



HITEC

LUXEMBOURG

TRAFFIC INFORMATION MANAGEMENT INFRASTRUCTURE PROJECT

CITA has been realized on behalf of Ponts et Chaussées, the Luxembourg government road authorities. The project was to put in place a highway traffic control and information management system allowing monitoring the entire highway network throughout Luxembourg.

The technical concept was developed by a consortium made up by HITEC Luxembourg in cooperation with Graf & Reber Engineering (Geneva, CH). A dedicated supervision system was installed in different project phases. It consists of:

- Control center - Technical rooms
- Optical redundant network
- Real-time traffic and meteorological data collection
- Cameras for surveillance and automatic incident detection for safety
- Control-Command and HMI for traffic operators
- Gantries and variable message signs (VMS) for traffic regulation

The developed infrastructure concept is in use since 2000. HITEC Luxembourg is since then in charge of evaluating technologies to keep CITA a state-of-the-art infrastructure.

KEY FEATURES

Client:

Ministère du Développement Durable et des infrastructures - Administration des Ponts et Chaussées, Luxembourg.

Contractor:

HITEC Luxembourg S.A.

Role of HITEC Luxembourg:

Assistance à Maîtrise d'Ouvrage et Maîtrise d'Oeuvre

PHASE 1: ELABORATION OF CONTRACT SPECIFICATIONS & PROJECT DOCUMENTS**Objectives**

Creation and Compilation of

- Call for tender for the traffic management infrastructure
- Planning and project schedule

TASKS**Project Definition**

- System analysis
- Definition of essential technical data
- Detailed concept
- Detailed structure for system and installation
- Detailed description of data flows and quantity of data
- Definition of interfaces
- Clarification of security and energy issues
- Wiring principles
- Determination of volumes and location of installations
- Coordination of installation tasks
- Representation of project

Budget estimation**Elaboration of RFP documents and contract specification**

- General conditions and general project description
- Description of installation tasks
- Specific technical conditions
- Technical summary
- Financial summary
- Drawings and schemes

Analysis and evaluation of tenders**Proposal of supplier to client****Project Planning and schedule****PHASE 2: PROJECT CONTROLLING & TECHNICAL MANAGEMENT****Objectives**

Supplier contract management

Creation of work description

Supervision of task realization according to contractual definitions

Qualitative and technical control of installation and final acceptance

TASKS**Work description**

Follow up of specified contractual aspects (models, functions, data, interfaces, constraints, dimensions, calculations, etc.)

Validation and approval of project documents, schedules and drawings

Project status controlling (financial, technical, progress, quality of task accomplishment)**Planning, supervision and implementation of acceptance tests****Project Management and Quality Management & Assurance**

Site installations

Deliverables

Invoices

Verification and validation

Standard and statement of work conformity**Project Review & Completion**

Final project costs analysis

Validation of project AS BUILT documentation and accomplished tasks

Enforcement of guarantees and adjustments

Production of maintenance manuals

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SUBSYSTEM MANAGEMENT

- Network management
- Vehicle counting
- Incident detection
- Video monitoring
- Weather stations
- Variable message displays
- Tunnel supervision
- Front-end sensors and actuators
- Data streaming
- Centralized data treatment
- Supervisory environment
- Vehicle identification
- Ramp metering
- Height detection
- Traffic safety systems
- Communication, navigation and survey

FUNCTIONALITIES & FEATURES

Traffic supervision	Data acquisition for traffic control & regulation Characterisation of events Coordination of interventions
Road side installation management	Equipment status control Pre-emptive and corrective maintenance Spare parts stock management
Monitoring of changes in traffic circulation	Estimation of changes in traffic circulation, perturbation time and delays Weather prediction
Infrastructure management procedures	Resources management for interventions Selection of operating modes Preparation of information Proposal of emergency plans Automatic intervention calls and alarms
Interface management with external systems, users and partners	Traffic data transfer Forwarding of alarms Synoptic communication Video and data transmission Management of human resources for stand-by service Remote access for maintenance interventions
Training of operators	Simulations of incidents, system functions and technical incidents during operation
Maintenance management	Equipments and stock Energy consumption Intervention and work loads Human Resources Management incl. intervention and work loads

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