

Feasibility Study Czech NAP v2.0

English Summary

January 2026

Abstract

This document provides an English-language summary of the comprehensive Czech National Access Point (NAP) v2.0 feasibility study. The original study was conducted in Czech by ITS&S (Association for Transport Telematics) for the Road and Motorway Directorate of the Czech Republic (ŘSD). This summary serves to introduce the study's scope, methodology, deliverables, and key findings to international stakeholders.

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Project	Feasibility Study NAP v2.0 (NAP 2.0 Studie proveditelnosti)
Client	Road and Motorway Directorate of the Czech Republic (ŘSD)
Contractor	ITS&S - Sdružení pro dopravní telematiku, z.s. (Association for Transport Telematics)
Project ID	ISPROFIN/ISPROFOND: 500 116 0007
Final Version	3.0 (April 27, 2025)
Study Period	Three consecutive stages (Etapa 1, 2, 3) completed June 2024 - December 2024
Summary Prepared	January 29, 2026, by Jan Vlčinský

Executive Summary

This comprehensive feasibility study documents the design and implementation roadmap for the Czech National Access Point (NAP) and partially the National Body (NB) for conformity assessment, in compliance with Directive (EU) 2023/2661 (amending ITS Directive 2010/40/EU). The study demonstrates thorough professional work through a structured three-stage approach, extensive stakeholder engagement, international best practice analysis, and detailed technical specifications.

Key Deliverables

The study provides a complete framework including:

- **Legislative foundation** based on Directive (EU) 2023/2661 (amending ITS Directive 2010/40/EU) transposition requirements
- **Comprehensive data catalogue** defining all transport data types requiring NAP publication
- **Hybrid technical solution** combining metadata repository with optional data hosting for small data holders
- **Three-layered architecture** (functional, organizational, information) for both NAP and NB
- **Implementation roadmap** with phased approach targeting full operation by end of 2028
- **Resource estimates** covering technical infrastructure, personnel, and operational costs

Stakeholder Engagement

The project demonstrates rigorous methodology through:

- **6 documented meetings** (3 workshops with public stakeholders, 3 Ministry of Transport consultations)
- **Broad expert team** involving 15+ specialists across all study stages
- **International coordination** through NAPCORE project integration
- **Continuous iteration** with version control showing progressive refinement

Recommended Model

The study advocates for a **distributed hybrid NAP** approach where:

- NAP operates as a metadata catalogue with discovery services
- Small data holders can optionally store static data directly in NAP
- National and regional aggregators complement NAP functionality
- National Body (NB) ensures quality control and conformity assessment
- Road and Motorway Directorate (ŘSD) designated as NAP operator
- Ministry of Transport oversees NB function

Document Structure and Relationships

This delivery comprises **23 documents** organized in a hierarchical structure demonstrating comprehensive project documentation:

Core Study Document (1 document)

- **Main Study** (140+ pages): Complete three-stage documentation with management summary, requirements analysis, architecture specifications, and implementation action plan

Technical Annexes (12 documents)

Detailed supporting documentation organized by topic:

Legislative Framework (Annexes 1, 5)

- Annex 1: Legislative research and strategic framework analysis
- Annex 5: Recommendations for legislative anchoring of NAP and NB in Czech law

Data Specifications (Annexes 2, 3, 4, 6)

- Annex 2: Complete NAP 2.0 data catalogue (PDF + Excel format)
- Annex 3: International best practices from foreign NAP implementations
- Annex 4: Detailed evaluation of foreign NAPs (Excel format)
- Annex 6: Identification of expected data holder community in Czech Republic

System Architecture (Annexes 7, 8, 9, 10)

- Annex 7: NAP functional architecture with function descriptions
- Annex 8: National Body (NB) functional architecture
- Annex 9: Organizational architecture for NAP and NB
- Annex 10: Information architecture defining data exchanges

Implementation Support (Annexes 11, 12)

- Annex 11: NAP 2.0 presentation materials from CZECHBUS 2024 conference
- Annex 12: Technical implementation documentation proposal

Meeting Documentation (6 documents)

Demonstrating thorough stakeholder consultation process:

- **Workshop Minutes (3):** Public stakeholder engagement June-December 2024
- **Ministry Consultations (3):** Technical review sessions with Ministry of Transport

Supplementary Diagrams (3 documents)

Standalone visual representations for quick reference:

- **NAP-KH Interconnection:** Data flow diagram showing ecosystem relationships
- **NAP-NB High-Level Functions:** Functional architecture overview diagrams
- **NAP-NB Organizational Architecture:** Institutional relationship diagram

Document Interdependencies

Main Study (Stages 1-3)

- Stage 1 (Chapters 3-6) → Supported by Annexes 1-5
 - Ch. 3: NAP Role → Annex 1 (Legislative Framework)
 - Ch. 4: Data Catalogue → Annex 2 (Data Catalogue)
 - Ch. 5: Requirements → Annexes 3, 4 (Best Practices)
 - Ch. 6: Concept → Annex 5 (Legislative Recommendations)
- Stage 2 (Chapter 7) → Supported by Annexes 6-10
 - Ch. 7: Implementation → Annexes 6-10 (Architecture Specs)
- Stage 3 (Chapter 8) → Supported by Annexes 11-12
 - Ch. 8: Action Plan → Annexes 11-12 (Implementation Support)

Meeting Minutes → Validate all stages with stakeholder input

Supplementary Diagrams → Quick visual reference for key architectures

Main Study Document Summary

File: 00_NAP_Studie_RSD_Etapa_123_v3-0_final_270325.pdf (140+ pages)

The core study document integrates three consecutive project stages into a unified comprehensive specification. The document evolved through 18 documented revisions (v0.1 to v3.0) between March 2024 and April 2025, demonstrating iterative refinement based on stakeholder feedback.

Document Structure

Management Summary (Chapter 1) - High-level overview emphasizing:

- Legislative urgency: Directive (EU) 2023/2661 transposition requirement
- Organizational recommendation: Distributed system with central NAP coordination
- Technical approach: Hybrid metadata catalogue + optional data hosting
- Economic justification: Cost-benefit analysis supporting hybrid model investment
- Implementation timeline: Phased approach targeting 2028 full operation
- Key recommendation: ŘSD as NAP operator, Ministry of Transport overseeing NB

Definitions and Abbreviations (Chapter 2) - Standardized terminology

Stage 1: Foundation and Requirements (Chapters 3-6)

Chapter 3: NAP Role and Mission

- NAP definition within EU regulatory framework
- Strategic and legal framework analysis
- Key stakeholder relationships to NAP
- Scope delimitation for Czech implementation

Chapter 4: Data and Information Catalogue

- Extension of TP172 data category catalogue
- Complete NAP data catalogue structure
- Connection to strategic/legal framework requirements

Chapter 5: Main Requirements for NAP

- Legislative requirements
- Data and information specifications
- NAP interconnection with key stakeholders
- Functional requirements (based on TP172 function sets FA-FD)
- Quality assurance requirements

Chapter 6: Conceptual Implementation Approach

- International best practice examples
- International project recommendations (NAPCORE insights)
- Variant analysis: metadata vs. data platform vs. hybrid solutions

- Variant analysis: single vs. multiple NAPs, aggregation strategies
- Vision for NAP 2028

Stage 2: Detailed Design (Chapter 7)

Chapter 7: Implementation per Proposed Vision

- Functional architecture (with detailed Annex 7, 8)
- Organizational architecture (with detailed Annex 9)
- Information architecture (with detailed Annex 10)
- NAP as public administration information system (ISVS)
- Personal data protection and privacy considerations
- Cybersecurity requirements

Stage 3: Implementation Roadmap (Chapter 8)

Chapter 8: Action Plan for Czech NAP Development

- Strategic, organizational, technical, operational decisions
- Legislative and competence framework
- Phased implementation timeline (3 phases: preparation, implementation, development)
- Organizational-operational NAP operation model
- Service availability definitions
- Personnel roles and staffing requirements
- Financial cost estimates (capital and operational)

Key Findings

The study identifies critical success factors:

1. **Legal Framework:** Transposition of Directive (EU) 2023/2661 with clear role assignments
2. **Quality Control:** National Body function essential for data quality assurance
3. **Hybrid Model:** Combining metadata catalogue with optional data hosting addresses small data holder needs
4. **Phased Approach:** Three-stage implementation enables progressive capability building
5. **Stakeholder Ecosystem:** Success depends on parallel development of NAP, NB, and data aggregators

Technical Annexes Summary

Legislative and Strategic Framework

Annex 1: Strategic and Legal Framework Research (01_Priloha_1_NAP_Reserse_legislativy_v1-0_300924.pdf)

Comprehensive analysis of EU and national legislation governing NAP implementation. Documents the regulatory foundation including ITS Directive 2010/40/EU (as amended by Directive 2023/2661), Commission Delegated Regulation (EU) 2017/1926 (as amended by Regulation 2024/490), and required transposition into Czech law. Establishes legal basis for NAP operational requirements.

Annex 5: Legislative Anchoring Recommendations (05_Priloha_5_NAP_legislativni_zakotveni_v1-0_130924.pdf)

Legal opinion and recommendations for Czech legislative framework establishing NAP and NB. Proposes specific legal provisions defining roles, responsibilities, and enforcement mechanisms. Addresses data holder obligations, open license requirements, and technical standard harmonization.

Data Catalogue and International Best Practices

Annex 2: NAP 2.0 Data Catalogue (02_Priloha_2_NAP_Datovy_katalog_v1-1_300924.pdf + .xlsx)

Complete structured catalogue of all transport data types required for NAP publication under EU regulations. Organizes data into main categories (road infrastructure data, travel/mobility data) with detailed specifications for each dataset type. Provides foundation for data holder obligations and NAP metadata structure. Available in both PDF documentation and Excel tabular format.

Annex 3: International Best Practice Examples (03_Priloha_3_NAP_Priklady_praxe_v1-0_250624.pdf)

Comparative analysis of successful NAP implementations across European countries. Documents lessons learned, technical solutions, organizational models, and service offerings from leading NAP operators. Identifies transferable practices applicable to Czech context.

Annex 4: Detailed Foreign NAP Evaluation (04_Priloha_4_NAP_Prikady_praxe_v1-0_250624.xlsx)

Detailed tabular comparison of evaluated foreign NAP systems. Provides structured assessment matrix for benchmarking Czech NAP development against international standards. Excel format enables filtering and analysis of specific NAP characteristics.

Annex 6: Data Holder Identification (06_Priloha_6_NAP_drzitele_dat_v0-6_270924.pdf)

Systematic identification of Czech organizations obligated to provide transport data through NAP. Categories include road infrastructure managers, public transport operators, service providers, and regional authorities. Establishes scope of stakeholder engagement requirements.

System Architecture Specifications

Annex 7: NAP Functional Architecture (07_Priloha_7_NAP_funkci-architektura_v0-11_310824.pdf)

Detailed specification of NAP functional requirements organized into four function sets:

- **FA: Data Input** - Data holder registration, metadata entry, validation
- **FB: Data Processing** - Metadata search, quality control, standard compliance
- **FC: Data Presentation** - Web portal, discovery services, user documentation
- **FD: Support Functions** - Stakeholder collaboration, access management, bilingualism

Includes high-level functional architecture diagram (identical to supplementary diagram file) and detailed function-by-function descriptions with mandatory/optional designations.

Annex 8: National Body Functional Architecture (08_Priloha_8_NB_funkcni_architektura_v0-6_310824.pdf)

Parallel specification of National Body (conformity assessment authority) functional requirements:

- **NB FA: Information Collection** - Data reception from NAP and stakeholders
- **NB FB: Processing** - Conformity assessment, corrective measures, reporting
- **NB FC: Presentation** - Stakeholder communication, web portal, guidelines
- **NB FD: Support** - Stakeholder cooperation, outreach, bilingualism

Includes high-level NB functional architecture diagram showing NB-specific function organization.

Annex 9: Organizational Architecture NAP and NB (09_Priloha_9_NAP_NB_organizacni_architektura_v0-8_240924.pdf)

Institutional relationship model defining actors and their interactions:

- **Key Actors:** NAP operator, NB, data holders, aggregators, users, EU NAPs, regulatory bodies, standardization organizations
- **Numbered Relationships (14 types):** Documents specific interaction patterns including supervision, data provision, regulatory compliance, standardization coordination
- **Governance Framework:** Maps how regulatory frameworks (EU and Czech) apply to different actors
- Includes two organizational architecture diagrams showing relationship networks

Annex 10: Information Architecture NAP and NB (10_Priloha_10_NAP_NB_informan-architektura_v0-8_240924.pdf)

Data exchange specifications between NAP/NB and stakeholders. Defines information flows, data formats, protocols, and metadata structures. Establishes interoperability requirements including mobilityDCAT-AP specification compliance. Documents specific data exchanges for each relationship type defined in Annex 9.

Implementation Support Materials

Annex 11: CZECHBUS 2024 Conference Presentation
(17_Priloha_11_Podklad_VDOL_Czechbus_2024.pdf)

Public dissemination materials from NAP 2.0 presentation at “Public Transport Online 2024” conference during CZECHBUS exhibition. Demonstrates project transparency and stakeholder communication approach. Contains presentation slides explaining NAP concept to transport sector professionals.

Annex 12: Technical Implementation Documentation Proposal (18_Priloha_12_NAP_Technicko-realizacni_Dokumentace.pdf)

Technical specification framework for NAP system procurement and development. Outlines requirements for technical implementation documentation (TRD - Technickorealizační dokumentace). Provides guidance for ŘSD to prepare tender specifications for NAP system development.

Meeting Minutes Summary

The project conducted structured stakeholder engagement through two parallel tracks: public workshops and Ministry of Transport consultations. Each meeting is documented with participants, agenda, presentations, and outcomes.

Workshop 1 - Stage 1 Results (11_Zapis_01_NAP_Zapis_workshop-1_180624.pdf)

Date: June 18, 2024 | Location: Prague

First public stakeholder workshop presenting Stage 1 interim results. Introduced NAP concept, legislative framework, data catalogue, and initial requirements to transport sector representatives. Gathered feedback on data holder obligations and technical approach. Validated problem definition and scope with professional community. Established foundation for continued stakeholder dialogue throughout project.

Ministry Consultation 1 - Stage 1 Review (12_Zapis_02_NAP_Zapis_MDCR_040924_final.pdf)

Date: September 4, 2024 | Location: Prague

Technical review session with Ministry of Transport (MDCR) departmental experts on completed Stage 1 deliverables. Discussed legislative requirements, organizational model options, and data catalogue completeness. Obtained ministry guidance on governance preferences and regulatory approach. Aligned project direction with ministry strategic priorities before proceeding to Stage 2.

Workshop 2 - Stage 2 Results (13_Zapis_03_NAP_Zapis_workshop-2_081024.pdf)

Date: October 8, 2024 | Location: Prague

Second public workshop presenting Stage 2 architectural specifications. Detailed functional, organizational, and information architectures for NAP and NB. Discussed data holder registration process, metadata requirements, and quality control mechanisms. Addressed stakeholder questions on implementation implications and timeline. Refined technical specifications based on data holder community feedback.

Ministry Consultation 2 - Stage 2 Review (14_Zapis_04_MDCR_181024.pdf)

Date: October 18, 2024 | Location: Prague

Ministry review of Stage 2 architectural deliverables. Validated functional requirements, organizational model, and information architecture specifications. Discussed NB function placement within ministry structure. Addressed integration with existing national transport information systems. Confirmed approach before proceeding to implementation planning in Stage 3.

Workshop 3 - Stage 3 Results (15_Zapis_05_NAP_Zapis_workshop-3_031224.pdf)

Date: December 3, 2024 | Format: Online

Final public workshop presenting complete study results including implementation action plan. Detailed phased timeline, resource requirements, and role definitions. Discussed data holder readiness requirements and support mechanisms. Addressed long-term operational model and sustainability. Online format enabled broader participation from regional stakeholders.

Ministry Consultation 3 - Final Review (16_Zapis_06_NAP_Zapis_MDCR_041224.pdf)

Date: December 4, 2024 | Location: Prague

Final ministry consultation reviewing complete study package. Discussed implementation roadmap feasibility, budget estimates, and legislative action requirements. Aligned on next steps for EU directive transposition and NAP development project initiation. Confirmed ministry commitment to recommended model and timeline. Established basis for follow-on implementation activities.

Stakeholder Engagement Summary

The six documented meetings demonstrate:

- **Methodological rigor:** Parallel public and ministry consultation tracks
- **Iterative validation:** Stage-by-stage review and refinement
- **Broad participation:** Transport operators, infrastructure managers, technology providers, ministry departments
- **Transparency:** Public workshops ensure sector-wide awareness and buy-in
- **Governance alignment:** Regular ministry consultation ensures policy alignment
- **Progressive disclosure:** Complexity introduced gradually across three stages

This consultation process establishes credibility and demonstrates that study recommendations reflect consensus among Czech transport sector stakeholders.

Supplementary Diagram Documents

Three standalone diagram files provide quick visual reference for key architectural elements, suitable for presentations or high-level briefings.

NAP-KH Interconnection Diagram (NAP_KH_vzajemné_propojení_300924.pdf)

Contextual data flow diagram illustrating the NAP ecosystem. Shows data exchange relationships between Czech NAP, data holders/providers (road infrastructure, travel information), aggregators (NDIC, CIS JŘ, regional DICs), other EU country NAPs, National Body, National Open Data Catalogue, information systems (ISVS, ISVD), and end users. Arrows indicate data flow directions. Multiple instances of similar entities (e.g., multiple EU NAPs) illustrate network nature of NAP interconnections. Essential for understanding NAP's role within broader Czech and European transport information landscape.

NAP-NB High-Level Functional Architecture (NAP_NB_highlevel_funkce_300924.pdf)

Two-page functional decomposition diagram set:

- **Page 1:** NAP functional architecture organizing functions into four sets (FA: Data Collection, FB: Data Processing, FC: Data Presentation, FD: Support Functions)
- **Page 2:** National Body functional architecture with parallel four-set organization (NB FA: Data Collection, NB FB: Data Processing, NB FC: Data Presentation, NB FD: Support Functions)

Provides overview of all functional requirements without detailed descriptions. Identical diagrams appear in Annexes 7 and 8 with accompanying detailed specifications.

NAP-NB Organizational Architecture (NAP_NB_organizacni-achitektura_300924.pdf)

Two-page institutional relationship diagram set showing:

- **Key Actors:** NAP operator, NB, data holders, aggregators, users, EU NAPs, regulatory frameworks, standardization bodies
- **Numbered Relationships (1-14):** Specific interaction types (supervision, data provision, regulatory compliance, standardization)
- **Governance Structure:** How EU and Czech regulatory frameworks apply to actors

Identical diagrams appear in Annex 9 with detailed relationship descriptions. Suitable for explaining governance model to non-technical stakeholders.

These three diagram files serve as executive-level visual summaries extracting key diagrams from detailed technical annexes for quick reference and presentation purposes.

Key Terminology and Abbreviations

Czech Transport Sector Terms

- **NAP** - National Access Point (vnitrostátní přístupové místo, sometimes also národní přístupové místo/bod): Central system for publishing transport data metadata
- **NB** - National Body (Vnitrostátní subjekt pro posouzení shody): Authority supervising NAP conformity assessment
- **ŘSD** - Road and Motorway Directorate of the Czech Republic (Ředitelství silnic a dálnic s.p.): Proposed NAP operator
- **MDCR** - Ministry of Transport (Ministerstvo dopravy ČR): Overseeing authority
- **KH** - Key Subjects (Klíčové subjekty): Stakeholder ecosystem around NAP
- **DIC** - Transport Information Center (Dopravní informační centrum)
- **NDIC** - National Transport Information Center (Národní dopravní informační centrum)
- **CIS JŘ** - Central Information System of Schedule Data (Centrální informační systém jízdních řádů)
- **TP 172** - Technical Standard 172: Czech national standard for transport information systems

Data and Systems

- **PK** - Road (Pozemní komunikace)
- **VHD** - Public Passenger Transport (Veřejná hromadná doprava)
- **ISVS** - Public Administration Information System (Informační systém veřejné správy)
- **NKOD** - National Open Data Catalogue (Národní katalog otevřených dat)
- **mobilityDCAT-AP** - Mobility Data Catalogue Application Profile: EU metadata standard
- **agregátor** - Data aggregator: Entity consolidating data from multiple holders

EU Regulatory Framework

- **ITS Directive** - Directive 2010/40/EU on the framework for the deployment of Intelligent Transport Systems (as amended by Directive (EU) 2023/2661)
- **Commission Delegated Regulation (EU) 2017/1926** - Supplementing ITS Directive on provision of EU-wide multimodal travel information services (as amended by Delegated Regulation (EU) 2024/490)
- **NAPCORE** - EU project supporting NAP implementation coordination

Architecture Terminology

- **Functional Architecture** - System functions organized by purpose
- **Organizational Architecture** - Institutional actors and relationships
- **Information Architecture** - Data exchanges and formats
- **Metadata Catalogue** - Searchable registry of available datasets
- **Hybrid NAP** - Combines metadata repository with optional data hosting
- **Conformity Assessment** - Verification that data meets EU specifications

Conclusion

This document set represents comprehensive feasibility study work demonstrating:

1. **Thorough Analysis:** 140+ page main study plus 12 detailed technical annexes
2. **Rigorous Methodology:** Three-stage approach with iterative stakeholder validation
3. **International Benchmarking:** Best practice analysis from multiple EU countries
4. **Complete Specifications:** Functional, organizational, and information architecture details
5. **Stakeholder Engagement:** 6 documented consultation sessions across 6 months
6. **Implementation Roadmap:** Phased approach with resource estimates and timeline
7. **Regulatory Compliance:** Full alignment with ITS Directive 2010/40/EU (as amended) and Commission Delegated Regulation (EU) 2017/1926 (as amended)
8. **Professional Documentation:** Version-controlled, well-structured, extensively reviewed

The study establishes a solid foundation for Czech NAP implementation, demonstrating that project funds were invested in serious, comprehensive technical and strategic planning work. The deliverable meets EU project quality standards and provides ŘSD with actionable specifications for proceeding to NAP system development and deployment.

The three supplementary diagram files and extensive meeting documentation further evidence the project's commitment to transparency, stakeholder communication, and practical usability of study outputs.