LVNL

Air traffic in safe hands

Market consultation for an Incident Investigation System – Air Traffic Control the Netherlands (LVNL)

TN 623055

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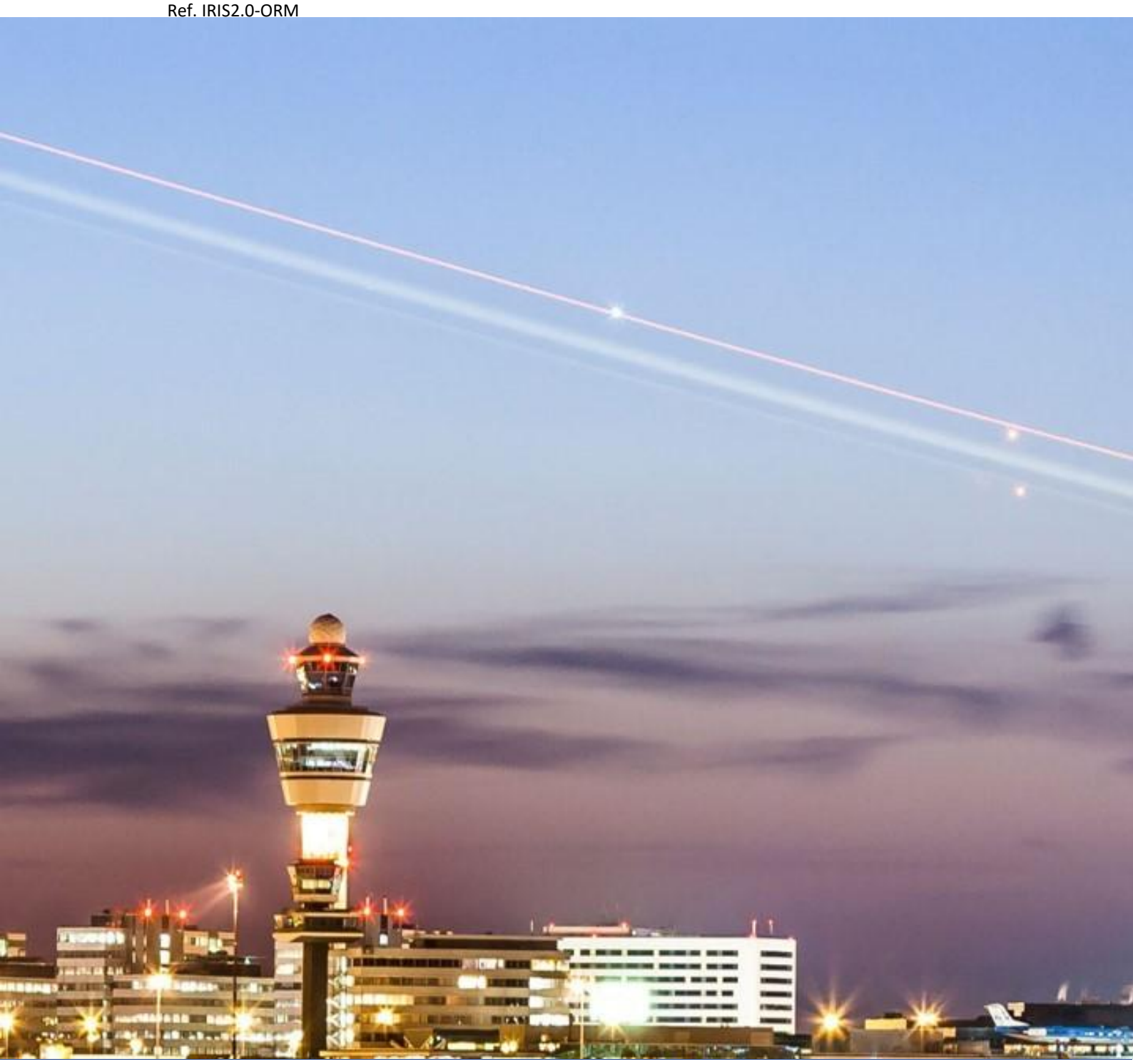


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1. Background and Rationale for the Market Consultation

LVNL intends to launch a tender for the replacement, management, maintenance, and further development of LVNL's incident investigation system.
Through this market consultation, LVNL invites interested parties to provide relevant information.
Please note: Participation in this market consultation is entirely voluntary and does not confer any right to be awarded the contract.

Purpose of this market consultation:
To gain insight into the solutions and capabilities available in the market. As part of this consultation, LVNL wishes to explore, at a minimum, the following solution approaches:

1. **Implementation of a completely new incident investigation system** that meets LVNL's requirements and wishes.
2. **Further development and customization of an off-the-shelf system**, whereby the knowledge, functionality, and data from the current system are migrated to the new system and adapted to meet LVNL's specific requirements.
3. **Takeover and further development of the existing system**, including the implementation of additional functionality and enhancements in line with LVNL's requirements and wishes.

In scope

- Development:
    - Development of test and production environments for the application.
    - Further development of the system upon request after the initial delivery (to be defined in more detail at a later stage).

- Management and maintenance:
    - Preventive, proactive, and corrective maintenance and support.
    - Rapid response, availability, and deployment of patches in the event of incidents, defects, or system outages.
    - Functional consultancy and advisory services.

- Migration:
    - Migration of existing data from the current system to the new system

2. Information

LVNL intends to submit the following draft scope of work to the market and to further elaborate and refine it based on the responses received to the questions set out in Chapter 3.

2.1 Scope of the assignment

The assignment concerns the provision of a (new) incident investigation system for LVNL.
Each year, LVNL records all air traffic management-related incident reports in an incident investigation system. Depending on the nature of the occurrence and the information obtained, the level of investigation is determined. This may range from simple registration for strategic analysis and trend monitoring purposes to more comprehensive investigations.
Incident investigation plays a central role within LVNL and serves as an essential foundation for various elements of LVNL's Safety Management System (SMS). Consequently, the replacement of the current incident investigation system should not be viewed as a standalone project, but rather as part of the broader framework in which incident investigation operates and the strategic value it provides to LVNL.
In addition, LVNL provides incident-related data to external stakeholders, including government authorities and airports. Therefore, the new system must support efficient data management, reporting, and information exchange with both internal and external stakeholders while ensuring data quality, security, and regulatory compliance.

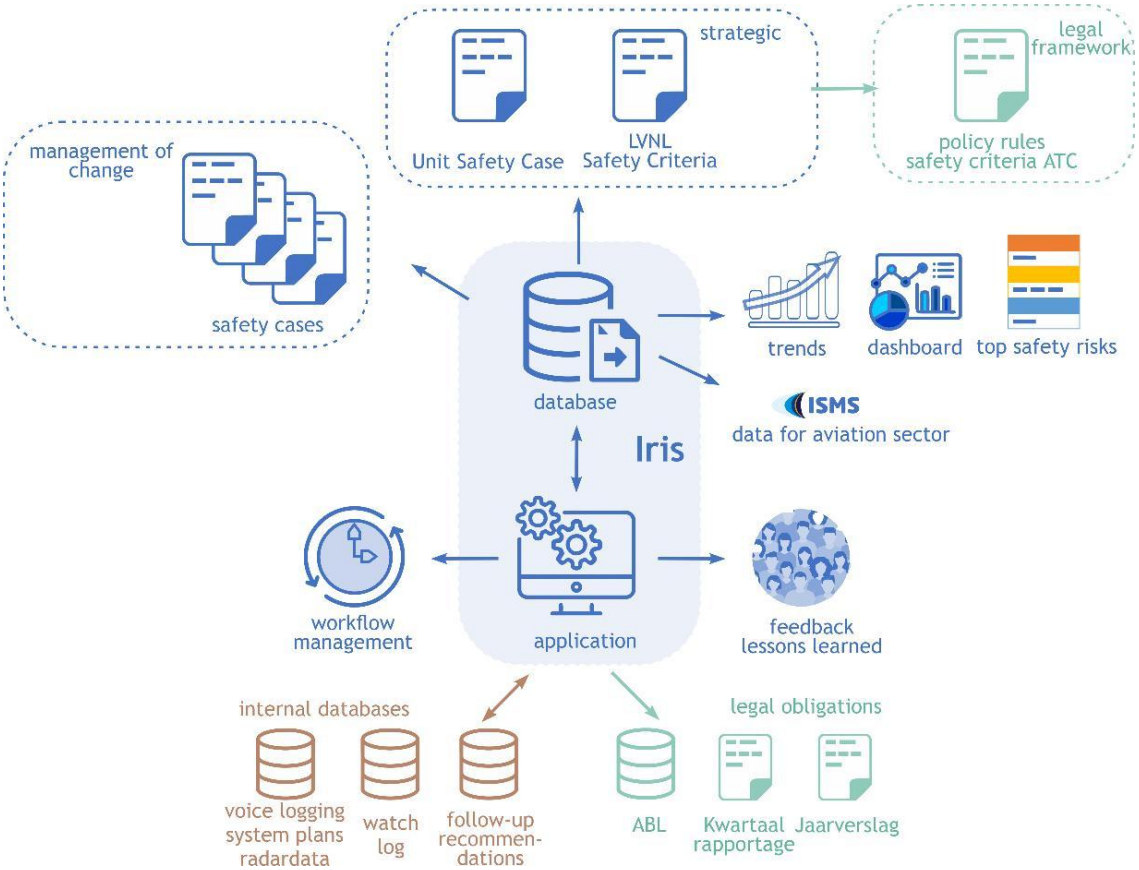


Figure 1: Interaction between the incident investigation system, various data sources, and the resulting outputs and deliverables.

Incident Investigation Process Workflow

The incident investigation system must be capable of both collecting information and generating outputs.

In addition, the incident investigation system shall provide workflow management functionality that facilitates, monitors, and controls the progress of investigations throughout the various stages of the process, as well as the input provided by the different roles involved.

1. An incident is reported.
2. Relevant data associated with the incident is collected, to the greatest extent possible, automatically from multiple data sources.
    a) The system shall automatically correlate data from different sources, for example based on a call sign.
3. A Safety Expert analyses the incident, documents the investigation findings, and assigns the appropriate classification. Additional files may be attached to the investigation record (e.g., a PDF containing an aerodrome chart).
4. The incident enters the approval workflow, during which the investigation data is frozen to ensure data integrity and traceability.
5. Following approval, reports, analyses, and management dashboards can be generated.
6. Safety recommendations may be developed across multiple incidents and stored within the system for tracking and follow-up purposes.
7. Feedback can be generated and provided to reporters.
8. Incident data can be exported and shared with external stakeholders and regulatory bodies.

In addition, the incident investigation system shall provide the capability to register safety recommendations and monitor their implementation status through integration with data from the recommendation follow-up process.

The system shall also provide functionality for visualising statistics and trends based on the recorded information, enabling investigators to identify emerging risks and monitor safety trends.

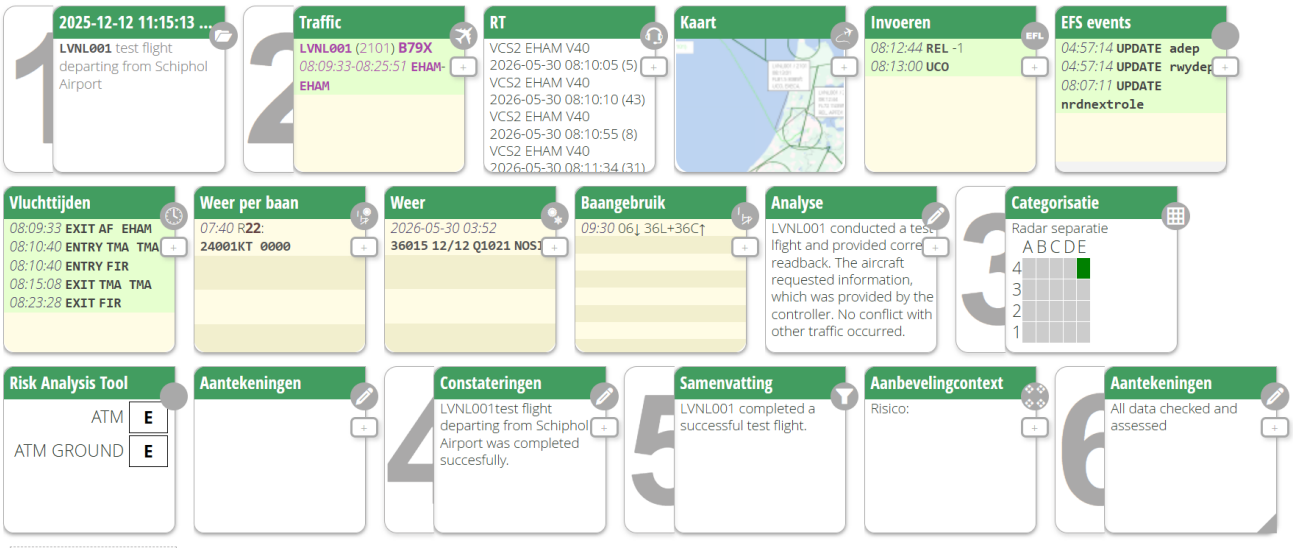


Figure 2: Illustrative example of a fictitious incident investigation

Technical Requirements for the Incident Investigation System

1. The system shall be capable of automatically collecting, accessing, and centralising relevant data from various source applications and (LVNL-specific) databases for investigation purposes.
2. The system shall be capable of graphically visualising investigation data, including at a minimum:
    a. radar tracks displayed on a geographical map, including separation distances between aircraft;
    b. event timelines;
    c. radiotelephony recordings and other relevant media files.
3. The system shall provide a minimum of 1 TB of storage capacity for investigation records and historical investigation data.
4. The system shall be accessible from a Windows 11 workstation.
5. The system shall comply with LVNL's applicable information security requirements, including access control, audit logging, and encryption of data at rest and in transit.
6. The system shall support future enhancements and extensibility, including the possibility of integrating Artificial Intelligence (AI) capabilities at a later stage.

Functional requirements

1. The system shall support investigators in analysing incident data originating from multiple data sources.
2. The system shall enable the creation, management, and archiving of investigation records, including the recording of investigation findings, analyses, and supporting evidence.
3. The system shall be capable of generating reports based on investigation data.
4. The system shall support the export of data and reports to commonly used file formats, including PDF, Microsoft Word, and Microsoft Excel.
5. The system shall provide search and filtering capabilities for accessing investigation records, events, and investigation data.
6. The user interface shall support the investigation process through a clear and intuitive presentation of records, data, analyses, and reports.
7. The incident investigation system shall provide approximately 50 users with simple and efficient access to underlying data within the application through transparent integration with LVNL's back-end databases.
    a. The system shall support role-based access control, allowing different levels of user permissions to be assigned.
    b. The system shall allow multiple users to work simultaneously within the same investigation record.

Constraints

1. The system shall be capable of storing historical investigation data for the defined retention period and keeping it accessible for consultation throughout that period.
2. The system shall be capable of preserving investigation data and rendering it immutable for the purposes of investigations, audits, and potential legal proceedings.
3. The system shall comply with all applicable privacy and data protection legislation, including the General Data Protection Regulation (GDPR).
4. The system shall provide appropriate information security measures, including access control, audit logging, and the protection of data both at rest and in transit.
5. The system may store data in a cloud environment; however, all data must remain both legally and physically hosted within the European Economic Area (EEA).

3. Questions and Discussion points

1. To what extent are the requested functionalities already provided by your solution?
2. To what extent is your solution a standard product, a customised solution, or a newly developed product?
3. In your opinion, which functionalities are commonly available as standard market offerings, which functionalities are differentiating, and which functionalities are essential in a future-proof solution?
4. Do you have experience implementing similar solutions? If so, please indicate which solutions and for which organisations?
5. What experience do you have in developing (custom) interfaces and integrations with other systems?
6. Would you be willing to provide a customer reference?
7. Please briefly describe how you envisage the migration from the current solution to your proposed solution.
8. What information, considerations, and prerequisites would you require to prepare a robust proposal, including an indicative implementation approach, timeline and cost estimate?
9. Can you provide a high-level estimate of the project timeline and overall implementation duration?
10. Can you provide a high-level cost estimate for the proposed solution and services?
11. What challenges do you foresee in the execution of this assignment? How could the bidder and/or LVNL mitigate these challenges?
12. Based on your experience and expertise, are there any additional recommendations you would make to help ensure a successful procurement process?
13. What aspects of this assignment would make it particularly attractive to your organisation?
14. What support services can you provide for your proposed solution?
15. Cybersecurity and Privacy: The data must be hosted within the European Economic Area (EEA). Are you able to meet this requirement?
16. Please describe how coordination between the various disciplines and stakeholders should be organised during project execution to ensure efficient delivery. How would you approach and structure this collaboration?
17. Please indicate whether your organisation would be interested in submitting a proposal should LVNL decide to initiate a formal procurement procedure for this requirement.
18. Which solution approaches do you consider most suitable for our needs, and why?
19. Which solution approach do you most commonly see implemented within comparable organisations?
20. Which innovative or AI-enabled functionalities are currently available within your solution, and which of these are already being used by existing customers?

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