

**1. Expected time schedule of TMS Control Level of HSL Procurement Milestones**

<b>Mile-stone</b>	<b>Name</b>	<b>Description</b>	<b>Expected date</b>
<b>Mile-stone 1</b>	<b>TMS preparation, design and testing</b>	Development of a comprehensive and detailed TMS system design, including customisations and finalisation of software components according to specific project requirements. Software testing in a simulated environment to ensure functionality and reliability.	24 months from the signing of the contract
<b>Mile-stone 2</b>	<b>Construction of training hall CDP Prague</b>	Setup and equipment of a training hall in CDP Prague for testing and simulation of TMS operation. Software and hardware testing. Stability assessment with response.	36 months from the signing of the contract
<b>Mile-stone 3</b>	<b>Construction of traffic control room at CDP Prague and CDP Přerov + Integration and testing</b>	Installation and configuration of TMS in the halls of CDP Prague and CDP Přerov. This includes testing of integration with existing systems and functionality under real-world conditions.	48 months from the signing of the contract
<b>Mile-stone 4</b>	<b>Pilot operation, official commissioning and staff training</b>	Putting the TMS into pilot operation on the first HSL section. Performance monitoring, fine-tuning and system optimisation based on real data. Official launch of TMS. Includes training of personnel to operate the system during regular operation and maintenance.	1 January 2033 (assumption)
<b>Mile-stone 5</b>	<b>Start of regular maintenance</b>	Start of regular maintenance of the equipment after successful commissioning. Maintenance must include regular checks, software and hardware updates and ensuring of continued operation of the system.	As of the HSL operation launch (assumption: 1 January 2034)
<b>Mile-stone 6</b>	<b>Addition of halls during the commissioning of further HSL phases</b>	Supplementing the equipment of the halls and workplaces at CDP Přerov and CDP Prague with the commissioning of each new HSL phase.	During the implementation of other phases
<b>Mile-stone 7</b>	<b>Extension of regular maintenance</b>	Extension of the periodic maintenance programme to include new equipment and sites added during the implementation of each next HSL phase.	After commissioning of the other phases

**Milestone 1** – handover or implementation within 24 months of the contract effect date of:

- inventory taking, analysis of all relevant systems, including security equipment, communication equipment and power systems that will be integrated into the TMS system;
- development of functional specifications – defining all required functions of TMS, including operating modes, failure messages, interfaces with other systems and specifications of controller's workplace and the training hall workplace;
- development of detailed design and specifications of the training hall including layout, ergonomic requirements, equipment, hardware and software requirements for testing and simulation of TMS operation;
- elaboration of the design and specification of controller's workplace (in CDP Přeřov and CDP Praha), including ergonomics, acoustic study, location of equipment, cabling and data communication for the actual TMS operation;
- defining the hardware and software architecture of the TMS, including the database, user interface and integration with other systems (including EULYNX);
- selection of appropriate communication and security systems to be integrated into the TMS;
- detailed design of controller's workplaces and the training workplace (CDP Přeřov and CDP Praha), including equipment layout and organisation, cabling and ergonomics for efficient TMS operation;
- development of a detailed plan for the implementation, testing, simulation and connection of TMS systems, including timelines and test scenarios for the training hall.

**Milestone 2** – handover or implementation within 36 months of the contract effect date of:

- creation and equipping of a fully functional training room at CDP Prague, which will be a true copy of a real controller's workplace, including all functionalities, interfaces and visual features;
- realistic simulations of operational situations and provision of optimal conditions for the training of traffic controllers;
- supply of equipment – supply of necessary hardware and software, including servers, workstations, network infrastructure, backup resources in accordance with the design and specifications;
- installation and configuration of all equipment in the training hall, including interfacing with other systems and configuration for simulations of TMS operational scenarios;
- integration of TMS hardware and software components into the training hall, ensuring the functionality and connectivity of all system elements;
- testing and debugging of the entire system in the training hall (reliability, security, performance and associated latency tests);
- simulating operation and performing simulations of real operational scenarios to verify the correct functionality of the TMS according to predefined rules;
- submission of a report on the readiness of the training hall for the conduct of simulations of operating conditions, confirming that all components of the training hall are ready for operation.

**Milestone 3** – handover or implementation **within 48 months of the contract effect date** of:

- comprehensive construction and commissioning of the equipment of halls at CDP Přeřov and CDP Prague;

- installation of necessary equipment, system setup, integration and interfacing with existing conventional systems;
- thorough testing of the new TMS in the halls before its deployment into live operation;
- training of Správa železnic instructors in the system.

**Milestone 4** – handover or implementation as of 1 January 2033 of:

- putting the TMS into pilot operation on the first HSL section;
- training of personnel (traffic controllers) in system operation;
- performance monitoring, latency, fine-tuning and system optimisation based on real data;
- testing of non-standard system conditions. Unauthorised interference with the operating system, switching of sources, power failures, individual technology failures, switching to the backup server, switching to the backup workstation, etc.;
- official commissioning of the TMS.

**Milestone 5** – handover or implementation as the date of the HSL operation launch (assumption: 1 January 2034) of:

- maintenance of the hall equipment to be provided by the Supplier in accordance with the Appendix, which will include a detailed maintenance schedule within this contract.

**The following Milestones 6 and 7 will be activated during the implementation of the next phases of HSL sections. Both of these milestones will be activated sequentially for each section being put into operation.**

**Milestone 6** – handover or implementation of:

- software modification and testing;
- physical and technological expansion of the equipment of the control rooms in CDP Přerov and CDP Praha.

**Milestone 7** – handover or implementation of:

- regular maintenance of all new installed sections of the system in accordance with the maintenance plan.