



**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**

[ETSI EN 303 213-1 V1.3.1 \(2012-04\)](https://standards.iteh.ai/catalog/standards/etsi/3d8611a0-13da-4d1a-b523-3725e8c740e1/etsi-en-303-213-1-v1-3-1-2012-04)

<https://standards.iteh.ai/catalog/standards/etsi/3d8611a0-13da-4d1a-b523-3725e8c740e1/etsi-en-303-213-1-v1-3-1-2012-04>

---

**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

iteh Standards  
(<https://standards.iteh.ai>)  
Document Preview

---

**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/chaicor/ETSI\\_support.asp](http://portal.etsi.org/chaicor/ETSI_support.asp)

---

**Copyright Notification**

---

No part may be reproduced except as authorized by written permission.  
The copyright and the foregoing restriction extend to reproduction in all media.

© European Telecommunications Standards Institute 2011.  
All rights reserved.

DECT<sup>TM</sup>, PLUGTESTS<sup>TM</sup>, UMTS<sup>TM</sup> and the ETSI logo are Trade Marks of ETSI registered for the benefit of its Members.  
3GPP<sup>TM</sup> and LTE<sup>TM</sup> are Trade Marks of ETSI registered for the benefit of its Members and  
of the 3GPP Organizational Partners.  
GSM<sup>®</sup> and the GSM logo are Trade Marks registered and owned by the GSM Association.

# Contents

|                                                                                      |    |
|--------------------------------------------------------------------------------------|----|
| Intellectual Property Rights .....                                                   | 5  |
| Foreword.....                                                                        | 5  |
| Introduction .....                                                                   | 6  |
| 1 Scope .....                                                                        | 7  |
| 2 References .....                                                                   | 7  |
| 2.1 Normative references .....                                                       | 7  |
| 2.2 Informative references .....                                                     | 7  |
| 3 Definitions and abbreviations.....                                                 | 8  |
| 3.1 Definitions .....                                                                | 8  |
| 3.2 Abbreviations .....                                                              | 10 |
| 4 Requirements for implementing A-SMGCS Level 1 .....                                | 11 |
| 4.1 Constituents of an A-SMGCS Level 1 System.....                                   | 11 |
| 4.1.1 Constituent - Surface Movement Radar (SMR).....                                | 11 |
| 4.1.1.1 Interfaces for SMR.....                                                      | 11 |
| 4.1.2 Constituent - Local Area Multilateration (LAM).....                            | 11 |
| 4.1.2.1 Interfaces for LAM .....                                                     | 11 |
| 4.1.3 Interface for Data fusion .....                                                | 11 |
| 4.1.4 Human Machine Interface (HMI).....                                             | 11 |
| 4.1.4.1 Interface for HMI .....                                                      | 11 |
| 4.2 Design Requirements for A-SMGCS Level 1 Systems .....                            | 12 |
| 4.2.1 Design Requirements on System Level .....                                      | 12 |
| 4.2.1.1 Modularity .....                                                             | 12 |
| 4.2.1.2 System Integrity .....                                                       | 12 |
| 4.2.1.3 Availability and Continuity of Service.....                                  | 12 |
| 4.2.1.4 Identification .....                                                         | 12 |
| 4.2.1.5 Position Registration Accuracy.....                                          | 12 |
| 4.2.1.6 Logical architecture.....                                                    | 12 |
| 4.2.1.7 Safety .....                                                                 | 12 |
| 4.2.1.7.1 Failure effect.....                                                        | 12 |
| 4.2.1.7.2 Reliability .....                                                          | 12 |
| 4.2.1.7.3 Human capabilities .....                                                   | 12 |
| 4.2.1.7.4 Safety Assessment.....                                                     | 12 |
| 4.2.1.8 Capacity and Quality.....                                                    | 13 |
| 4.2.1.8.1 Handle Traffic Movements.....                                              | 13 |
| 4.2.1.8.2 System capacity .....                                                      | 13 |
| 4.2.1.8.3 Accuracy.....                                                              | 13 |
| 4.2.1.8.4 Resolution.....                                                            | 13 |
| 4.2.1.8.5 Update rate .....                                                          | 13 |
| 4.2.1.8.6 Coverage Volume .....                                                      | 13 |
| 4.2.1.8.7 Classification .....                                                       | 13 |
| 4.2.1.9 Evolution.....                                                               | 13 |
| 4.2.2 Design Requirements for Surface Movement Radar .....                           | 13 |
| 4.2.3 Design Requirements for Local Area Multilateration.....                        | 13 |
| 4.2.4 Design Requirements for Data Fusion.....                                       | 13 |
| 4.2.5 Design Requirements for HMI.....                                               | 14 |
| 4.3 Acceptance testing requirements for A-SMGCS Level 1 System .....                 | 14 |
| 4.3.1 Acceptance testing requirements on System Level.....                           | 14 |
| 4.3.1.1 General Tests.....                                                           | 14 |
| 4.3.1.2 Tests on modularity and interchangeability .....                             | 14 |
| 4.3.1.3 Acceptance testing requirements for Data Fusion.....                         | 14 |
| 4.3.1.4 Acceptance testing requirements for HMI .....                                | 14 |
| 4.3.2 Acceptance testing requirements on Constituent Level .....                     | 14 |
| 4.3.2.1 Acceptance testing requirements for Constituent Surface Movement Radar ..... | 14 |

|                                                                            |                                                                                                                                                  |           |
|----------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------|-----------|
| 4.3.2.2                                                                    | Acceptance testing requirements for Constituent Local Area Multilateration .....                                                                 | 14        |
| 4.4                                                                        | Maintenance Requirements for A-SMGCS Level 1 Systems .....                                                                                       | 14        |
| 4.5                                                                        | Requirements for operation of A-SMGCS Level 1 Systems .....                                                                                      | 14        |
| 4.5.1                                                                      | Requirements for operational responsibility .....                                                                                                | 14        |
| 4.5.1.1                                                                    | System performance below specified minima .....                                                                                                  | 15        |
| 5                                                                          | Testing .....                                                                                                                                    | 15        |
| <b>Annex SA (normative): Standards Annex .....</b>                         |                                                                                                                                                  | <b>16</b> |
| SA.1                                                                       | Correspondence between the present document and the Single European Sky Interoperability Regulation as amended for A-SMGCS Systems Level 1 ..... | 16        |
| <b>Annex A (normative): Checklist .....</b>                                |                                                                                                                                                  | <b>20</b> |
| A.1                                                                        | Interoperability Regulation Annex II Essential Requirements; Part A: General requirements .....                                                  | 21        |
| A.2                                                                        | Interoperability Regulation Annex II Essential Requirements Part B: Specific requirements .....                                                  | 27        |
| A.2.1                                                                      | Systems and procedures for airspace management .....                                                                                             | 27        |
| A.2.2                                                                      | Systems and procedures for air traffic flow management .....                                                                                     | 27        |
| A.2.3                                                                      | Systems and procedures for air traffic services .....                                                                                            | 28        |
| A.2.3.1                                                                    | Flight data processing systems .....                                                                                                             | 28        |
| A.2.3.2                                                                    | Surveillance data processing systems .....                                                                                                       | 30        |
| A.2.3.3                                                                    | HMI systems .....                                                                                                                                | 31        |
| A.2.4                                                                      | Communications systems and procedures for ground-to-ground, air-to-ground and air-to-air communications .....                                    | 32        |
| A.2.5                                                                      | Navigation systems and procedures .....                                                                                                          | 33        |
| A.2.6                                                                      | Surveillance systems and procedures .....                                                                                                        | 33        |
| A.2.7                                                                      | Systems and procedures for aeronautical information services .....                                                                               | 34        |
| A.2.8                                                                      | Systems and procedures for the use of meteorological information .....                                                                           | 34        |
| <b>Annex B (informative): The EN title in the official languages .....</b> |                                                                                                                                                  | <b>36</b> |
| <b>Annex C (informative): Bibliography .....</b>                           |                                                                                                                                                  | <b>37</b> |
| History .....                                                              |                                                                                                                                                  | 38        |

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

<https://standards.iteh.ai/catalog/standards/etsi/3d8611a0-13da-4d1a-b523-3725e8c740e1/etsi-en-303-213-1-v1-3-1-2012-04>

---

# 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 final draft European Standard (EN) has been produced by ETSI Technical Committee Aeronautics (AERO), and is now submitted for the ETSI standards One-step Approval Procedure.

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."