Members Meeting

24th of June 2021 – Web meeting

Members Meeting #15

24th June 2021

ITXPT
INFORMATION TECHNOLOGY
for PUBLIC TRANSPORT

General meeting tips

- **Chat** open during the meeting, mic and cameras not active
- Please add your **name** and **company** when entering the conference in the chat

2- Introduction to MM

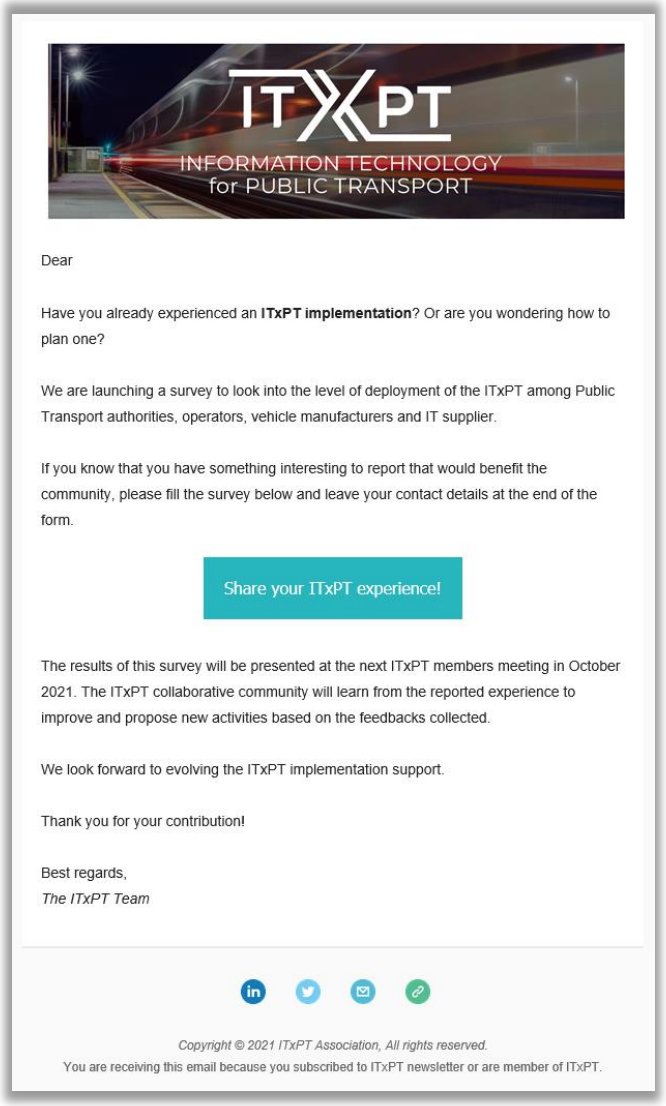
Agenda

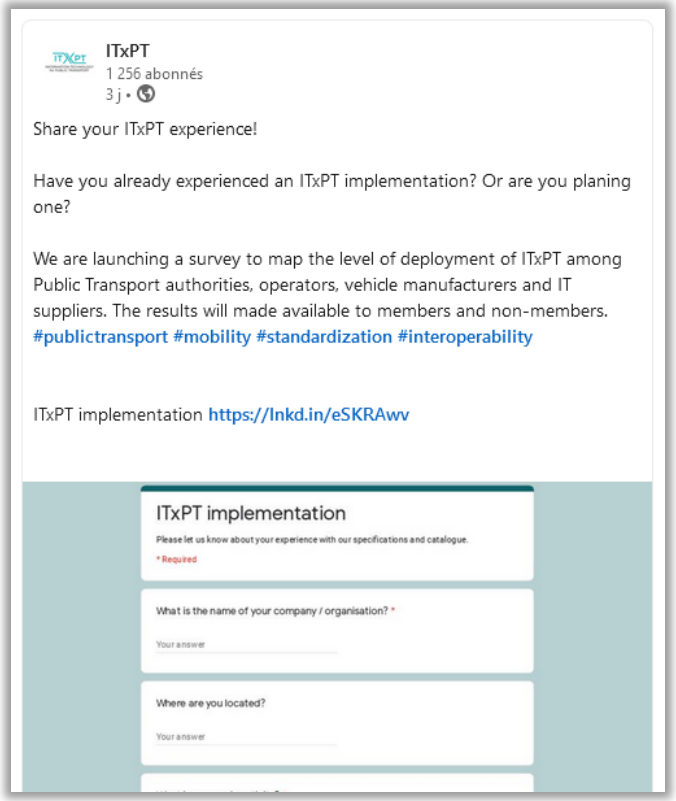
Start	End	Duration	Content	Speakers
09:30	10:00	**00:30**	General Assembly	Anders Selling, Terje Storhaug
10:00	10:05	**00:05**	Introduction to MM	Anders Selling
10:05	10:10	**00:05**	ITxPT Implementation survey overview	Pascale Guyot
10:10	10:25	**00:15**	TfL / iBus tender - Implementation case	Simon Reed
10:25	10:30	**00:05**	The ITxPT Roadmap	Anders Selling
10:30	11:15	**00:45**	RC and TC - Committees and WG (active) Progress 2021 Q1+Q2 RC pre-study (On demand transport) and RWG (Electric Vehicle data and Passenger information) TC and TWG (Passenger Counting, FMStoIP, Login service) and Technical Requirements (Data centric / MQTT, Data dictionary, JSON)	 RC: Guido Di Pasquale, Anastasia Founta RTWG leaders: Henning B. Steve R. TC: Emmanuel de Verdalle, Anders Fromell, Ole A. Bae TWG leaders: Simon R., Ole A.B. Technical Requirements: Sylviane R., David G. Ole A.B.
11:15	11:25	**00:10**	Plan for next steps in Roadmap	Guido Di Pasquale, Emmanuel de Verdalle
11:25	11:40	**00:15**	ITxPT project engagements	Anastasia Founta, Emmanuel de Verdalle
11:40	11:55	**00:15**	Latest news	Anders Selling, Pascale Guyot
11:55	12:00	**00:05**	Wrap up	Anders Selling

3- Implementation status

Implementation survey

- **Large scale** survey open to public
  - Mass mailing
  - Website
  - Social media
  - Word of mouth
- The **final results** will be shared later this year





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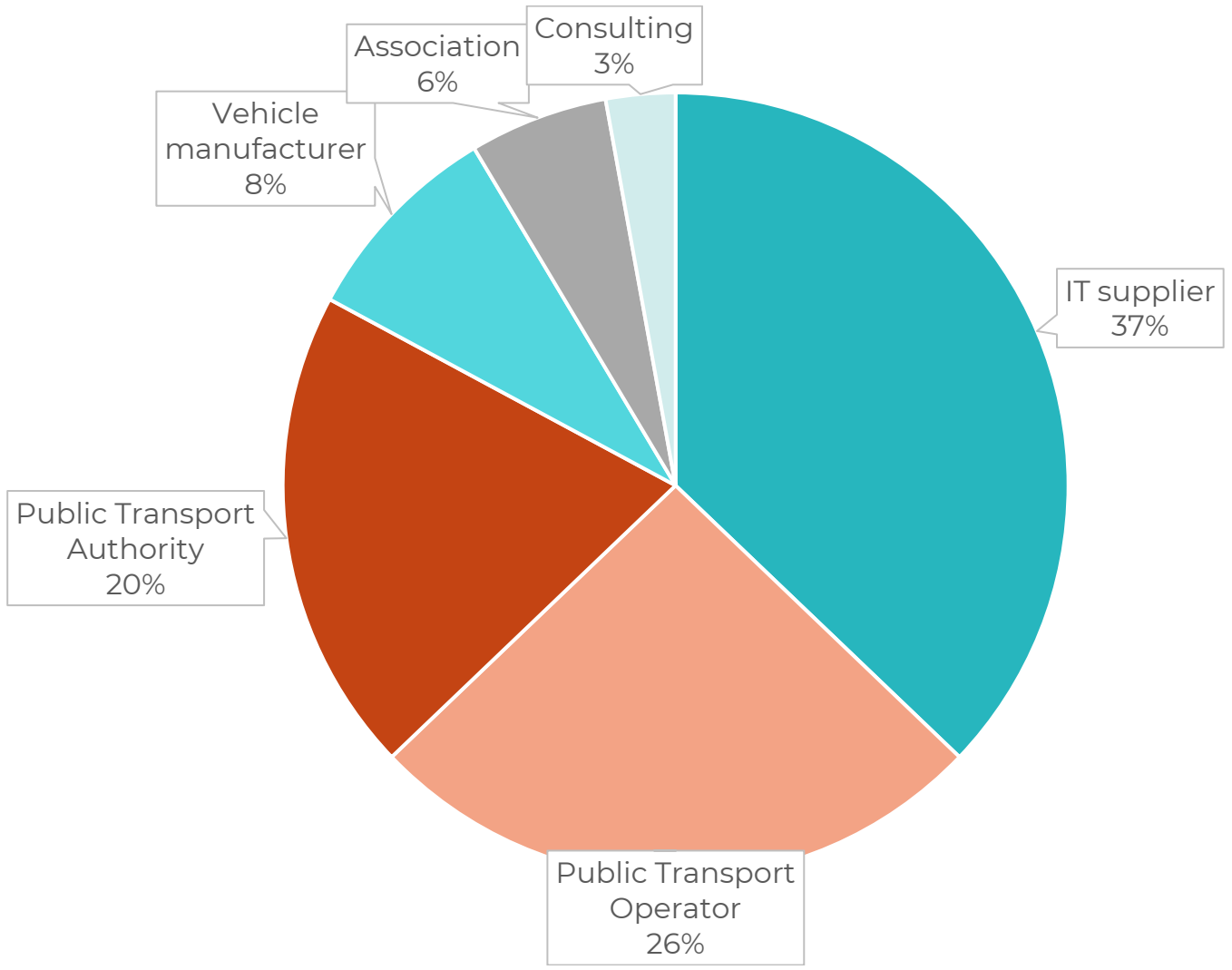
Implementation
First trends



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Implementation
First trends

- Belgium
- Dubai
- Estonia
- France
- Germany
- Ireland
- Israel
- Italy
- Netherlands
- Norway
- Singapore
- Spain
- Sweden
- Switzerland
- Taiwan
- United Kingdom

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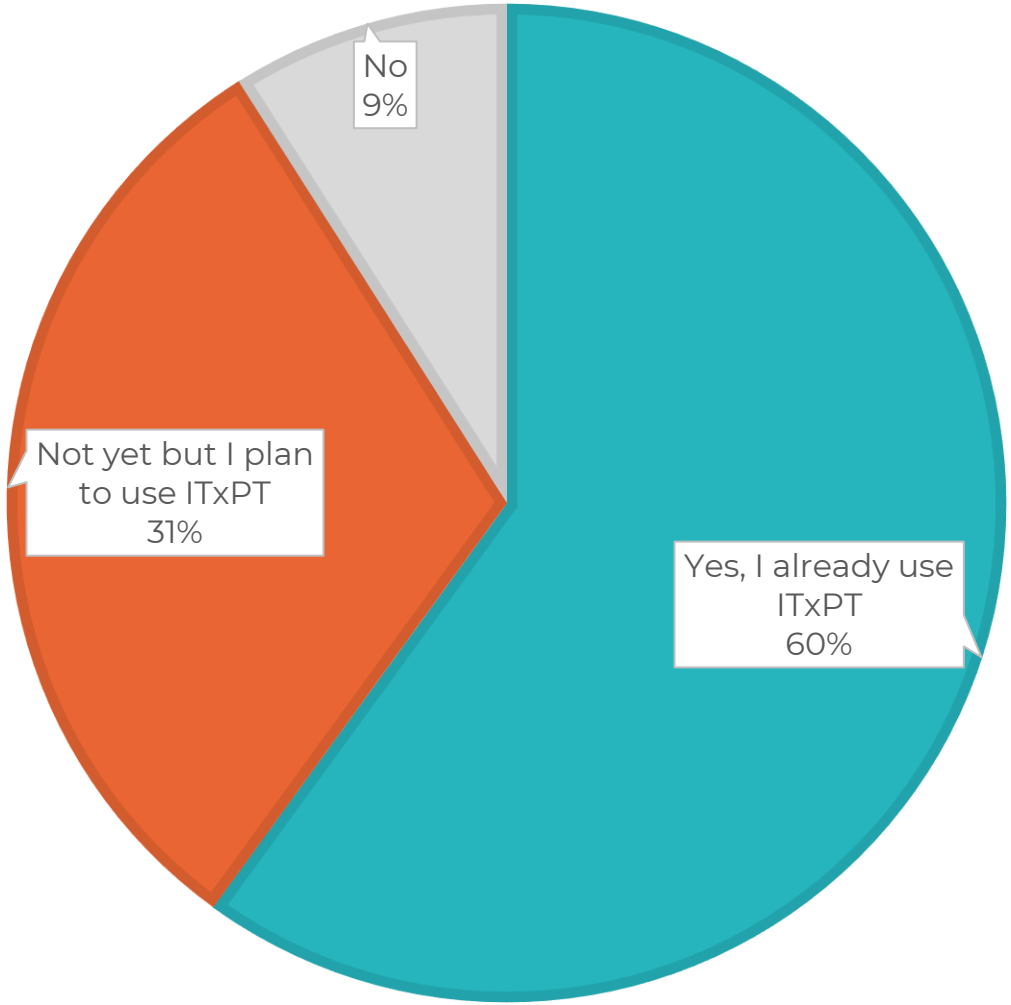
Implementation
First trends



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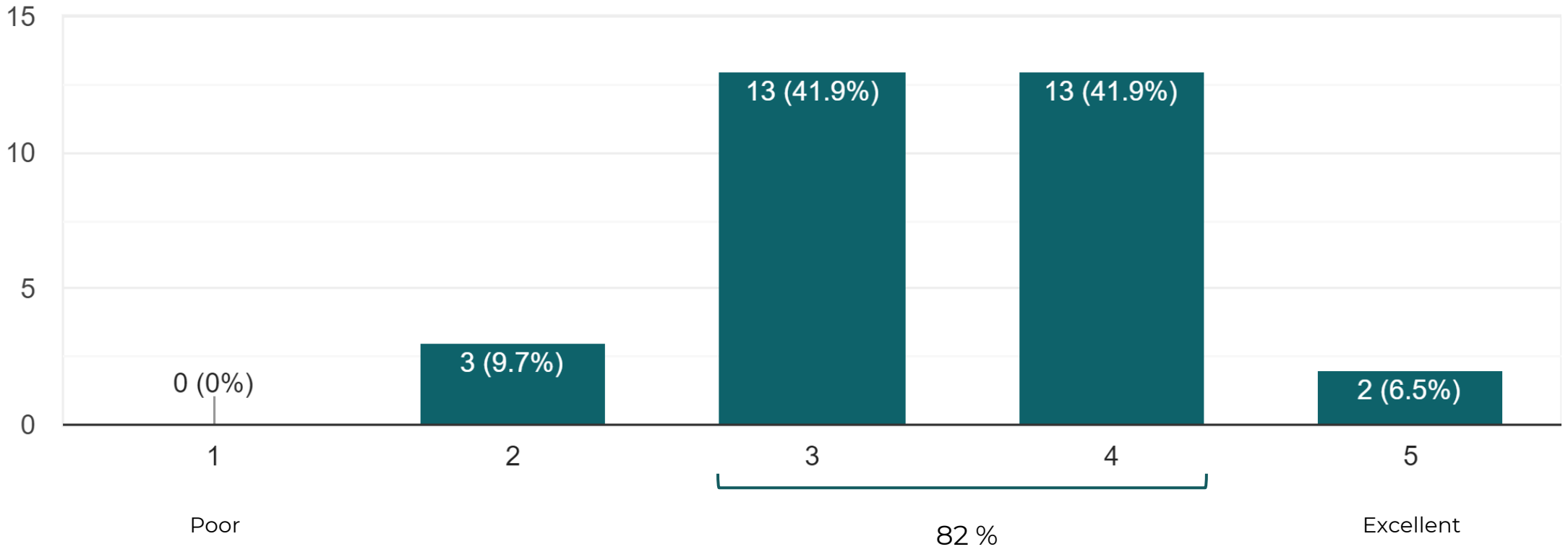
Implementation
First trends

How would you rate your experience of ITxPT implementation?

31 responses



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Implementation next steps

- In not yet done, you can find the implementation survey here, spread the word!

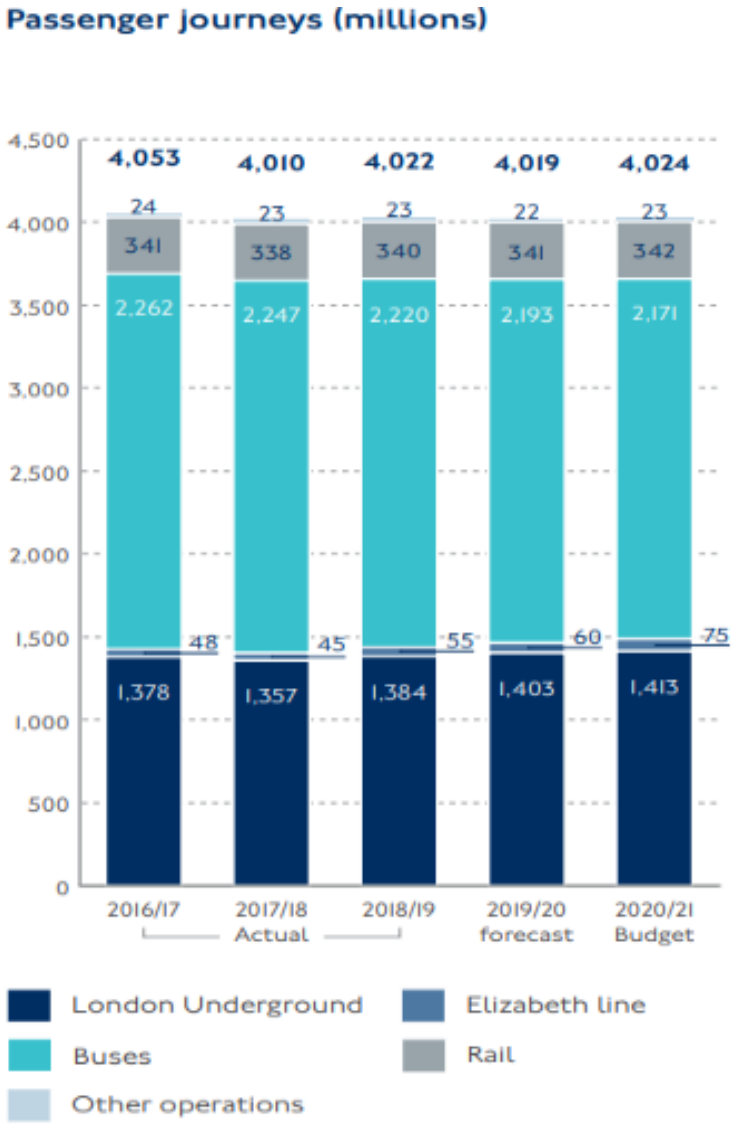
Take the ITxPT implementation survey!

4- iBus2

PTA implementation example
by Simon Reed,
Transport for London

TfL Outlook Pre-Covid

TfL Group (£m)	2020/21 Budget
Passenger income	5,063
Other operating income	1,006
Total operating income	**6,069**
Business Rates Retention	969
Other revenue grants	17
Total income	**7,055**
Operating cost	(6,625)
Net operating surplus	**430**
Net financing costs	(468)
Net surplus/(cost) of operations before renewals	**(38)**
Capital renewals	(533)
Net cost of operations	**(571)**



Source TfL Budget 2020/21

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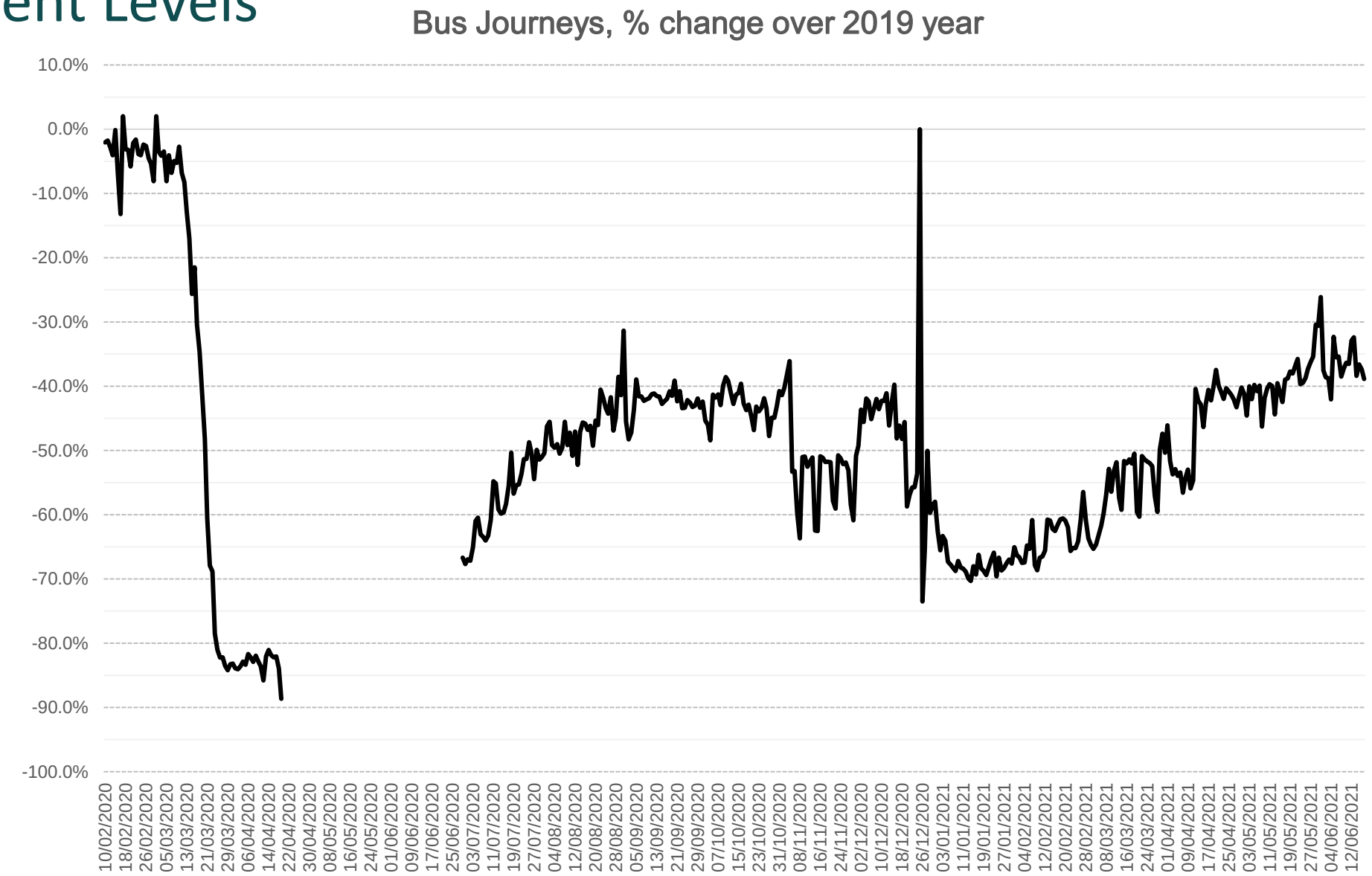
Current Levels



Source TfL Budget 2020/21

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Our key priorities

January 2021 - March 2022

Future funding

Secure a long term, sustainable financial deal for TfL

Transformative projects

Complete the Northern line extension, finish Crossrail and open the Elizabeth line

Pandemic recovery

Safely support and drive forward London's post-pandemic recovery and win back our customers

Clear vision

Create a people-centric vision and a more diverse and inclusive organisation, informed by and for our colleagues

Green future

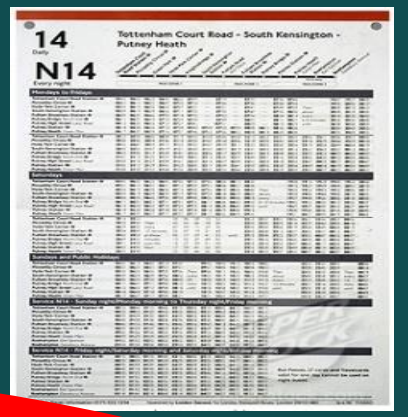
Improve London's air quality and accelerate decarbonisation

(London Buses) Business Model & Technology Tools

Passenger Data Analysis

Tendering & Schedules

Contracts



iBus Service Control

Passengers

Passengers

Network Planning/ Development

Operations

Operator Payments

£

Performance Monitoring

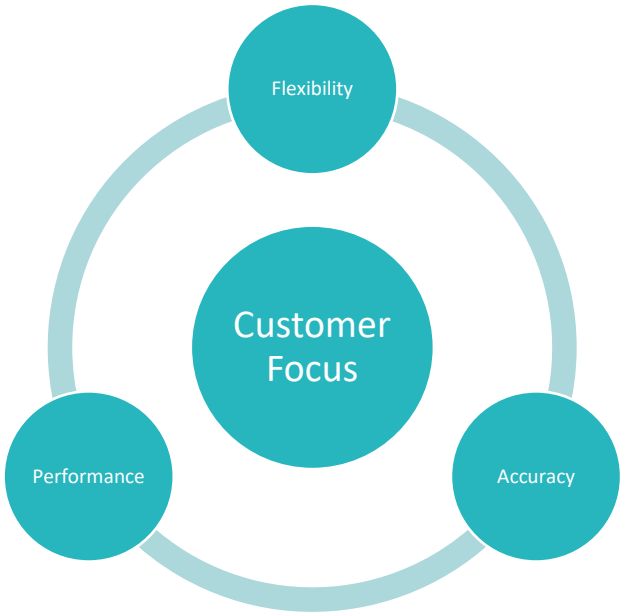
iBus Reporting

iBus On- Board

Challenges to be addressed

Our systems have supported the same business model for 15 years.

- An underlying ‘fixed’ bus schedule
- Incentive schemes based on km’s operated and performance (EWT)
- Accurate real-time customer information



For the next 15 years – we would expect:

- A zero-emission bus fleet with additional service control requirements
- The ability to dynamically change the number of buses operating based on demand/air-quality/congestion
- New incentive schemes for bus operators to reflect a more flexible operating environment
- Advanced passenger information that can be truly trusted by passengers
- Flexibility to introduce innovation from bus companies and technology partners
- Systems fully integrated with the rest of Surface Transport (Road Network Management and Enforcement)

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Flexibility

The ability to change business/technology models

Bus Operators

Delivery:

- Service Control
- Route Information
- Resource Management

TfL

Planning & Monitoring:

- Route Specifications
- Emergency Control
- Road Network Management
- Bus Performance Management

Data Feeds:

1. Routes/ Schedules
2. Fares
3. Stop RTI
4. Vehicle RTI

Services:

1. Signs
2. Website
3. TFL Go

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iBus Product Strategy

In life changes and developments –
- adapt to change,
- enable new technologies,
- allow BoC integration and investment

iBus 1

- Legacy

iBus 2

- Modularised
- Open architecture
- User experience by design

iBus 3

- Data centric

Product Outcomes

MAINTAIN EXISTING LEVELS OF SERVICE

MEET EXISTING AND FUTURE DEMAND

IMPROVE CUSTOMER EXPERIENCE

IMPROVE PROVISION OF ACCESSIBLE INFORMATION AND COMMUNICATION

BE FLEXIBLE AND RESPONSIVE

KEEP DATA AND INFORMATION CURRENT

BE MORE INTELLIGENT

BE SCALABLE

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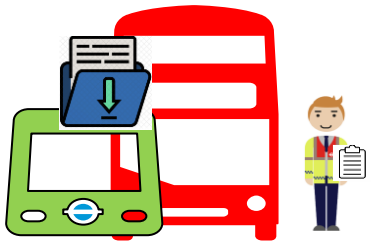
iBus2 On-bus Requirements Overview

On-bus Lot 1



Driver Logon and Route upload

Driver view, Headway and TLP

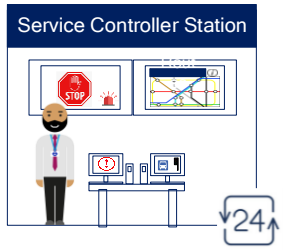
On-bus Ticketing

Fall back mode

Driver and Passenger information

Back Office Lot 2

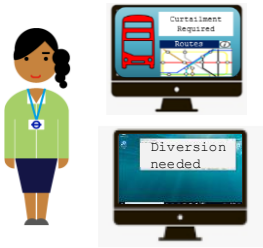
Automated Process



Incremental data Transfer

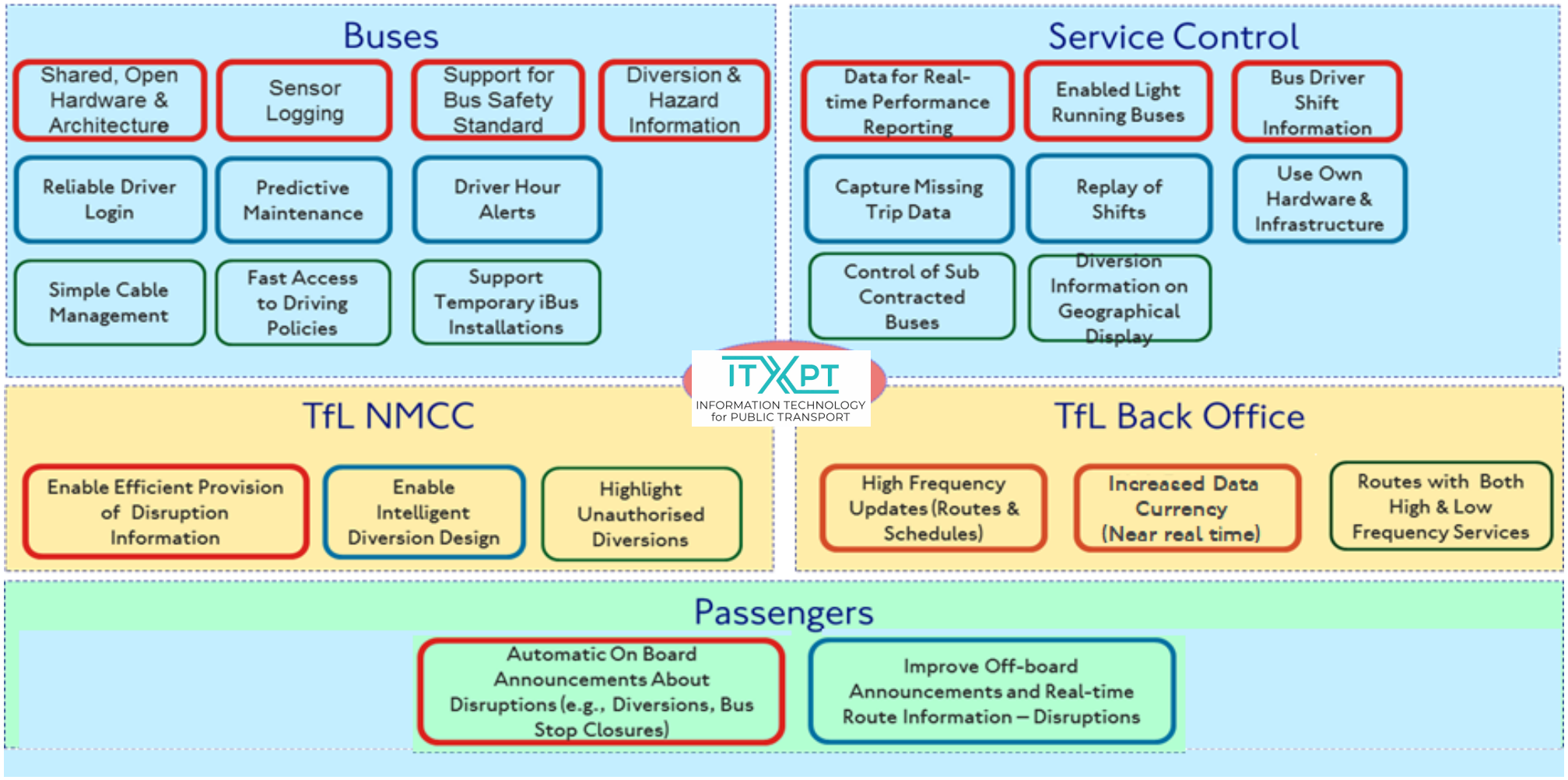
Near Realtime updates

Service Control



Curtailment & Diversion

iBus 2 Problem Statements



iBus 2 Technical Outcomes

Common Outcomes:

- Consistency of Data throughout components
- Improved Data Currency/Access to all iBus Data
- Open Architecture and Interfaces
- Use own Hardware and Infrastructure
- Improved automation
- User Experience

Collect and distribute Reference Data	• High Frequency Updates • Routes with both Low and High Frequency services • Diversion and Hazard Information	**Service Control**	• Bus Driver Shift Information • Replay of Shifts • Enable Light Running Buses • Control of sub-contracted Buses • Diversion Information • Efficient provision of Disruption Information
On-bus functions	• Sensor Logging • Support for Bus Safety Standard • Automatic on-board announcements • Access to Driving Policies • Diversion & Hazard Information • Simple Cable Management (ITxPT)		

iBus 2 Outcomes - continued

Near-real-time data	• Driver Hours Alerts • Real Time Performance Reporting • Highlight unauthorised Diversions	**Shared Functions**	• Reliable Driver Login • Intelligent Diversion Design • Support for Temporary iBus Installations • Predictive Maintenance
Real Time Information	• Improve Off-Board announcements and Real Time Route Information • Efficient provision of Disruption Information	**Calculate Operator Performance**	• Capture Missing Trip Data
Operational Reporting	• Maintain key reporting • Improve Data Currency	**SMS service**	• Improve Off-Board announcements and Real Time Information

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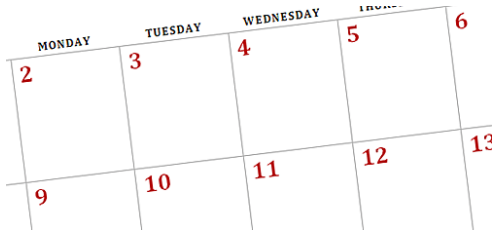
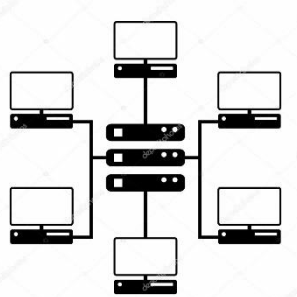
Expected key differences between iBus and iBus 2

Data Currency



Increased Automation



Improved information during disruptions

Next Stop
*

Next Stop
Blackwall (Diversion)

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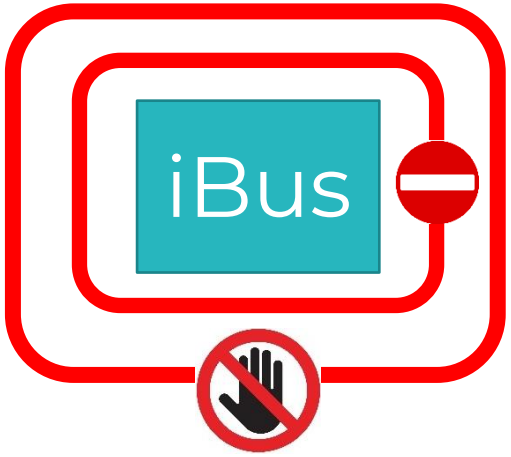
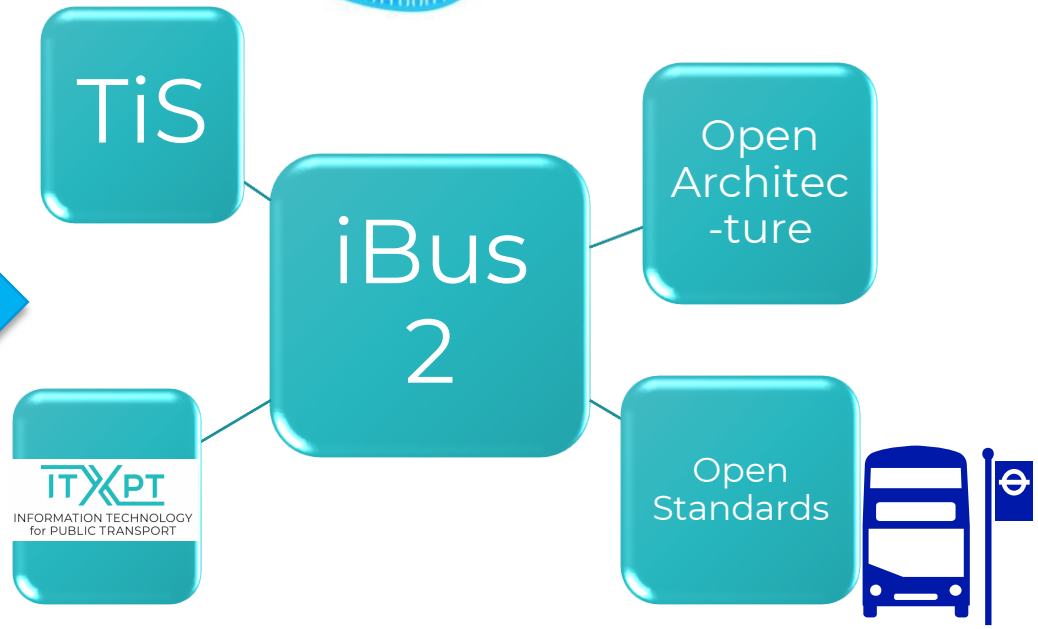
Expected key differences between iBus and iBus 2

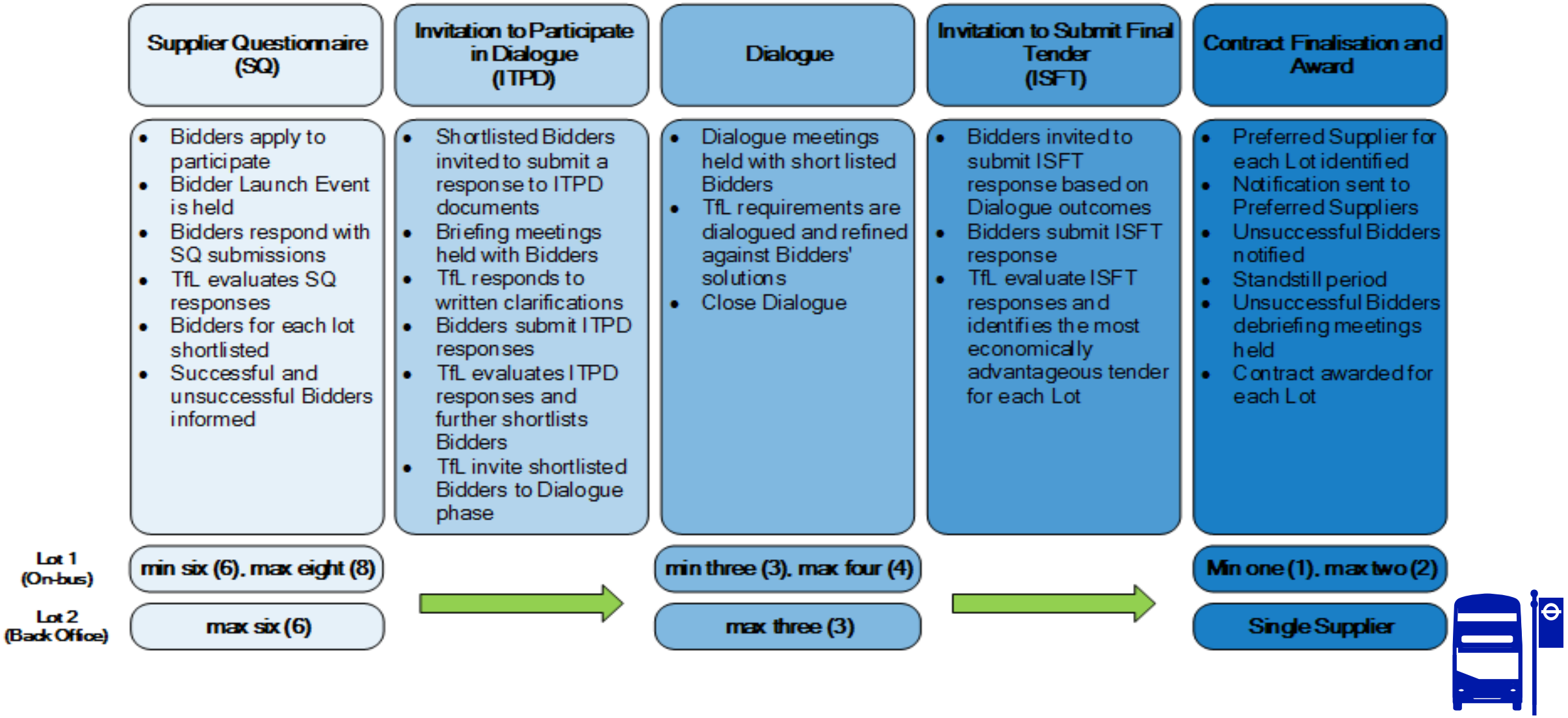
Access to Data

Flexibility





Overview of Procurement Process



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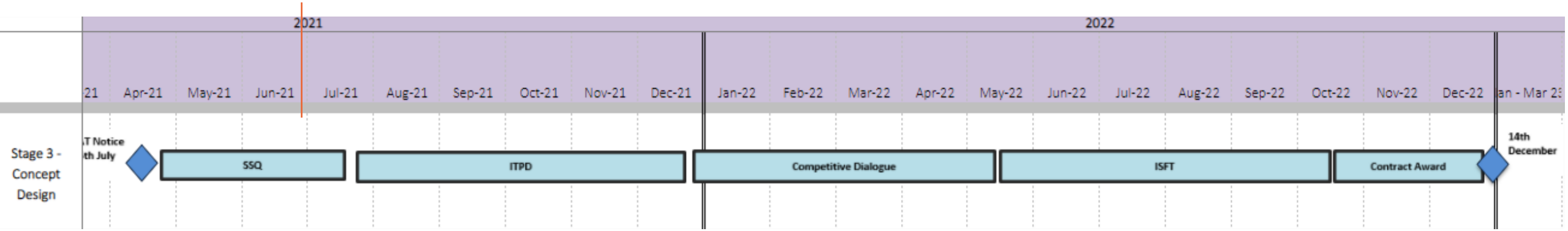
Next Steps



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Our Ambition

The backbone for the next 15 years

The premise:

Every Journey Matters distils down to accuracy, quality and performance of data. Data is everything.

Therefore:

Every system that is now planned has an expected life of 15 years, but built in a flexible architecture with sharable quality data through open interfaces/API's

So that:

Passengers, Bus Operators and TfL can provide the services that London needs with:

- The best customer information available for Passengers
- Integrated management systems across Surface Transport
- At a price that TfL and London can afford

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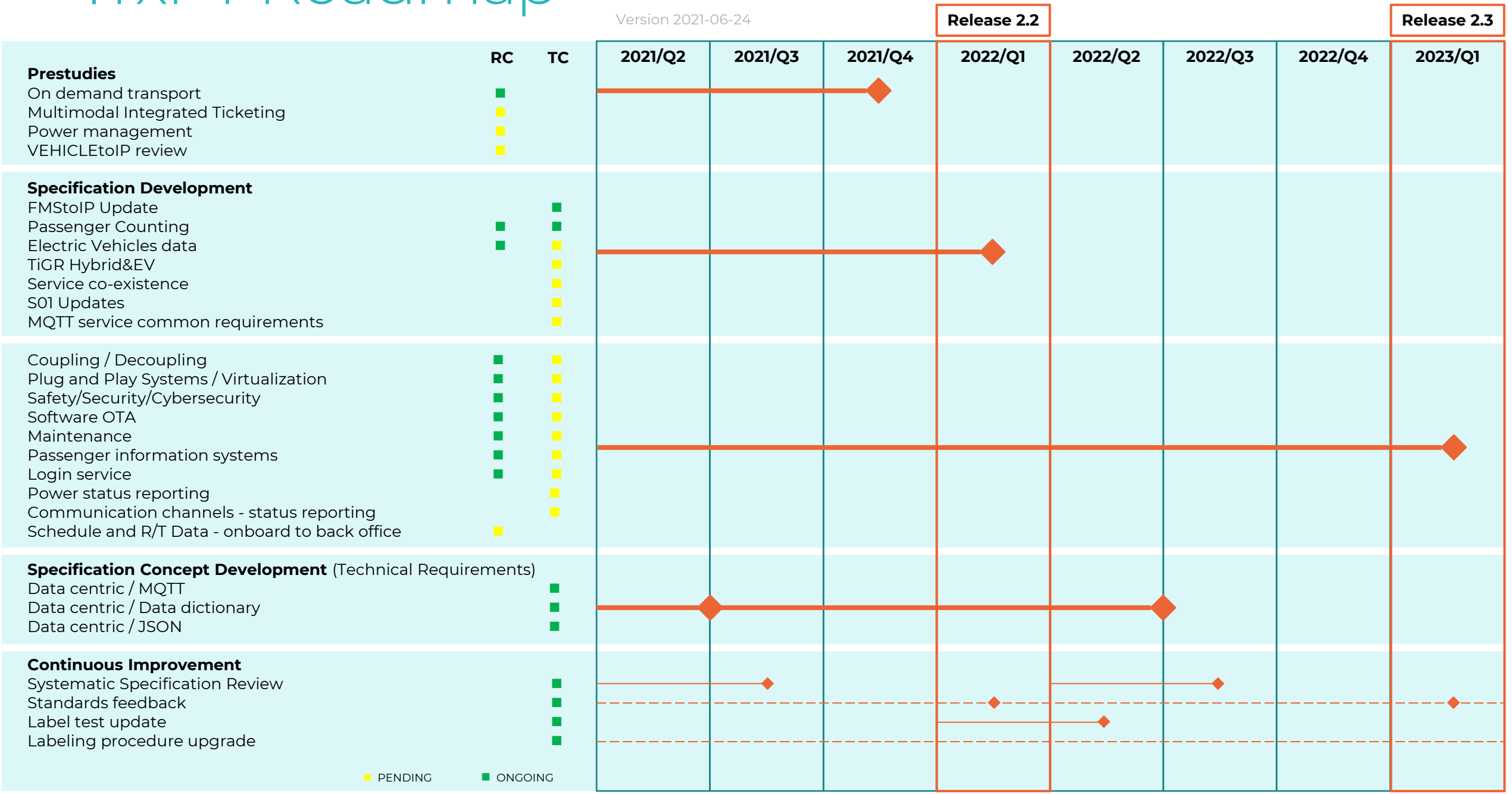
5- The ITxPT roadmap

Overview

ITxPT Roadmap

Version 2021-06-24



6- Reporting status

RC – WG – pre-studies

TC – WG – publications

Requirements Committee

Progress/Updates

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RC mission

1. Capture customers' needs

2. Drive specifications updates

3. Build collaboration between different kind of organizations

4. Define the ITxPT roadmap - Middle term vision

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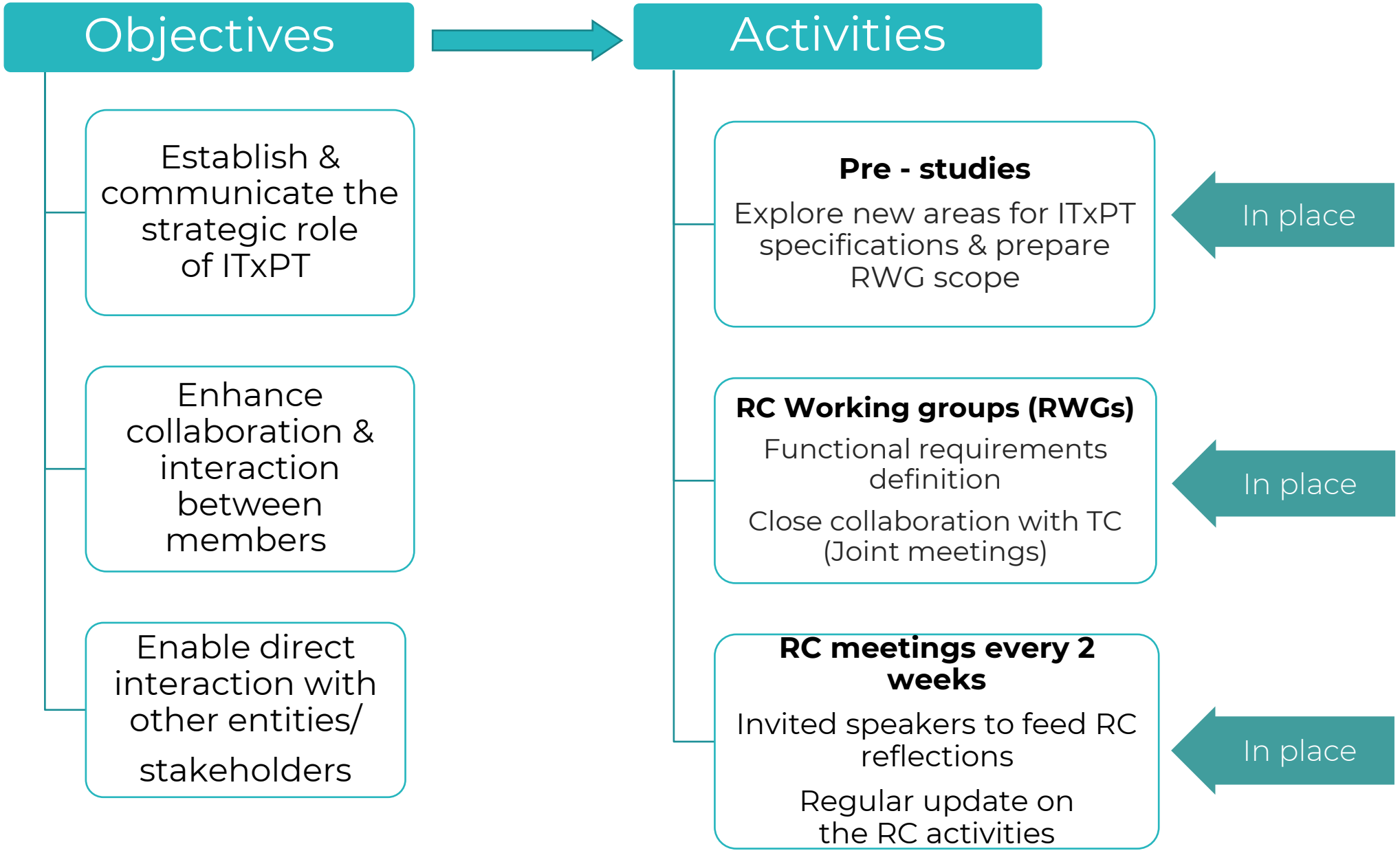
RC strategy



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RC meetings

Topics discussed during Q2

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RC meetings

Requirements Committee meeting # 27, April 21st

- Challenges regarding interoperability
- ITxPT specifications & DRT
- Inputs from Ruter (PTA) & Bestmile (IT)

Requirements Committee meeting #28, May 5th

- Testing ITxPT specifications in electric vehicle bus line and in real life conditions
- Experiences from different perspective Västtrafik (PTA), RISE (Research Institutes of Sweden), & Luminator Technology Group (LTG)

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RC meetings

Requirements Committee meeting # 30, June 2nd

- A complete and concise guide on standardisation landscape by Emmanuel de Verdalle

Requirements Committee meeting # 31, June 16th

- Investigating the potential adoption of EGNSS for Public Transport and urban mobility by raising awareness on GALILEO / EGNOS benefits, and its technical features.
- Presentation by EUSPA

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RC Working Groups

Progress

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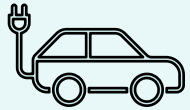
Active RWGs



RW02

Electric vehicles and charging infrastructure

Leader: NORGESBUSS
Henning Berthelsen

RW03

Login service

Leader: Land Transport Authority
Steve Robinson

RW04

Passenger Information Systems

Leader: ITXPT
Ole Anders Bae
Anders Fromell
Anastasia Founta

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Main objective of all RWGs

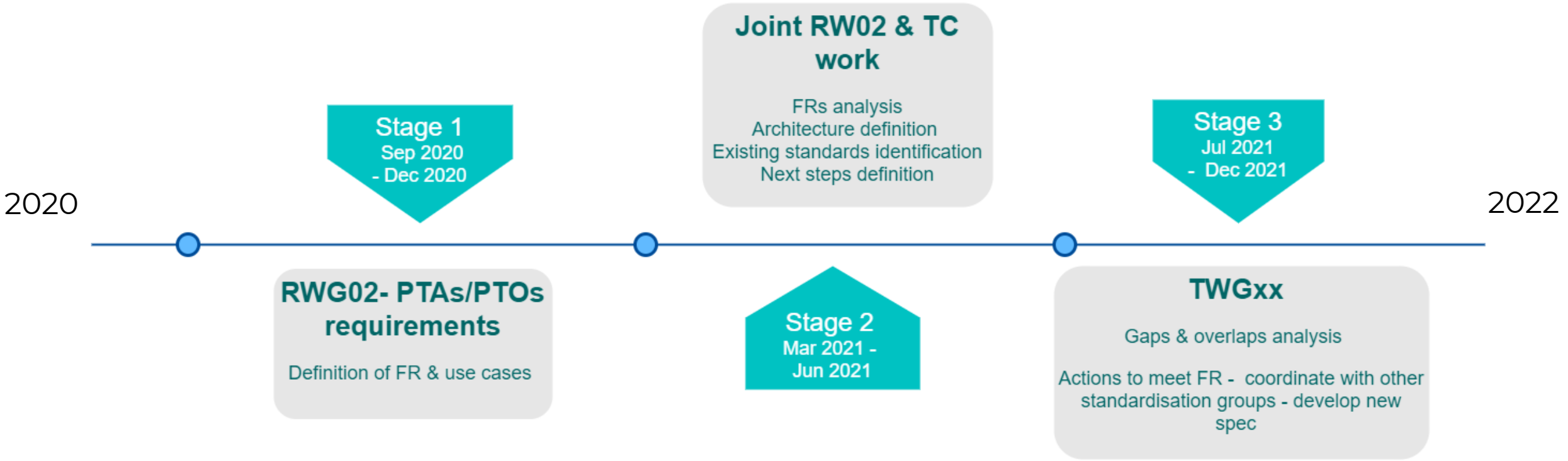
Deliver Functional Requirements (FRs)
and drive specifications updates

RWG02 Electric vehicles & charging infrastructure

RWG02 scope

- Define FRs to overcome challenges of electric vehicles fleet management and enable interoperability
- Focus on:
  - Power/energy efficiency of vehicles
  - Reliable charging possibilities
  - Vehicles and infrastructure performance assessment and service evaluation
  - Interoperability from both vehicles and infrastructure perspective

Timeline



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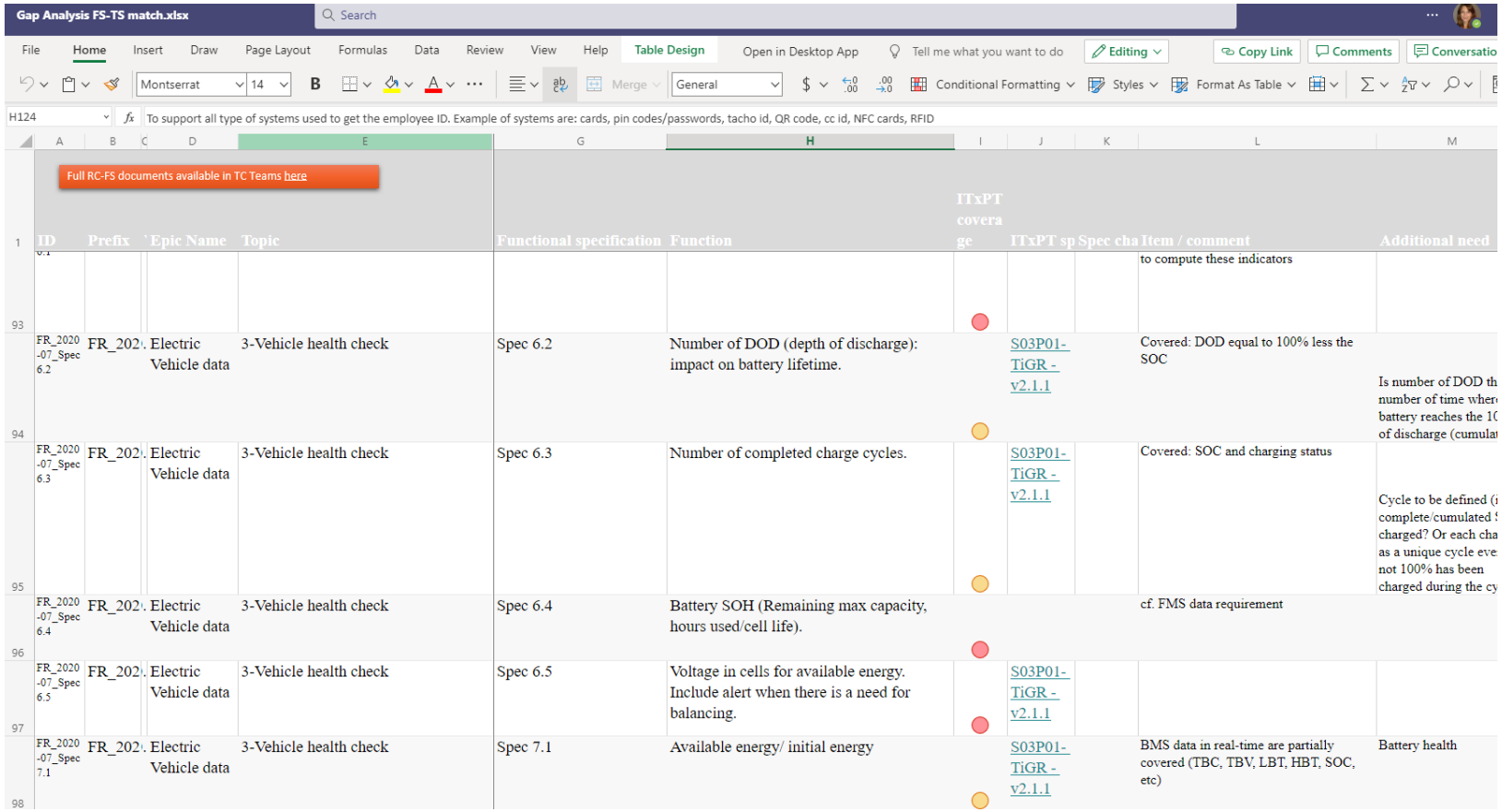
Outputs during last 3 months

- Gap analysis between TiGR and RWG02 functional requirements



	ID	Prefix	Epic Name	Topic	Functional specification	Function	ITxPT coverage	ITxPT sp	Spec cha	Item / comment	Additional need
93										to compute these indicators	
94	FR_2020-07_Spec 6.2	FR_202	Electric Vehicle data	3-Vehicle health check	Spec 6.2	Number of DOD (depth of discharge): impact on battery lifetime.		S03P01-TiGR - v2.1.1		Covered: DOD equal to 100% less the SOC	Is number of DOD th number of time wher battery reaches the 10 of discharge (cumulat
95	FR_2020-07_Spec 6.3	FR_202	Electric Vehicle data	3-Vehicle health check	Spec 6.3	Number of completed charge cycles.		S03P01-TiGR - v2.1.1		Covered: SOC and charging status	Cycle to be defined (complete/cumulated charged? Or each cha as a unique cycle eve not 100% has been charged during the cy
96	FR_2020-07_Spec 6.4	FR_202	Electric Vehicle data	3-Vehicle health check	Spec 6.4	Battery SOH (Remaining max capacity, hours used/cell life).				cf. FMS data requirement	
97	FR_2020-07_Spec 6.5	FR_202	Electric Vehicle data	3-Vehicle health check	Spec 6.5	Voltage in cells for available energy. Include alert when there is a need for balancing.		S03P01-TiGR - v2.1.1			
98	FR_2020-07_Spec 7.1	FR_202	Electric Vehicle data	3-Vehicle health check	Spec 7.1	Available energy/ initial energy		S03P01-TiGR - v2.1.1		BMS data in real-time are partially covered (TBC, TBV, LBT, HBT, SOC, etc)	Battery health

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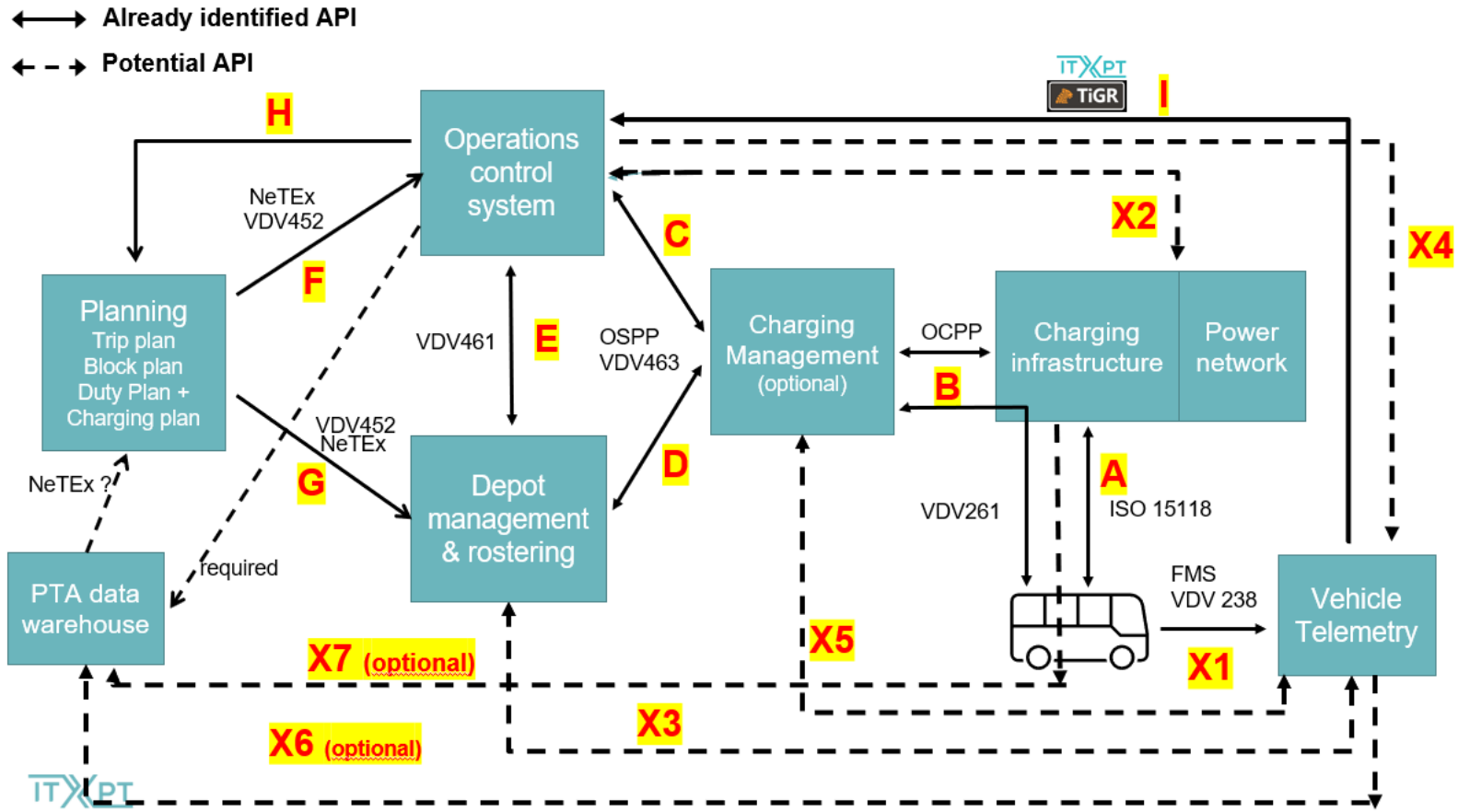
Outputs during last 3 months

- Functional architecture for electric vehicles fleet
  - Based on FRs & input from all participated members
- Identification of existing standards



Next steps

- **Creation of dedicated TC Working Group to**
  - Analyse existing standards - gaps and overlaps between standards & FRs
    - *In case of overlaps*
      - Make recommendation on related standards / Map related standards
    - *In case of gaps*
      - Make some proposal to update existing standards
      - Develop new specification

Potential RWG02 contribution

- ❖ Further elaborate on the interfaces and prioritise them
- ❖ Specify additional or analyse more the data needed for all actors involved for the prioritised APIs

-

Call for contribution open

Kick-off in beginning of July 2021

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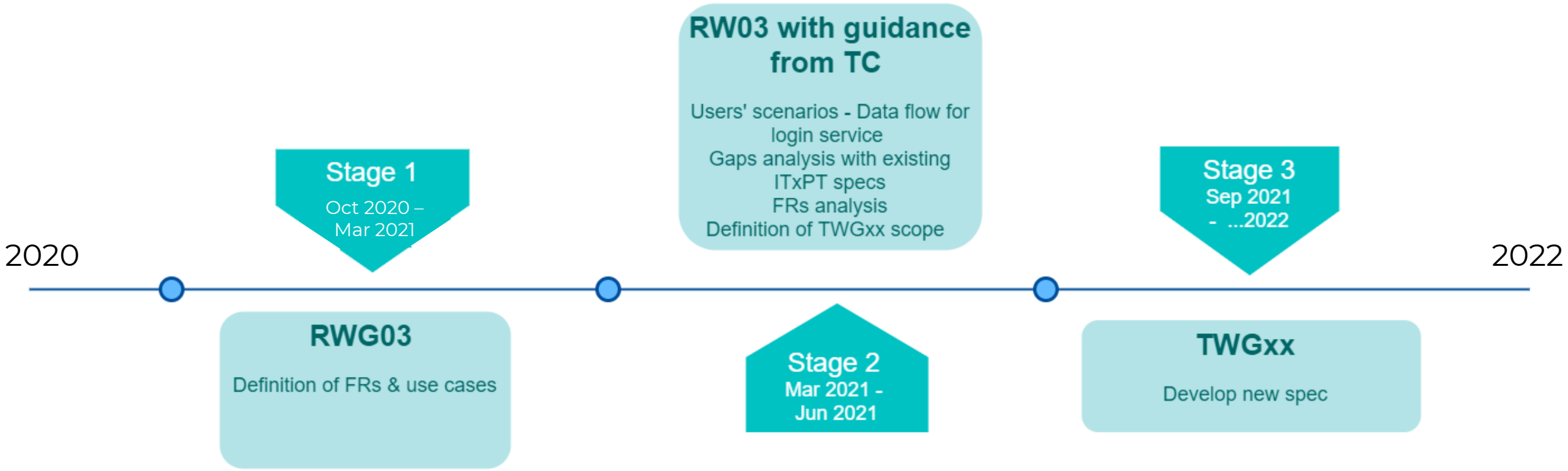
RWG03 Login Service

RWG03 goal

- Standardise APIs for login service to:

  - **Reduce the integration cost** related to login information
  - **Add value to other sub-systems** that consume login information
  - **Increase safety and security** for the employees and the passengers

Timeline



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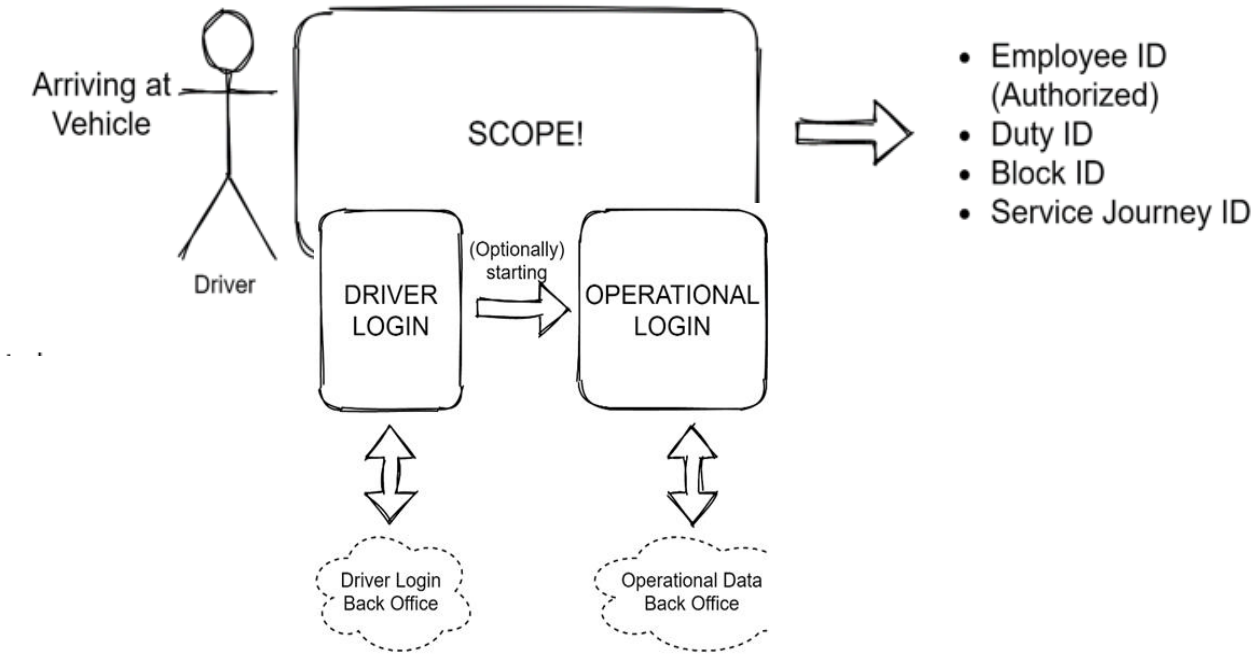
Outputs during last 3 months

- RC & TC joint review of RWG FR
  - Enough material to start a TWG
  - Scope definition:
    - Single sign in to give most benefit for least effort & to allow existing systems to become single sign on systems in a standarized way



Next steps

- **Creation of dedicated TC Working Group to**
  - work on specifications development based on the selected APIs

Call for contribution soon

Kick-off in the beginning of September 2021

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RWG04 Passenger Information Systems

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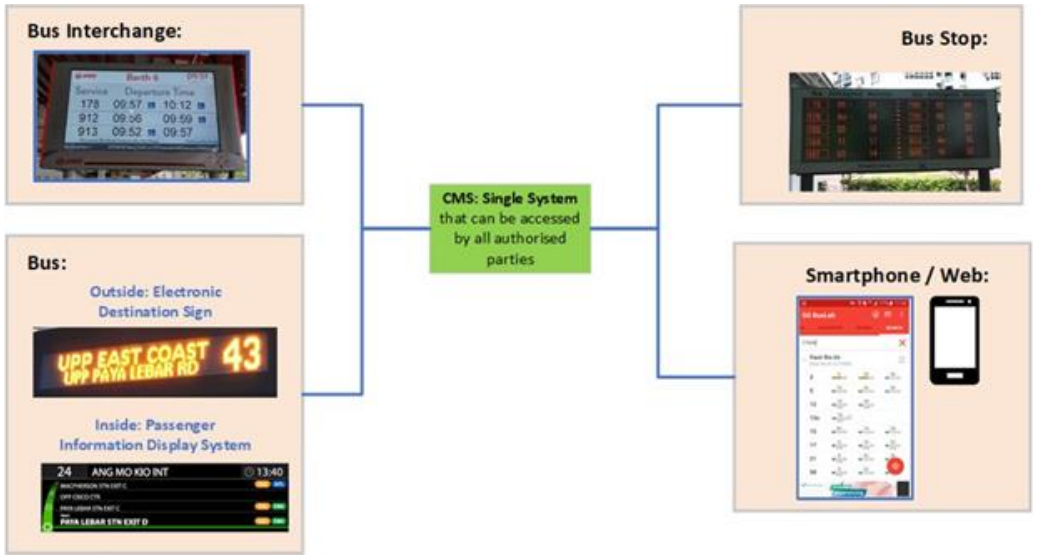
RWG04 goals

- **PTOs and/or PTAs to be able to:**
  - enter information into a single Content Management System (CMS) within their organisation
  - to share information with the CMS of other organisations
  - to disseminate passenger information to ALL relevant passenger Edge Devices



Ultimate goal is to provide accurate, consistent, relevant, and concise information to passengers to allow them to easily optimise their door-to-door journeys, and thus make public transport the mode of choice.

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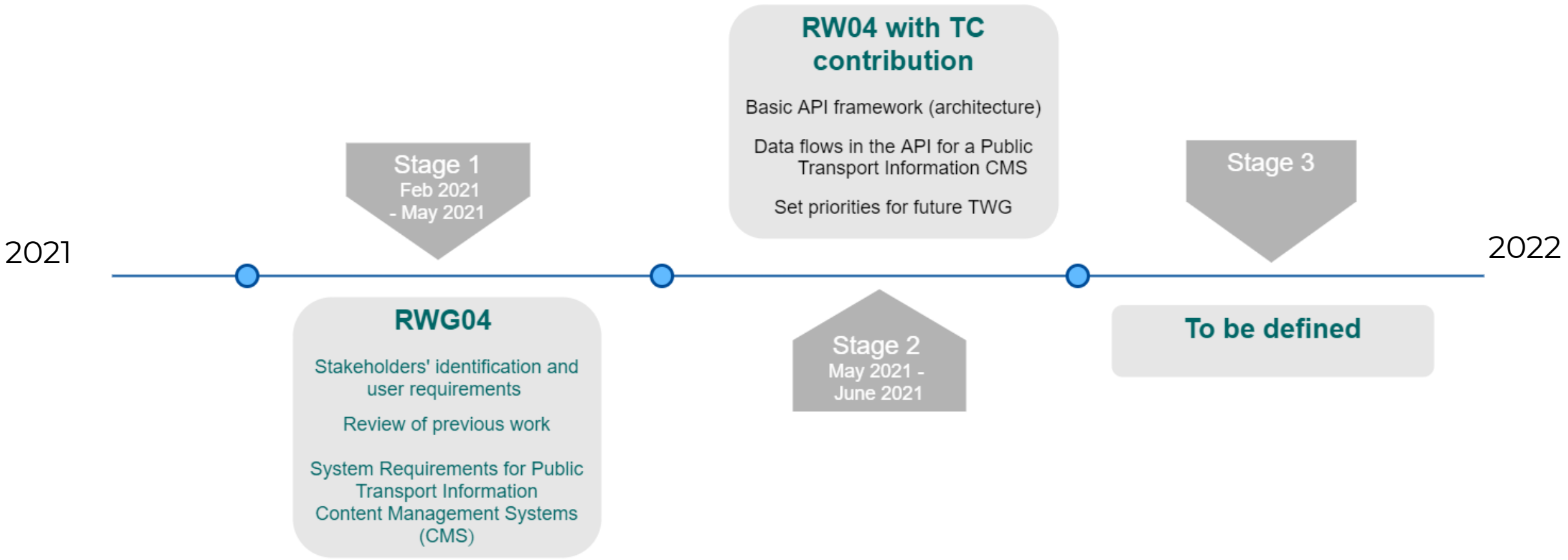
RWG04 specific objectives

1. Identify Stakeholders
2. Define User Requirements
3. Identify sources of Passenger Information
4. Provide consistent Terminology
5. Identify System Requirements for Public Transport Information Content Management Systems (CMS)
6. Basic API framework (architecture)
7. Data flows in the API for a Public Transport Information CMS
8. Set the priorities for the future technical work

Timeline



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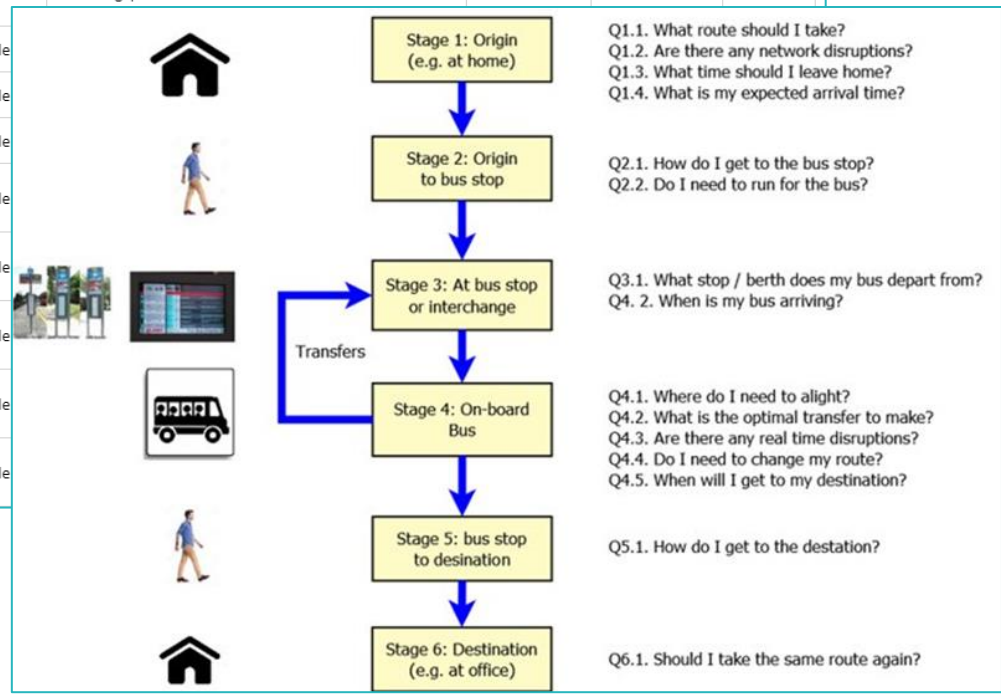
Outputs during last 3 months

- List of stakeholders and user requirements for all stages of a trip

Excel RWG04_Passenger_Info_Requirements_20210318 - Saved

no	User Requirement	Primary Stakeholder owning requirement	Stage of trip / Subgroup	Business Rationale	Date Added	Added By	Priority (MoSCoW)
309	A PWD will want the vehicle operator to know that they will be boarding at the next stopping point. They will want to receive confirmation that the driver of the vehicle is proactively looking out for them.	PWD	At Boarding Stop	Wheelchair users often get left behind at busy bus stops because the bus captain was not aware they wished to board the bus. NB. In Singapore there has been a trial called MAVIS which	13-Mar-21	Steve	
401	On board the vehicle passengers want to know when they should alight (get off)	Passengers	On vehicle				
402	On board the vehicle passengers want to know how much longer will the journey take	Passengers	On vehicle				
403	On board the vehicle passengers want to know whether they are in the right vehicle	Passengers	On vehicle				
404	On board the vehicle passengers want to know information about their connection (When do I get my connection? Is my connection on time?)	Passengers	On vehicle				
405	On board the vehicle passengers want to know where are free seats in the vehicle and guidance to get there	Passengers	On vehicle				
406	On board the vehicle passengers want to know from where should they get off (i.e. which side/door ?)	Passengers	On vehicle				
407	On board the vehicle passengers want to know basic trip details such as the vehicle destination and scheduled stopping points	Passengers	On vehicle				
408	On board the vehicle passengers want to know what Points of Interest are at the stopping points	Passengers	On vehicle				



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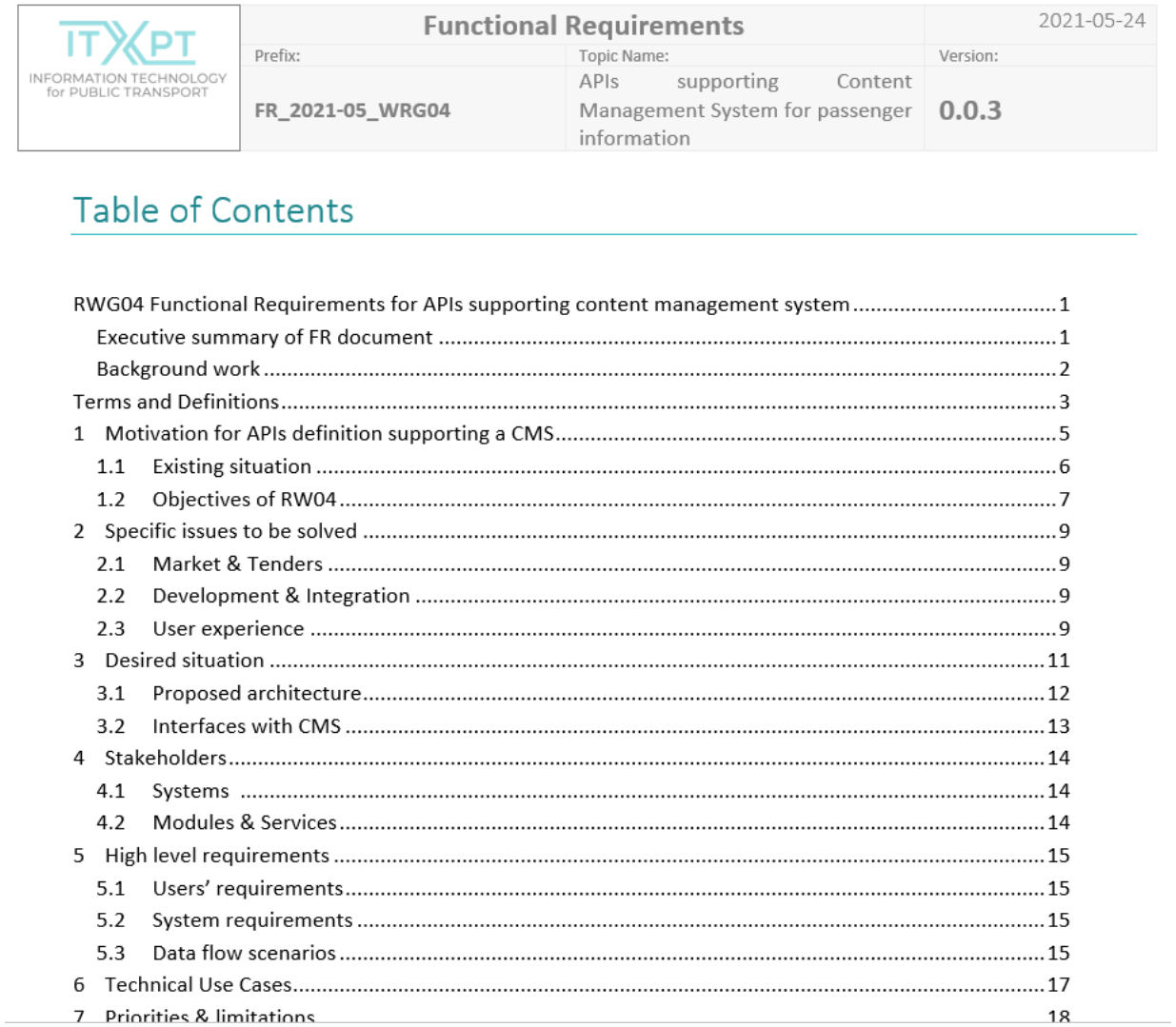
Outputs during last 3 months

- List of requirements for Content Management System

No:	Topic	High level functional Requirement	Data examples (linked to the identified functionality)	Use cases	Business Rationale	Date added	Added by	Relevant APIs					Priority (MoSCoW)
								Back- office to back-office	Between on board displays & back-office	Between Displays at stations/stops & back office	Between on-board displays and other on-board system	Between websites/mobile apps & back office	
3	Security - connectivity	Centralized user authentication with support for roles	Roles examples: - producing system (producers with this proposed priority - importance) : transport authorities - advisories will be also given by TA,real time deviation producer, road authorities, government authorities in general - traffic controler - control centre dispatcher: for manual or for automated approval (i.e. a source is trustful and no need a customised approval) - control centre administrator -users of data (recipients) - end user (displays in vhcls, outside etc.) - a person/system/computer might have multiple roles - we could have a dispatcher/producer role in each organisation (so similar roles but with other level of importance/priority	Sub system tries to connect with control centre - using credentials the system is securely connect Using the best practices cyber security standards Auditing of login & authentication should be done Information about type of sub-system shall be connected to login credentials (e.g. PTA back-office, road authority back office etc. System automatically to generate or/and consume the information			RWG	yes					M
4	Security - workflow	The system shall support a workflow to ensure that certain actions (such as management of concent) can be approved by a management role, and to esnure that the "approver" is a different person from the "maker"		Part of D4		2021-04-26	SR						M
5	Audit / Log	The system shall have possibilities for automated (realtime) export of audit/log data to external systems.		A PTA would like to verify that a certain message has reached the expected target. E.g. for advertisements you need to report to the advertising company how the message was displayed etc. Maintenance support and fault			RGW	yes	yes	yes			M
6	On-demand transportation	The systems shall support information to passengers using on -demand transport	Data to exchange: real time location, vehicle number/color (information that helps passenger identifying the vhcl transport) - continuous confirmation of the vhcl	Scenario 1: I want to go the the train station and the first part of the trip is done with on demand transport but then want to use the train: access to both passenger information systems			RWG	yes (back office of on demand to back office of the fixed)					W

Outputs during last 3 months

- FRs document with analysis of the methodology, the challenges and the desired final result



ITXPT INFORMATION TECHNOLOGY for PUBLIC TRANSPORT	Functional Requirements		2021-05-24
	Prefix:	Topic Name:	Version:
	FR_2021-05_WRG04	APIs supporting Content Management System for passenger information	0.0.3

Table of Contents

RC Pre-studies

Update

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On – demand transport

- **Kick – off** on Thursday, 3/6/2021

  - **Pre-study objective**
    - Define the role of ITxPT in DRT ecosystem

  - **Methodology**
    - Step 1: Define users' scenarios and functional architecture for DRT
    - Step 2: Identify gaps
    - Step 3: Define ITxPT actions

  - **Time plan**
    - Every first Thursday of a month, from 1/7/2021 till December 2021.

Technical Committee

Evolving the specification

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TC mission

Analyse RC outcome

Open TC working group to prepare technical outcome

Align TC proposal with RC expectation

Deliver Technical Specification

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TC last achievements

- Three Technical Documents approved by ExB:
  - Technical Requirement - TR001 General Design Rules
    - *Version 1.0 of the General Design Rules was approved earlier this year. In version 1.1 two new sections have been added.*
    - *The section Static Configuration discusses when, why and how a specification may require a module/service to have configuration parameters that are outside of the service definition/API itself.*
    - *The new section about Public Drafts and Preview Releases describes two new specification states.*
  - Technical Requirement - TR003 MQTT
    - *The Data Centric subgroup for MQTT has now produced TR-003 MQTT which sets general rules for the usage of MQTT in future MQTT-based ITxPT standards.*
  - Technical Specification (Preview Release) - FMStoIP 2.2.0
    - *During the last six months the FMStoIP subgroup has completed a large revision of the FMStoIP specification, focusing on interoperability and usability. The updated specification is expected to be compatible with most 2.1.0/2.1.1 clients but contains a large number of clarifications and additions.*
    - *The release is a Preview Release, which means it may change before final 2.2.0 release, but only if changes are needed to resolve identified problems.*

TC active TWGs

Technical Working Groups (TWG)		Leader	Start	End
TWG01	Data centric	T-L		
TWG01 SG1	General Design Rules	ITxPT	May-2020	Dec-2020
TWG01 SG2	Data Centric	Hanover Displays	May-2020	Dec-2020
TWG01 SG3	MQTT	SNCF	May-2020	June-2021
TWG01 SG4	JSON	ITxPT	Apr-2021	Ongoing
TWG02 SG1 • SG1	Maintenance • FMStoIP	ITxPT	Nov-2020	June-2021
TWG03	Passenger Counting	TfL	Feb-2021	Ongoing
TWG04	Data dictionary	Hanover Displays	Apr-2021	Ongoing
TWG05	Electric Vehicle	TBD	June 2021	Just started

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2.1.1 S02 – schemas & examples

- Schemas are now up to date
- Examples have been updated

2.1.1 Known Issues

- Documented known issues for the 2.1.1 spec

Example from S01 Known Issues

Section 2.5.5 "Awake request (optional)"

Issue: There is no defined signal level for this signal.

Implementation advice: Based on the other signals defined, the reasonable assumption is that 24V would be the awake request, and that the signal should be at ground level at all other times. (However, see next issue.)

2.1.1 S02 Client Development Guide

Check version

The TXT record attribute version lists the compatible specification version(s?). If specification version is not inside the expected range, this should, at minimum, be logged as a warning.

At ITxPT Github

- https://github.com/ITxPT/S01
- https://github.com/ITxPT/S02
- https://github.com/ITxPT/S03

FMStoIP 2.2.0

Large update!
Many additions and clarifications.

Backwards Compatible!
(99%)

“Guaranteed” to be interoperable.

Out now as a Preview Release!

Strongly recommended to use 2.2.0 rather than 2.1.x!

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FMStoIP addtional material

- Implementation guide
- XSDs and examples are updated to 2.2.0

Both at: https://github.com/ITxPT/S02/tree/2.2.0

Preview Release

- Finished! Same process as official release
- May change – but only when *necessary!*
- All members having started implementation will be consulted!
- Implementations must be updated!
- Only one labeling activity counted

TR – JSON Format

- For use with new ITxPT standards using JSON
- Mostly points to Google JSON Style Guide
- Ensures consistent usage within and between specifiations
- Available now
- Should you use it internally?

ITxPT Data Dictionary

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Data Dictionary

- The Data Dictionary is a central part of the Data Centric approach
  - Defines terms used in ITxPT Technical Specifications, with the goal of being:
    - *Clear, unambiguous & accurate*
    - *Useful to the organisation and its members*
    - *Maintainable*
    - *Promoting the Data Centric approach*
- The Data Dictionary sub-Committee (DDC) of TC
    - *Ongoing commitment to maintaining and publishing the Data Dictionary*
    - *Includes helping the Technical Working Groups define Data Dictionary additions*
    - *Defined relationship between DDC and TC*
    - *Liaison with Transmodel*

Current Status

- DDC Mission mostly defined
- Ways of working coming along well
- APC Concepts worked on and pending release
- Access to WIP GitHub repository via: https://github.com/ITxPT/DataDictionary/tree/main

Data Dictionary Concepts

PASSENGER ENTRANCE

Source: ITxPT

Definition: A physical or virtual boundary point through which passengers can enter or exit, e.g. a vehicle door. A PASSENGER ENTRANCE has a designated enter-direction and a designated exit-direction.

PASSENGER ENTRANCE COUNT

Source: ITxPT

Definition: Number of passengers and other objects that have entered and exited through a specific PASSENGER ENTRANCE during a time span or since some implicit or explicit previous time/event. A possible implementation of LOGGABLE OBJECT.

PASSENGER EQUIPMENT

Source: Transmodel

Definition: An item of equipment of a particular type actually available at a location within a PLACE or a VEHICLE

TWG03 APC

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TWG03 APC Status

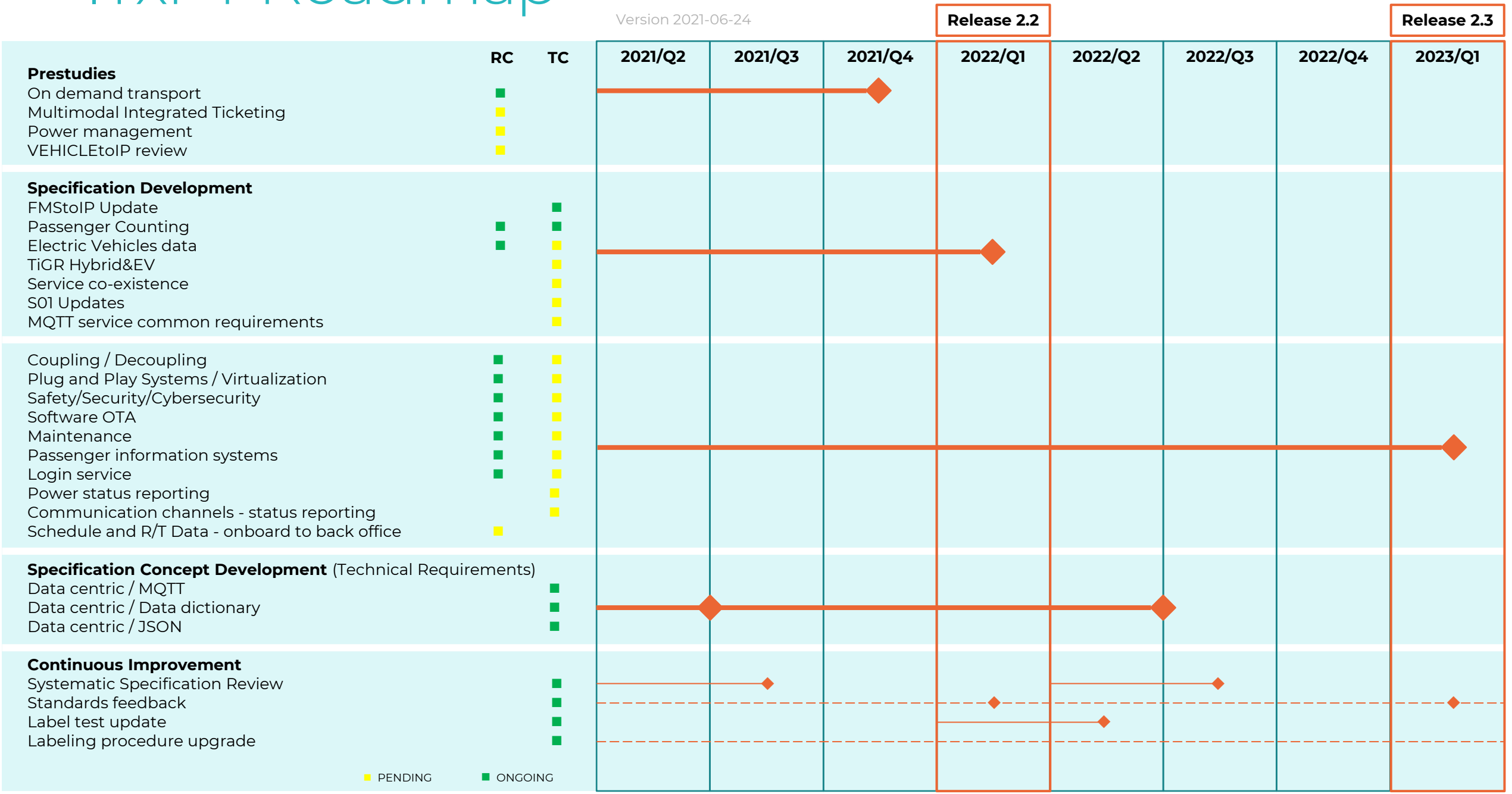
- A first TWG-internal draft has been produced
- Fulfills Heavy Rail requirement of multiple «zones»
- Similar to, be separate from, exsisting APC S02P07 specification
- Looking for autumn completion

7- Plan for next steps

in Roadmap

ITxPT Roadmap

Version 2021-06-24



8- Projects engagement

Projects

Project	Mission	Outcome	ITxPT role
CONNECTA 3 (Shift2Rail)	compatibility between ITxPT and **train** control network	ITxPT specification review and alignement with Rail specification	Technical expert as support for SNCF
DATA4PT (EU PSA)	support for Transmodel/ Siri/NeTEx, and implementation of **National Access Points**	Training, validation tool and technical support	Technical leader
NAPcore (EU PSA)	Harmonize NAP implementation and standardisation related work		Leader of Multimodal WG
Nordic Way 3 (C-ITS pilot projects)	Test of API's for traffic signal priority and road authority information	Several pilots, identify gaps in API's	Coordination between project and ITxPT activities
Rivsilon 2 (SE project)	Building a state-of-art ITxPT reference installation in a fully **electric vehicle** usable in real production	The vehicle is a base platform for additional sub-projects	Bench testing at our LAB and supporting installation and documentation
SHOW (EU H2020)	defines interoperability aspects of **autonomous vehicles**	Review of technical architecture	Technical expert as support for UITP

Outputs till June 2021

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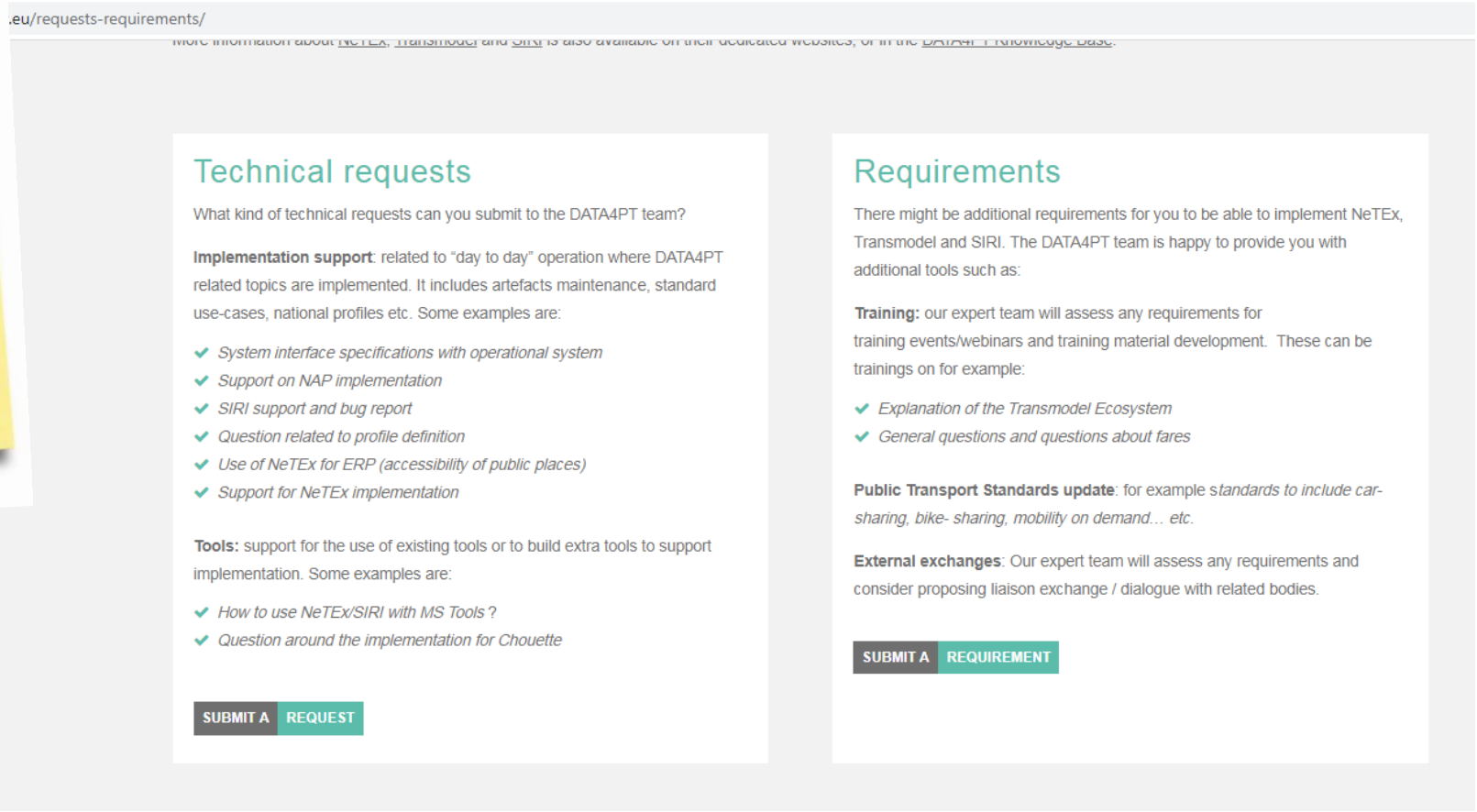
Technical support

Submit your request (technical questions etc.) ***or requirement*** (change request etc. ***to DATA4PT experts' team***

https://data4pt-project.eu/



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Technical support

Find technical artefacts, technical papers, FAQs etc. under “knowledge base”

https://data4pt-project.eu/

Knowledge Database

GUIDELINES

FAQ

TRAINING MATERIAL

WIKI PAGE

Data4PT - Methodology for comparing data standards

18/03/2021

Read the report **HERE**.

Provide NeTEx files according to the European Passenger Information Profile (EPIP). The technical artefacts

29/01/2021

Ideally all member states will provide NeTEx files according to the European Passenger Information Profile (EPIP) on their respective National Access Point. Data4PT provides some artefacts to simplify producing and quality assure such information.

First of all a simplified and EPIP-adapted version of the full NeTEx XML schema has been produced. A graphic and interactive technical presentation of the adapted schema is available.

Continue to the presentation **HERE**

Download the EPIP adapted XML-schema **HERE**

Download an EPIP example file **HERE**

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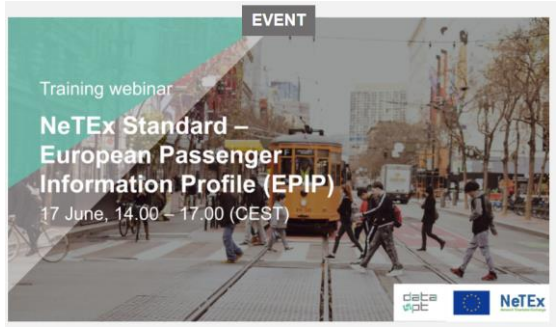
Trainings

12/4/2021: 1st DATA4PT Webinar
Introduction on Transmodel

08/6/2021: 2nd DATA4PT Webinar
SIRI Standard



17/6/2021: 3rd DATA4PT Webinar
NeTEx EPIP

Material & recordings available in DATA4PT website under "knowledge base"

https://data4pt-project.eu/

More to Come

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Stakeholders' forum

DATA4PT gathers EU Member States & public transport sector for first successful Stakeholder Workshop

NEWS

On 5 November 2020, the DATA4PT project organised its first Stakeholder Workshop. Gathering over 70 participants including EU Member States, PTOs, PTAs and the industry, the Workshop provided a very fruitful platform for different actors in public transport to discuss how data standards Transmodel, NeTEx and SIRI – and the DATA4PT project – can improve multimodal information services across the European Union. In this wrap-up report we discuss some of the questions asked by the audience about how to adopt and implement data standards to improve services.

You can find all speakers' presentations in the DATA4PT Library.

2nd Stakeholders' forum in October 2021 – open to everybody

Stay tuned!

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Next main outputs

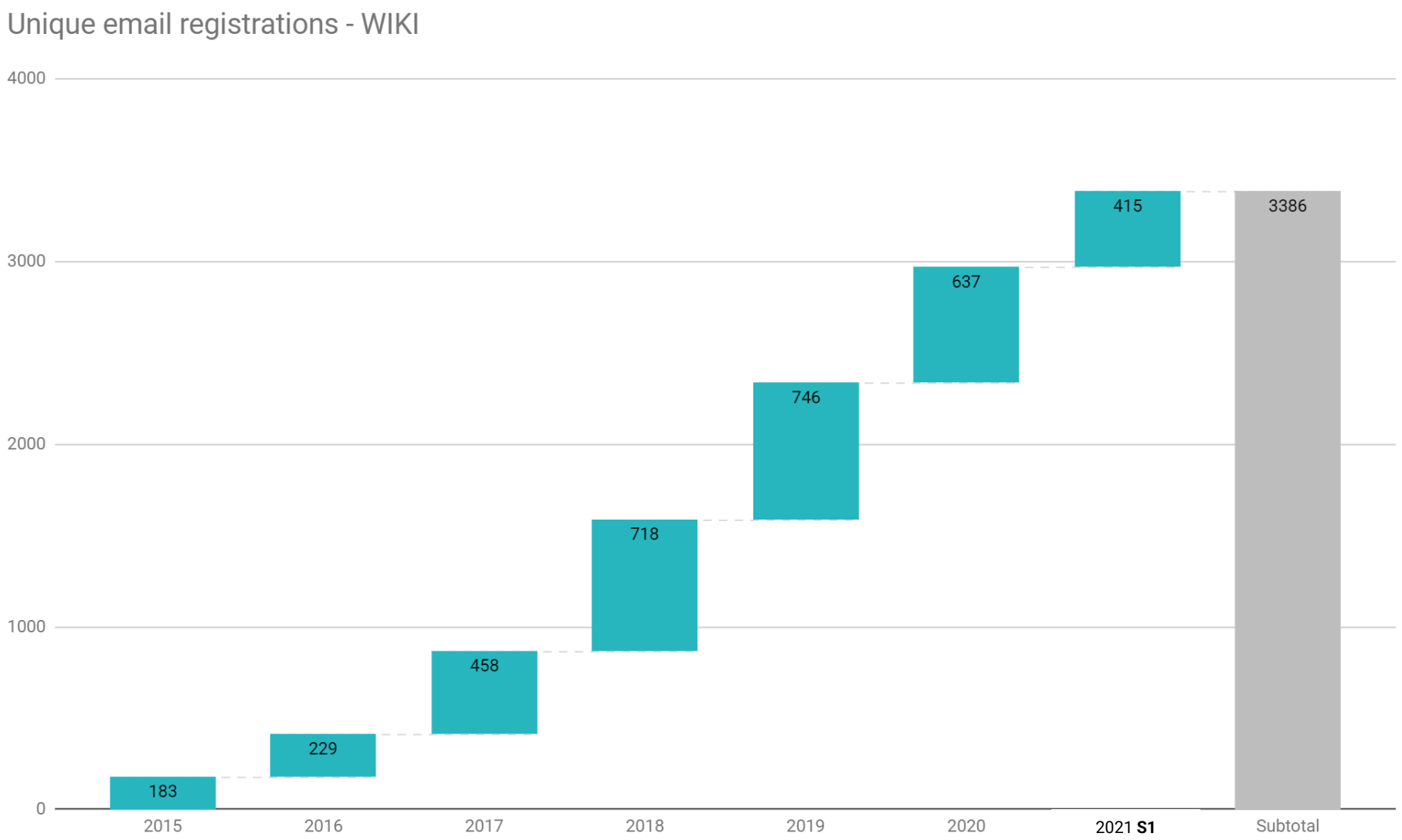
- Validation tools for NeTEx and SIRI data sets

(1st release for pilot use in the end of 2021)

- European minimum profiles for:
  - *SIRI (end of 2021)*
  - *NeTEx accessibility data (end of 2021)*
  - *NeTEx fares data (2022)*

9- Latest news

Wiki registrations



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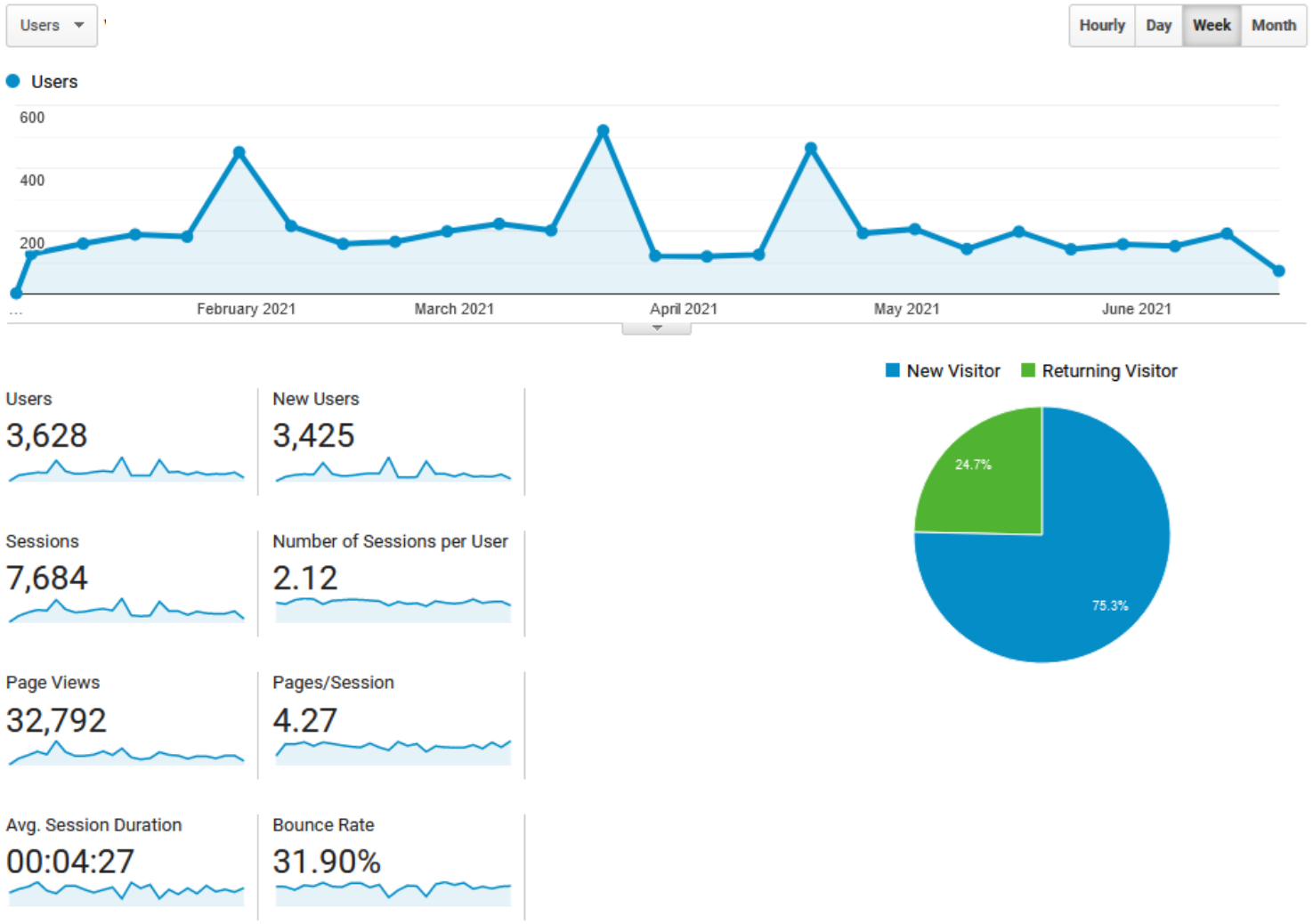
Wiki users – 2021 S1

200 users per week average

+ 40 % users vs 2020 S2



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10 -Conclusions from Secretary General

Anders Selling - ITxPT

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Next

- Summer break
  - Last Requirement Committee 30.6 and Technical Committe 7.7 - Committees will start again from the October 6
  - Working groups will continue during summer
  - ITxPT Office and Lab will have reduced manning 12.7 - 27.8
- Preliminary dates for next Members Meetings will be September 16 and December 9


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