SLOVENSKI STANDARD
SIST EN 303 213-1 V1.3.1:2012

01-junij-2012

Napredni sistem za vodenje in nadzor gibanja po zemlji (A-SMGCS) - 1. del: Specifikacija Skupnosti za izvajanje zahtev Uredbe EC 552/2004 o medobratovalnosti na enotnem evropskem nebu za A-SMGSC, 1. raven, vključno z zunanjimi vmesniki

Advanced Surface Movement Guidance and Control System (A-SMGCS) - Part 1: Community Specification for application under the Single European Sky Interoperability Regulation EC 552/2004 for A-SMGCS Level 1 including external interfaces

Ta slovenski standard je istoveten z: **EN 303 213-1 Version 1.3.1**

ICS:

03.220.50	Zračni transport	Air transport
49.090	Oprema in instrumenti v zračnih in vesoljskih plovilih	On-board equipment and instruments

SIST EN 303 213-1 V1.3.1:2012 **en**

ETSI EN 303 213-1 V1.3.1 (2012-04)

Advanced Surface Movement Guidance and Control System (A-SMGCS); Part 1: Community Specification for application under the Single European Sky Interoperability Regulation EC 552/2004 for A-SMGCS Level 1 including external interfaces

Reference
REN/AERO-00011

Keywords
aeronautical, air traffic management,
interoperability

ETSI

650 Route des Lucioles
F-06921 Sophia Antipolis Cedex - FRANCE

Tel.: +33 4 92 94 42 00 Fax: +33 4 93 65 47 16

Siret N° 348 623 562 00017 - NAF 742 C
Association à but non lucratif enregistrée à la
Sous-Préfecture de Grasse (06) N° 7803/88

Important notice

Individual copies of the present document can be downloaded from:
http://www.etsi.org

The present document may be made available in more than one electronic version or in print. In any case of existing or perceived difference in contents between such versions, the reference version is the Portable Document Format (PDF). In case of dispute, the reference shall be the printing on ETSI printers of the PDF version kept on a specific network drive within ETSI Secretariat.

Users of the present document should be aware that the document may be subject to revision or change of status. Information on the current status of this and other ETSI documents is available at
http://portal.etsi.org/tb/status/status.asp

If you find errors in the present document, please send your comment to one of the following services:
http://portal.etsi.org/chaircor/ETSI_support.asp

Copyright Notification

Contents

Intellectual Property Rights

IPRs essential or potentially essential to the present document may have been declared to ETSI. The information pertaining to these essential IPRs, if any, is publicly available for **ETSI members and non-members**, and can be found in ETSI SR 000 314: *"Intellectual Property Rights (IPRs); Essential, or potentially Essential, IPRs notified to ETSI in respect of ETSI standards"*, which is available from the ETSI Secretariat. Latest updates are available on the ETSI Web server (http://ipr.etsi.org).

Pursuant to the ETSI IPR Policy, no investigation, including IPR searches, has been carried out by ETSI. No guarantee can be given as to the existence of other IPRs not referenced in ETSI SR 000 314 (or the updates on the ETSI Web server) which are, or may be, or may become, essential to the present document.

Foreword

This European Standard (EN) has been produced by ETSI Technical Committee Aeronautics (AERO).

The present document has been revised by ETSI Technical Committee on Aeronautics (AERO).

The present document has been produced by ETSI in response to mandate M/390 from the European Commission issued under Council Directive 98/34/EC [i.11] (as amended) laying down a procedure for the provision of information in the field of technical standards and regulations. The present document has been developed in cooperation with EUROCAE to support Essential Requirements of the Single European Sky Interoperability Regulation 552/2004 [i.1] and/or requirements given in implementing rules for interoperability based on the Single European Interoperability Regulation.

The presumption of conformity which is linked to the full application of EN 303 213 (parts 1 to 4) can only be claimed after EN 303 213 (parts 1 to 4) has been listed in the Official Journal of the European Union as Community Specification.

General and specific requirements for presumption of conformity to SES Interoperability Regulation 552/2004 [i.1] as amended by Regulation 1070/2009 [i.12] are given in the normative annexes of the present document.

NOTE: Other requirements and other EU Regulations and/or Directives may be applicable to the product(s) falling within the scope of the present document.

The present document is part 1 of a multi-part deliverable covering Advanced Surface Movement Guidance and Control System (A-SMGCS), as identified below:

Part 1: "Community Specification for application under the Single European Sky Interoperability Regulation EC 552/2004 for A-SMGCS Level 1 including external interfaces";

Part 2: "Community Specification for application under the Single European Sky Interoperability Regulation EC 552/2004 for A-SMGCS Level 2 including external interfaces";

Part 3: "Community Specification for application under the Single European Sky Interoperability Regulation EC 552/2004 for a deployed cooperative sensor including its interfaces";

Part 4: "Community Specification for application under the Single European Sky Interoperability Regulation EC 552/2004 for a deployed non-cooperative sensor including its interfaces";

Part 5: Harmonized EN covering the essential requirements of article 3.2 of the R&TTE Directive for multilateration equipment;"

Part 6: Harmonized EN covering the essential requirements of article 3.2 of the R&TTE Directive for deployed surface movement radar sensors."

National transposition dates	
Date of adoption of this EN:	4 April 2012
Date of latest announcement of this EN (doa):	31 July 2012
Date of latest publication of new National Standard or endorsement of this EN (dop/e):	31 January 2013
Date of withdrawal of any conflicting National Standard (dow):	31 January 2014

Introduction

The European Union launched the Legislation "Single European Sky" (SES) in 2002 which was adopted in 2004 and amended by Regulation (EC) No 1070/2009 [i.12].

The SES legislation is based on a framework of 4 regulations, which includes the Interoperability Regulation [i.1]. The objective of the Interoperability Regulation is to ensure interoperability of the European Air Traffic Management Network (EATMN) consistent with air navigation services. Under this regulation, the use of a European Standard referenced in the Official Journal of the European Union as Community Specification (CS) is a means of compliance to the essential requirements of the Regulation and/or the relevant implementing rules for interoperability.

The present document takes into account the Council Decision 2009/320/EC endorsing the European Air Traffic Management Master Plan of the Single European Sky ATM Research (SESAR) project [i.8].

This revised version takes into account the updated referenced documents from EUROCONTROL.

1 Scope

The present document is applicable to Advanced Surface Movement Guidance and Control System (A-SMGCS) Level 1. This system provides enhanced surveillance functionalities, as well as a display to controllers with accurate and unambiguous identity and position information on the entire manoeuvring and movement area.

The present document provides a European Standard for Air Navigation Service Providers, who have to demonstrate and declare compliance of their systems and procedures to the IOP regulation.

Any software elements related to the software assurance level of an A-SMGCS are outside of the scope of the present document. As such the essential requirements of the Interoperability Regulation are not considered for software elements within the present document.

The present document does not give presumption of conformity related to the maintenance requirements, environmental constraints, procedure level, effect of harmful interference and civil/military coordination.

NOTE: For these ERs, please refer to the Air Navigation Service Provider procedures.

Requirements in the present document which refer to "should" statements or recommendations in the normatively referenced material (clause 2.1) are to be interpreted as fully normative ("shall") for the purpose of compliance with the present document.

Currently there are no relevant Implementing Rules for A-SMGCS.
The present document does not give presumption of conformity to any current interoperability Implementing Rules.

2 References

References are either specific (identified by date of publication and/or edition number or version number) or non-specific. For specific references, only the cited version applies. For non-specific references, the latest version of the reference document (including any amendments) applies.

Referenced documents which are not found to be publicly available in the expected location might be found at http://docbox.etsi.org/Reference.

NOTE: While any hyperlinks included in this clause were valid at the time of publication ETSI cannot guarantee their long term validity.

2.1 Normative references

The following referenced documents are necessary for the application of the present document.

[1] EUROCAE ED-87B (January 2008, including Amendment No 1 - January 2009): "MASPS for Advanced Surface Movement Guidance and Control Systems (A-SMGCS) - Levels 1 and 2".

[2] EUROCONTROL 10/07/15-70 (V2.1: 30/06/2010): "Operational Concept and Requirements for A-SMGCS Implementation Level 1".

2.2 Informative references

The following referenced documents are not necessary for the application of the present document but they assist the user with regard to a particular subject area.

[i.1] Regulation (EC) No 552/2004 of the European Parliament and of the Council of 10 March 2004 on the interoperability of the European Air Traffic Management network (interoperability Regulation), OJ L 96, 31.03.2004, p. 26 as amended by Regulation (EC) No 1070/2009, OJ L 300, 14.11.2009, p. 34.

[i.2] ETSI EN 303 213-3: "Advanced Surface Movement Guidance and Control System (A-SMGCS) Part 3: Community Specification for application under the Single European Sky Interoperability Regulation EC 552/2004 for a deployed cooperative sensor including its interfaces".

[i.3] ETSI EN 303 213-4-1: "Advanced Surface Movement Guidance and Control System (A-SMGCS); Part 4: Community Specification for application under the Single European Sky Interoperability Regulation EC 552/2004 for a deployed non-cooperative sensor including its interfaces; Sub-part 1: Generic requirements for non-cooperative sensor".

[i.4] ETSI EN 303 213-4-2: "Advanced Surface Movement Guidance and Control System (A-SMGCS); Part 4: Community Specification for application under the Single European Sky Interoperability Regulation EC 552/2004 for a deployed non-cooperative sensor including its interfaces; Sub-part 2: Specific requirements for a deployed Surface Movement Radar sensor".

[i.5] Regulation (EC) No 549/2004 of the European Parliament and of the Council of 10 March 2004 laying down the framework for the creation of the single European sky (the framework Regulation), OJ L 96, 31.03.2004, p. 1 as amended by Regulation (EC) No 1070/2009, OJ L 300, 14.11.2009, p. 34.

[i.6] EUROCAE ED-128 (08/2007): "Guidelines for surveillance data fusion in advanced surface movement guidance and control systems (A-SMGCS) levels 1 and 2".

[i.7] ICAO Document 9830, AN/452: "Advanced Surface Movement Guidance and Control Systems (A-SMGCS) Manual", First Edition, 2004.

[i.8] Council Decision 2009/320/EC endorsing the European Air Traffic Management Master Plan of the Single European Sky ATM Research (SESAR) project, 30.03.2009.

[i.9] ETSI EN 303 213-2: "Advanced Surface Movement Guidance and Control System (A-SMGCS); Part 2: Community Specification for application under the Single European Sky Interoperability Regulation EC 552/2004 for A-SMGCS Level 2 including external interfaces".

[i.10] EUROCONTROL 10/07/15-71 (V2.1: 30/06/2010): "A-SMGCS Levels 1 & 2 Preliminary Safety Case".

[i.11] 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.

[i.12] Regulation (EC) No 1070/2009 of the European Parliament and of the Council of 21 October 2009 amending Regulations (EC) No 549/2004, (EC) No 550/2004, (EC) No 551/2004 and (EC) No 552/2004 in order to improve the performance and sustainability of the European aviation system, OJ L 300, 14.11.2009.

3 Definitions and abbreviations

3.1 Definitions

For the purposes of the present document, the following terms and definitions apply:

A-SMGCS Level 1: A-SMGCS including a comprehensive Surveillance element capable of the location and classification of all aircraft and vehicles within the area of interest and the identification of cooperative aircraft and vehicles

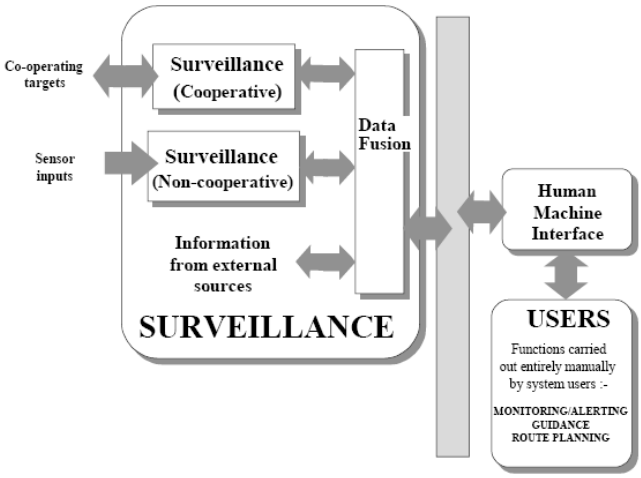

Figure 1: A-SMGCS Level 1 Functional Configuration

A-SMGCS Level 2: A-SMGCS including the capabilities of A-SMGCS Level 1 and uses the comprehensive surveillance data available to monitor the situation in the area of interest against a set of rules which will enable the system to alert the user to hazardous situations

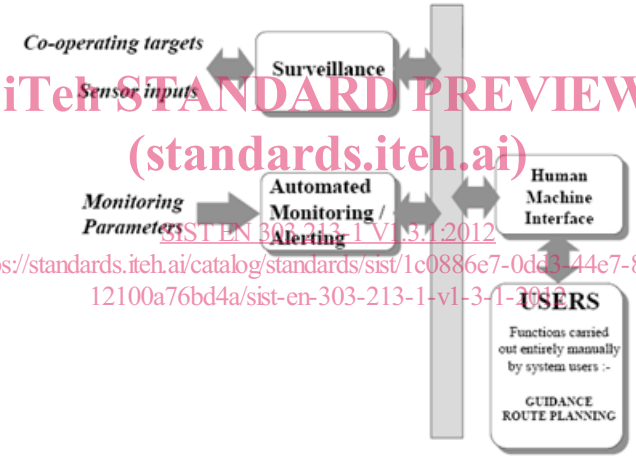

Figure 2: A-SMGCS Level 2 Functional Configuration

Advanced Surface Movement Guidance and Control System: systems providing routing, guidance, surveillance for the control to aircraft and vehicles in order to maintain movement rate under all local weather conditions within the Aerodrome Visibility Operational Level (AVOL) whilst maintaining the required level of safety

NOTE: This definition is derived from the ICAO Document 9830 [i.7].

aerodrome: defined area on land or water (including any buildings, installations, and equipment) intended to be used either wholly or in part for arrival, departure and surface movement of aircraft

NOTE: This definition is derived from the ICAO Document 9830 [i.7].

apron: defined area on an aerodrome, intended to accommodate aircraft for purposes of loading or unloading passengers, mail or cargo, fuelling, parking or maintenance

NOTE 1: This definition is derived from the ICAO Document 9830 [i.7].

NOTE 2: De-icing platforms, including remote de-icing areas, are considered as apron areas.

availability: probability that a system or an item is in a functioning state at a given point in time

classification: function which groups targets into various types (e.g. large, medium, small)

constituents: tangible objects such as hardware and intangible objects such as software upon which the interoperability of the EATMN depends

NOTE: This is the legally binding definition in the context of Single European Sky [i.5].

manoeuvring area: part of an aerodrome to be used for take-off, landing and taxiing of aircraft, excluding aprons

NOTE: This definition is derived from the ICAO Document 9830 [i.7].

movement area: part of an aerodrome to be used for take-off, landing and taxiing of aircraft, consisting of the manoeuvring area and apron(s)

NOTE: This definition is derived from the ICAO Document 9830 [i.7].

procedure: standard method for either the technical or operational use of the system, in the context of agreed and validated concepts of operation requiring uniform implementation throughout the EATMN

NOTE: This is the legally binding definition in the context of Single European Sky [i.5].

system: aggregation of airborne and ground based constituents, as well as space-based equipment, that provides support for air navigation services for all phases of flight

NOTE: This is the legally binding definition in the context of Single European Sky [i.5].

target: aircraft, vehicle or obstacle that is displayed on a surveillance display

NOTE: This definition is derived from the ICAO Document 9830 [i.7].

test targets: form of either fixed reflectors or active devices transponders, mounted at fixed positions within the Coverage Volume

update: renewal of target reports relating to all targets under surveillance

3.2 Abbreviations

For the purposes of the present document, the following abbreviations apply:

A-SMGCS	Advanced Surface Movement Guidance and Control Systems
ATC	Air Traffic Control
ATM	Air Traffic Management
ATS	Air Traffic Service
AVOL	Aerodrome Visibility Operational Level
CS	Community Specification
DFP	Data Fusion Processor
doa	date of announcement
dow	date of withdrawal
EATMN	European Air Traffic Management Network
EC	European Communities
EN	European Norm - (standard)
ER	Essential Requirement
EUROCAE	EUROpean organization for Civil Aviation Equipment
EUROCONTROL	EUROpean organization for the safety of air navigation
HMI	Human Machine Interface
ICAO	International Civil Aviation Organization
IOP Regulation	InterOPerability Regulation
LAM	Local Area Multilateration
MASPS	Minimum Aviation Systems Performance Specification
PRA	Position Registration Accuracy
SES	Single European Sky
SMR	Surface Movement Radar
TMA	Terminal Manoeuvring Area

4 Requirements for implementing A-SMGCS Level 1

An A-SMGCS Level 1 System shall consist of the following constituents as a minimum for the implementation, operation and maintenance:

1) Surface Movement Radar.

2) Local Area Multilateration (LAM).

Data Fusion and HMI are considered as part of the System but are not at this time defined as constituents.

NOTE 1: Guidance for the Data Fusion can be found in ED-128 [i.6].

NOTE 2: The Data fusion could be part of a larger data fusion processor providing other ATS functions.

NOTE 3: The Data fusion may be a separate part of the CS in the future.

4.1 Constituents of an A-SMGCS Level 1 System

The following clauses identify the constituents of an A-SMGCS.

NOTE: Data Fusion and HMI are currently defined at System level, however they have been included here, since they may become constituents in the future.

4.1.1 Constituent - Surface Movement Radar (SMR)

The SMR constituent of an A-SMGCS is covered in EN 303 213-4-1 [i.3] (Generic requirements) and EN 303 213-4-2 [i.4] (Specific requirements).

4.1.1.1 Interfaces for SMR

The interfaces for SMR constituents shall comply with the requirements as defined in ED-87B [1], clause 2.5.1.1.

4.1.2 Constituent - Local Area Multilateration (LAM)

The LAM constituent of an A-SMGCS is covered in EN 303 213-3 [i.2] (cooperative sensors).

4.1.2.1 Interfaces for LAM

The interfaces for LAM constituents shall comply with the requirements as defined in ED-87B [1], clause 2.5.1.1.

4.1.3 Interface for Data fusion

The interfaces for the data fusion in an A-SMGCS shall comply with the requirements as defined in ED-87B [1], clause 2.5.1.1.

NOTE: Guidance for the Data Fusion can be found in ED-128 [i.6].

4.1.4 Human Machine Interface (HMI)

The requirements for the HMI are further described in clauses 4.2.5 and 4.3.1.4 of the present document.

NOTE 1: The HMI could be part of a larger HMI, providing other ATS functions.

NOTE 2: The HMI could be a separate part of the CS in the future.

4.1.4.1 Interface for HMI

The interface for the HMI shall be capable to exchange data with the data fusion processor.