

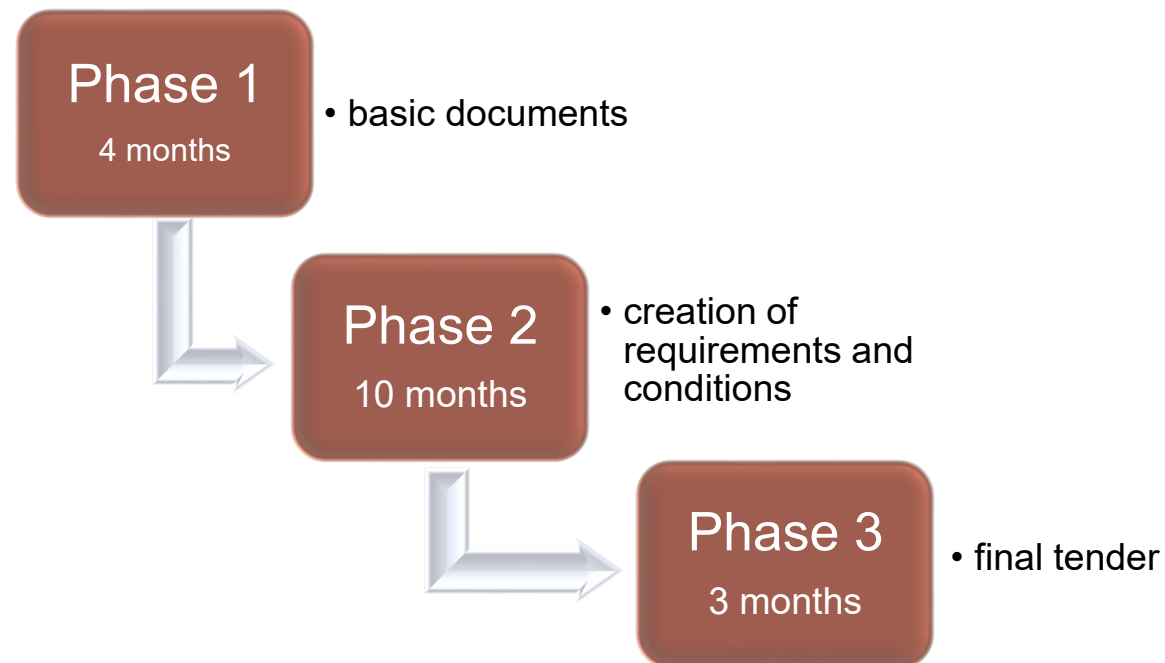
# First steps on a way to ETCS Level 2

Conference Zagreb/Croatia 3.10.2019

# Overview

## Phases to create documents:

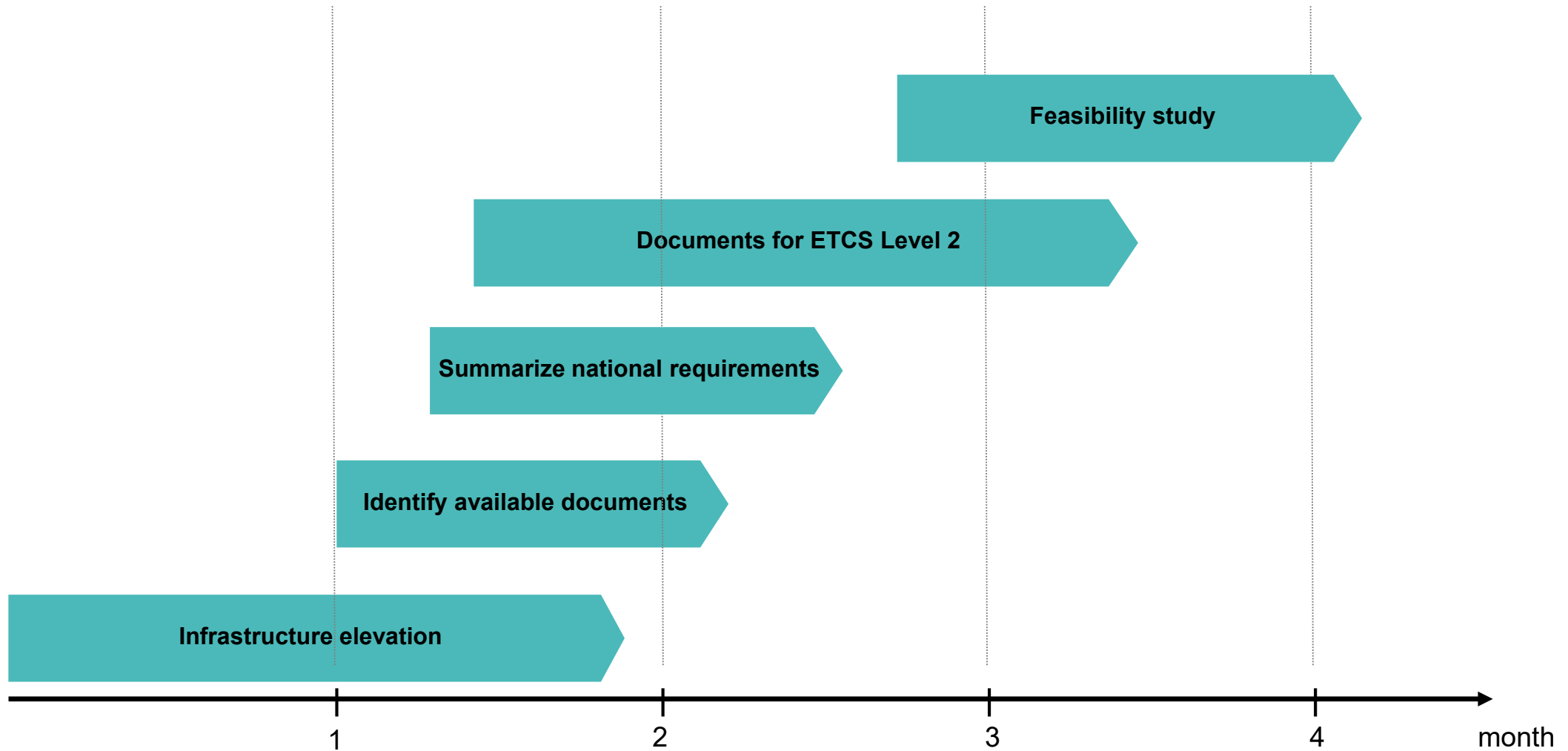
- Phase 1- basic documents
- Phase 2- creation of requirements and conditions
- Phase 3- Input for project start (tender)



## Phase 1 – basic documents

- **Infrastructure elevation** (topology, switches, signals,...)
- **Identify available documents:**
  - Summarize interfaces to peripheral systems (GSM-R, RBC, IXL,...)
  - Summarize vehicle interfaces
  - Description of the level areas and level transition
  - Description of the available network architecture
- **Summarize of existing national requirements:**
  - User requirement specification
  - Operational requirement specification
  - National legal requirements
  - Service and maintenance requirements
  - Safety and quality requirements
- **Identify the functionality of the existing peripheral systems** (IXL, OCS,...)  
regarding the necessity for the implementation of ETCS Level 2
- **Support of external consulting staff** (usual procedure like ÖBB, SBB, DB,...)
- **Feasibility study** (identify open issues,...)

# Phase 1 – basic documents



## Phase 2 – creation of requirements and conditions

### ➤ **Define requirements for ETCS Level 2:**

- User requirement specification
- Functional requirement specification
- Technical requirement specification
- Operational processes / requirement specification
- Service and maintenance requirements
- Safety and quality requirements
- Book of rules

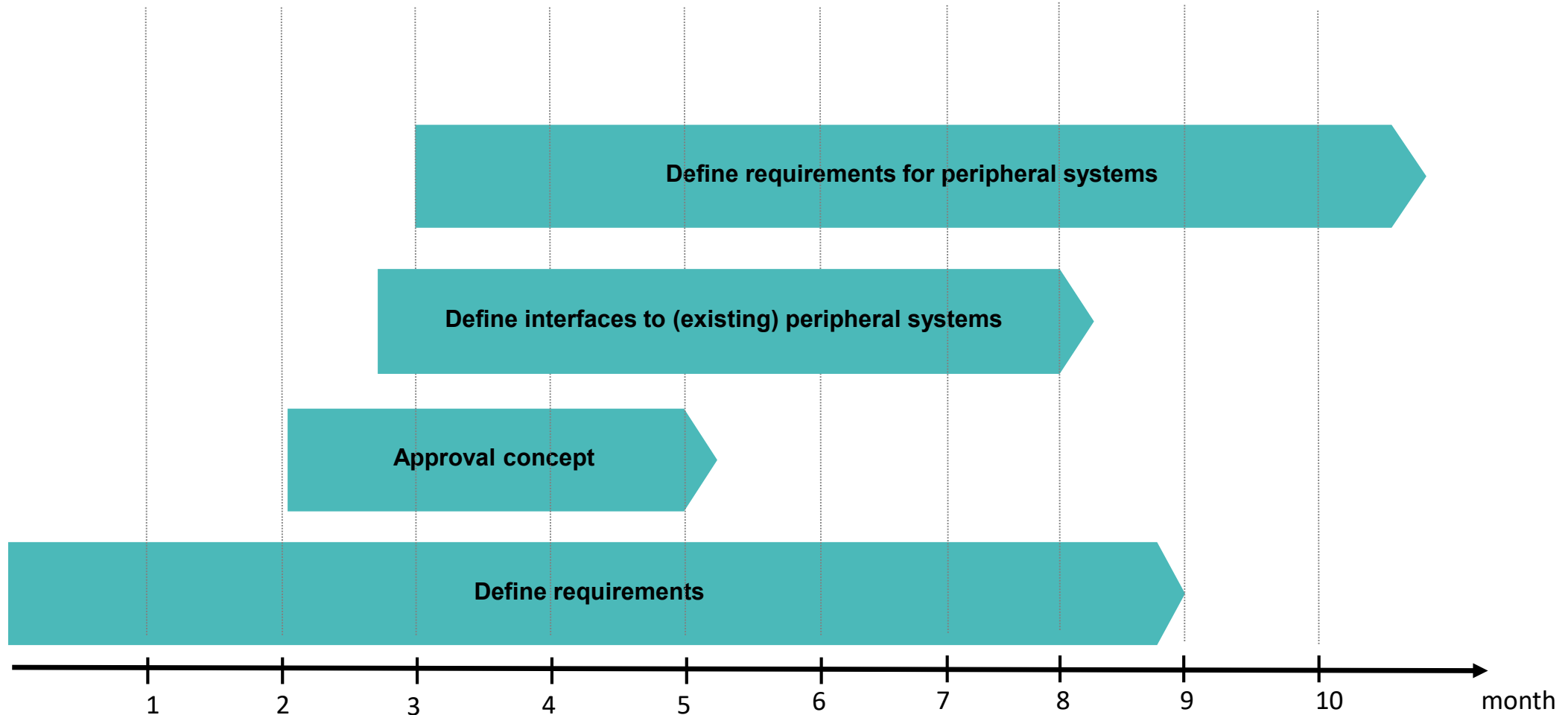
### ➤ **Approval concept:**

- Define V&V
- Laboratory tests
- Track side tests
- Integration concept
- Approval concept according to the national law / TSI (NoBo)

### ➤ **Define interfaces** to (existing) peripheral systems (IXL, OCS,...) (incl. all Network requirement)

### ➤ **Define requirements** for peripheral systems (IXL, OCS,...)

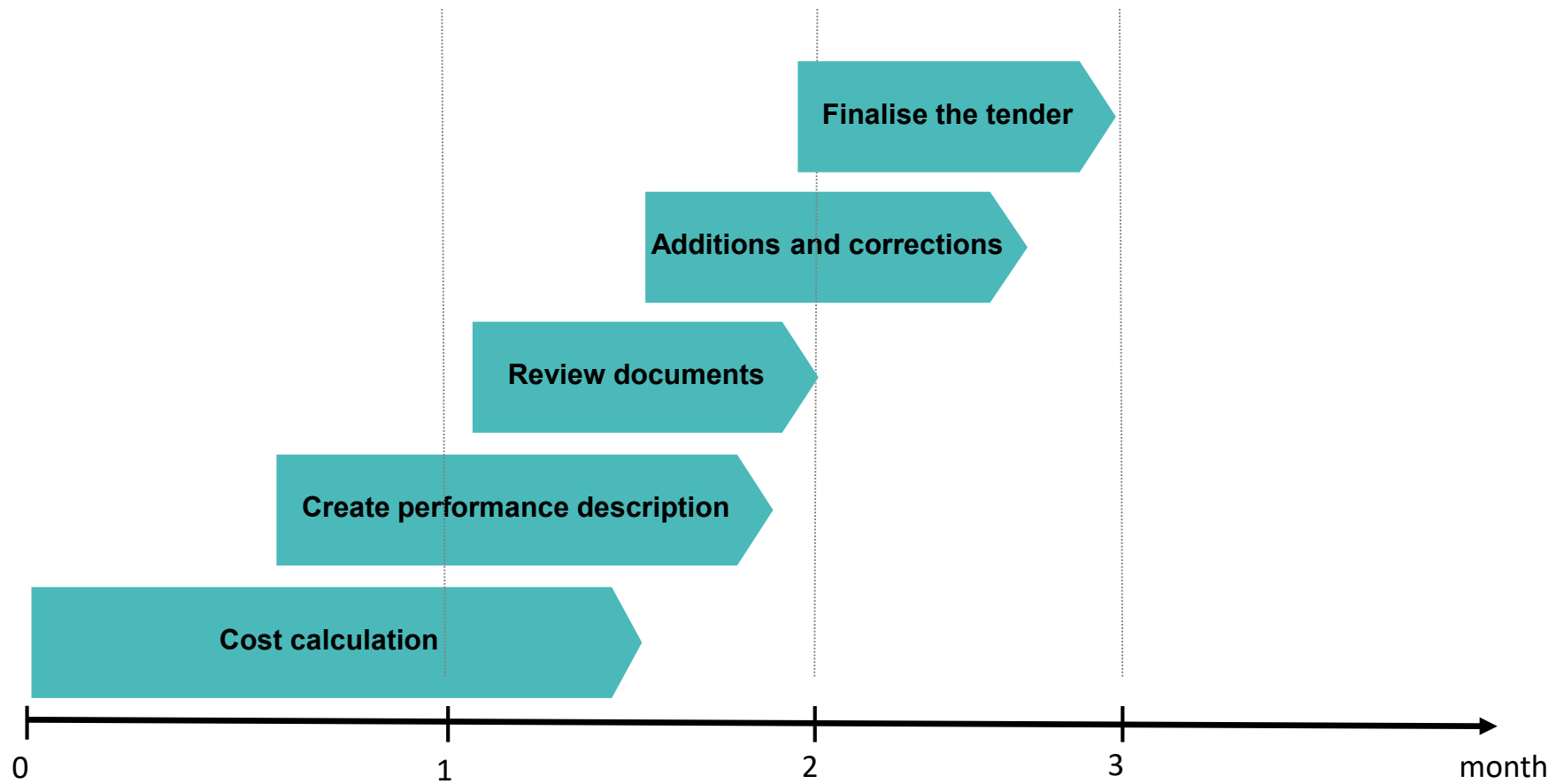
## Phase 2 – creation of requirements and conditions



## Phase 3 – Input for project start (Tender)

- Cost calculation
- Create performance description
- Review documents
- Additions and corrections
- Finalise the tender

# Phase 3 – Input for project start (Tender)





## Questions

- Is a team of experts with the needed know-how for the whole time available?
- Are the national operational rules and regulations consistent?
- Are the stakeholders (Agency, Railway operator, Financing institution,...) aligned?
- An experienced external Consultant available?

Thank you

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