

# ETSI EN 303 213-8 V2.1.1 (2023-09)



**Advanced Surface Movement Guidance and  
Control System (A-SMGCS);  
Part 8: Community Specification for  
A-SMGCS guidance service**

[ETSI EN 303 213-8 V2.1.1 \(2023-09\)](https://standards.iteh.ai/catalog/standards/sist/ab620bbb-8773-4213-8493-b9628f535386/etsi-en-303-213-8-v2-1-1-2023-09)

<https://standards.iteh.ai/catalog/standards/sist/ab620bbb-8773-4213-8493-b9628f535386/etsi-en-303-213-8-v2-1-1-2023-09>

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**Reference**

DEN/ERM-TGAERO-37-8

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# Foreword

This European Standard (EN) has been produced by ETSI Technical Committee Electromagnetic compatibility and Radio spectrum Matters (ERM).

The presumption of conformity which is linked to the full application of ETSI EN 303 213 (parts 1-4, 7 and 8) [i.4] can only be claimed after ETSI EN 303 213 (parts 1-4, 7 and 8) [i.4] has been listed in the Official Journal of the European Union as Community Specification.

General requirements for presumption of conformity to Regulation (EU) 2018/1139 [i.3] are given in the normative annex 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 8 of a multi-part deliverable covering Advanced Surface Movement Guidance and Control System (A-SMGCS), as identified below:

- Part 1: "Community Specification for A-SMGCS surveillance service including external interfaces";
- Part 2: "Community Specification for A-SMGCS airport safety support service";
- Part 3: "Community Specification for a deployed cooperative sensor including its interfaces";
- Part 4: "Community Specification for a deployed non-cooperative sensor including its interfaces";
- Part 5: "Harmonised Standard for access to radio spectrum for Multilateration (MLAT) equipment";
- Part 6: "Harmonised Standard for access to radio spectrum for deployed surface movement radar sensors";
- Part 7: "Community Specification for A-SMGCS routing service";
- Part 8: "Community Specification for A-SMGCS guidance service".**

National transposition dates	
Date of adoption of this EN:	13 July 2023
Date of latest announcement of this EN (doa):	31 October 2023
Date of latest publication of new National Standard or endorsement of this EN (dop/e):	30 April 2024
Date of withdrawal of any conflicting National Standard (dow):	30 April 2024

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## Modal verbs terminology

In the present document "shall", "shall not", "should", "should not", "may", "need not", "will", "will not", "can" and "cannot" are to be interpreted as described in clause 3.2 of the [ETSI Drafting Rules](#) (Verbal forms for the expression of provisions).

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# 1 Scope

The present document is applicable to the Advanced Surface Movement Guidance and Control System (A-SMGCS) Guidance Service. This service is based on the A-SMGCS surveillance service (as specified in ETSI EN 303 213-1 [3]) and generates individual guidance information for mobiles based on the surveillance and routing information and known constraints (e.g. standard taxi routes, taxiway closures). In most cases these guidance information will be provided to external partner systems of the A-SMGCS, such as the airfield ground lighting or electronic flight bag display systems in the cockpit of the mobiles. The guidance information can be modified by the controller at any time.

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 Regulation (EU) 2018/1139 [i.3], and takes into account Commission Implementing Regulation (EU) 2021/116 [i.2].

A mapping of requirements for the A-SMGCS guidance service to the relevant Essential Requirements of Regulation (EU) 2018/1139 [i.3] is provided in Annex A.

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 Regulation (EU) 2018/1139 [i.3] 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, 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.

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## 2 References

### 2.1 Normative 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 referenced document (including any amendments) applies.

Referenced documents which are not found to be publicly available in the expected location might be found at <https://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.

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

- [1] [EUROCAE ED-87E \(April 2022\)](#): "MASPS for A-SMGCS including Airport Safety Support Service Routing Service and Guidance Service".
- [2] [EUROCONTROL-SPEC-171 Version 2.0 \(22/04/2020\)](#): "EUROCONTROL Specification for Advanced-Surface Movement Guidance and Control System (A-SMGCS) Services".
- [3] [ETSI EN 303 213-1](#): "Advanced Surface Movement Guidance and Control System (A-SMGCS); Part 1: Community Specification for A-SMGCS surveillance service including external interfaces".

## 2.2 Informative 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 referenced document (including any amendments) applies.

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

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] ICAO Document 9830, AN/452: "Advanced Surface Movement Guidance and Control Systems (A-SMGCS) Manual", First Edition, 2004.
- [i.2] [Commission Implementing Regulation \(EU\) 2021/116 of 1 February 2021](#) on the establishment of the Common Project One supporting the implementation of the European Air Traffic Management Master Plan provided for in Regulation (EC) No 550/2004 of the European Parliament and of the Council, amending Commission Implementing Regulation (EU) No 409/2013 and repealing Commission Implementing Regulation (EU) No 716/2014.
- [i.3] [Regulation \(EU\) 2018/1139 of the European Parliament and of the Council of 4 July 2018](#) on common rules in the field of civil aviation and establishing a European Union Aviation Safety Agency, and amending Regulations (EC) No 2111/2005, (EC) No 1008/2008, (EU) No 996/2010, (EU) No 376/2014 and Directives 2014/30/EU and 2014/53/EU of the European Parliament and of the Council, and repealing Regulations (EC) No 552/2004 and (EC) No 216/2008 of the European Parliament and of the Council and Council Regulation (EEC) No 3922/91.
- [i.4] ETSI EN 303 213 (all parts): "Advanced Surface Movement Guidance and Control System (A-SMGCS)".

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## 3 Definition of terms, symbols and abbreviations

### 3.1 Terms

For the purposes of the present document, the terms given in EUROCAE ED-87E [1] and the following apply:

**Advanced Surface Movement Guidance and Control System:** system providing as a minimum Surveillance and which can include Airport Safety Support, Routing and Guidance to aircraft and vehicles in order to maintain the airport throughput under all local weather conditions whilst maintaining the required level of safety

NOTE: This definition is derived from EUROCAE ED-87E [1].

**aerodrome:** defined area (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.1].

**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.1].

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

**availability:** probability that the system will operate satisfactorily at a given point in time when used under stated conditions in an ideal support environment

NOTE: This definition is derived from EUROCAE ED-87E [1].

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

**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.1].

**movement area:** part of an aerodrome to be used for take-off, landing and taxiing of aircraft, consisting of the Manoeuvring Area and Aprons

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

**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

**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

## 3.2 Symbols

Void.

## 3.3 Abbreviations

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

ANS	Air Navigation Services
A-SMGCS	Advanced Surface Movement Guidance and Control Systems
A-VDGS	Advanced Visual Docking Guidance Systems
AERO	Technical Committee Aeronautics
AGL	Above Ground Level
ATM	Air Traffic Management
doa	date of announcement
EATMN	European Air Traffic Management Network
EC	European Communities
EN	European Norm - (standard)
ER	Essential Requirement
EU	European Union
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
IPRs	Intellectual Property Rights
SMGCS	Surface Movement Guidance and Control System

# 4 Requirements for the A-SMGCS Guidance Service

## 4.0 General

The A-SMGCS guidance service is based on the A-SMGCS surveillance service as defined in ETSI EN 303 213-1 [3].

Both, the surveillance and guidance services are constituents of the A-SMGCS. Hence requirements on the system level related to system safety, reliability, system security and documentation are already specified in ETSI EN 303 213-1 [3] and will not be duplicated in the present document.

## 4.1 Dependency on the A-SMGCS surveillance service

The A-SMGCS guidance service shall comply with the requirements as defined in ETSI EN 303 213-1 [3].



## 4.2 Guidance Service Basic Functionality

The guidance service shall comply with the requirements as defined as defined in EUROCAE ED-87E [1], clauses 2.1.5 and 3.6, requirements [REQ 26.] and [REQ 38.].

In addition, the guidance service shall comply with the requirements as defined in the EUROCONTROL Specification for A-SMGCS Services [2], chapter 6.1.1, requirements ASMGCS-[GUID]-[010], ASMGCS-[ GUID]-[020], ASMGCS-[ GUID]-[030], ASMGCS-[ GUID]-[040], ASMGCS-[ GUID]-[050], ASMGCS-[ GUID]-[060], ASMGCS-[ GUID]-[070], ASMGCS-[ GUID]-[080], ASMGCS-[ GUID]-[090].

## 4.3 Guidance Service specific requirements

### 4.3.1 Guidance service AGL specific requirements

In case the A-SMGCS Guidance Service incorporates an AGL interface and the functionality of automated switching of AGL is used, the requirements as defined in EUROCAE ED-87E [1], clauses 2.1.5, 3.6.6 and 3.6.7, requirements [REQ 38.] and [REQ 39.] as well as to the requirements defined in the EUROCONTROL Specification for A-SMGCS Services [2], chapter 6.5.2, requirements ASMGCS-[GUID100]-[260] shall be met.

### 4.3.2 Guidance Service requirements for automated switching of Stop Bars

In case the A-SMGCS Guidance Service incorporates a Stop Bar interface and the functionality of automated switching of Stop Bars is used, the requirements as defined in EUROCAE ED-87E [1], clauses 2.1.5, 3.6.6 and 3.6.7, requirements [REQ 38.] and [REQ 39.] as well as to the requirements defined in the EUROCONTROL Specification for A-SMGCS Services [2], chapter 6.5.2, requirements ASMGCS-[GUID270]-[330] shall be met.

### 4.3.3 Guidance Service A-VDGS specific requirements

In case the A-SMGCS Guidance Service incorporates an interface to A-VDGS and the functionality of automated switching of A-VDGS is used, the requirements as defined in EUROCAE ED-87E [1], clauses 2.1.5, 3.6.6 and 3.6.8, requirements [REQ 38.] and [REQ 40.] as well as to the requirements defined in the EUROCONTROL Specification for A-SMGCS Services [2], chapter 6.5.2, requirements ASMGCS-[GUID340]-[360] shall be met.

## 4.4 Design Requirements for the A-SMGCS Guidance Service

### 4.4.1 Design Requirements on System Level

The design requirements for the A-SMGCS Guidance service regarding Modularity, System Integrity, and Safety shall be identical to the design requirements for the A-SMGCS surveillance service as defined in ETSI EN 303 213-1 [3].

### 4.4.2 Performance and Capacity Parameters

The guidance service performance and capacity parameters shall comply with the requirements as defined in EUROCAE ED-87E [1], clause 3.5, requirements [REQ 23.], [REQ 24.], [REQ 25.].

### 4.4.3 Evolution

The evolution shall comply with the requirements as defined in EUROCAE ED-87E [1], clause 1.8.3.

#### 4.4.4 HMI and Human capabilities

The A-SMGCS Guidance Service HMI shall be designed in such a way, that the human capabilities shall be compatible with the principals described in EUROCAE ED-87E [1], clause 2.2.1 as well as to the requirements defined in the EUROCONTROL Specification for A-SMGCS Services [2], chapters 5.3.1 and 6.1, requirements ASMGCS-[GENL]-[070], ASMGCS-[GENL]-[100], ASMGCS-[GENL]-[110], ASMGCS-[GENL]-[120], ASMGCS-[GENL]-[130], ASMGCS-[GENL]-[140], ASMGCS-[GENL]-[150].

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## 5 Testing

### 5.1 Acceptance testing requirements for the A-SMGCS Guidance Service

#### 5.1.1 Acceptance testing requirements on System Level

All system level tests shall be performed identical to the requirements as defined for the A-SMGCS surveillance service, as defined in ETSI EN 303 213-1 [3], clause 5 as well as EUROCAE ED-87E [1] requirements [REQ 33.], [REQ 34.] and [REQ 35.].

#### 5.1.2 Acceptance testing requirements specific to the Guidance Service

The Guidance Service shall perform the deployment tests as defined in EUROCAE ED-87E [1], clauses 5.1. and 5.5 as well as requirements [REQ 33.], [REQ 34.] and [REQ 35.].

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# Annex A (normative): Regulation (EU) No 2018/1139 Essential Requirements mapping and Checklist

## A.1 Correspondence between the present document and the Regulation (EU) 2018/1139

This annex provides a relationship between the present document and the Essential Requirements of Annex VIII of Regulation (EU) 2018/1139 [i.3].

The A-SMGCS Guidance Service shall comply with the Essential Requirements of Regulation (EU) 2018/1139 [i.3] as defined and described in the traceability matrixes of this annex (Table A.1 and Table A.2 below).

NOTE 1: Whenever "n/a" is used, that means that a given ER and/or an associated "keyword" is not applicable for presumption of conformity.

**Table A.1: Traceability from Interoperability Regulation to clauses of the present document**

Essential Requirements (ERs) of Regulation (EU) 2018/1139 [i.3]	Clause(s) of the present document	Qualifying remarks/Notes
ER 1 Use of the airspace	The present document does not give presumption of conformity.	
ER 2 Services	The present document does not give presumption of conformity.	
ER 3.1 Fit for purpose	4.1 Dependency on the A-SMGCS surveillance service 4.3 Guidance Service specific requirements 4.3.1 Guidance service AGL specific requirements 4.3.2 Guidance Service requirements for automated switching of Stop Bars 4.3.3 Guidance Service A-VDGS specific requirements 4.4.1 Design Requirements on System Level 4.4.2 Performance and Capacity Parameters 5.1.1 Acceptance testing requirements on System Level 5.1.2 Acceptance testing requirements specific to the Guidance Service	The present document does not give presumption of conformity related to maintenance of the system.  Requirements related to system security are specified in ETSI EN 303 213-1 [3].
ER 3.2 Integrity and safety related performance and reliability	4.2 Guidance Service Basic Functionality 4.3 Guidance Service specific requirements 4.3.1 Guidance service AGL specific requirements 4.3.2 Guidance Service requirements for automated switching of Stop Bars 4.3.3 Guidance Service A-VDGS specific requirements 4.4.2 Performance and Capacity Parameters	Additional requirements related to ER2 are specified in ETSI EN 303 213-1 [3].
ER 3.3 Seamless operation	4.4.1 Design Requirements on System Level 4.3 Guidance Service specific requirements 4.3.1 Guidance service AGL specific requirements 4.3.2 Guidance Service requirements for automated switching of Stop Bars 4.3.3 Guidance Service A-VDGS specific requirements	The present document does not give presumption of conformity related to maintenance of the system.
ER 3.4 Support for new concepts of operation	4.2 Guidance Service Basic Functionality 4.3 Guidance Service specific requirements 4.3.1 Guidance service AGL specific requirements 4.3.2 Guidance Service requirements for automated switching of Stop Bars 4.3.3 Guidance Service A-VDGS specific requirements 4.4.3 Evolution	
ER 3.5 Civil-military coordination	The present document does not give presumption of conformity.	The present document does not give presumption of conformity.