



## AOP04.1 — Advanced Surface Movement Guidance and Control System A-SMGCS Surveillance Service (former ICAO Level 1)

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Implement A-SMGCS Surveillance Service (former ICAO Level 1) which consists of an airport surface surveillance system that provides the Controller with the position and automatic identity of:

- All suitably equipped aircraft on the movement area;
- All suitably equipped vehicles on the maneuvering area.

A-SMGCS Surveillance data may be used to replace visual observation as required, in accordance with ICAO EUR Doc 7030, chapter 6.5.6 (approved March 2009), and as the basis of controller decision making. Traffic will be controlled through the use of appropriate procedures allowing the issuance of information and clearances to traffic on the basis of A-SMGCS Surveillance data.

Apron management units, airlines and other interested parties may also benefit from the provision of A-SMGCS Surveillance data.

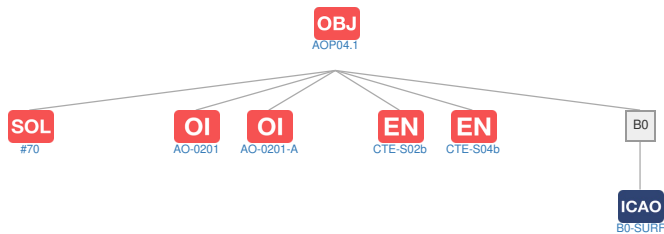
A-SMGCS Surveillance is a prerequisite for A-SMGCS Runway Monitoring and Conflict Alerting (RMCA former ICAO Level 2) as the first element of A-SMGCS Airport Safety Support service.

**NOTE FOR MILITARY AUTHORITIES:** It is the responsibility of each military authority to review this Objective IN ITS ENTIRETY and address each of the SLoAs that the military authority considers RELEVANT for itself. This has to be done on top and above of the review of "MIL" SLoAs which identify actions EXCLUSIVE to military authorities.

|                     |   |
|---------------------|---|
| <b>Edition</b>      | 2022  |
| <b>Stakeholders</b> | Regulator / Air Navigation Service Provider / Airport Operator / Airspace Users / International Organisations and Regional Bodies |
| <b>Type</b>         | SESAR   |
| <b>Scope</b>        | Airport   |
| <b>Status</b>       | Active  |

### Context

#### Related Elements



### Applicability Area(s) and Timescales

**Applicability Area:** See list of airports in MP Level 3 Implementation Plan - Annexes

| Timescales                     | From       | By         | Applicable to      |
|--------------------------------|------------|------------|--------------------|
| Initial operational capability | 01-01-2007 | -          | Applicability Area |
| Full operational capability    | -          | 31-12-2020 | Applicability Area |

### Links to ATM Master Plan Level 2

#### OI Operational Improvement Steps

| Code      | Title   | IOC        | FOC        | Related Elements      |
|-----------|---|------------|------------|-----------------------|
| AO-0201   | Ground Controller Situational Awareness in all Weather Conditions                     | 31-12-2006 | 31-12-2010 | OI EN OBJ ICAO        |
| AO-0201-A | Enhanced Ground Controller Situational Awareness in all Weather Conditions with ADS-B | 31-12-2020 | 31-12-2024 | SOL OI EN OBJ DS ICAO |

#### EN Enablers

| Code     | Title                          | IOC        | Related Elements |
|----------|--------------------------------|------------|------------------|
| CTE-S02b | Surface Movement Radar         | 31-12-2007 | STK OI EN OBJ    |
| CTE-S04b | Airport Multilateration (MLAT) | 31-12-2007 | STK OI EN OBJ DS |

#### SOL Links to SESAR Solutions

| Code | Title  | Program | Related Elements   |
|------|--|---------|--------------------|
| #70  | Enhanced Ground Controller Situation Awareness in all Weather Conditions | SESAR1  | OI OBJ DS EOC ICAO |

**PCP** Links to PCP ATM Sub-Functionalities

| Code            | Title | Related Elements |
|-----------------|-------|------------------|
| No record found |       |                  |

**ICAO** ICAO Block Modules

| Designator | Title   | Related Elements     |
|------------|---|----------------------|
| B0         |   |                      |
| B0-SURF    | Improved Runway Safety (A-SMGCS Level 1-2 and Cockpit Moving Map) | <b>OI</b> <b>OBJ</b> |

References

**Applicable legislation**  
None

**Applicable ICAO Annexes and other references**  
ICAO Annex 10 - Telecommunications  
ICAO Annex 14 - Aerodromes

**Deployment Programme 2022**  
-

**Operating Environments**  
Airport

Expected Performance Benefits

|                               |   |
|-------------------------------|---|
| <b>Safety</b>                 | Through improved situational awareness of the controller, especially during periods of reduced visibility and darkness. |
| <b>Capacity</b>               | Traffic throughput notably increased in low visibility conditions.  |
| <b>Operational efficiency</b> | More efficient control of surface traffic.  |
| <b>Cost efficiency</b>        | -   |
| <b>Environment</b>            | Reduction in fuel burn and emissions.   |
| <b>Security</b>               | -   |

Stakeholder Lines of Action

| Code  | Title  | From       | By         | Related Enablers |
|-------|--|------------|------------|------------------|
| REG01 | Mandate the carriage of required aircraft equipment to enable location and identification of aircraft on the movement area (including military aircraft, as appropriate) | 01-01-2007 | 31-12-2010 |                  |
| REG02 | Mandate the carriage of required vehicle equipment to enable location and identification of vehicles on the manoeuvring area   | 01-01-2007 | 31-12-2010 |                  |
| REG03 | Publish A-SMGCS Surveillance procedures (including transponder operating procedures) in national aeronautical information publications                                   | 01-01-2007 | 31-12-2010 |                  |
| REG04 | Approve A-SMGCS Surveillance implementations for operation   | DELETED    |            |                  |
| ASP01 | Install required surveillance equipment  | 01-01-2007 | 01-01-2021 | <b>EN</b>        |
| ASP02 | Train aerodrome control staff in the use of A-SMGCS Surveillance in the provision of aerodrome control service   | 01-01-2007 | 01-01-2021 |                  |
| ASP03 | Implement approved A-SMGCS operational procedures at airports equipped with A-SMGCS  | 01-01-2007 | 01-01-2021 | <b>EN</b>        |
| APO01 | Install required surveillance equipment  | 01-01-2007 | 01-01-2021 | <b>EN</b>        |
| APO02 | Equip Ground Vehicles  | 01-01-2007 | 01-01-2021 |                  |
| APO03 | Train ground vehicle drivers   | 01-01-2007 | 01-01-2021 |                  |
| USE01 | Update aircrew training manual to include procedures for use of correct Mode-S transponder setting for enabling cooperative A-SMGCS detection on the movement area       | FINALISED  |            |                  |
| INT01 | Coordinate amendments to the related ICAO documentation to include A-SMGCS (Surveillance Service - ICAO Level 1) procedures  | FINALISED  |            |                  |

Supporting Material

Title

|  |  |
|--|--|
| ETSI - EN 303 213-1 - Advanced Surface Movement Guidance and Control System (A-SMGCS); Part 1: A-SMGCS Level 1 including external interfaces; Community Specification for application under the Single European Sky Interoperability Regulation EC 552/2007<br><a href="http://webapp.etsi.org/workprogram/SimpleSearch/QueryForm.asp">http://webapp.etsi.org/workprogram/SimpleSearch/QueryForm.asp</a>   |  |
| ETSI - EN 303 213-3 - Advanced Surface Movement Guidance and Control System (A-SMGCS); Part 3: Deployed cooperative sensor including its interfaces; Community Specification for application under the Single European Sky Interoperability Regulation EC 552/2007<br><a href="http://webapp.etsi.org/workprogram/SimpleSearch/QueryForm.asp">http://webapp.etsi.org/workprogram/SimpleSearch/QueryForm.asp</a>  |  |
| ETSI - EN 303 213-4-1 - Advanced Surface Movement Guidance and Control System (A-SMGCS); Part 4: Deployed non-cooperative sensor including its interfaces; Sub-part 1: Generic requirements for non-cooperative sensor; Community Specification for application under the Single European Sky Interoperability Regulation EC 552/2007<br><a href="http://webapp.etsi.org/workprogram/SimpleSearch/QueryForm.asp">http://webapp.etsi.org/workprogram/SimpleSearch/QueryForm.asp</a>   |  |
| ETSI - EN 303 213-4-2 - Advanced Surface Movement Guidance and Control System (A-SMGCS); Part 4: Deployed non-cooperative sensor including its interfaces; Sub-part 2: Specific requirements for a deployed Surface Movement Radar sensor; Community Specification for application under the Single European Sky Interoperability Regulation EC 552/2007<br><a href="https://portal.etsi.org/webapp/WorkProgram/Report_WorkItem.asp?WKI_ID=58962&amp;curlItemNr=1&amp;totalNrItems=1&amp;optDisplay=10&amp;qSORT=HIGHVERSION&amp;qETSI_ALL=&amp;SearchPage=TRUE&amp;qETSI_NUMBER=303+213%2D4%2D2&amp;qINCLUDE_SUB_TB=True&amp;qINCLUDE_MOVED_ON=&amp;qSTOP_FLG=&amp;qKEYWORD_BOOLEAN=">https://portal.etsi.org/webapp/WorkProgram/Report_WorkItem.asp?WKI_ID=58962&amp;curlItemNr=1&amp;totalNrItems=1&amp;optDisplay=10&amp;qSORT=HIGHVERSION&amp;qETSI_ALL=&amp;SearchPage=TRUE&amp;qETSI_NUMBER=303+213%2D4%2D2&amp;qINCLUDE_SUB_TB=True&amp;qINCLUDE_MOVED_ON=&amp;qSTOP_FLG=&amp;qKEYWORD_BOOLEAN="</a> |  |
| EUROCAE - ED-116 - Minimum Operational Performance Specification for Surface Movement Radar Sensor Systems for Use in A-SMGCS 01/2004<br><a href="http://boutique.eurocae.net/catalog/index.php">http://boutique.eurocae.net/catalog/index.php</a>   |  |
| EUROCAE - ED-117 Revision - A MOPS for Mode S Multilateration Systems for Use in Advanced Surface Movement Guidance and Control Systems (A-SMGCS)<br><a href="https://eshop.eurocae.net/eurocae-documents-and-reports/ed-117a/">https://eshop.eurocae.net/eurocae-documents-and-reports/ed-117a/</a>   |  |
| EUROCAE - ED-87E - MASPS for A-SMGCS including Airport Safety Support Service Routing Service and Guidance Service - April 2022 / 04/2022<br><a href="https://www.eurocae.net/news/posts/2022/may/ed-87e-masps-for-a-smgcs-including-airport-safety-support-service-routing-service-and-guidance-service/">https://www.eurocae.net/news/posts/2022/may/ed-87e-masps-for-a-smgcs-including-airport-safety-support-service-routing-service-and-guidance-service/</a>   |  |
| EUROCONTROL - ATCO Rating Training - Training Plans: Aerodrome Training - Annex B: Detailed Training Plans - Edition 1.0 / 03/2004<br><a href="https://trainingzone.eurocontrol.int">https://trainingzone.eurocontrol.int</a>  |  |
| EUROCONTROL - SPEC-171 - EUROCONTROL Specification for Advanced Surface Movement Guidance and Control System (A-SMGCS) Services - Edition 2.0 / 04/2020<br><a href="https://www.eurocontrol.int/publication/eurocontrol-specification-smgcs-services">https://www.eurocontrol.int/publication/eurocontrol-specification-smgcs-services</a>   |  |
| ICAO - Doc 9774 - Manual on Certification of Aerodromes - Edition 1 / 12/2001<br><a href="https://store.icao.int/">https://store.icao.int/</a>   |  |
| ICAO - Doc 9830 - Advanced Surface Movement Guidance and Control Systems (A-SMGCS) Manual - Edition 1 / 12/2004<br><a href="http://www.icao.int/publications/Pages/catalogue.aspx">http://www.icao.int/publications/Pages/catalogue.aspx</a>   |  |

Consultation & Approval

|   |                               |
|---|-------------------------------|
| Working Arrangement in charge                   | Airport Operations Team (AOT) |
| Outline description approved in                 | -                             |
| Latest objective review at expert level         | 04/2012                       |
| Commitment Decision Body                        | Provisional Council (PC)      |
| Objective approved/endorsed in                  | 03/2003                       |
| Latest change to objective approved/endorsed in | 07/2014                       |