



Brussels, 12 July 2006

M/390 EN

**MANDATE TO CEN/CENELEC/ETSI FOR THE DEVELOPMENT OF
EUROPEAN STANDARDS (FIRST SET OF COMMUNITY SPECIFICATIONS)
FOR INTEROPERABILITY OF THE EUROPEAN AIR TRAFFIC
MANAGEMENT NETWORK (EATMN)**

1. MOTIVATION

The Regulation (EC) N° 549/2004 of the European Parliament and of the Council laying down the framework for the creation of the Single European Sky (SES)¹ was adopted by the European Parliament on 29 January 2004 and by the Council on 2 February 2004. This Regulation called “the framework Regulation” was published on 31 March 2004 and entered into force on the twentieth day following its publication.

The framework Regulation establishes a harmonised regulatory framework for the creation of the SES in conjunction with:

- Regulation (EC) N° 550/2004 of the European Parliament and of the Council on the provision of air navigation services in the SES (“the service provision Regulation”)²;
- Regulation (EC) N° 551/2004 of the European Parliament and of the Council on the organisation and use of the airspace in the SES (“the airspace Regulation”)³;
- Regulation (EC) N° 552/2004 of the European Parliament and of the Council on the interoperability of the European Air Traffic network (“the interoperability Regulation”)⁴.

¹ OJ L 96 of 31.3.2004, p. 1.

² OJ L 96 of 31.3.2004, p. 20.

³ OJ L 96 of 31.3.2004, p. 10.

⁴ OJ L 96 of 31.3.2004, p. 26.

This mandate is related to the achievement of the objectives of the interoperability Regulation through the adoption of the priority 1 set of Community specifications (CS) for the interoperability of the European Air Traffic Management network (EATMN).

Article 4.1.a) of the interoperability Regulation lays down that Community specifications may be European Standards for systems or constituents, together with the relevant procedures, drawn up by the European standardisation bodies in cooperation with EUROCAE⁵, on a mandate from the Commission in accordance with Article 6. 4 of Directive 98/34/EC of the European Parliament and of the Council of 22 June 1998 laying down a procedure for the provision of information in the field of technical standards and regulations and pursuant to the general guidelines on cooperation between the Commission and the standardisation bodies signed on 13 November 1984.

Article 4.2 of the interoperability Regulation lays down that compliance with the essential requirements and/or implementing rules for interoperability shall be presumed for systems, together with the associated procedures, or constituents that meet the relevant Community specifications and whose reference numbers have been published in the Official Journal of the European Union.

The standardisation mandate M/354 (published in July 2004), that had been accepted by both CEN and ETSI, resulted in a standardisation programming document (STF 293, ETSI TR 102 395-1, V1.1.1; December 2005) which is an inventory of existing standards and specifications in progress for EATMN. The standardisation programming document will be used as guidance or reference material for the European standards (Community specifications) development within their different priority groups.

2. DESCRIPTION OF THE MANDATED WORK

CEN/CENELEC/ETSI are asked to produce European standards that satisfy the essential requirements and/or implementing rules of the interoperability Regulation for systems, together with the relevant procedures, or constituents for the following agreed four priority 1 Community specifications:

2.1. Software Assurance Levels (SWAL)

The Community specification on Software Assurance Levels (SWAL) is intended to apply to software components that are part of an Air Navigation System (ANS), focusing only on the “ground” segment of ANS and provides a reference against which stakeholders can assess their own practices for software specification, design, development, operation, maintenance, evolution and decommissioning.

Recommendations on the major processes required to provide assurance for software in Air Navigation Systems may include:

- An allocation process for Software Assurance Levels (SWAL);

⁵ European Organisation for Civil Aviation Equipment

- A SWAL grading policy, i.e. the identification of a policy and its rationale to justify and substantiate increasing stringency of the objectives to be met per SWAL;
- A list of objectives to be satisfied per SWAL;
- The identification of appropriate techniques to achieve these objectives.

The scope of the Community specification will cover the overall lifecycle of software within an Air Navigation System and provide an assessment of the activities for the development, operation, maintenance and evolution of Air Navigation System software components.

Deliverables

- Development of European standards for Air Navigation System software
- Development of a standardization deliverable for software assurance based on the existing Eurocontrol⁶ documentation ‘Recommendations for ANS SW’

Timelines

The European standard shall be available at the latest by the end of 2008.

2.2 Airport - Collaborative Decision Making (A-CDM)

Airport - Collaborative Decision Making (A-CDM) is a concept which aims at improving Air Traffic Flow and Capacity Management (ATFCM) at airports by reducing delays, improving the predictability of events and optimizing the utilization of resources through a structured data exchange between the various actors. A-CDM allows an Airport CDM partner to make the right decisions in collaboration with other Airport CDM partners, knowing their preferences and constraints and the actual and predicted situation. The decision making by the Airport CDM partners is totally dependent upon the sharing of accurate and timely information and upon adapted procedures, mechanisms and tools. A-CDM can be implemented using basically simple technology such as a maintained spreadsheet commonly available to all actors, or a federation of information coming from advanced applications such as Arrival Management (AMAN), Departure Management (DMAN), Surface Management (SMAN), etc. CDM could be seen as a federation of information and their associated applications of varying sophistication. It is therefore not a “black box” but is in essence a “system of systems” tailored to meet the needs specific to an individual airport.

⁶ European Organisation for the Safety of Air Navigation

Deliverables

Development of European standards for CDM interoperability up to the level of detail required for the implementation, including:

- A functional architecture identifying components and associated interfaces (based on the architectural requirements of the Eurocontrol Airport CDM Implementation Manual);
- Detailed specifications for interfaces between components of the CDM system;
- Test and validation procedures.

Development of a standardization deliverable for the implementation of the standard.

Timelines

The European standard shall be available at the latest by the end of 2008.

2.3 Advanced Surface Movement Guidance and Control Systems A-SMGCS (level 1 & level 2)

Advanced Surface Movement Guidance and Control Systems (A-SMGCS) are systems providing routing, guidance, surveillance and control to aircraft and affected vehicles or airport surface in order to improve the current movement rate under all local weather conditions within the Aerodrome Visibility Operational Level (AVOL) whilst maintaining the required level of safety.

Level 1 A-SMGCS provides for the necessary surveillance and display systems to permit comprehensive situation awareness. This level recognizes that aerodromes which plan to develop an A-SMGCS may have existing investments in systems such as Surface Movement Radar. They will have identified the need to add further surveillance capability to their system to include identification, and improved coverage and accuracy.

Level 2 A-SMGCS introduces automated monitoring and alerting of the situation, made possible by comprehensive automated surveillance. It is likely to include runway incursion monitoring and other forms of incident prediction and alert early in its evolution.

A-SMGCS consists of many elements which, when integrated, are designed to meet the specific operational requirements of an aerodrome. In order to cover a wide range of requirements any element design should comply with a modularity concept which can be tailored to meet the needs specific to an individual airport.

Deliverables

Development of European standards for Advanced Surface Movement Guidance and Control Systems (A-SMGCS) up to the level of detail required for the implementation, including:

- SMGCS Minimum Aviation System Performance Standards (MASPS) including a functional architecture (Level 1 and 2);
- Minimum Operational Performance Specifications (MOPS) for the technical enablers (e.g. Multilateration Systems, Surface Movement Radar)
- Detailed guidelines on data fusion;
- System interface definition document;
- Test and validation procedures.

Development of a standardization deliverable for the implementation of the standard.

Timelines

The European standard shall be available at the latest by the end of 2008.

2.4 Interoperability of Flight Data Processing (Air Traffic Control - Air Traffic Control)

Flight Data Processing (FDP) interoperability is a key element to facilitate and harmonize Flight Data systems data exchanges and critical to the functioning of a harmonized European Air Traffic Management system. FDP Interoperability can be achieved by the use of different techniques appropriate to the operational need, e.g. message exchange, replication mechanisms and data sharing. The architectural framework in which the different actors have to inter-operate is of major importance to define the context in which the Standards have to be developed. For a systematic solution to certain flight data inconsistency problems currently existing in Europe, the definition of a Flight Object (FO) is required to become a conceptual single point of reference for flight data to be used by stakeholder systems. Interoperability of FDP (ATC-ATC) includes coordination and transfer; correlation and surveillance, facilitation of optimum routes; Medium Term Conflict Detection (MTCD) and resolutions; recovery support; ground-ground situation awareness and traffic management.

Deliverables

Development of European standards for Flight Data Processing interoperability, including:

- the Architectural Framework;
- the Flight Object Interoperability Proposed Standard (FOIPS);

- the Data Model and Access Services;
- and the Standard Flight Data Model.

Timelines

The European standard shall be available at the latest by the end of 2009.

CEN/CENELEC/ETSI are asked to ensure the compliance of the standard with the general and specific essential requirements laid down in Annex II, Parts A & B of the Interoperability Regulation N° 552/2004 and with the relevant implementing rules.

European standards to be developed under this mandate must be consistent with ICAO⁷ standards and European standards should include mechanisms to ensure an efficient process of update which enables ongoing consistency.

3. BODIES TO BE ASSOCIATED

The elaboration of the standard must be undertaken in cooperation with EUROCAE, particularly taking into account the technical expertise of EUROCAE on equipments (systems and constituents) for air traffic management.

This cooperation should also include the participation of relevant interested groups and organisations (e.g. Eurocontrol), international and European level associations and military organisations.

In the elaboration of the standard any relevant material should be taken into account, in particular ICAO SARPS (Standards and Recommended Practices) and Eurocontrol specifications or other available documents.

4. EXECUTION OF THE MANDATE

The European Standardisation Organisation mainly in charge of this mandate shall, after consultation of EUROCAE and other European Standardisation Organisations, inform the Commission of the arrangements to be adopted for the execution of the work within three months of acceptance of this mandate. Such information will include a detailed list of standards to be developed and it will cover also co-operation arrangements with EUROCAE and other involved parties.

CEN/CENELEC/ETSI will forward to the Commission regular reports on the progress of the work at regular intervals of 12 months.

⁷ International Civil Aviation Organisation

CEN/CENELEC/ETSI will forward to the Commission titles of the standards in the official languages of the European Union, along with a copy of the standards in the working languages of CEN/CENELEC/ETSI.

The standstill period referred to in Article 7 of Directive 98/34/EC⁸ of 22 June 1998 will commence on acceptance of this standardisation mandate by CEN/CENELEC/ETSI.

⁸ OJ L 204 of 21.07.98, p. 37, as amended by Directive 98/48/EC, OJ L 217 of 5.08.98, p.18.