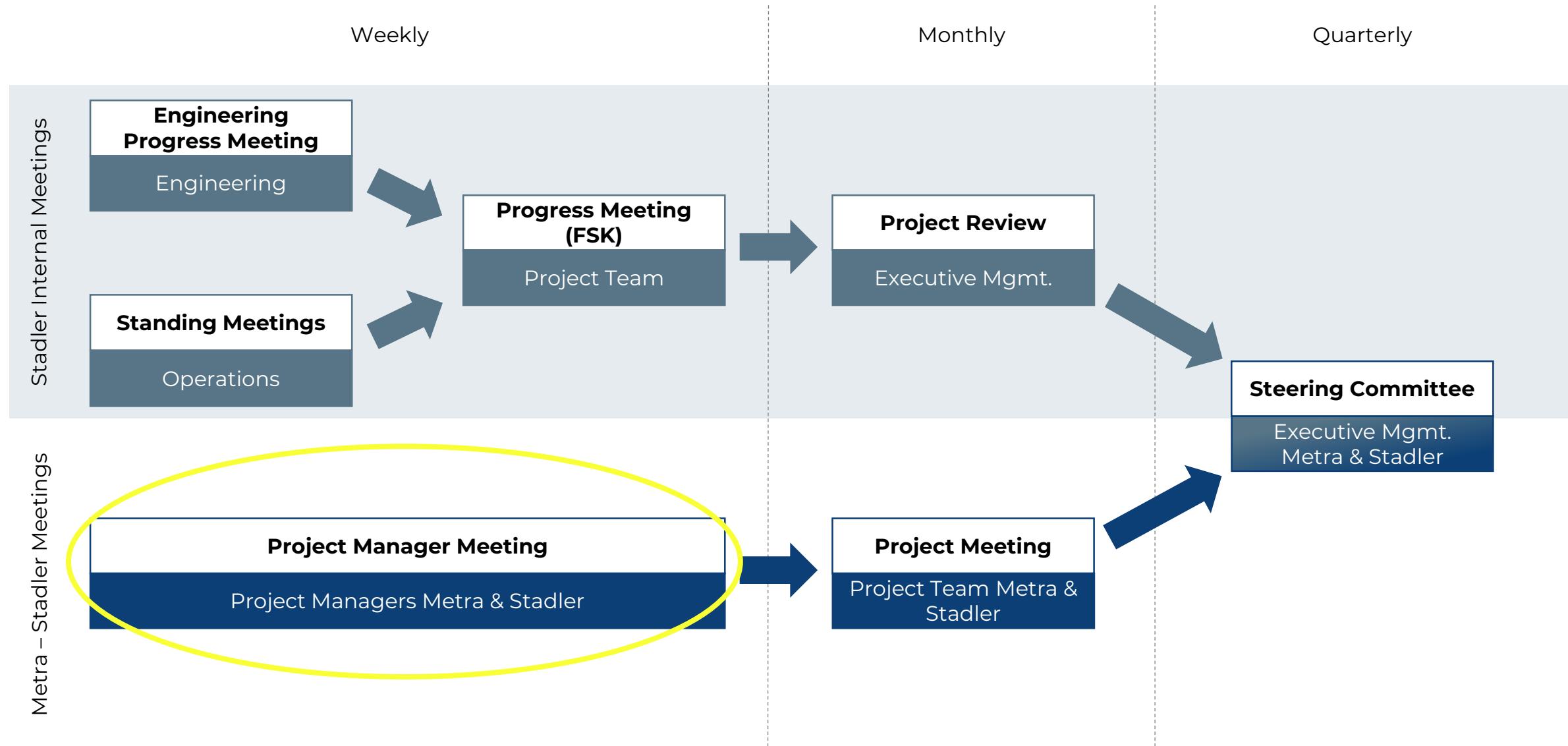
Formal Communication Procedures, Reporting Channels

Meeting Schedule and Structure, Regular Reporting & Letters and Filing Tools

Meeting Structure



Meeting Structure

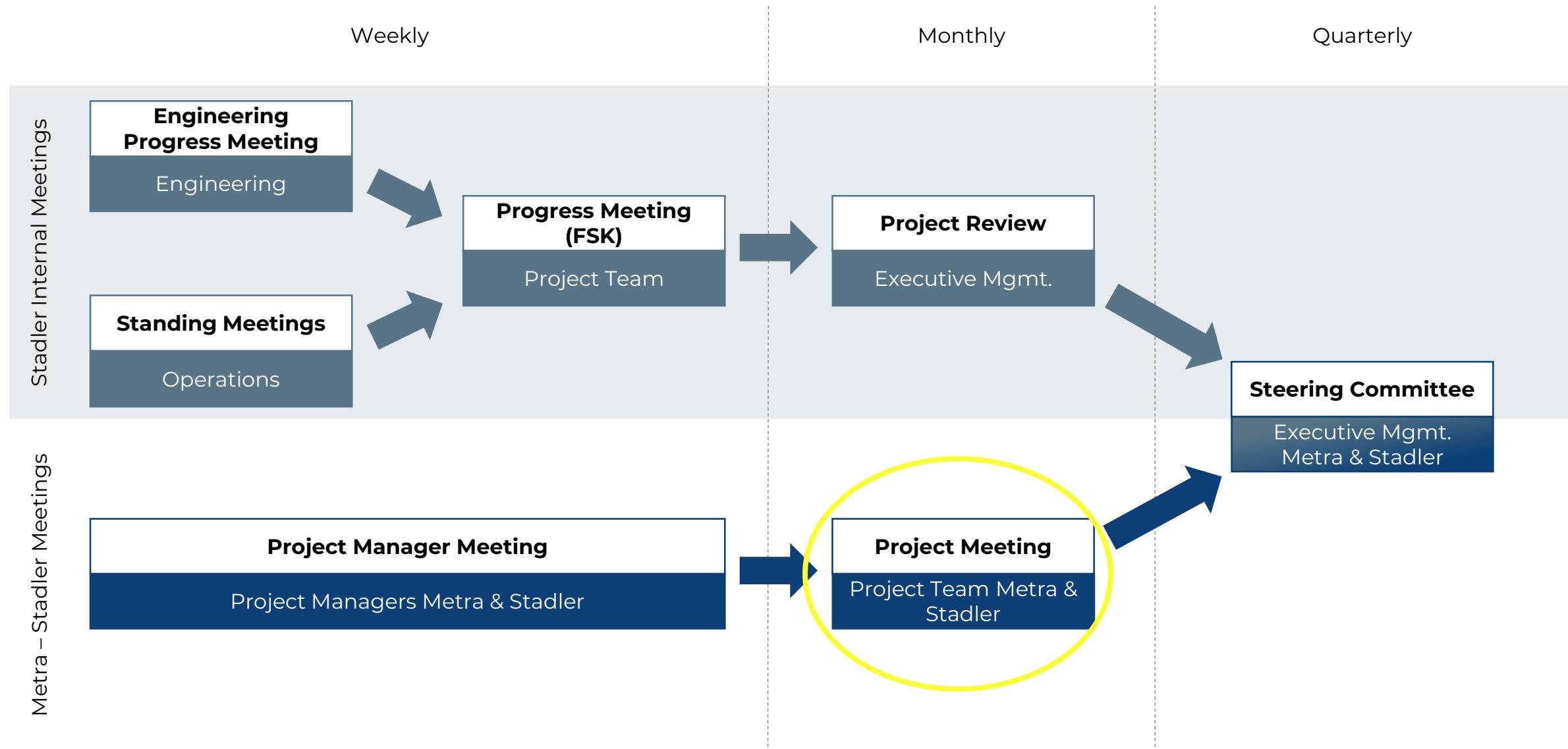


Project Manager Meeting – Metra & Stadler

What	Frequency	Participants	Agenda
Project Manager Meetings	Weekly	<ul style="list-style-type: none">• Metra PM• Metra project engineer• Stadler CPM (host)• Stadler TPM	<ol style="list-style-type: none">1. Open to current relevant topics2. Review Q&A Sheet

Decision to be made: Starting in July – what day of the week?

Meeting Structure

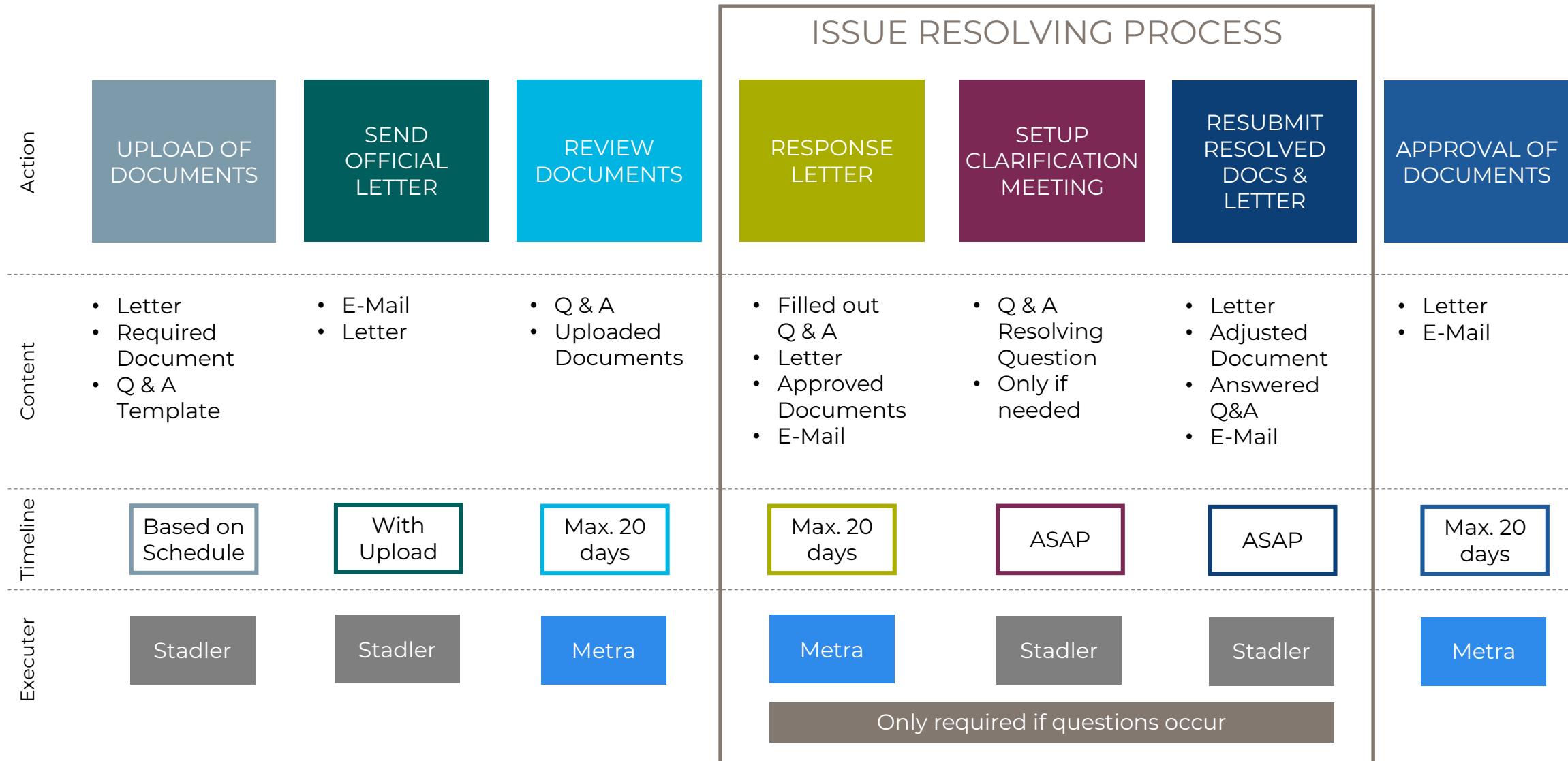


Project Team Meeting – Metra & Stadler

What	Frequency	Participants	Agenda
Monthly Project Meeting	Monthly	<ul style="list-style-type: none"> • Metra PM • Metra engineers • CPM (host) • TPM • Metra principle consultant • Additional relevant specialists as needed 	<ol style="list-style-type: none"> 1. Project progress previous month 2. 6 week project look-a-head 3. Open submittals Metra 4. Open letters/responses Stadler 5. Open quality items 6. Open engineering dispositions 7. Project deliverables tracking matrix 8. Other topics as necessary

Decision to be made: Starting in July – what day and what week of the month?

Letter and Document Approval Process



Formal Communication Procedures, Reporting Channels

Folder Structure

1. Top Level Folder

SharePoint [COMM] Metra_Stadler_Collaboration Private group

Home Conversations Documents Shared with us Notebook Site contents Recycle bin Edit

Documents

In channels In site library

Name	Modified	Modified By
01_Correspondence	June 11	Trächsel Sebastian STAUS
02_Approved Documents	June 11	Trächsel Sebastian STAUS
03_Reportings	June 11	Trächsel Sebastian STAUS
Announcements	June 11	SharePoint App
General	June 11	SharePoint App
Planning	June 11	SharePoint App
Resources	June 11	SharePoint App

2. Correspondence Folder

SharePoint [COMM] Metra_Stadler_Collaboration Private group

Home Conversations Documents Shared with us Notebook Site contents Recycle bin Edit

Documents > 01_Correspondence

Name	Modified	Modified By
0101_STAUS-METRA	Tuesday at 18:54	Trächsel Sebastian STAUS
0102_METRA-STAUS	Tuesday at 18:55	Trächsel Sebastian STAUS

3. From STAUS to Metra

SharePoint [COMM] Metra_Stadler_Collaboration Private group

Home Conversations Documents Shared with us Notebook Site contents Recycle bin Edit

Documents > 01_Correspondence > 0101_STAUS-METRA

Name	Modified	Modified By
STAUS-METRA-0001	Tuesday at 18:51	Trächsel Sebastian STAUS

4. Inside a Letter Folder

SharePoint [COMM] Metra_Stadler_Collaboration Private group

Home Conversations Documents Shared with us Notebook Site contents Recycle bin Edit

Documents > 01_Correspondence > 0101_STAUS-METRA > STAUS-METRA-0001

Name	Modified	Modified By
01_Project Management Plan	5 days ago	Trächsel Sebastian STAUS
02_CDRIL-C-1-02-QAPP	5 days ago	Trächsel Sebastian STAUS
03_Master Program Plan	5 days ago	Trächsel Sebastian STAUS
STAUS-METRA-0001_Submittal of PMP, QAPP (CDRIL-C-1-02) and Master Program Plan.pdf	5 days ago	Klein Philip Andrew STAUS
STAUS-METRA-0001_QBIA_Tracker.xlsx	2 minutes ago	Klein Philip Andrew STAUS

Formal Communication Procedures, Reporting Channels

Document Examples

Letter

STAU5-METRA-0001

STADLER

5880 W 150 S, Salt Lake City UT
Metra
547 W. Jackson Blvd., 11th & 16th Floor
Chicago, Illinois 60661
Attn: Chief Mechanical Officer, Sean Cronin
Attn: Sr. Project Manager, Phil Romito

EDITING: Sebastian Traehsel
MOBILE: +1 385.208.9565
E-MAIL: Sebastian.Traehsel@stadlerrail.com

RESPONSE: REQUIRED
ENCLOSURES: Sharepoint

Salt Lake City, 14 June 2024
Submittal of PMP, QAPP (CDRL C-1-03) and Master Program Plan

Dear Sean and Phil

Stadler would like to submit this letter, along with the requested documents for the first Payment Milestone:

- Project Management Plan (PMP)
- C-1-03 Quality Assurance Program Plan (QAPP)
- Master Program Schedule

With the submittal of the QAPP, we propose to close the CDRL C-1-03. There are no CDRLs for the Master Program Schedule and PMP specified in the Technical Specification M-22-001. The Master Program Schedule will be updated as needed, where as the QAPP and the PMP will generally not be updated. Exceptions include but are not limited to significant changes in Stadler processes, change of key personnel (Commercial, Technical or Quality Project Manager), or changes on the project scope.

Your prompt review and approval of this submittal is greatly appreciated. Should you have any questions, please feel free to contact us directly.

Kind regards


Sebastian Traehsel
Commercial Project Manager


Philip Klein
Technical Project Manager

Attachments: [COMM] Metra_Stadler_Collaboration - STAU5-METRA-0001 - All Documents (sharepoint.com)

5880 W 150 S, SLC, UT, 84104 1/1

CDRL Overview

Confidential

STADLER

1 CDRL Definition

1.1 Title
CDRL C-1-03 Quality Assurance Program Plan (QAPP)

1.2 Technical Specifications
TS 1.3 & 22.1 

1.3 Contractual Description
1.3.7 The Contractor shall submit the following with CDRLs after 60 days of NTP for review, the Contracting Authority shall be the sole judge of compliance of the Contractor's submittals to the Contracting Authority's requirements and the appropriate quality assurance standards:
1.3.7.1 Contractor's Quality Assurance Program Plan and Procedures [CDRL C-1-03]

2 List of Requirements

Paragraph in Customer Spec	Title	Requirement	Evidence
22.1	Quality Assurance	It is the intent of these Specifications that inspection of the car and its components be the responsibility of the Contractor and the Manufacturers and that inspections be performed at the plants of the Contractor and the Manufacturers so that corrections can be made under factory conditions.	TSC1

QP-6012_ 3 / 12

Submitted Document

CDRL1-03 QAPP

STADLER

Document – No. QP-6011
Index –
State Released
Type of document Submittal
Number of pages 13
Project Metra FLIRT BEMU

Quality Assurance Program Plan (QAPP)

L-4608 Metra FLIRT BEMU | CDRL 1-03

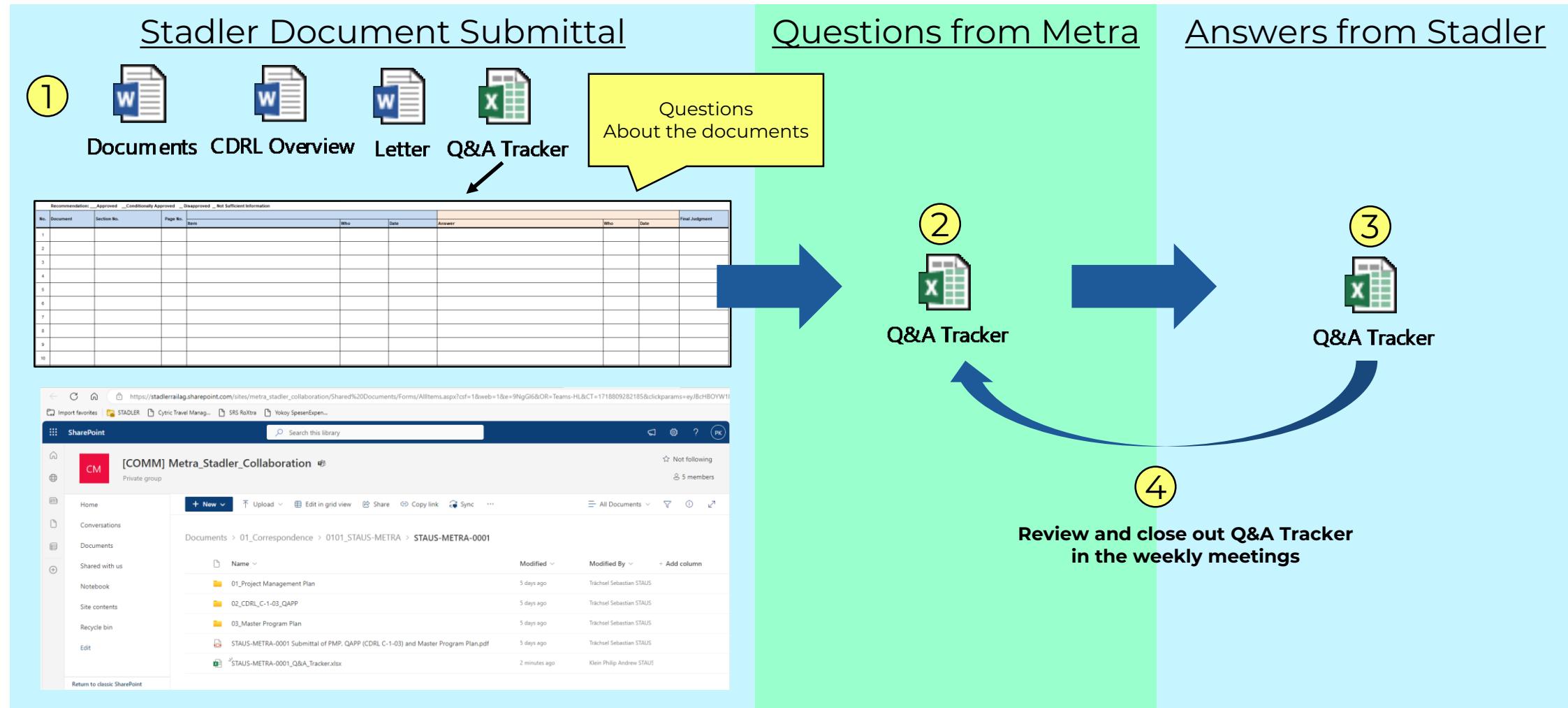
Created (first version)	Checked (current index)	Released (current index)
Name Walvai	Date 4/22/2024	Name Lambre
		Date 6/4/2024
		Name Baicla
		Date 6/13/2024

Revision History

Index	Modification	Date	Author	Checked	Released
a	Original		Walvai	Lambre	Baicla
b					
c					
d					

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Stadler Document Submittal: STAUS-METRA_0000_Q&A_Tracker



05

Questions about the Project

Contract, Tech. Spec., CDRL, Schedule,
Collaboration etc.

Questions about the Project

Stadler Question Submittal: STAUS-METRA-PROJECT_Q&A_Tracker

1 Questions from Stadler



PROJECT Q&A



② Answers from Metra



Summary of Questions

Number of questions	Topic	Priority
1	Metra's SSPP	HIGH
1	Metra's CDRL's	MEDIUM
15	Metra's Training Requirements	HIGH
1	Type Testing in Chicago	HIGH
1	Service and Maintenance Manuals	LOW
1	Metra's Technical Specification	MEDIUM

Metra SSPP

MIL-STD 882

Risk Analysis and Assessment

The identified risks are subjected to analysis based on the standard likelihood-by-severity formula. The likelihood is measured based on how likely the risk is expected to be realized. The severity is measured based on the potential consequences expected from realizing the risk. A combination of both quantitative and qualitative inputs is used to determine likelihood and severity. Data used to determine frequency include records of the work performed and event intervals (quantitative) along with feedback from employees and management. Data used to determine severity includes any history of risk realization (incidents/accidents/equipment failures) or reported close calls, along with employee experience and feedback from Safety. Performing this analysis yields a result that enables each risk to be assessed using two scales. The scales measure likelihood and severity, as determined by the risk analysis. The likelihood scale is a letter-based value range of A to E, based on MIL-STD-882E methodology. The higher the grade, the more likely the risk is expected to be realized. The risk management likelihood scale is depicted in the following table:

Risk Management Likelihood Scale			
Probability	Value	Qualitative Meaning	Quantitative Meaning
Frequent	A	Likely to occur frequently to an individual asset or subsystem. Continuously experienced in the asset or subsystem.	Probability of occurrence greater than or equal to 10^1 (10%).
Probable	B	Will occur several times in the life of an asset or subsystem. Will occur frequently in the asset or subsystem.	Probability of occurrence less than 10^1 (10%) but greater than or equal to 10^{-2} (1%).
Occasional	C	Likely to occur sometime in the life of an asset or subsystem. Will occur several times in the asset or subsystem.	Probability of occurrence less than 10^{-1} (1%) but greater than or equal to 10^{-4} (0.1%).

Example

Table 5: Likelihood of Occurrence

Frequency	Level	Within Specific Individual Items	Within a Fleet or Inventory
Frequent	A	Qualitative: Likely to occur often in the life of an item. Exposed to the hazard once a day Quantitative: Mean Time Between Events (MTBE) is less than 1000 operating hours.	Continuously experienced
	B	Qualitative: Will occur frequently. Will occur several times in life of an item. Exposed to the hazard once a week Quantitative: MTBE is equal to or greater than 1000 operating hours and less than 100,000 operating hours.	Will occur frequently
Probable	C	Qualitative: Likely to occur sometime in life of item. Exposed to the hazard once a month Quantitative: MTBE is equal to or greater than 100,000 operating hours and less than 1,000,000 operating hours.	Will occur several times
	D	Qualitative: Unlikely but possibly to occur in life of item. Exposed to the hazard once per year Quantitative: MTBE is equal to or greater than 1,000,000 operating hours.	Unlikely, but can be reasonable expected to occur
Occasional	E	Qualitative: Unlikely to occur. Can be assumed that the event may exceptionally occur.	Expected to happen more than once within a period of approximately 6 weeks
	F	Qualitative: Unlikely to occur. The event will not be expected to occur often.	Expected to happen approximately once per 6 weeks to once per year
Remote	G	Qualitative: Unlikely to occur. The event will not be expected to occur several times.	Expected to happen approximately once per 1 year to once per 10 years
	H	Qualitative: Unlikely to occur. The event will not be expected to occur at all.	Expected to happen approximately once per 10 years to once per 100,000 years

EN Specification

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EN 80126-1-2

Table C.1 — Frequency of occurrence of hazardous events with examples for quantification (based)

Frequency level	Description	Example of event occurrence in a single lifetime of a single component (e.g. 24 h/day, 5000 h/year)
Frequent	Likely to occur Frequently. The event will be frequently experienced.	more than once within a period of approximately 6 weeks
Probable	Will occur several times. The event will be expected to occur often.	approximately once per 6 weeks to once per year
Occasional	Likely to occur several times. The event will be expected to occur several times.	approximately once per 1 year to once per 10 years
Rare	Likely to occur sometimes in the lifetime of the component. The event can reasonably be expected to occur.	approximately once per 10 years to once per 1,000 years
Improbable	Unlikely but possible. If can be assumed that the event may exceptionally occur.	approximately once per 1,000 years to once per 100,000 years
Highly improbable	Extremely unlikely to occur. It can be assumed that the event will not occur.	once in a period of approximately 10,000 years or longer

NOTE: The example given in this table refers to a single item type dependent on the number of systems and/or the number of operation cycles.

Where the frequency is constant, the expected mean time between the frequency. For a single item type bandwidth this formula applies:

EXAMPLE E.1: For a rate of 10^{-1} h⁻¹
 $1/10^{-1} \text{ h}^{-1} = 10,000$ which means an expected event frequency of approx. - 1.2 years in case of 24 h operation
- 2 years in case of assumed 5 000 h operating time per year

The expected occurrence or number of events in a time period is determined multiplied by the given rate or frequency of occurrence. The time period sh

Tabs with information about the questions

Tabs with information about the questions



Metra

Questions from Metra and
Stadler

STADLER