



Final Safety and Performance Requirements (SPR) for Alerts for Vehicle Drivers

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Abstract

This is the Final Safety and Performance Requirements document (SPR) relating "Alerts for Vehicle Drivers". The document describes safety and performance requirements for safety and support tools for vehicle drivers on the airport manoeuvring area. To justify requirements described in this document, a Safety Assessment Report (SAR, D78A) was produced.

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54 Executive summary

55

56 This document is the Final version of Safety and Performance Requirements for “Alerts for Vehicle
57 Drivers”, deliverable D78 of the 06.07.01 SESAR element of the SESAR solution “#04 Enhanced
58 Traffic Situational Awareness and Airport Safety Nets for the vehicle drivers”.

59

60 Generally speaking, the safety and performance requirements are related to each operational process
61 and services defined in the Operational Services and Environment Description (OSED), here
62 deliverable D77 of the 6.7.1 SESAR project “Airport safety support tools for pilots, vehicle drivers and
63 controllers”.

64 In this version of SPR, described Safety and Performance Requirements are derived from previous
65 versions of Safety and Performance Requirements for “Alerts for Vehicle Drivers”, from the V3
66 validation exercises conducted in Dublin [18] and Paris Charles de Gaulle [19] airports in Q2 2015
67 and represents the last phase of validation.

68 In previous version, the first steps of the necessary preparatory tasks “Operational Safety
69 Assessment” and “Operational Performance Assessment” are described. Safety Criteria, Safety
70 Objectives and Safety Requirements are determined and described in the document “Alerts for
71 Vehicle Drivers Safety Assessment Report” is part of the present version of SPR and published as
72 D78A [15].

73 The first references for the requirements are already identified in documents (e.g. ICAO A-SMGCS
74 Manual) and previous projects (e.g. EMMA2, NUP2+). NUP2+ and EMMA2 experience and findings
75 were used as basis to develop SAR.

76 Vehicle position and Alerts are generated within the manoeuvring area. Manoeuvring area is divided
77 into three zones: RWY zone, taxiway zone and buffer zone. A distinction can be made between those
78 vehicles authorised to operate on the manoeuvring area and apron service vehicles. The latter group
79 is restricted to operate on the apron area and is not authorised to enter the manoeuvring area. It is
80 assumed that they will not enter the manoeuvring area. Thus, not having a moving map, they are not
81 considered further. (Ref. OSED 4.2.2)[14].

82 The third validation phase completed in 2015 validated the SESAR AVDR concept in V3 maturity and
83 was built on the previous results. The second validation completed in Malmö 2014 indicated that
84 presenting alerts to vehicle drivers operating on the manoeuvring area was a safety enhancement.
85 The system is designed to provide the vehicle drivers with a continuous update on their position on
86 the movement area, and alert when entering a restricted or closed area or when in a conflict situation
87 with an aircraft on the manoeuvring area. It provides detection and alerts in situations that if not
88 corrected could end up in hazardous situations.

89 Parameters for speed and heading will determine when alerts shall be triggered. Two solutions for
90 alerts - uplink of alerts from ground server and alert directly triggered on board the vehicle are
91 assessed.

92 Alerts should be aural and visual type (fully functional in a noisy environment). The driver should also
93 be alerted when outside the vehicle.

94 Alerts will be triggered on two different situations.

- 95 • Traffic alerts on the manoeuvring area towards aircraft;
- 96 • Alerting functions in case of infringement of defined areas.

97 **All numeric values and colour preferences presented in this SPR document are**
98 **recommendations. These values were used to carry out V2, V2+ and V3 trials. Values to be**
99 **used in real life will be defined by local airport authorities.**

100

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102

- 103 The system consists of an on-board Vehicle Display System (VDS) which comprises:
- 104 • An Airport Moving Map (AMM) which will indicate the position of the vehicle on the airport,
 - 105 • A Ground Traffic Display (GTD) displaying other traffic operating on the manoeuvring area of
106 the airport.
 - 107 • A GTD displays alerts to a vehicle driver on aircraft that are in a potential conflict with the
108 vehicle and when the vehicle is inside a defined area
 - 109 • An alerting system to provide an aural and visual alert to the vehicle driver. The alerts in the
110 vehicles may be generated by an on-board system (e.g. on-board alert processor) or by a
111 centralised server (A-SMGCS) with an uplink to the vehicle (up-link of alerts)
112
- 113 The moving map data can be provided by the vehicle's own Navigation System or via data link from
114 the server providing the ground traffic display data and alerting function.
- 115 In a conflict situation the system will provide an alert to the driver but will not issue a resolution as this
116 will be encompassed within local procedures to be developed by individual airport authorities
- 117 Working procedures for the vehicle drivers shall be adapted to ensure that inputs in the system for the
118 vehicle driver are easy and suitable for working inside and outside the vehicle.
- 119
- 120
- 121

122 **1 Introduction**

123 **1.1 Purpose of the document**

124 The Safety and Performance Requirements (SPR) document provides the safety and performance
 125 requirements for Services related to the operational Processes defined in the corresponding OSED
 126 D77 [14]. They shall identify the requirements needed to fulfil each KPA and include, or reference, the
 127 sources justifying those requirements. This document is used to provide the basis for ensuring that
 128 these SPR requirements are applicable during implementation and continued operation.

129 This Final version of Safety and Performance Requirements (SPR) document provides a mature level
 130 of requirements to implement “Alerts for Vehicle Drivers”. Safety Criteria, Safety Objectives and
 131 Safety Requirements are determined and described in the document “Alerts for Vehicle Drivers Safety
 132 Assessment Report” D78A [15] which is in close relation with the present version of the Final SPR.

133 **1.2 Scope**

134 This document supports the operational services and concept elements identified in the Operational
 135 Service and Environment Definition (OSED) D77, P 06.07.01 WA5 [14]. The requirements developed
 136 in the final document (chapter 3) show traceability to the higher level requirements described in the
 137 corresponding OSED, which show traceability to the higher level KPAs (through DOD), as
 138 represented in **Figure 1** SPR document with regards to other SESAR deliverables below.

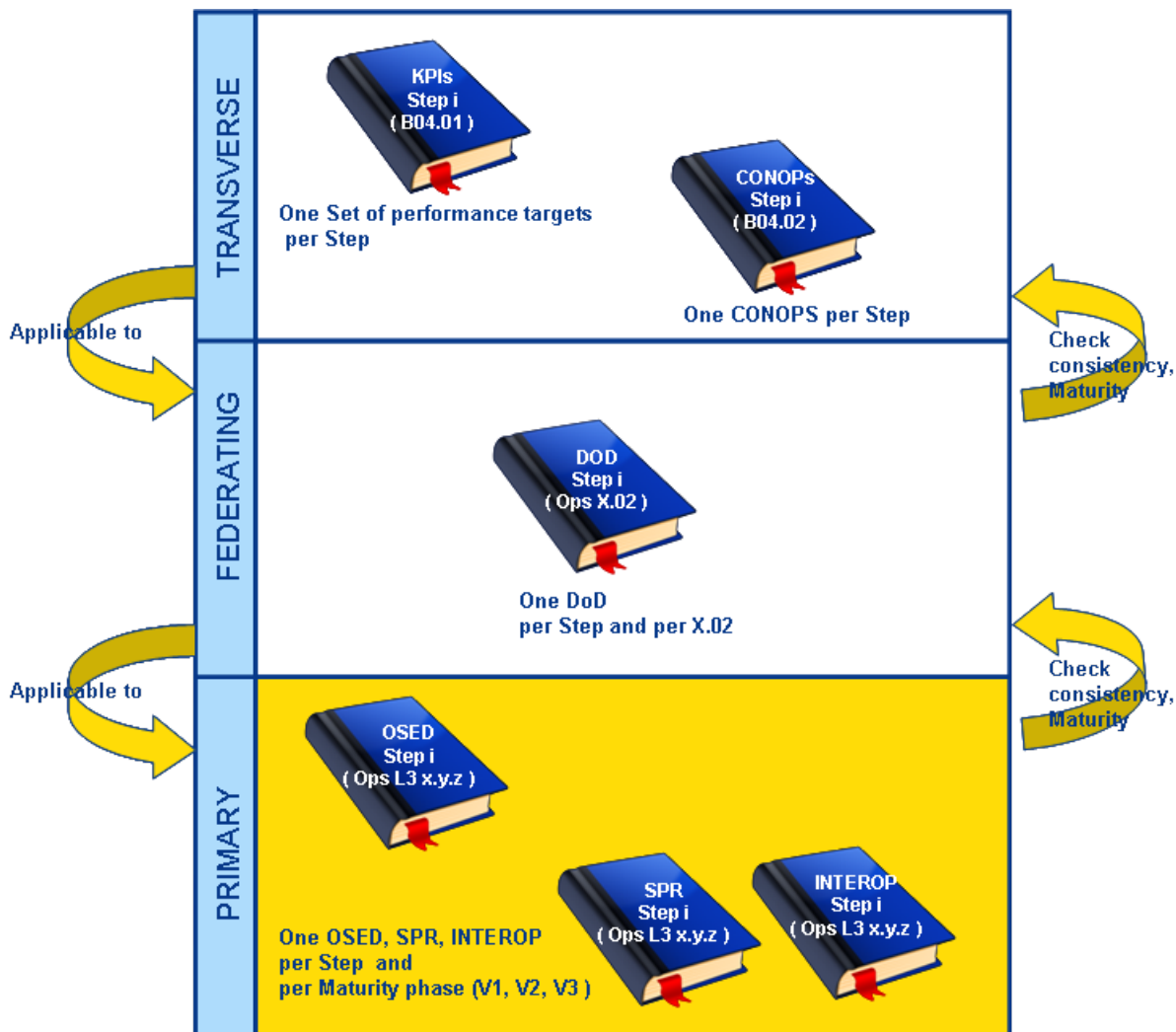


Figure 1 SPR document with regards to other SESAR deliverables

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141 In **Figure 1** SPR document with regards to other SESAR deliverables, the Steps are driven by the OI
142 Steps addressed by the project in the Integrated Roadmap document [21].

143 1.3 Intended readership

144 The main audience for this SPR is:

- 145 ▪ The other tasks within the 06.07.01 using the SPR as input, e.g. INTEROP and Validation
146 Plan for Alerts for vehicle drivers;
- 147 ▪ The project 06.07.03;
- 148 ▪ The technical project 12.03.02;
- 149 ▪ The technical project 12.04.03, is in charge of enhancing the Airport FDP to interface with
150 other subsystems;
- 151 ▪ The federating project 06.02;
- 152 ▪ SWIM project P08.03.10 concerning updates and development of the map information in the
153 moving map;
- 154 ▪ P06.03.01 for integrated V3 validations;
- 155 ▪ The project 16.06.01 for safety, support and coordination management.

156 1.4 Structure of the document

157 The structure of the document is as follows:

- 158 • §1 (This section) introduces the document;
- 159 • §2 addresses what is to be developed and provides the traceability to the relevant OSED. It
160 details in simple terms and plain language the operational concept and scope. §2.3 describe
161 the operational environment;
- 162 • §3 describes the Requirements for the Operational Services;
- 163 • §4 provides references and applicable documents;
- 164 • Appendix A refers to Deleted Requirements and Safety Assessment Report (SAR) AVDR
165 D78A.

166 1.5 Background

167 In the NUP2+ project, surf applications, similar activities have been executed with focus both on
168 aircraft and vehicles. Live trials were held at Stockholm-Arlanda Airport in 2007.

169 This document is a new update of Second Update of SPR (D45) [20], which was completed after the
170 original V2 and V2+ trials.

171 A V2+ simulated trial took place in January 2014 in Malmo, Sweden. The objective of the second trial
172 was to further test the scenarios and better prepare for live trials which took place in first half-year of
173 2015 as part of Release 5.

174 The V3 validation exercises conducted in Dublin [18] and Paris Charles de Gaulle [19] airports in Q2
175 2015 represent the last phase of validation and built on the previous results.

176

177

178 **1.6 Glossary of terms**

179 The following terms used in this document have been introduced in the Final OSED, D77, for Alerts
180 for Vehicle Drivers [14]

Term	Definition
Buffer Zone	The buffer zone is a information and protection zone around the runway for vehicle drivers. The dimensions of this zone may be decided locally.
Caution Alert	Advisory to vehicles about a situation that is becoming potentially dangerous, providing information to help the receiver to understand the reason for the danger. The receiver of this alert should follow local procedures for Caution Alert e.g. consider taking action that prevents the situation to develop into a dangerous situation and hence trigger a Warning Alert.
Warning Alert	Alert generated to vehicles about an imminent danger situation. This will be indicated on the moving map highlighting the situation and by a visual and an aural alert. The receiver of this alert should take immediate action to avoid an accident and leave the zone according to local procedures for Warning Alert. It shall be mandatory to describe local procedures for this type of alerts.

181

182 **1.7 Acronyms and Terminology**

183

Term	Definition
A/C	Aircraft
ADS-B	Automatic Dependent Surveillance-Broadcast
AMM	Airport Moving Map
A-SMGCS	Advanced Surface Movement Guidance and Control Systems
ATC	Air Traffic Control
ATCO	Air Traffic Control Officer
ATM	Air Traffic Management
AVDR	Alerts for Vehicle Drivers
CAVOK	Ceiling and visibility ok
Defined Areas	Runway-, taxiway-, buffer zone, closed and restricted areas
DOD	Detailed Operational Description
EMM	External Mitigation Means
EMMA2	European Airport Movement Management by A-SMGCS, Part 2

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Term	Definition
FIS-B	Flight Information System -Broadcast
GND	Ground Control
GNSS	Global Navigation Satellite System
GPS	Global Positioning System
GSM	Global System for Mobile Communications
GTD	Ground Traffic display
HMI	Human Machine Interface
ICAO	International Civil Aviation Organization
INTEROP	Interoperability
KPA	Key Performance Area
LVC	Low Visibility Conditions
LVP	Low Visibility Procedures
OCD	Operational Concept Description
OI	Operational Improvement
OPA	Operational Performance Assessment
OSA	Operational Safety Assessment
OSED	Operational Services and Environment Description
NUP2 +	NEAN Update programme, NEAN is the abbreviation for Northern European ADS-B Network
RWY	Runway
SAR	Safety Assessment Report
SESAR	Single European Sky ATM Research Programme
SJU	SESAR Joint Undertaking
SWAL	Software Assurance Levels
SPR	Safety and Performance Requirements
TIS-B	Traffic Information Service Broadcast
TWR	Tower Control

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Term	Definition
TWY	Taxiway
VDS	Vehicle Display System
VHF	Very High Frequency

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185 2 Summary of Operational Concept (from OSED)

186 2.1 Description of the Concept Element

187 The objective is to improve surface operations by creating a system that:

- 188 • Gives vehicle drivers better situational awareness;
- 189 • Alerts vehicle drivers when in conflict with surrounding aircraft;
- 190 • Alerts vehicle drivers when entering defined areas (RWY zone, Buffer zone and
191 closed/restricted areas).

192 The main objective is to minimise hazardous situations, by giving drivers an alert and present a clear
193 view of the situation and thus a fair chance to solve it. (Ref. OSED 2.2) [14]

194 2.2 Description of Operational Services

195 A vehicle driver on the airport needs to move efficiently and safely, avoiding dangerous situations.
196 The driver would benefit from tools for navigation on complex airports (*own situational awareness*)
197 and for avoiding aircraft whilst operating on the surface (*traffic situational awareness*). The need for
198 supporting tools is greater at night and in reduced visibility conditions. The driver should receive alerts
199 in case a hazardous situation should develop.

200 Alerts are generated within the manoeuvring area. Vehicle position and parameters for speed and
201 heading will determine when alerts shall be triggered. Two solutions for alerts (i.e. uplink of alerts from
202 ground server or alert directly triggered on-board the vehicle) are assessed.

203 The system shall be designed with the possibility for the vehicle driver not to receive an alert if he/she
204 exits the runway and returns to the same runway zone within designated time. Alerts will be triggered
205 on two different situations.

- 206 • Traffic alerts on the manoeuvring area towards aircraft;
- 207 • Alerting functions in case of infringement of a defined area.

208 Vehicle Display System (VDS) will show own vehicle position and also the surrounding and conflicting
209 traffic. A vehicle driver should manoeuvre by looking out of the window and not by looking at the
210 screen except when having an alert or being unsure of his position. The moving map is considered to
211 be a pre-requisite.

212 The restricted/closed areas are inserted into the mapping server system by authorized personnel
213 described in local procedures and presented on the moving map in the vehicle (Ref. OSED 3.2.3) [14]

214 Alerts must be aural and visual type. The driver must also be alerted when outside the vehicle. This
215 also applies to vehicles without a moving map (vehicles with reduced functionality) or as a
216 redundancy level if the moving map fails to work.

217 False alerts must be kept to a minimum level according to accepted local procedures.

218 Every time the system starts it has to do a self-check and show the user the system status. If the
219 system fails during operation, this new status must be displayed for the vehicle driver.

220 Whenever using the VDS for the first time during a shift, the driver shall verify that the latest map is
221 loaded.

222 Once started, the display needs to indicate the quality of the GNSS receiver (e.g. "GNSS OK" or while
223 acquiring "GNSS NOK"). The same way, the status of the data link (or the different data links if
224 multiple communication modes like GSM, Wi-Fi or VHF are implemented) needs to be displayed to
225 the driver. In case of malfunction and whether such a degraded mode is still acceptable under certain
226 circumstances (e.g. only during CAVOK), is up to local decision. At least a textual and/or aural
227 indication to the driver is needed to make him aware that all other traffic is removed from VDS. Rules
228 regarding degraded mode operations shall be decided locally by the airport authorities.

229 While the colours of the status indications is preferably configurable, green for “OK” and red for “NOK”
 230 is suggested. The driver may then select his/her profile (e.g. “tow truck”, “marshalling” or “snow
 231 clearing”) to activate the respective parameters.

232 Since many airports differentiate at least certain areas (usually those close to/around a RWY) who is
 233 still allowed to enter them in low visibility (LVC), the system may need to warn differently. Those
 234 restricted areas would then be taken into account to generate an area alert for those roles that are not
 235 allowed to enter it. This status can either be input manually by the driver or even be uplinked via data
 236 link. As in today’s procedure, the driver is responsible to avoid any LVP-area if need be.

237 Changes in LVP conditions, the status of the RWY and restricted/closed areas will be presented
 238 automatically on the moving map in the vehicles and displayed on the moving map...

239 There are different procedures at different airports regarding prerequisites to drive on the taxiway
 240 system. At some airports, an ATC clearance is needed while at others vehicles are allowed to drive
 241 on the manoeuvring area without needing an ATC clearance.

242 To enter a RWY zone the vehicle driver will need to make an input into VDS to acknowledge the
 243 clearance. If the driver fails to make an input on his screen he will receive a warning, as if he has no
 244 clearance, (aural/ visual) when entering the RWY zone.

245 The alerting function shall always be active, when operating in the manoeuvring area.

246 When driving close to the border of the RWY zone, the alerting system is likely to go “on and off”
 247 which might be a nuisance to the vehicle driver. This will be addressed by establishing a “buffer zone”
 248 adjacent to the RWY zone. Driver will get Caution Alert when inside the Buffer zone to advise the
 249 driver of approaching the RWY zone.

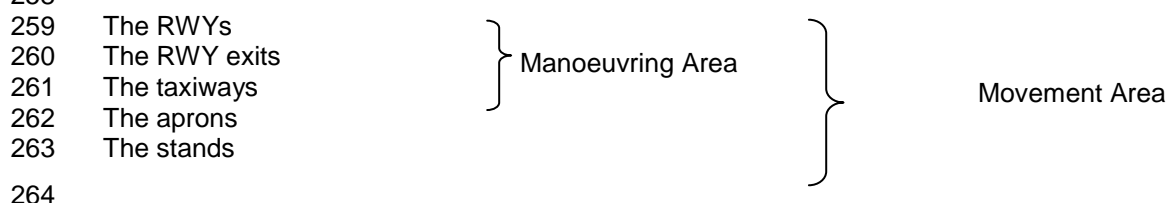
250 During the V2 validation the vehicle drivers found the buffer zone marking on the moving map to be
 251 supportive to stay clear of the RWY zone.

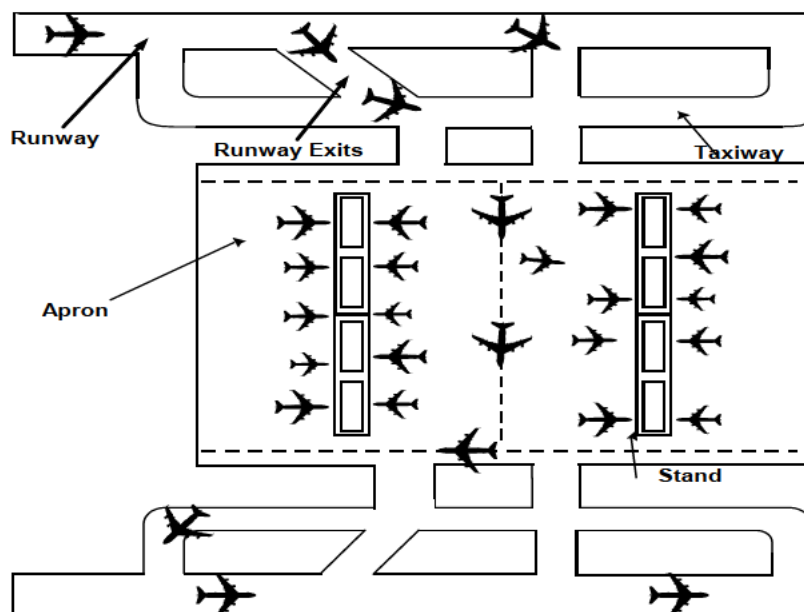
252 2.3 Description of Operational Environment

253 2.3.1 Operational Characteristics

254 The operational environment is intended for airports with medium or high traffic levels. Alerts are
 255 generated **only within the manoeuvring area**.

256 257 Typical aerodrome environment areas





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Figure 2 Aerodrome environment areas

269 2.3.2 Roles and Responsibilities

270 A vehicle driver on the airport needs to move efficiently and safely, avoiding dangerous situations.
271 Below will follow a description of the responsibilities of the various roles that influence the vehicle driver
272 in his daily work at the airport and why there is a need for a support tools for the vehicle drivers.

273 2.3.2.1 Vehicle Drivers

274 A vehicle driver on the airport needs to move efficiently and safely, avoiding dangerous situations.
275 The driver would benefit from tools for navigation on complex airports (*own ship situational awareness*)
276 and for avoiding aircraft whilst operating on the surface (*traffic situational awareness*).
277 The need for supporting tools is greater at night and in reduced visibility conditions. The driver should
278 receive alerts in case a hazardous situation should develop.

279 A vehicle driver should manoeuvre by looking out of the window and not by looking at the screen
280 except when having an alert or being unsure of his position.

281 A vehicle driver must always monitor the frequency while on the manoeuvring area. At some airports
282 it is mandatory to monitor several frequencies e.g. internal vehicle frequency and ATC frequencies.

283 In order to guarantee that the alert is noticed by the driver both an audio and a visual alert is
284 preferred. Traffic alerts must be presented on a moving map to simplify for the driver to detect the
285 reason or reasons for the alert in order to be able to avoid the reason for the hazard/hazards.
286 Restricted/closed areas will be presented on a moving map.

287 A distinction can be made between those vehicles authorised to operate on the manoeuvring area
288 and the apron service vehicles. The latter group is restricted to operate on the apron area and is not
289 authorised to enter the manoeuvring area.

290 2.3.2.2 ATC

291 The principal responsibility of air traffic controllers is to issue clearances, instructions and information
292 to aircraft and vehicles under their control to achieve a safe, orderly and expeditious flow of air traffic
293 on and in the vicinity of the airport. The ATCO has the full responsibility for ensuring that the RWY is
294 free when issuing a take-off or landing clearance.

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295 RWY operations require that separation is applied whereas no separation minima are applied on
296 aprons and taxiways. Procedures are based on visual "see and be seen" principles to maintain
297 spacing between aircraft and/or vehicles. The progressive increase in traffic, the complexity of
298 aerodrome layouts and the increasing number of operations that take place in low visibility conditions
299 require advanced capabilities to ensure spacing and separation when visual means are not adequate.
300 This is a prerequisite to maintained aerodrome capacity and safety in low visibility conditions.

301 Aprons are normally not controlled. Munich and Frankfurt exemplifies exceptions.

302 Controllers primarily need a clear and dynamic presentation of the traffic situation in order to safely
303 and efficiently manage aircraft and vehicle operations. The controller would also benefit from decision
304 support tools to detect and resolve specific situations. Functions for interacting with, and monitoring
305 of, the system operation must be available.

306 The following tower operator roles are involved in airport surface operations. Operator roles can be
307 combined depending on traffic situation, e.g. TWR and Ground, and sometimes all roles, can be held
308 by one controller.

309 **Tower Supervisor** coordinates TWR operations and is responsible for contacts with external parties.

310 **Clearance Delivery** issues the clearance for engine start and delivers the ATC clearance (from
311 departing to arrival airport) to the flight crew.

312 **Assistant controller** coordinates requests from vehicle drivers to enter the manoeuvring area with
313 either RWY- or GND controller. After received clearance the Assistant controller relays the clearance
314 to the vehicle driver.

315 **GND controller** issues pushback approval and taxi clearance to and from the RWYs to the parking
316 stand with restrictions that may be required to provide sequencing, spacing to other departing and
317 arriving traffic and possible vehicle traffic on the manoeuvring area. The GND controller is responsible
318 for all clearances (aircraft and vehicles) that are issued on the taxiways.

319 **RWY controller** sequences flights for take-off taking into account slot times, arriving traffic, wake-
320 vortex constraints and required separation after departure. For arriving flights, the RWY controller
321 manages the RWY occupancy, issues the landing clearance and controls the aircraft until it exits the
322 RWY. The TWR controller is responsible for all clearances (aircraft and vehicles) that are issued on
323 the RWY.

324 2.3.2.3 Flight Crew

325 On taxiways and aprons, flight crew are responsible for avoidance of collisions with obstacles, aircraft
326 and vehicles except when in visibility conditions 3 & 4 (cf. Appendix A in [13]), where they are not
327 capable anymore to avoid collisions. In visibility conditions 1 & 2 they shall apply "see and avoid"
328 rules. The flight crew will use out-the-window scanning to acquire visual contact with other traffic,
329 including vehicles, and adjust manoeuvres accordingly. TWR Ground controller will issue taxi
330 clearances, instructions, safety and efficiency related information to help the flight crew perform their
331 task but this does not relieve the flight crew from their responsibilities.

332 In low visibility conditions, at night or if the flight crew are unfamiliar with the airport, there is an
333 increased probability of the flight crew misunderstanding or misinterpreting the taxi clearance or
334 becoming confused as to their actual position. The controller can then (with the help of an A-SMGCS)
335 provide respective instructions or commit a follow-me vehicle to help the crew find its way.

336

337 2.3.3 Constraints

338 The position of the aircraft transmitted by the transponder needs to be determined in order to know
339 how to decide the target position and size. This is vital for target accuracy. It is suggested that target
340 position shall be regarded to be in the centre of gravity of the aircraft. The alerting systems in vehicles
341 must react when they are supposed to, i.e. show the position and cause for the warning on a moving
342 map (visual) and preferably also give an aural alert to the driver.

343 The closed/restricted areas must be displayed on a moving map. If they aren't, reasons could be
344 system failure in transmitting and/or receiving accurate information to the moving map.

345 The alerting system must be trustfully/accurately tuned. If not it is possible that it will eventually be
346 ignored or even shut off. The driver must feel that alerts are triggered at the right moment.

347 The alerting system must have parameters/algorithms that can be changed to fit any airport.

348 The system must be capable of accommodating different vehicle profiles eg. Snow ploughs, tow
349 trucks etc.

350

351 **Uplinks of alerts from a ground server;** A ground server should only provide information used for
352 local conflict calculation.

353 Constraints could be:

- 354 • The ground server must be configured to deliver vehicle specific alerts that may be different
355 from those used for a controller,
- 356 • The ATCO and driver systems should be distinct systems in order provide some measure of
357 redundancy in the event of failure of one of the systems,
- 358 • slower response time in both directions,
- 359 • poorer precision and an overall slower service due to lack of possibilities to send position
360 reports with the same frequency using ADS-B as is possible with a e.g. GPS transmitter in a
361 vehicle,
- 362 • the vehicle must be equipped with device to be able to send out position reports,
- 363 • increased complexity,
- 364 • radio shadows

365 **Alerts based on technique triggered directly into the vehicle;** the technical system could fail in
366 receiving and/or transforming vital information to an alert in the vehicle.

367 If the system in a vehicle fails to receive accessible position reports or other inadequate data, and,
368 thus not having aircraft displayed on the moving map might cause a hazardous situation.

369 Vehicle Display System must be easy to work with for all kinds of vehicles operating on the
370 manoeuvring area under various conditions, e.g. different light conditions.

371

372 **3 Requirements**

373 This section describes the safety and performance requirements. The SPR requirements show
374 traceability to the operational requirements (applicable to Processes and Services (P&S)) as
375 described in the OSED. Requirements are written using Requirements and V&V Guidelines [2].

376 In order to enable the import of SE Data in the SESAR SE Repository, the description uses the layout
377 described in Templates and Toolbox User Manual [3].

378 **3.1 Operational Service Requirements**

379 **3.1.1 Safety Requirements**

380 For SESAR applications, Safety guidance is provided by P16.06.01 (Safety Reference Material) [8].

381
382 While SPR is dealing with two types of alerting systems (On-board generated alerts and Up-linked
383 alerts from ground server), some of the requirements are duplicated because of the structure of
384 presenting the requirements. For better reading and understanding of requirements, architectural
385 figures for both systems are added below in **Figure 3** and **Figure 4**

386

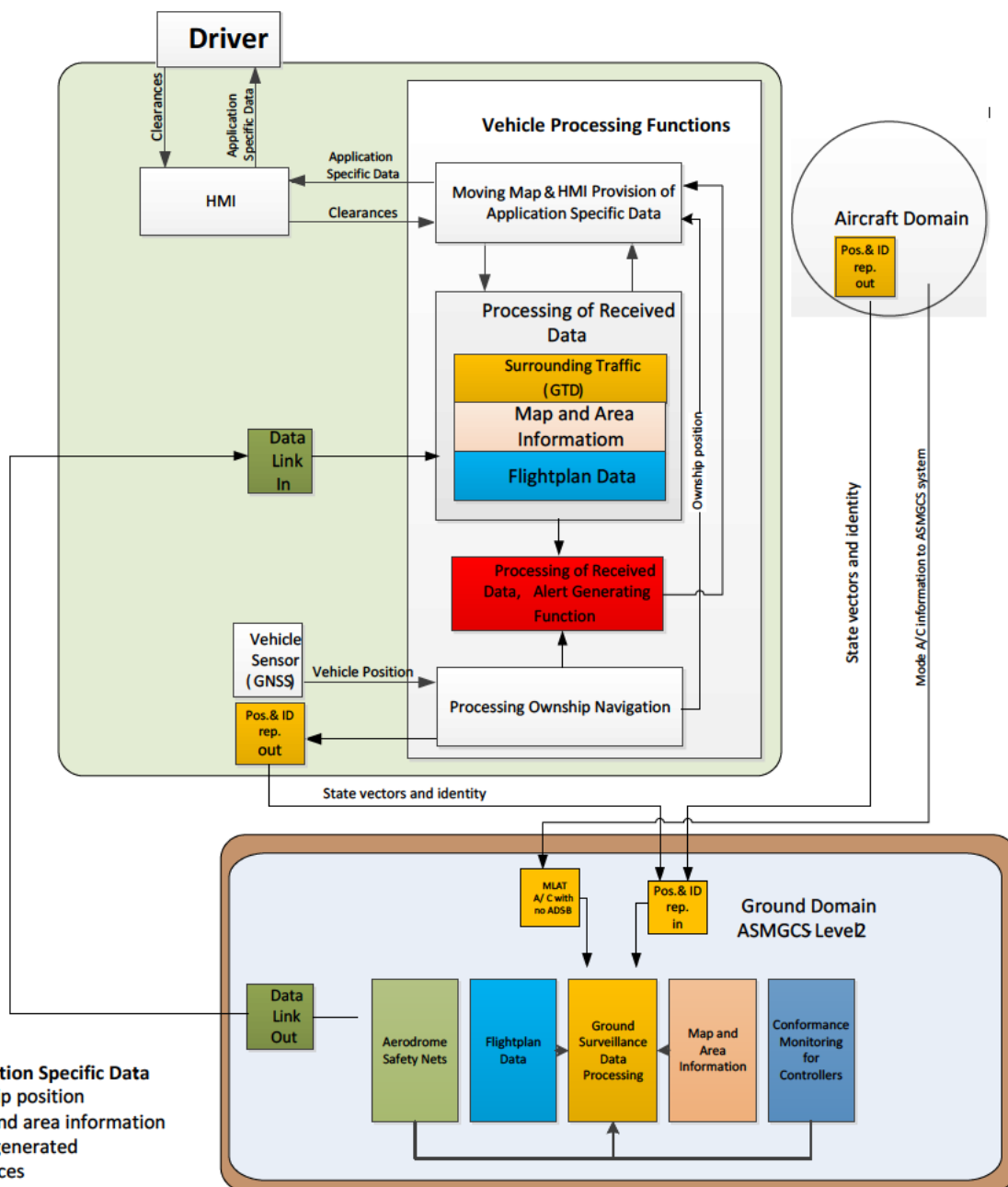


Figure 3 On board generated alerts system description

387
388
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390
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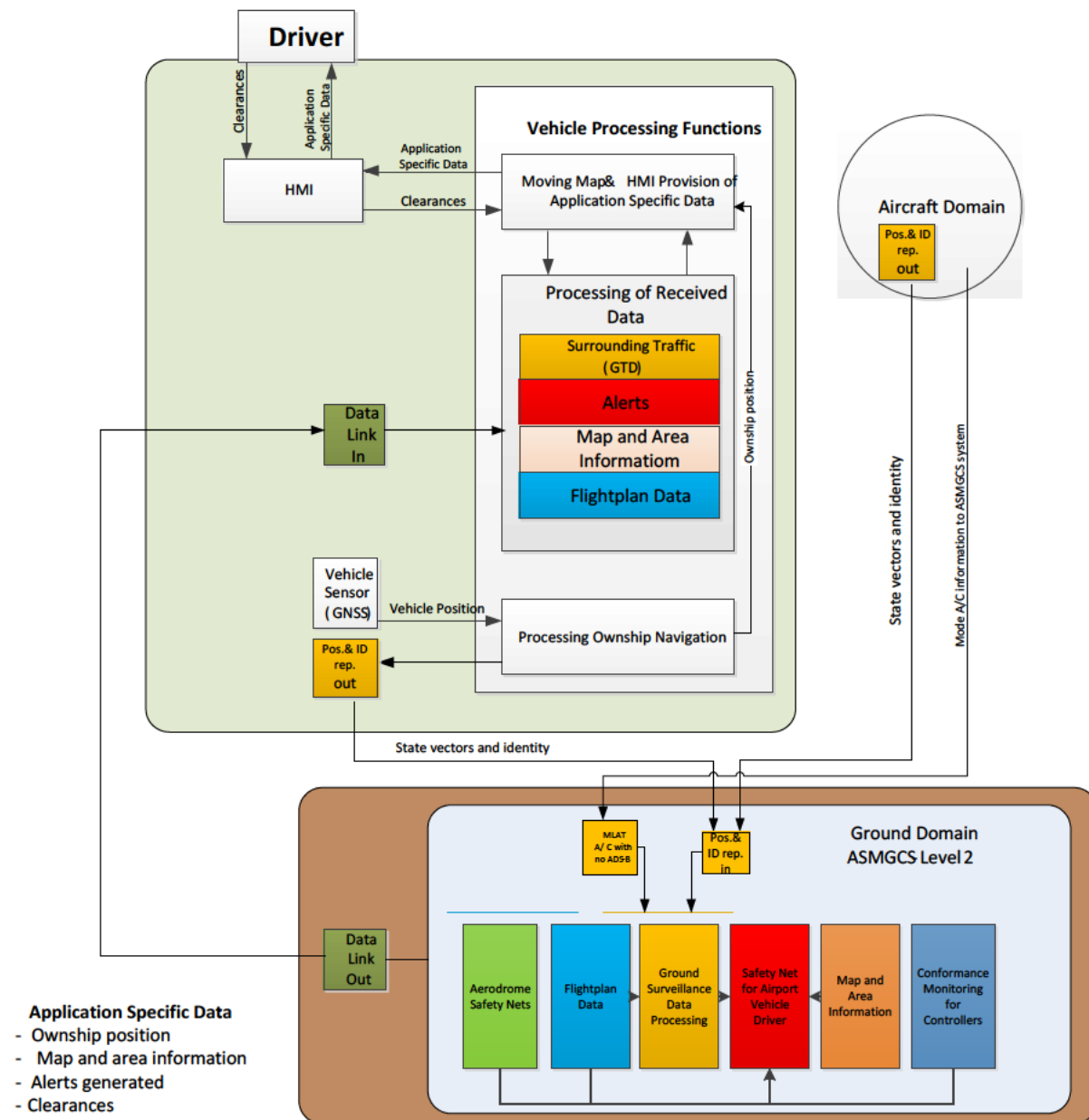


Figure 4 Uplink of alerts from ground system description

The VDS is the overall display unit upon which layers that include AMM and the GTD are displayed. The AMM displays the airport geography and the vehicle’s “own position” and the GTD displays surrounding mobiles. The VDS also includes the display for alerts that have been triggered either by the on-board system or by the central A-SMGCS server. Requirements are numbered as follows:

- HMI/Procedures: REQ-06.07.01-SPR-AVDR.00xx
- Alerting Service (Up-link of alerts): REQ-06.07.01-SPR-AVDR.01xx
- Alerting Service (On-board alerting system): REQ-06.07.01-SPR-AVDR.02xx
- Airport Moving Map: REQ-06.07.01-SPR-AVDR.03xx
- Ground Traffic Display: REQ-06.07.01-SPR-AVDR.04xx
- Vehicle Display System: REQ-06.07.01-SPR-AVDR.05xx
- Performance Requirements: REQ-06.07.01-SPR-AVDR.06xx (previously ynnumbered)

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409 3.1.1.1 HMI and Procedures

410 [REQ]

Identifier	REQ-06.07.01-SPR-AVDR.0070
Requirement	A Caution Alert shall be displayed in VDS alerting layer. It should be in yellow colour.
Title	Associated with detected alerting situation
Status	<Validated>
Rationale	To recognize hazardous situation
Category	<Safety>
Validation Method	<Live Trial>
Verification Method	<Test>

411

412 [REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<APPLIES TO>	<Operational Focus Area>	OFA01.02.01	N/A
<SATISFIES>	<ATMS Requirement>	REQ-06.07.01-OSED-AVDR.0101	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-06.07.01-OSED-AVDR.0209	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-06.07.01-OSED-AVDR.0225	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-06.02-DOD-6200.0005	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-06.02-DOD-6200.0008	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-06.02-DOD-6200.0011	<Partial>

413

414 [REQ]

Identifier	REQ-06.07.01-SPR-AVDR.0071
Requirement	A Warning Alert shall be displayed in VDS alerting layer. It should be in red colour.
Title	Associated with detected alerting situation
Status	<Validated>
Rationale	To recognize hazardous situation
Category	<Safety>
Validation Method	<Live Trial>
Verification Method	<Test>

415

416 [REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<APPLIES TO>	<Operational Focus Area>	OFA01.02.01	N/A
<SATISFIES>	<ATMS Requirement>	REQ-06.07.01-OSED-AVDR.0102	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-06.07.01-OSED-AVDR.0209	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-06.07.01-OSED-AVDR.0225	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-06.02-DOD-6200.0005	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-06.02-DOD-6200.0008	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-06.02-DOD-6200.0011	<Partial>

417

418 [REQ]

Identifier	REQ-06.07.01-SPR-AVDR.0072
Requirement	Yellow traffic alert "connection line" shall be displayed on VDS alerting layer around target and own vehicle with connection line indicating direction of involved mobile during Caution Alert.
Title	Associated with detected alerting situation
Status	<Validated>
Rationale	To recognize hazardous situation
Category	<Safety>
Validation Method	<Live Trial>
Verification Method	<Test>

419

420 [REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<APPLIES TO>	<Operational Focus Area>	OFA01.02.01	N/A
<SATISFIES>	<ATMS Requirement>	REQ-06.07.01-OSED-AVDR.0101	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-06.02-DOD-6200.0005	<Partial>

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<SATISFIES>	<ATMS Requirement>	REQ-06.02-DOD-6200.0008	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-06.02-DOD-6200.0011	<Partial>

421

422

[REQ]

Identifier	REQ-06.07.01-SPR-AVDR.0073
Requirement	Red traffic alert "connection line" shall be displayed on VDS alerting layer around target and own vehicle with connection line indicating direction of involved mobile during Warning Alert.
Title	Associated with detected alerting situation
Status	<Validated>
Rationale	To recognize hazardous situation
Category	<Safety>
Validation Method	<Live Trial>
Verification Method	<Test>

423

424

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<APPLIES TO>	<Operational Focus Area>	OFA01.02.01	N/A
<SATISFIES>	<ATMS Requirement>	REQ-06.07.01-OSED-AVDR.0101	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-06.02-DOD-6200.0005	<Partial>
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<SATISFIES>	<ATMS Requirement>	REQ-06.02-DOD-6200.0011	<Partial>

425

426

[REQ]

Identifier	REQ-06.07.01-SPR-AVDR.0074
Requirement	Aural Caution Alerts should be a single word to be determined by local airport authorities and shall self- cancel after a predetermined period of time or number.
Title	Aural caution alert
Status	<Validated>
Rationale	Distinctive and not to be confused with other sounds
Category	<Performance>
Validation Method	<Live Trial>
Verification Method	<Test>

427

428

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<APPLIES TO>	<Operational Focus Area>	OFA01.02.01	N/A
<SATISFIES>	<ATMS Requirement>	REQ-06.07.01-OSED-AVDR.0101	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-06.07.01-OSED-AVDR.0103	<Full>
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<SATISFIES>	<ATMS Requirement>	REQ-06.02-DOD-6200.0008	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-06.02-DOD-6200.0011	<Partial>

429

430

[REQ]

Identifier	REQ-06.07.01-SPR-AVDR.0075
Requirement	Aural Warning Alerts should be a single word to be determined by local implementation such as "Traffic" or "RWY".
Title	Wording for aural Warning Alerts
Status	<Validated>
Rationale	It's important that the aural warning allow for immediate attention of the vehicle driver of the kind of alert.
Category	<Performance>
Validation Method	<Live Trial>
Verification Method	<Test>

431

432

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<APPLIES TO>	<Operational Focus Area>	OFA01.02.01	N/A
<SATISFIES>	<ATMS Requirement>	REQ-06.07.01-OSED-AVDR.0102	<Full>

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<SATISFIES>	<ATMS Requirement>	REQ-06.07.01-OSED-AVDR.0104	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-06.07.01-OSED-AVDR.0218	<Full>
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<SATISFIES>	<ATMS Requirement>	REQ-06.02-DOD-6200.0011	<Partial>

433

434 [REQ]

Identifier	REQ-06.07.01-SPR-AVDR.0076
Requirement	The vehicle driver shall receive aural alert when in or outside of vehicle, engine running or not.
Title	Aural alerts
Status	<Validated>
Rationale	It's important that the aural alert allow for immediate attention of the vehicle driver and is available also when outside of vehicle.
Category	<Safety>
Validation Method	<Expert Group (Judgement Analysis)>
Verification Method	<Analysis>

435

436 [REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<APPLIES TO>	<Operational Focus Area>	OFA01.02.01	N/A
<SATISFIES>	<ATMS Requirement>	REQ-06.07.01-OSED-AVDR.0101	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-06.07.01-OSED-AVDR.0102	<Full>
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<SATISFIES>	<ATMS Requirement>	REQ-06.02-DOD-6200.0005	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-06.02-DOD-6200.0008	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-06.02-DOD-6200.0011	<Partial>

437

438 [REQ]

Identifier	REQ-06.07.01-SPR-AVDR.0077
Requirement	The VDS shall receive and treat clearances related to its vehicle operations shown on HMI.
Title	Receiving of clearances
Status	<Validated>
Rationale	In order to avoid an alert in a situation when driver is obtained a clearance
Category	<Safety>
Validation Method	<Real Time Simulation>
Verification Method	<Test>

439

440 [REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<APPLIES TO>	<Operational Focus Area>	OFA01.02.01	N/A
<SATISFIES>	<ATMS Requirement>	REQ-06.07.01-OSED-AVDR.0105	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-06.02-DOD-6200.0005	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-06.02-DOD-6200.0008	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-06.02-DOD-6200.0011	<Partial>

441

442 [REQ]

Identifier	REQ-06.07.01-SPR-AVDR.0078
Requirement	The VDS HMI shall have clearance conformation/acknowledgement function.
Title	To make possible to the vehicle driver to acknowledge received clearances.
Status	<Validated>
Rationale	In order to avoid an alert in a situation when driver is obtained a clearance
Category	<Safety>
Validation Method	<Live Trial>
Verification Method	<Test>

443

444

445

446 [REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<APPLIES TO>	<Operational Focus Area>	OFA01.02.01	N/A
<SATISFIES>	<ATMS Requirement>	REQ-06.07.01-OSED-AVDR.0105	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-06.02-DOD-6200.0005	<Partial>
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<SATISFIES>	<ATMS Requirement>	REQ-06.02-DOD-6200.0011	<Partial>

447

448 [REQ]

Identifier	REQ-06.07.01-SPR-AVDR.0011
Requirement	The driver shall confirm the received clearances.
Title	Confirmation of received clearances
Status	<Validated>
Rationale	In order to avoid an alert in a situation when driver is obtained a clearance
Category	<Safety>
Validation Method	<Live Trial>
Verification Method	<Test>

449

450 [REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<APPLIES TO>	<Operational Focus Area>	OFA01.02.01	N/A
<SATISFIES>	<ATMS Requirement>	REQ-06.07.01-OSED-AVDR.0105	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-06.02-DOD-6200.0005	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-06.02-DOD-6200.0008	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-06.02-DOD-6200.0011	<Partial>

451

452 [REQ]

Identifier	REQ-06.07.01-SPR-AVDR.0079
Requirement	The VDS HMI shall have adjustable brightness display function.
Title	VDS display brightness
Status	<Validated>
Rationale	To allow vehicle driver to select the most appropriate brightness settings for best vision
Category	<Performance>
Validation Method	<Real Time Simulation>
Verification Method	<Inspection>

453

454 [REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<APPLIES TO>	<Operational Focus Area>	OFA01.02.01	N/A
<SATISFIES>	<ATMS Requirement>	REQ-06.07.01-OSED-AVDR.0106	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-06.07.01-OSED-AVDR.0107	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-06.02-DOD-6200.0005	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-06.02-DOD-6200.0008	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-06.02-DOD-6200.0011	<Partial>

455

456 [REQ]

Identifier	REQ-06.07.01-SPR-AVDR.0080
Requirement	The VDS HMI shall have predefined night and day display mode function.
Title	VDS display brightness
Status	<Validated>
Rationale	In night time conditions a driver could be dazzled by a screen to ambient
Category	<Performance>
Validation Method	<Real Time Simulation>
Verification Method	<Inspection>

457

458 [REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<APPLIES TO>	<Operational Focus Area>	OFA01.02.01	N/A
<SATISFIES>	<ATMS Requirement>	REQ-06.07.01-OSED-AVDR.0106	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-06.07.01-OSED-AVDR.0107	<Partial>

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<SATISFIES>	<ATMS Requirement>	REQ-06.02-DOD-6200.0005	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-06.02-DOD-6200.0008	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-06.02-DOD-6200.0011	<Partial>

459
460

[REQ]

Identifier	REQ-06.07.01-SPR-AVDR.0081
Requirement	The VDS shall have functionality to indicate LVP conditions on HMI.
Title	LVP condition indication
Status	<Validated>
Rationale	The LVP conditions could be of influence for the use of the alerting system for vehicle drivers
Category	<Performance>
Validation Method	<Live Trial>
Verification Method	<Test>

461
462

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<APPLIES_TO>	<Operational Focus Area>	OFA01.02.01	N/A
<SATISFIES>	<ATMS Requirement>	REQ-06.07.01-OSED-AVDR.0112	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-06.02-DOD-6200.0005	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-06.02-DOD-6200.0008	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-06.02-DOD-6200.0011	<Partial>

463
464

[REQ]

Identifier	REQ-06.07.01-SPR-AVDR.0082
Requirement	VDS HMI shall have GNSS health status indicator.
Title	GNSS status indication
Status	<Validated>
Rationale	To indicate vehicle driver of GNSS status.
Category	<Performance>
Validation Method	<Live Trial>
Verification Method	<Test>

465
466

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<APPLIES_TO>	<Operational Focus Area>	OFA01.02.01	N/A
<SATISFIES>	<ATMS Requirement>	REQ-06.07.01-OSED-AVDR.0503	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-06.02-DOD-6200.0008	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-06.02-DOD-6200.0011	<Partial>

467
468

[REQ]

Identifier	REQ-06.07.01-SPR-AVDR.0083
Requirement	Malfunction of GNSS shall be highlighted.
Title	GNSS status indication
Status	<Validated>
Rationale	To detect GNSS malfunction.
Category	<Performance>
Validation Method	<Live Trial>
Verification Method	<Test>

469
470

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<APPLIES_TO>	<Operational Focus Area>	OFA01.02.01	N/A
<SATISFIES>	<ATMS Requirement>	REQ-06.07.01-OSED-AVDR.0511	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-06.02-DOD-6200.0008	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-06.02-DOD-6200.0011	<Partial>

471
472

[REQ]

Identifier	REQ-06.07.01-SPR-AVDR.0084
Requirement	VDS HMI shall have Data Link health status indicator.

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Title	GNSS status indication
Status	<Validated>
Rationale	To indicate vehicle driver of Data Link status.
Category	<Performance>
Validation Method	<Live Trial>
Verification Method	<Test>

473

474 [REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<APPLIES_TO>	<Operational Focus Area>	OFA01.02.01	N/A
<SATISFIES>	<ATMS Requirement>	REQ-06.07.01-OSED-AVDR.0509	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-06.02-DOD-6200.0008	<Partial>
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475

476 [REQ]

Identifier	REQ-06.07.01-SPR-AVDR.0085
Requirement	Malfunction of Data Link shall be highlighted.
Title	Data Link status indication
Status	<Validated>
Rationale	To detect Data Link malfunction.
Category	<Performance>
Validation Method	<Live Trial>
Verification Method	<Test>

477

478 [REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<APPLIES_TO>	<Operational Focus Area>	OFA01.02.01	N/A
<SATISFIES>	<ATMS Requirement>	REQ-06.07.01-OSED-AVDR.0510	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-06.02-DOD-6200.0008	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-06.02-DOD-6200.0011	<Partial>

479

480 [REQ]

Identifier	REQ-06.07.01-SPR-AVDR.0086
Requirement	The VDS should have pan and zoom functionality.
Title	Pan and zoom functionality
Status	<Validated>
Rationale	To be better equipped to provide situational awareness
Category	<Performance>
Validation Method	<Live Trial>
Verification Method	<Test>

481

482 [REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<APPLIES_TO>	<Operational Focus Area>	OFA01.02.01	N/A
<SATISFIES>	<ATMS Requirement>	REQ-06.07.01-OSED-AVDR.0113	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-06.02-DOD-6200.0005	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-06.02-DOD-6200.0008	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-06.02-DOD-6200.0011	<Partial>

483

484 [REQ]

Identifier	REQ-06.07.01-SPR-AVDR.0087
Requirement	The VDS HMI should have function to recall predetermined zoom settings.
Title	Pan and zoom functionality
Status	<Validated>
Rationale	To be better equipped to gain situational awareness
Category	<Performance>
Validation Method	<Live Trial>
Verification Method	<Test>

485

486 [REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<APPLIES TO>	<Operational Focus Area>	OFA01.02.01	N/A
<SATISFIES>	<ATMS Requirement>	REQ-06.07.01-OSED-AVDR.0113	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-06.02-DOD-6200.0005	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-06.02-DOD-6200.0008	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-06.02-DOD-6200.0011	<Partial>

487

488 [REQ]

Identifier	REQ-06.07.01-SPR-AVDR.0088
Requirement	In case of alert, VDS HMI should automatically pan and zoom to conflicting situation.
Title	Pan and zoom functionality
Status	<Validated>
Rationale	To be better equipped to gain situational awareness
Category	<Performance>
Validation Method	<Live Trial>
Verification Method	<Test>

489

490 [REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<APPLIES TO>	<Operational Focus Area>	OFA01.02.01	N/A
<SATISFIES>	<ATMS Requirement>	REQ-06.07.01-OSED-AVDR.0113	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-06.02-DOD-6200.0005	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-06.02-DOD-6200.0008	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-06.02-DOD-6200.0011	<Partial>

491

492 [REQ]

Identifier	REQ-06.07.01-SPR-AVDR.0049
Requirement	Vehicle Drivers shall be trained along agreed procedures to make appropriate action in case of warning or caution alert.
Title	Procedures and Training for vehicle drivers
Status	<Validated>
Rationale	To make sure that vehicle drivers are properly trained
Category	<Safety>
Validation Method	<Live Trial>
Verification Method	<Inspection>

493

494 [REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<APPLIES TO>	<Operational Focus Area>	OFA01.02.01	N/A
<SATISFIES>	<ATMS Requirement>	REQ-06.07.01-OSED-AVDR.0103	<Full>
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<SATISFIES>	<ATMS Requirement>	REQ-06.07.01-OSED-AVDR.0512	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-06.02-DOD-6200.0005	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-06.02-DOD-6200.0008	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-06.02-DOD-6200.0011	<Partial>

495

496 [REQ]

Identifier	REQ-06.07.01-SPR-AVDR.0062
Requirement	In case of deficient technical presentation of the situation, driver shall be trained to detect this failure and to take appropriate decision
Title	Deficient HMI
Status	<Validated>
Rationale	Guideline in case of abnormal situation
Category	<Safety>
Validation Method	<Live Trial>
Verification Method	<Inspection>

497

498 [REQ Trace]

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Relationship	Linked Element Type	Identifier	Compliance
<APPLIES TO>	<Operational Focus Area>	OFA01.02.01	N/A
<SATISFIES>	<ATMS Requirement>	REQ-06.07.01-OSED-AVDR.0103	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-06.07.01-OSED-AVDR.0104	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-06.02-DOD-6200.0005	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-06.02-DOD-6200.0008	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-06.02-DOD-6200.0011	<Partial>

499

500

501 3.1.1.2 Alerting service

502 3.1.1.2.1 Up-link of alerts

503

504

505

[REQ]

Identifier	REQ-06.07.01-SPR-AVDR.0101
Requirement	VDS Alerting system shall be able to receive appropriate alerts towards the aircraft and defined areas via data link.
Title	Alerts via Data link
Status	<Validated>
Rationale	To be able to receive alerts
Category	<Safety>
Validation Method	<Live Trial>
Verification Method	<Test>

506

507

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<APPLIES TO>	<Operational Focus Area>	OFA01.02.01	N/A
<SATISFIES>	<ATMS Requirement>	REQ-06.07.01-OSED-AVDR.0101	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-06.07.01-OSED-AVDR.0102	<Full>
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<SATISFIES>	<ATMS Requirement>	REQ-06.02-DOD-6200.0005	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-06.02-DOD-6200.0008	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-06.02-DOD-6200.0011	<Partial>

508

509

[REQ]

Identifier	REQ-06.07.01-SPR-AVDR.0102
Requirement	Warning and Caution Alerts in appropriate situations, also Warning and Caution Alerts toward the defined areas shall be provided via data link.
Title	Alerting service
Status	<Validated>
Rationale	To be able to receive alerts
Category	<Safety>
Validation Method	<Live Trial>
Verification Method	<Test>

510

511

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<APPLIES TO>	<Operational Focus Area>	OFA01.02.01	N/A
<SATISFIES>	<ATMS Requirement>	REQ-06.07.01-OSED-AVDR.0101	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-06.07.01-OSED-AVDR.0102	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-06.07.01-OSED-AVDR.0206	<Full>
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<SATISFIES>	<ATMS Requirement>	REQ-06.02-DOD-6200.0011	<Partial>

512

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514 [REQ]

Identifier	REQ-06.07.01-SPR-AVDR.0103
Requirement	The vehicle driver shall receive a Warning Alert via up-link from ground server when in the RWY zone and an aircraft is on approach less than 25 seconds from RWY zone.
Title	Warning alert triggered associated with detected alerting situation
Status	<Validated>
Rationale	Avoid hazardous situation
Category	<Safety>
Validation Method	<Live Trial>
Verification Method	<Test>

515

516 [REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<APPLIES_TO>	<Operational Focus Area>	OFA01.02.01	N/A
<SATISFIES>	<ATMS Requirement>	REQ-06.07.01-OSED-AVDR.0207	<Full>
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<SATISFIES>	<ATMS Requirement>	REQ-06.07.01-OSED-AVDR.0223	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-06.02-DOD-6200.0005	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-06.02-DOD-6200.0008	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-06.02-DOD-6200.0011	<Partial>

517

518 [REQ]

Identifier	REQ-06.07.01-SPR-AVDR.0104
Requirement	The vehicle driver shall receive a Caution Alert via up-link from ground server when in the RWY zone and an aircraft is on approach 25-40 seconds from the RWY zone.
Title	Caution alert triggered associated with detected alerting situation
Status	<Validated>
Rationale	Avoid hazardous situation
Category	<Safety>
Validation Method	<Live Trial>
Verification Method	<Test>

519

520 [REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<APPLIES_TO>	<Operational Focus Area>	OFA01.02.01	N/A
<SATISFIES>	<ATMS Requirement>	REQ-06.07.01-OSED-AVDR.0207	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-06.07.01-OSED-AVDR.0212	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-06.07.01-OSED-AVDR.0215	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-06.07.01-OSED-AVDR.0223	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-06.02-DOD-6200.0005	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-06.02-DOD-6200.0008	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-06.02-DOD-6200.0011	<Partial>

521

522 [REQ]

Identifier	REQ-06.07.01-SPR-AVDR.0105
Requirement	The vehicle driver shall receive a Warning Alert via up-link from ground server when in the RWY zone ahead of an aircraft when the aircraft indicates velocity > 20 kt.
Title	Warning Alert triggered associated with detected alerting situation
Status	<Validated>
Rationale	Avoid hazardous situation
Category	<Safety>
Validation Method	<Live Trial>
Verification Method	<Test>

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524 [REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<APPLIES_TO>	<Operational Focus Area>	OFA01.02.01	N/A
<SATISFIES>	<ATMS Requirement>	REQ-06.07.01-OSED-AVDR.0207	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-06.07.01-OSED-AVDR.0215	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-06.07.01-OSED-AVDR.0223	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-06.07.01-OSED-AVDR.0224	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-06.02-DOD-6200.0005	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-06.02-DOD-6200.0008	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-06.02-DOD-6200.0011	<Partial>

525

526 [REQ]

Identifier	REQ-06.07.01-SPR-AVDR.0106
Requirement	The vehicle driver shall receive a Caution Alert via up-link from ground server when a vehicle is operating within the RWY zone and an a/c is lining up for departure.
Title	Caution Alert triggered associated with detected alerting situation
Status	<Validated>
Rationale	Avoid a potential hazardous situation
Category	<Safety>
Validation Method	<Live Trial>
Verification Method	<Test>

527

528 [REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<APPLIES_TO>	<Operational Focus Area>	OFA01.02.01	N/A
<SATISFIES>	<ATMS Requirement>	REQ-06.07.01-OSED-AVDR.0207	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-06.07.01-OSED-AVDR.0212	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-06.07.01-OSED-AVDR.0215	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-06.07.01-OSED-AVDR.0223	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-06.07.01-OSED-AVDR.0224	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-06.02-DOD-6200.0008	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-06.02-DOD-6200.0011	<Partial>

529

530 [REQ]

Identifier	REQ-06.07.01-SPR-AVDR.0107
Requirement	The vehicle driver shall receive a Warning Alert via up-link from ground server for traffic when the vehicle and the aircraft predicted trajectories intersect within 7 seconds.
Title	Traffic alert triggered associated with detected alerting situation vehicle and aircraft.
Status	<Validated>
Rationale	To avoid hazardous situation with regards to vehicle and aircraft.
Category	<Safety>
Validation Method	<Live Trial>
Verification Method	<Test>

531

532 [REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<APPLIES_TO>	<Operational Focus Area>	OFA01.02.01	N/A
<SATISFIES>	<ATMS Requirement>	REQ-06.07.01-OSED-AVDR.0207	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-06.02-DOD-6200.0005	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-06.02-DOD-6200.0008	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-06.02-DOD-6200.0011	<Partial>

533

534 [REQ]

Identifier	REQ-06.07.01-SPR-AVDR.0108
Requirement	The vehicle driver shall receive a Caution Alert via up-link from ground

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	server when entering closed/ restricted area.
Title	Area alert triggered associated with detected alerting situation towards the defined area
Status	<Validated>
Rationale	To avoid hazardous situation with regards to defined areas.
Category	<Safety>
Validation Method	<Live Trial>
Verification Method	<Test>

535

536 [REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<APPLIES TO>	<Operational Focus Area>	OFA01.02.01	N/A
<SATISFIES>	<ATMS Requirement>	REQ-06.07.01-OSED-AVDR.0213	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-06.02-DOD-6200.0005	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-06.02-DOD-6200.0008	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-06.02-DOD-6200.0011	<Partial>

537

538 [REQ]

Identifier	REQ-06.07.01-SPR-AVDR.0109
Requirement	The vehicle driver shall receive a Caution Alert via up-link from ground server when entering buffer zone.
Title	Reminder that driver is approaching RWY zone
Status	<Validated>
Rationale	In order to increase awareness in the proximity of RWY zone
Category	<Performance>
Validation Method	<Live Trial>
Verification Method	<Test>

539

540 [REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<APPLIES TO>	<Operational Focus Area>	OFA01.02.01	N/A
<SATISFIES>	<ATMS Requirement>	REQ-06.07.01-OSED-AVDR.0206	<Full>
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<SATISFIES>	<ATMS Requirement>	REQ-06.02-DOD-6200.0008	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-06.02-DOD-6200.0011	<Partial>

541

542 [REQ]

Identifier	REQ-06.07.01-SPR-AVDR.0110
Requirement	The vehicle driver shall receive a Warning Alert via up-link from ground server when entering the RWY zone without clearance confirmation on HMI.
Title	Area alert towards the RWY zone
Status	<Validated>
Rationale	To avoid RWY incursions
Category	<Performance>
Validation Method	<Live Trial>
Verification Method	<Test>

543

544 [REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<APPLIES TO>	<Operational Focus Area>	OFA01.02.01	N/A
<SATISFIES>	<ATMS Requirement>	REQ-06.07.01-OSED-AVDR.0208	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-06.02-DOD-6200.0005	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-06.02-DOD-6200.0008	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-06.02-DOD-6200.0011	<Partial>

545

546 [REQ]

Identifier	REQ-06.07.01-SPR-AVDR.0111
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Requirement	In case of an infringement of defined area the area concerned shall be highlighted along with the appropriate aural alert via up-link from ground server.
Title	Highlighting of infringement area during Caution Alert
Status	<Validated>
Rationale	Visual alert the driver of the area concerned
Category	<Performance>
Validation Method	<Live Trial>
Verification Method	<Test>

547

548

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<APPLIES TO>	<Operational Focus Area>	OFA01.02.01	N/A
<SATISFIES>	<ATMS Requirement>	REQ-06.07.01-OSED-AVDR.0213	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-06.02-DOD-6200.0005	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-06.02-DOD-6200.0008	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-06.02-DOD-6200.0011	<Partial>

549

550

[REQ]

Identifier	REQ-06.07.01-SPR-AVDR.0112
Requirement	In case of a Caution Alert, the alert shall be self-cancelling after a pre-determined period of time or when the alert no longer exists. This time period will be determined by local regulations.
Title	Self- cancelling of alert following set time period or resolution of alert situation
Status	<Validated>
Rationale	Situation no longer exists or sufficient time has elapsed for driver to have been made aware of the situation
Category	<Performance>
Validation Method	<Live Trial>
Verification Method	

551

552

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<APPLIES TO>	<Operational Focus Area>	OFA01.02.01	N/A
<SATISFIES>	<ATMS Requirement>	REQ-06.07.01-OSED-AVDR.0211	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-06.02-DOD-6200.0005	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-06.02-DOD-6200.0008	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-06.02-DOD-6200.0011	<Partial>

553

554

[REQ]

Identifier	REQ-06.07.01-SPR-AVDR.0113
Requirement	In case of a Warning Alert the aural and visual alert shall continue until the situation has been resolved.
Title	Continuous aural and visual alert during Warning Alert
Status	<Validated>
Rationale	Situation is still considered a hazard until resolved
Category	<Performance>
Validation Method	<Live Trial>
Verification Method	<Test>

555

556

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<APPLIES TO>	<Operational Focus Area>	OFA01.02.01	N/A
<SATISFIES>	<ATMS Requirement>	REQ-06.07.01-OSED-AVDR.0212	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-06.02-DOD-6200.0005	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-06.02-DOD-6200.0008	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-06.02-DOD-6200.0011	<Partial>

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557
558

[REQ]

Identifier	REQ-06.07.01-SPR-AVDR.0114																								
Requirement	<p>In a situation of multiple alerts at the same time only the aural signal of the alert having the highest priority shall be activated. The priority may be defined as presented hereunder. Other options may be defined based on local implementation preferences.</p> <p>Priority 1 is higher than priority 2 etc...</p> <table border="1"> <thead> <tr> <th>Alert situations</th> <th>Proposed priority</th> </tr> </thead> <tbody> <tr> <td>Vehicle on RWY a/c is taking off</td> <td>1</td> </tr> <tr> <td>Vehicle on RWY a/c on approach less than 25 seconds from threshold</td> <td>2</td> </tr> <tr> <td>Vehicle in RWY zone</td> <td>3</td> </tr> <tr> <td>Vehicle to a/c merging path</td> <td>4</td> </tr> <tr> <td>Vehicle to a/c opposite direction</td> <td>5</td> </tr> <tr> <td>a/c follows behind vehicle</td> <td>6</td> </tr> <tr> <td>Vehicle follows behind a/c</td> <td>7</td> </tr> <tr> <td>Vehicle on RWY a/c on approach 40 - 25 seconds from threshold</td> <td>8</td> </tr> <tr> <td>Vehicle on RWY a/c is lining up</td> <td>9</td> </tr> <tr> <td>Vehicle in buffer zone</td> <td>10</td> </tr> <tr> <td>Vehicle in closed/restricted area</td> <td>11</td> </tr> </tbody> </table>	Alert situations	Proposed priority	Vehicle on RWY a/c is taking off	1	Vehicle on RWY a/c on approach less than 25 seconds from threshold	2	Vehicle in RWY zone	3	Vehicle to a/c merging path	4	Vehicle to a/c opposite direction	5	a/c follows behind vehicle	6	Vehicle follows behind a/c	7	Vehicle on RWY a/c on approach 40 - 25 seconds from threshold	8	Vehicle on RWY a/c is lining up	9	Vehicle in buffer zone	10	Vehicle in closed/restricted area	11
Alert situations	Proposed priority																								
Vehicle on RWY a/c is taking off	1																								
Vehicle on RWY a/c on approach less than 25 seconds from threshold	2																								
Vehicle in RWY zone	3																								
Vehicle to a/c merging path	4																								
Vehicle to a/c opposite direction	5																								
a/c follows behind vehicle	6																								
Vehicle follows behind a/c	7																								
Vehicle on RWY a/c on approach 40 - 25 seconds from threshold	8																								
Vehicle on RWY a/c is lining up	9																								
Vehicle in buffer zone	10																								
Vehicle in closed/restricted area	11																								
Title	Aural signal of alert highest priority																								
Status	<Validated>																								
Rationale	Mixed aural alerts at the same time will make the situation confusing for the vehicle driver.																								
Category	<Safety>																								
Validation Method	<Live Trial>																								
Verification Method	<Test>																								

559
560

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<APPLIES TO>	<Operational Focus Area>	OFA01.02.01	N/A
<SATISFIES>	<ATMS Requirement>	REQ-06.07.01-OSED-AVDR.0210	<Full>
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<SATISFIES>	<ATMS Requirement>	REQ-06.02-DOD-6200.0011	<Partial>

561
562

[REQ]

Identifier	REQ-06.07.01-SPR-AVDR.0115
Requirement	The vehicle driver shall not receive an alert via up-link from ground server for RWY incursion if he/she exits the runway and returns to the same runway zone within 10seconds
Title	Return to the runway
Status	<Validated>
Rationale	To enable vehicle driver return to the RWY when left for the short period of time
Category	<Performance>
Validation Method	<Live Trial>
Verification Method	<Test>

563
564

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<APPLIES TO>	<Operational Focus Area>	OFA01.02.01	N/A

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<SATISFIES>	<ATMS Requirement>	REQ-06.07.01-OSED-AVDR.0205	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-06.02-DOD-6200.0005	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-06.02-DOD-6200.0008	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-06.02-DOD-6200.0011	<Partial>

565

566 **3.1.1.2.2 On-Board alerting system**

567

568 [REQ]

Identifier	REQ-06.07.01-SPR-AVDR.0201
Requirement	VDS On-Board Alerting system shall be able to receive traffic information via data link.
Title	Data link
Status	<Validated>
Rationale	To be able to receive information about mobiles
Category	<Performance>
Validation Method	<Live Trial>
Verification Method	<Test>

569

570 [REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<APPLIES TO>	<Operational Focus Area>	OFA01.02.01	N/A
<SATISFIES>	<ATMS Requirement>	REQ-06.07.01-OSED-AVDR.0401	<Full>
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<SATISFIES>	<ATMS Requirement>	REQ-06.07.01-OSED-AVDR.0403	<Full>
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<SATISFIES>	<ATMS Requirement>	REQ-06.02-DOD-6200.0011	<Partial>

571

572 [REQ]

Identifier	REQ-06.07.01-SPR-AVDR.0202
Requirement	VDS On-Board Alerting system shall be able to receive information about defined areas via data link.
Title	Data link
Status	<Validated>
Rationale	To be able to receive information about active areas
Category	<Performance>
Validation Method	<Live Trial>
Verification Method	<Test>

573

574 [REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<APPLIES TO>	<Operational Focus Area>	OFA01.02.01	N/A
<SATISFIES>	<ATMS Requirement>	REQ-06.07.01-OSED-AVDR.0304	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-06.07.01-OSED-AVDR.0406	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-06.02-DOD-6200.0005	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-06.02-DOD-6200.0008	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-06.02-DOD-6200.0011	<Partial>

575

576 [REQ]

Identifier	REQ-06.07.01-SPR-AVDR.0203
Requirement	The latency of data link information from ground server shall not be less than 0.5 seconds per message.
Title	The latency of data link information uplinked to vehicle
Status	<Validated>
Rationale	To ensure that The latency of data link information is on desired level
Category	<Performance>

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Validation Method	<Live Trial>
Verification Method	<Test>

577

578

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<APPLIES TO>	<Operational Focus Area>	OFA01.02.01	N/A
<SATISFIES>	<ATMS Requirement>	REQ-06.07.01-OSED-AVDR.0215	<Partial>
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<SATISFIES>	<ATMS Requirement>	REQ-06.02-DOD-6200.0008	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-06.02-DOD-6200.0011	<Partial>

579

580

[REQ]

Identifier	REQ-06.07.01-SPR-AVDR.0204
Requirement	The information provided via data link shall include positions of mobiles, identification of mobiles, flight plan data, RWY status, activated closed/restricted areas, LVP status, map and area updates.
Title	Information needed
Status	<Validated>
Rationale	To be able to generate alerts
Category	<Performance>
Validation Method	<Live Trial>
Verification Method	<Test>

581

582

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<APPLIES TO>	<Operational Focus Area>	OFA01.02.01	N/A
<SATISFIES>	<ATMS Requirement>	REQ-06.07.01-OSED-AVDR.0301	<Full>
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<SATISFIES>	<ATMS Requirement>	REQ-06.02-DOD-6200.0011	<Partial>

583

584

[REQ]

Identifier	REQ-06.07.01-SPR-AVDR.0205
Requirement	VDS system shall detect position, direction and speed of own vehicle using on board GNSS system.
Title	Position awareness
Status	<Validated>
Rationale	To be aware of own ship position in relation of other mobiles, defined areas and AMM.
Category	<Performance>
Validation Method	<Live Trial>
Verification Method	<Test>

585

586

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<APPLIES TO>	<Operational Focus Area>	OFA01.02.01	N/A
<SATISFIES>	<ATMS Requirement>	REQ-06.07.01-OSED-AVDR.0406	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-06.02-DOD-6200.0005	<Partial>
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<SATISFIES>	<ATMS Requirement>	REQ-06.02-DOD-6200.0011	<Partial>

587

588

[REQ]

Identifier	REQ-06.07.01-SPR-AVDR.0206
Requirement	The accuracy of position determination of vehicle of the on-board alerting system shall be at least 3 meters.

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Title	Accuracy of vehicle position on-board alerting system
Status	<Validated>
Rationale	To be able to display correct vehicle position to avoid hazardous situation.
Category	<Safety>
Validation Method	<Live Trial>
Verification Method	<Test>

589

590

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<APPLIES_TO>	<Operational Focus Area>	OFA01.02.01	N/A
<SATISFIES>	<ATMS Requirement>	REQ-06.07.01-OSED-AVDR.0406	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-06.02-DOD-6200.0005	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-06.02-DOD-6200.0008	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-06.02-DOD-6200.0011	<Partial>

591

592

[REQ]

Identifier	REQ-06.07.01-SPR-AVDR.0019
Requirement	The position reports accuracy of vehicle sensor shall not be less than 1×10^{-5}
Title	Accuracy of vehicle sensor
Status	<Validated>
Rationale	To be able to display correct vehicle position
Category	<Safety>
Validation Method	<Analytical Modelling>
Verification Method	<Analysis>

593

594

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<APPLIES_TO>	<Operational Focus Area>	OFA01.02.01	N/A
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<SATISFIES>	<ATMS Requirement>	REQ-06.02-DOD-6200.0011	<Partial>

595

596

597

[REQ]

Identifier	REQ-06.07.01-SPR-AVDR.0210
Requirement	VDS On-Board Alerting system shall be able to generate Warning and Caution Alerts.
Title	Warning and caution alerts
Status	<Validated>
Rationale	To be able to generate different types of alerts
Category	<Safety>
Validation Method	<Live Trial>
Verification Method	<Test>

598

599

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<APPLIES_TO>	<Operational Focus Area>	OFA01.02.01	N/A
<SATISFIES>	<ATMS Requirement>	REQ-06.07.01-OSED-AVDR.0101	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-06.07.01-OSED-AVDR.0102	<Full>
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<SATISFIES>	<ATMS Requirement>	REQ-06.02-DOD-6200.0011	<Partial>

600

601

[REQ]

Identifier	REQ-06.07.01-SPR-AVDR.0211
Requirement	VDS On-Board Alerting system shall be able to generate Caution Alerts towards the closed/restricted areas.

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Title	Warning and caution alerts
Status	<Validated>
Rationale	To be able to generate different types of alerts
Category	<Safety>
Validation Method	<Live Trial>
Verification Method	<Test>

602

603

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<APPLIES TO>	<Operational Focus Area>	OFA01.02.01	N/A
<SATISFIES>	<ATMS Requirement>	REQ-06.07.01-OSED-AVDR.0206	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-06.07.01-OSED-AVDR.0208	<Full>
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<SATISFIES>	<ATMS Requirement>	REQ-06.07.01-OSED-AVDR.0213	<Partial>
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<SATISFIES>	<ATMS Requirement>	REQ-06.02-DOD-6200.0008	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-06.02-DOD-6200.0011	<Partial>

604

605

[REQ]

Identifier	REQ-06.07.01-SPR-AVDR.0212
Requirement	VDS On-board Alerting System shall distinguish Caution Alert situation and Warning Alert situation.
Title	Distinction between caution and warning alert
Status	<Validated>
Rationale	To differ caution and warning alert and by that better recognize different types of hazardous situations
Category	<Safety>
Validation Method	<Live Trial>
Verification Method	<Test>

606

607

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<APPLIES TO>	<Operational Focus Area>	OFA01.02.01	N/A
<SATISFIES>	<ATMS Requirement>	REQ-06.07.01-OSED-AVDR.0101	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-06.07.01-OSED-AVDR.0102	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-06.02-DOD-6200.0005	<Partial>
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<SATISFIES>	<ATMS Requirement>	REQ-06.02-DOD-6200.0011	<Partial>

608

609

[REQ]

Identifier	REQ-06.07.01-SPR-AVDR.0213
Requirement	The vehicle driver shall receive a Warning Alert from the on-board alerting system when in the RWY zone and an aircraft is on approach less than 25 seconds from RWY zone.
Title	Warning alert triggered associated with detected alerting situation
Status	<Validated>
Rationale	Avoid hazardous situation
Category	<Safety>
Validation Method	<Live Trial>
Verification Method	<Inspection>

610

611

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<APPLIES TO>	<Operational Focus Area>	OFA01.02.01	N/A
<SATISFIES>	<ATMS Requirement>	REQ-06.07.01-OSED-AVDR.0207	<Full>
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<SATISFIES>	<ATMS Requirement>	REQ-06.07.01-OSED-AVDR.0215	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-06.02-DOD-6200.0005	<Partial>

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<SATISFIES>	<ATMS Requirement>	REQ-06.02-DOD-6200.0008	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-06.02-DOD-6200.0011	<Partial>

612

613

[REQ]

Identifier	REQ-06.07.01-SPR-AVDR.0214
Requirement	The vehicle driver shall receive a Caution Alert from the on-board alerting system when in the RWY zone and an aircraft is on approach 25-40 seconds from the RWY zone.
Title	Caution alert triggered associated with detected alerting situation
Status	<Validated>
Rationale	Avoid hazardous situation
Category	<Safety>
Validation Method	<Live Trial>
Verification Method	<Test>

614

615

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<APPLIES TO>	<Operational Focus Area>	OFA01.02.01	N/A
<SATISFIES>	<ATMS Requirement>	REQ-06.07.01-OSED-AVDR.0207	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-06.07.01-OSED-AVDR.0211	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-06.07.01-OSED-AVDR.0215	<Full>
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<SATISFIES>	<ATMS Requirement>	REQ-06.02-DOD-6200.0005	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-06.02-DOD-6200.0008	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-06.02-DOD-6200.0011	<Partial>

616

617

[REQ]

Identifier	REQ-06.07.01-SPR-AVDR.0215
Requirement	The vehicle driver shall receive a Warning Alert from the on-board alerting system when in the RWY zone ahead of an aircraft when the aircraft indicates velocity > 20 kt.
Title	Warning Alert triggered associated with detected alerting situation
Status	<Validated>
Rationale	Avoid hazardous situation
Category	<Safety>
Validation Method	<Live Trial>
Verification Method	<Test>

618

619

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<APPLIES TO>	<Operational Focus Area>	OFA01.02.01	N/A
<SATISFIES>	<ATMS Requirement>	REQ-06.07.01-OSED-AVDR.0207	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-06.07.01-OSED-AVDR.0212	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-06.07.01-OSED-AVDR.0215	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-06.07.01-OSED-AVDR.0223	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-06.02-DOD-6200.0005	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-06.02-DOD-6200.0008	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-06.02-DOD-6200.0011	<Partial>

620

621

[REQ]

Identifier	REQ-06.07.01-SPR-AVDR.0216
Requirement	The vehicle driver shall receive a Caution Alert from the on-board alerting system when a vehicle is operating within the RWY zone and an a/c is lining up for departure.
Title	Caution Alert triggered associated with detected alerting situation
Status	<Validated>
Rationale	To avoid a potential hazardous situation

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Category	<Safety>
Validation Method	<Live Trial>
Verification Method	<Test>

622

623

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<APPLIES TO>	<Operational Focus Area>	OFA01.02.01	N/A
<SATISFIES>	<ATMS Requirement>	REQ-06.07.01-OSED-AVDR.0212	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-06.07.01-OSED-AVDR.0215	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-06.07.01-OSED-AVDR.0223	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-06.07.01-OSED-AVDR.0224	<Full>
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<SATISFIES>	<ATMS Requirement>	REQ-06.02-DOD-6200.0011	<Partial>

624

625

[REQ]

Identifier	REQ-06.07.01-SPR-AVDR.0217
Requirement	The vehicle driver shall receive a Warning Alert from the on-board alerting system for traffic when the vehicle and the aircraft predicted trajectories intersect within 7 seconds.
Title	Traffic alert triggered associated with detected alerting situation vehicle and aircraft.
Status	<Validated>
Rationale	To avoid hazardous situation with regards to vehicle and aircraft.
Category	<Safety>
Validation Method	<Live Trial>
Verification Method	<Test>

626

627

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<APPLIES TO>	<Operational Focus Area>	OFA01.02.01	N/A
<SATISFIES>	<ATMS Requirement>	REQ-06.07.01-OSED-AVDR.0207	<Full>
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<SATISFIES>	<ATMS Requirement>	REQ-06.02-DOD-6200.0008	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-06.02-DOD-6200.0011	<Partial>

628

629

[REQ]

Identifier	REQ-06.07.01-SPR-AVDR.0218
Requirement	The vehicle driver shall receive a Caution Alert from the on-board alerting system when entering closed restricted area.
Title	Area alert triggered associated with detected alerting situation towards the defined area
Status	<Validated>
Rationale	To avoid hazardous situation with regards to defined areas.
Category	<Safety>
Validation Method	<Live Trial>
Verification Method	<Test>

630

631

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<APPLIES TO>	<Operational Focus Area>	OFA01.02.01	N/A
<SATISFIES>	<ATMS Requirement>	REQ-06.07.01-OSED-AVDR.0213	<Full>
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<SATISFIES>	<ATMS Requirement>	REQ-06.02-DOD-6200.0011	<Partial>

632

633

[REQ]

Identifier	REQ-06.07.01-SPR-AVDR.0219
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Requirement	The vehicle driver shall receive a Caution Alert from the on-board alerting system when entering buffer zone.
Title	Reminder that driver is approaching RWY zone
Status	<Validated>
Rationale	In order to increase awareness the proximity of RWY zone
Category	<Safety>
Validation Method	<Live Trial>
Verification Method	<Test>

634

635 [REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<APPLIES TO>	<Operational Focus Area>	OFA01.02.01	N/A
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<SATISFIES>	<ATMS Requirement>	REQ-06.02-DOD-6200.0008	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-06.02-DOD-6200.0011	<Partial>

636

637 [REQ]

Identifier	REQ-06.07.01-SPR-AVDR.0220
Requirement	The vehicle driver shall receive a Warning Alert from the on-board alerting system when entering the RWY zone without clearance confirmation on HMI.
Title	Area alert towards the RWY zone
Status	<Validated>
Rationale	To avoid RWY incursions
Category	<Safety>
Validation Method	<Live Trial>
Verification Method	<Test>

638

639 [REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<APPLIES TO>	<Operational Focus Area>	OFA01.02.01	N/A
<SATISFIES>	<ATMS Requirement>	REQ-06.07.01-OSED-AVDR.0208	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-06.02-DOD-6200.0005	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-06.02-DOD-6200.0008	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-06.02-DOD-6200.0011	<Partial>

640

641 [REQ]

Identifier	REQ-06.07.01-SPR-AVDR.0221
Requirement	In case of an infringement of defined area the area concerned shall be highlighted along with the appropriate aural alert from the on-board alerting system.
Title	Highlighting of infringement area during Caution Alert
Status	<Validated>
Rationale	Visual alert the driver of the area concerned
Category	<Performance>
Validation Method	<Live Trial>
Verification Method	<Test>

642

643 [REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<APPLIES TO>	<Operational Focus Area>	OFA01.02.01	N/A
<SATISFIES>	<ATMS Requirement>	REQ-06.07.01-OSED-AVDR.0213	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-06.02-DOD-6200.0005	<Partial>
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<SATISFIES>	<ATMS Requirement>	REQ-06.02-DOD-6200.0011	<Partial>

644

645 [REQ]

Identifier	REQ-06.07.01-SPR-AVDR.0222
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Requirement	In case of a Caution Alert from the on-board alerting system, the alert shall be self-cancelling after a pre-determined period of time or when the alert no longer exists. This time period will be determined by local regulations.
Title	Self- cancelling of alert following set time period or resolution of alert situation
Status	<Validated>
Rationale	Situation no longer exists or sufficient time has elapsed for driver to have been made aware of the situation
Category	<Performance>
Validation Method	<Live Trial>
Verification Method	<Test>

646

647 [REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<APPLIES TO>	<Operational Focus Area>	OFA01.02.01	N/A
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<SATISFIES>	<ATMS Requirement>	REQ-06.02-DOD-6200.0011	<Partial>

648

649

[REQ]

Identifier	REQ-06.07.01-SPR-AVDR.0223
Requirement	In case of a Warning Alert from the on-board alerting system, the aural and visual alert shall continue until the situation has been resolved.
Title	Continuous aural and visual alert during Warning Alert
Status	<Validated>
Rationale	Situation is still considered a hazard until resolved
Category	<Performance>
Validation Method	<Live Trial>
Verification Method	<Test>

650

651

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<APPLIES TO>	<Operational Focus Area>	OFA01.02.01	N/A
<SATISFIES>	<ATMS Requirement>	REQ-06.07.01-OSED-AVDR.0212	<Full>
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<SATISFIES>	<ATMS Requirement>	REQ-06.02-DOD-6200.0008	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-06.02-DOD-6200.0011	<Partial>

652

653

[REQ]

Identifier	REQ-06.07.01-SPR-AVDR.0224																		
Requirement	<p>In a situation of multiple alerts from the on-board alerting system at the same time only the aural signal of the alert having the highest priority shall be activated.</p> <p>The priority may be defined as presented hereunder. Other options may be defined based on local implementation preferences.</p> <p>Priority 1 is higher than priority 2 etc...</p> <table border="1"> <thead> <tr> <th>Alert situations</th> <th>Proposed priority</th> </tr> </thead> <tbody> <tr> <td>Vehicle on RWY a/c is taking off</td> <td>1</td> </tr> <tr> <td>Vehicle on RWY a/c on approach less than 25 seconds from threshold</td> <td>2</td> </tr> <tr> <td>Vehicle in RWY zone</td> <td>3</td> </tr> <tr> <td>Vehicle to a/c merging path</td> <td>4</td> </tr> <tr> <td>Vehicle to a/c opposite direction</td> <td>5</td> </tr> <tr> <td>a/c follows behind vehicle</td> <td>6</td> </tr> <tr> <td>Vehicle follows behind a/c</td> <td>7</td> </tr> <tr> <td>Vehicle on RWY a/c on approach</td> <td>8</td> </tr> </tbody> </table>	Alert situations	Proposed priority	Vehicle on RWY a/c is taking off	1	Vehicle on RWY a/c on approach less than 25 seconds from threshold	2	Vehicle in RWY zone	3	Vehicle to a/c merging path	4	Vehicle to a/c opposite direction	5	a/c follows behind vehicle	6	Vehicle follows behind a/c	7	Vehicle on RWY a/c on approach	8
Alert situations	Proposed priority																		
Vehicle on RWY a/c is taking off	1																		
Vehicle on RWY a/c on approach less than 25 seconds from threshold	2																		
Vehicle in RWY zone	3																		
Vehicle to a/c merging path	4																		
Vehicle to a/c opposite direction	5																		
a/c follows behind vehicle	6																		
Vehicle follows behind a/c	7																		
Vehicle on RWY a/c on approach	8																		

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	40 - 25 seconds from threshold	
	Vehicle on RWY a/c is lining up	9
	Vehicle in buffer zone	10
	Vehicle in closed/restricted area	11
Title	Aural signal of alert highest priority	
Status	<Validated>	
Rationale	Mixed aural alerts at the same time will make the situation confusing for the vehicle driver.	
Category	<Performance>	
Validation Method	<Live Trial>	
Verification Method	<Test>	

654

655 [REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<APPLIES TO>	<Operational Focus Area>	OFA01.02.01	N/A
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656

657 [REQ]

Identifier	REQ-06.07.01-SPR-AVDR.0225
Requirement	The vehicle driver shall not receive an alert from the on-board alerting system for RWY incursion if he/she exits the runway and returns to the same runway zone within 10seconds.
Title	Return to the runway
Status	<Validated>
Rationale	To enable vehicle driver return to the RWY when left for the short period of time
Category	<Performance>
Validation Method	<Live Trial>
Verification Method	<Test>

658

659 [REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<APPLIES TO>	<Operational Focus Area>	OFA01.02.01	N/A
<SATISFIES>	<ATMS Requirement>	REQ-06.07.01-OSED-AVDR.0205	<Full>
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<SATISFIES>	<ATMS Requirement>	REQ-06.02-DOD-6200.0008	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-06.02-DOD-6200.0011	<Partial>

660

661

662 3.1.1.3 Airport Moving Map (AMM)

663

664 [REQ]

Identifier	REQ-06.07.01-SPR-AVDR.0301
Requirement	The AMM function shall display the vehicle's own ship position with respect to the aerodrome layout and geographic locations.
Title	Own ship position
Status	<Validated>
Rationale	To gain situational awareness
Category	<Performance>
Validation Method	<Live Trial>
Verification Method	<Test>

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665
666

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<APPLIES TO>	<Operational Focus Area>	OFA01.02.01	N/A
<SATISFIES>	<ATMS Requirement>	REQ-06.07.01-OSED-AVDR.0301	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-06.07.01-OSED-AVDR.0302	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-06.07.01-OSED-AVDR.0304	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-06.02-DOD-6200.0005	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-06.02-DOD-6200.0008	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-06.02-DOD-6200.0011	<Partial>

667
668

[REQ]

Identifier	REQ-06.07.01-SPR-AVDR.0302
Requirement	The AMM shall as a minimum display the following geographical features: RWY and taxiway layout with name indication, taxiway centreline marking, RWY entry marking, RWY marking, service roads layout, apron area with aircraft stand number indication, terminal building contour.
Title	Display geographical features
Status	<Validated>
Rationale	To be able to gain situational awareness
Category	<Performance>
Validation Method	<Live Trial>
Verification Method	<Test>

669
670

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<APPLIES TO>	<Operational Focus Area>	OFA01.02.01	N/A
<SATISFIES>	<ATMS Requirement>	REQ-06.07.01-OSED-AVDR.0301	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-06.07.01-OSED-AVDR.0302	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-06.07.01-OSED-AVDR.0303	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-06.07.01-OSED-AVDR.0304	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-06.02-DOD-6200.0005	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-06.02-DOD-6200.0008	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-06.02-DOD-6200.0011	<Partial>

671
672

[REQ]

Identifier	REQ-06.07.01-SPR-AVDR.0303
Requirement	The AMM shall have dynamic layer for displaying active closed/restricted areas, RWY buffer zone, RWY zone and manoeuvring area.
Title	Display geographical features
Status	<Validated>
Rationale	To be able to gain situational awareness
Category	<Performance>
Validation Method	<Live Trial>
Verification Method	<Test>

673
674

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<APPLIES TO>	<Operational Focus Area>	OFA01.02.01	N/A
<SATISFIES>	<ATMS Requirement>	REQ-06.07.01-OSED-AVDR.0302	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-06.07.01-OSED-AVDR.0303	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-06.07.01-OSED-AVDR.0304	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-06.02-DOD-6200.0005	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-06.02-DOD-6200.0008	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-06.02-DOD-6200.0011	<Partial>

675
676

[REQ]

Identifier	REQ-06.07.01-SPR-AVDR.0013
Requirement	Map updates shall be downloaded automatically.
Title	Maps update

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Status	<Validated>
Rationale	Up to date maps are essential for alerting service
Category	<Performance>
Validation Method	<Live Trial>
Verification Method	<Test>

677

678 [REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<APPLIES TO>	<Operational Focus Area>	OFA01.02.01	N/A
<SATISFIES>	<ATMS Requirement>	REQ-06.07.01-OSED-AVDR.0307	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-06.07.01-OSED-AVDR.0504	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-06.07.01-OSED-AVDR.0506	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-06.02-DOD-6200.0005	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-06.02-DOD-6200.0008	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-06.02-DOD-6200.0011	<Partial>

679

680 [REQ]

Identifier	REQ-06.07.01-SPR-AVDR.0305
Requirement	The AMM shall display a geographic north direction indicator.
Title	North direction indicator
Status	<Validated>
Rationale	To be able to gain situational awareness
Category	<Performance>
Validation Method	<Live Trial>
Verification Method	<Test>

681

682 [REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<APPLIES TO>	<Operational Focus Area>	OFA01.02.01	N/A
<SATISFIES>	<ATMS Requirement>	REQ-06.07.01-OSED-AVDR.0113	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-06.07.01-OSED-AVDR.0406	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-06.02-DOD-6200.0005	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-06.02-DOD-6200.0008	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-06.02-DOD-6200.0011	<Partial>

683

684 [REQ]

Identifier	REQ-06.07.01-SPR-AVDR.0306
Requirement	The AMM may have a functionality to switch map orientation between displaying surroundings in driving direction or north up.
Title	Fix map orientation
Status	<Validated>
Rationale	More experienced vehicle drivers rather prefer a fixed map facing north
Category	<Performance>
Validation Method	<Live Trial>
Verification Method	<Test>

685

686 [REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<APPLIES TO>	<Operational Focus Area>	OFA01.02.01	N/A
<SATISFIES>	<ATMS Requirement>	REQ-06.07.01-OSED-AVDR.0113	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-06.02-DOD-6200.0005	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-06.02-DOD-6200.0008	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-06.02-DOD-6200.0011	<Partial>

687

688

689 **3.1.1.4 Ground Traffic Display (GTD)**

690

691 [REQ]

Identifier	REQ-06.07.01-SPR-AVDR.0401
Requirement	The GTD should be able to display traffic information provided via data link.
Title	Distinction surrounding traffic
Status	<Validated>
Rationale	To provide situational awareness
Category	<Performance>
Validation Method	<Live Trial>
Verification Method	<Test>

692

693 [REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<APPLIES TO>	<Operational Focus Area>	OFA01.02.01	N/A
<SATISFIES>	<ATMS Requirement>	REQ-06.07.01-OSED-AVDR.0401	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-06.07.01-OSED-AVDR.0402	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-06.07.01-OSED-AVDR.0403	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-06.07.01-OSED-AVDR.0404	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-06.07.01-OSED-AVDR.0405	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-06.07.01-OSED-AVDR.0406	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-06.07.01-OSED-AVDR.0407	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-06.02-DOD-6200.0005	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-06.02-DOD-6200.0008	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-06.02-DOD-6200.0011	<Partial>

694

695 [REQ]

Identifier	REQ-06.07.01-SPR-AVDR.0402
Requirement	The own ship vehicle symbol should be indicated in the centre or lower third of the GTD as a default.
Title	Own ship position on screen
Status	<Validated>
Rationale	In order to look sufficiently ahead in the direction of the heading
Category	<Performance>
Validation Method	<Live Trial>
Verification Method	

696

697 [REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<APPLIES TO>	<Operational Focus Area>	OFA01.02.01	N/A
<SATISFIES>	<ATMS Requirement>	REQ-06.07.01-OSED-AVDR.0406	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-06.02-DOD-6200.0005	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-06.02-DOD-6200.0008	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-06.02-DOD-6200.0011	<Partial>

698

699 **3.1.1.5 Vehicle Display System**

700

701 [REQ]

Identifier	REQ-06.07.01-SPR-AVDR.0501
Requirement	VDS shall be able to receive traffic information via data link.
Title	Data link
Status	<Validated>
Rationale	To be able to receive information about mobiles
Category	<Performance>

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Validation Method	<Live Trial>
Verification Method	<Test>

702

703

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<APPLIES TO>	<Operational Focus Area>	OFA01.02.01	N/A
<SATISFIES>	<ATMS Requirement>	REQ-06.07.01-OSED-AVDR.0401	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-06.07.01-OSED-AVDR.0402	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-06.07.01-OSED-AVDR.0403	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-06.07.01-OSED-AVDR.0404	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-06.07.01-OSED-AVDR.0405	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-06.07.01-OSED-AVDR.0406	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-06.07.01-OSED-AVDR.0407	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-06.07.01-OSED-AVDR	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-06.02-DOD-6200.0005	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-06.02-DOD-6200.0008	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-06.02-DOD-6200.0011	<Partial>

704

705

[REQ]

Identifier	REQ-06.07.01-SPR-AVDR.0502
Requirement	The information provided via data link shall include positions of mobiles, identification of mobiles, flight plan data, RWY status, activated closed/restricted areas, LVP status, map and area updates.
Title	Information needed
Status	<Validated>
Rationale	To be able to display needed information on VDS
Category	<Performance>
Validation Method	<Live Trial>
Verification Method	<Test>

706

707

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<APPLIES TO>	<Operational Focus Area>	OFA01.02.01	N/A
<SATISFIES>	<ATMS Requirement>	REQ-06.07.01-OSED-AVDR.0301	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-06.07.01-OSED-AVDR.0302	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-06.07.01-OSED-AVDR.0303	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-06.07.01-OSED-AVDR.0304	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-06.07.01-OSED-AVDR.0402	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-06.07.01-OSED-AVDR.0403	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-06.07.01-OSED-AVDR.0404	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-06.07.01-OSED-AVDR.0405	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-06.07.01-OSED-AVDR.0407	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-06.02-DOD-6200.0005	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-06.02-DOD-6200.0008	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-06.02-DOD-6200.0011	<Partial>

708

709

[REQ]

Identifier	REQ-06.07.01-SPR-AVDR.0503
Requirement	The latency of data link information shall not be less than 0.5 seconds per message.
Title	The latency of data link information uplinked to vehicle from ground system
Status	<Validated>
Rationale	To ensure that the latency of data link information is on desired level
Category	<Performance>
Validation Method	<Live Trial>
Verification Method	<Test>

710

711

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<APPLIES TO>	<Operational Focus Area>	OFA01.02.01	N/A
<SATISFIES>	<ATMS Requirement>	REQ-06.07.01-OSED-AVDR.0215	<Partial>

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<SATISFIES>	<ATMS Requirement>	REQ-06.02-DOD-6200.0005	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-06.02-DOD-6200.0008	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-06.02-DOD-6200.0011	<Partial>

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714

[REQ]

Identifier	REQ-06.07.01-SPR-AVDR.0508
Requirement	The accuracy of position determination of vehicle of the vehicle display system shall be at least 3 meters.
Title	Accuracy of vehicle position vehicle display system
Status	<Validated>
Rationale	To be able displaying correct vehicle position to avoid hazardous situation.
Category	<Performance>
Validation Method	<Live Trial>
Verification Method	<Test>

715
716

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<APPLIES TO>	<Operational Focus Area>	OFA01.02.01	N/A
<SATISFIES>	<ATMS Requirement>	REQ-06.07.01-OSED-AVDR.0401	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-06.07.01-OSED-AVDR.0403	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-06.02-DOD-6200.0005	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-06.02-DOD-6200.0008	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-06.02-DOD-6200.0011	<Partial>

717
718

[REQ]

Identifier	REQ-06.07.01-SPR-AVDR.0509
Requirement	System shall have capability to record all data for subsequent playback.
Title	Data recording
Status	<Validated>
Rationale	In order to investigate situations if needed
Category	<Performance>
Validation Method	<Live Trial>
Verification Method	<Test>

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720

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<APPLIES TO>	<Operational Focus Area>	OFA01.02.01	N/A
<SATISFIES>	<ATMS Requirement>	REQ-06.07.01-OSED-AVDR.0501	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-06.02-DOD-6200.0005	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-06.02-DOD-6200.0008	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-06.02-DOD-6200.0011	<Partial>

721
722

[REQ]

Identifier	REQ-06.07.01-SPR-AVDR.0510
Requirement	Local procedures shall be defined how to use recorded data.
Title	Procedure
Status	<Validated>
Rationale	In order to investigate situations if needed
Category	<Operational>
Validation Method	<Expert Group (Judgement Analysis)>
Verification Method	<Analysis>

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724

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<APPLIES TO>	<Operational Focus Area>	OFA01.02.01	N/A
<SATISFIES>	<ATMS Requirement>	REQ-06.07.01-OSED-AVDR.0501	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-06.02-DOD-6200.0005	<Partial>

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<SATISFIES>	<ATMS Requirement>	REQ-06.02-DOD-6200.0008	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-06.02-DOD-6200.0011	<Partial>

725

726 [REQ]

Identifier	REQ-06.07.01-SPR-AVDR.0512
Requirement	The system may have capability to have different profiles for different types of vehicles.
Title	Vehicle profiles
Status	<Validated>
Rationale	In order to adjust system for specific needs
Category	<Performance>
Validation Method	<Live Trial>
Verification Method	<Test>

727

728 [REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<APPLIES TO>	<Operational Focus Area>	OFA01.02.01	N/A
<SATISFIES>	<ATMS Requirement>	REQ-06.07.01-OSED-AVDR.0502	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-06.07.01-OSED-AVDR.0513	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-06.02-DOD-6200.0005	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-06.02-DOD-6200.0008	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-06.02-DOD-6200.0011	<Partial>

729

730 [REQ]

Identifier	REQ-06.07.01-SPR-AVDR.0513
Requirement	The system shall be able to perform a self-diagnostics at least once in 5 minute when working.
Title	Self-diagnostics
Status	<Validated>
Rationale	To ensure that system is working properly
Category	<Performance>
Validation Method	<Live Trial>
Verification Method	<Test>

731

732 [REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<APPLIES TO>	<Operational Focus Area>	OFA01.02.01	N/A
<SATISFIES>	<ATMS Requirement>	REQ-06.07.01-OSED-AVDR.0503	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-06.07.01-OSED-AVDR.0504	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-06.07.01-OSED-AVDR.0505	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-06.07.01-OSED-AVDR.0506	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-06.07.01-OSED-AVDR.0507	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-06.07.01-OSED-AVDR.0509	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-06.02-DOD-6200.0005	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-06.02-DOD-6200.0008	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-06.02-DOD-6200.0011	<Partial>

733

734 [REQ]

Identifier	REQ-06.07.01-SPR-AVDR.0514
Requirement	In case of malfunction relevant warning shall be displayed on HMI.
Title	Self-diagnostics
Status	<Validated>
Rationale	To ensure that system is working properly
Category	<Performance>
Validation Method	<Live Trial>
Verification Method	<Test>

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736 [REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<APPLIES TO>	<Operational Focus Area>	OFA01.02.01	N/A
<SATISFIES>	<ATMS Requirement>	REQ-06.07.01-OSED-AVDR.0507	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-06.07.01-OSED-AVDR.0510	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-06.07.01-OSED-AVDR.0511	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-06.02-DOD-6200.0005	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-06.02-DOD-6200.0008	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-06.02-DOD-6200.0011	<Partial>

737

738 [REQ]

Identifier	REQ-06.07.01-SPR-AVDR.0515
Requirement	VDS shall check for map and area updates at least once in every minute when working.
Title	Map and area update
Status	<Validated>
Rationale	To ensure that system has latest version of map and active areas
Category	<Performance>
Validation Method	<Live Trial>
Verification Method	<Test>

739

740 [REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<APPLIES TO>	<Operational Focus Area>	OFA01.02.01	N/A
<SATISFIES>	<ATMS Requirement>	REQ-06.07.01-OSED-AVDR.0504	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-06.07.01-OSED-AVDR.0506	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-06.02-DOD-6200.0005	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-06.02-DOD-6200.0008	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-06.02-DOD-6200.0011	<Partial>

741

742 [REQ]

Identifier	REQ-06.07.01-SPR-AVDR.0516
Requirement	VDS shall check for software updates at least once in one hour.
Title	Software update
Status	<Validated>
Rationale	To ensure that system has latest version of software
Category	<Performance>
Validation Method	<Live Trial>
Verification Method	<Test>

743

744 [REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<APPLIES TO>	<Operational Focus Area>	OFA01.02.01	N/A
<SATISFIES>	<ATMS Requirement>	REQ-06.07.01-OSED-AVDR.0505	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-06.02-DOD-6200.0005	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-06.02-DOD-6200.0008	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-06.02-DOD-6200.0011	<Partial>

745

746 [REQ]

Identifier	REQ-06.07.01-SPR-AVDR.0517
Requirement	The VDS shall indicate on GTD when new software is available.
Title	Software update
Status	<Validated>
Rationale	To ensure that system has latest version of software
Category	<Performance>
Validation Method	<Live Trial>
Verification Method	<Test>

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748 [REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<APPLIES TO>	<Operational Focus Area>	OFA01.02.01	N/A
<SATISFIES>	<ATMS Requirement>	REQ-06.07.01-OSED-AVDR.0505	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-06.07.01-OSED-AVDR.0507	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-06.02-DOD-6200.0005	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-06.02-DOD-6200.0008	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-06.02-DOD-6200.0011	<Partial>

749

750 [REQ]

Identifier	REQ-06.07.01-SPR-AVDR.0518
Requirement	Local procedures shall describe how to install new software to the system.
Title	Software update installation procedures
Status	<Validated>
Rationale	To ensure that system has the latest software version
Category	<Operational>
Validation Method	<Live Trial>
Verification Method	<Test>

751

752 [REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<APPLIES TO>	<Operational Focus Area>	OFA01.02.01	N/A
<SATISFIES>	<ATMS Requirement>	REQ-06.07.01-OSED-AVDR.0307	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-06.07.01-OSED-AVDR.0308	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-06.02-DOD-6200.0005	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-06.02-DOD-6200.0008	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-06.02-DOD-6200.0011	<Partial>

753

754 [REQ]

Identifier	REQ-06.07.01-SPR-AVDR.0519
Requirement	Software used in the Vehicle Alerting System shall be compliant with a Software Assurance Level SWAL 4
Title	Software Assurance Level
Status	<Validated>
Rationale	To ensure that software has accepted assurance level
Category	<Reliability>
Validation Method	<Expert Group (Judgement Analysis)>
Verification Method	<Analysis>

755

756 [REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<APPLIES TO>	<Operational Focus Area>	OFA01.02.01	N/A
<SATISFIES>	<ATMS Requirement>	REQ-06.07.01-OSED-AVDR.0505	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-06.02-DOD-6200.0005	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-06.02-DOD-6200.0008	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-06.02-DOD-6200.0011	<Partial>

757

758 [REQ]

Identifier	REQ-06.07.01-SPR-AVDR.0520
Requirement	The Mean Time Between Failure (MTBF) of Vehicle Alerting System shall be at least of 10^{-3} /operational hour.
Title	MTBF
Status	<Validated>
Rationale	To ensure consistent and flawless operation of system
Category	<Reliability>
Validation Method	<Expert Group (Judgement Analysis)>
Verification Method	<Analysis>

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759

760 [REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<APPLIES TO>	<Operational Focus Area>	OFA01.02.01	N/A
<SATISFIES>	<ATMS Requirement>	REQ-06.07.01-OSED-AVDR.0215	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-06.02-DOD-6200.0005	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-06.02-DOD-6200.0008	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-06.02-DOD-6200.0011	<Partial>

761

762 [REQ]

Identifier	REQ-06.07.01-SPR-AVDR.0521
Requirement	The vehicle must be equipped with Data Link out to send identity and position reports to the ground server.
Title	equipment
Status	<Validated>
Rationale	To ensure that vehicles are equipped with correct ADS-B out
Category	<Performance>
Validation Method	<Live Trial>
Verification Method	<Test>

763

764 [REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<APPLIES TO>	<Operational Focus Area>	OFA01.02.01	N/A
<SATISFIES>	<ATMS Requirement>	REQ-06.07.01-OSED-AVDR.0403	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-06.02-DOD-6200.0005	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-06.02-DOD-6200.0008	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-06.02-DOD-6200.0011	<Partial>

765

766 3.1.2 Performance Requirements

767 [REQ]

Identifier	REQ-06.07.01-SPR-AVDR.0601
Requirement	The false alert rate of the Alerts for Vehicle Driver System shall not be greater than 10 ⁻⁴ per movement.
Title	VDS; A-SMGCS
Status	<Validated>
Rationale	To ensure that false alert rate is kept on minimum level for uplinked system
Category	<Reliability>
Validation Method	<Live Trial>
Verification Method	<Test>

768

769 [REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<APPLIES TO>	<Operational Focus Area>	OFA01.02.01	N/A
<SATISFIES>	<ATMS Requirement>	REQ-06.07.01-OSED-AVDR.0215	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-06.07.01-OSED-AVDR.0101	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-06.07.01-OSED-AVDR.0102	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-06.02-DOD-6200.0005	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-06.02-DOD-6200.0008	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-06.02-DOD-6200.0011	<Partial>

770

[REQ]

Identifier	REQ-06.07.01-SPR-AVDR.0602
Requirement	The VDS shall not alert the Driver (false alert) with a frequency of occurrence greater than 10 ⁻⁴ per movement when no conflicting situation is present.
Title	VDS
Status	<Validated>
Rationale	To ensure that false alert rate is kept on minimum level for on-board system
Category	<Reliability>

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Validation Method	<Live Trial>
Verification Method	<Test>

771

772

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<APPLIES TO>	<Operational Focus Area>	OFA01.02.01	N/A
<SATISFIES>	<ATMS Requirement>	REQ-06.07.01-OSED-AVDR.0215	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-06.07.01-OSED-AVDR.0101	<Full>
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<SATISFIES>	<ATMS Requirement>	REQ-06.02-DOD-6200.0005	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-06.02-DOD-6200.0008	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-06.02-DOD-6200.0011	<Partial>

773

774

[REQ]

Identifier	REQ-06.07.01-SPR-AVDR.0603
Requirement	The accuracy of the Surveillance System shall be sufficient (12 m (95%) to prevent false alert when the routes of the two mobiles are no more in conflicts.
Title	A-SMGCS]
Status	<Validated>
Rationale	Alert cancelation when conflict situation is resolved
Category	<Performance>
Validation Method	<Live Trial>
Verification Method	<Test>

775

776

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<APPLIES_TO>	<Operational Focus Area>	OFA01.02.01	N/A
<SATISFIES>	<ATMS Requirement>	REQ-06.07.01-OSED-AVDR.0215	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-06.07.01-OSED-AVDR.0101	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-06.07.01-OSED-AVDR. 0102	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-06.02-DOD-6200.0005	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-06.02-DOD-6200.0008	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-06.02-DOD-6200.0011	<Partial>

777

778

[REQ]

Identifier	REQ-06.07.01-SPR-AVDR.0208
Requirement	Vehicle position reports update rate shall be less than 1 second if the mobile is moving.
Title	Latency of processing own ship position
Status	<Validated>
Rationale	To get essential information on time
Category	<Performance>
Validation Method	<Analytical Modelling>
Verification Method	<Analysis>

779

780

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<APPLIES_TO>	<Operational Focus Area>	OFA01.02.01	N/A
<SATISFIES>	<ATMS Requirement>	REQ-06.07.01-OSED-AVDR.0406	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-06.02-DOD-6200.0005	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-06.02-DOD-6200.0008	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-06.02-DOD-6200.0011	<Partial>

781

782

[REQ]

Identifier	REQ-06.07.01-SPR-AVDR.0209
Requirement	Vehicle position reports update rate shall be less than 5 second if the mobile is not moving.
Title	Latency of processing own ship position

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Status	<Validated>
Rationale	To get essential information on time
Category	<Performance>
Validation Method	<Analytical Modelling>
Verification Method	<Test>

783

784 [REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<APPLIES TO>	<Operational Focus Area>	OFA01.02.01	N/A
<SATISFIES>	<ATMS Requirement>	REQ-06.07.01-OSED-AVDR.0406	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-06.02-DOD-6200.0005	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-06.02-DOD-6200.0008	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-06.02-DOD-6200.0011	<Partial>

785

786

787 [REQ]

Identifier	REQ-06.07.01-SPR-AVDR.0504
Requirement	The transmission rate via data link shall be less than 1 second if the mobile is moving.
Title	Latency of transmission rate
Status	<Validated>
Rationale	To get essential information on time
Category	<Performance>
Validation Method	<Analytical Modelling>
Verification Method	<Test>

788

789 [REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<APPLIES TO>	<Operational Focus Area>	OFA01.02.01	N/A
<SATISFIES>	<ATMS Requirement>	REQ-06.07.01-OSED-AVDR.0215	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-06.02-DOD-6200.0005	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-06.02-DOD-6200.0008	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-06.02-DOD-6200.0011	<Partial>

790

791 [REQ]

Identifier	REQ-06.07.01-SPR-AVDR.0505
Requirement	The transmission rate via data link shall be less than 5 seconds if the mobile is not moving.
Title	Latency of transmission rate from ground ATM system to vehicle.
Status	<Validated>
Rationale	To get essential information on time
Category	<Performance>
Validation Method	<Analytical Modelling>
Verification Method	<Test>

792

793 [REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<APPLIES TO>	<Operational Focus Area>	OFA01.02.01	N/A
<SATISFIES>	<ATMS Requirement>	REQ-06.07.01-OSED-AVDR.0215	<Full>
<SATISFIES>	<ATMS Requirement>	REQ-06.02-DOD-6200.0005	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-06.02-DOD-6200.0008	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-06.02-DOD-6200.0011	<Partial>

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3.2 Information Exchange Requirements (IER)

[IER]

Identifier	Name	Content Type	Frequency	Safety Criticality	Confidentiality	Maximum Time of Delivery	Interaction Type	Free
IER-06.07.01-OSED-0001.0001	Airport layout	<Data>	Ad hoc when the information is updated	<Major>	<Public>	The transmission rate via data link shall be less than 1 second if the mobile is moving	<Two-way dialogue>	
IER-06.07.01-OSED-0001.0002	LVPs in use	<Data>	Periodical, depends on weather conditions	<Minor>	Public	The transmission rate via data link shall be less than 1 second if the mobile is moving	<Two-way dialogue>	

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799

Table 1: IER layout

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800 4 References and Applicable Documents

801 *This section identifies the documents (name, reference, source project) the SPR has to comply to or to be used*
802 *as additional inputs for the SPR.*

803 4.1 Applicable Documents

804 *This SPR complies with the requirements set out in the following documents:*

805 [1] Template Toolbox 03.00.00
806 Requirements and V&V Guidelines 03.00.00
807

808 [2] Templates and Toolbox User Manual 03.00.00
809

810 [3] EUROCONTROL ATM Lexicon
811 Reference Documents

812 *The following documents were used to provide input / guidance / further information / other:*

813 [4] ED-78A GUIDELINES FOR APPROVAL OF THE PROVISION AND USE OF AIR TRAFFIC
814 SERVICES SUPPORTED BY DATA COMMUNICATIONS.

815 [5] B.04.01, Refined Performance Framework (Edition2) Cycle 3, (D41, Edition 01.01.00,
816 25/11/2014)

817 [6] B 04 03- Architecture Description Document Step 2, (D97, Edition 00.03.01, 06/02/2015)

818 [7] SESAR Safety Reference Material (Project ID 16.06.01, Edition 00.02.01, 30/01/2012)
819

820 [8] SESAR Security Reference Material (D101, Edition 00.03.01, 2013)
821

822 [9] SESAR Environment Reference Material (D26, Edition 02.00.01, 04/11/2014)
823

824 [10] SESAR Human Performance Reference Material (D06 Edition 00.01.00, 15/12/2010)
825

826 [11] SESAR Business Case Reference Material (D26_05, Edition 01.00.00, 19/09/2014)
827

828 [12] ICAO Doc 9830: Advanced Surface Movement Guidance and Control Systems (A-SMGCS)
829 Manual ; Fist edition-2004

830 [13] Final OSED 06.07.01-D77 for "Alerts for vehicle drivers" following V3 trials (Edition 00.01.01,
831 07/06/2016)

832 [14] 06.07.01-D78A-SAR-V3-AVDR Alerts for Vehicle Drivers Safety Assessment Report (Edition
833 00.01.00, 09/06/2016)

834 [15] SESAR DEL 06.02-D122-step1 Airport DOD 2014 Update (Edition 00.01.00 December 2014)

835 [16] 06.07.01 D38 V2 Validation Report for "alerts for vehicle drivers" (Edition 00.01.03,
836 11/06/2012)

837 [17] 06.07.01-D76-VP769 Validation Report, (Edition 00.01.02, 29/07/2016)

838 [18] 06.03.01-D151 EXE724 VALR (Edition 00.01.01, 07/01/2015)

839 [19] 06.07.01-D45-SPR-AVDR (Edition 00.01.01, 05/08/2015)

840 [20] WPB.01 Integrated Roadmap Latest version DS15
841

842 Appendix A Assessment / Justifications

843 A.1 Safety and Performance Assessments

844 A.1.1 Safety assessment

845 In order to develop a safety assessment, a Safety Assessment Report (SAR), D78A, [15] was carried
846 out for the Alerts for Vehicle Drivers function. In the SAR, requirements were determined through a
847 broader approach (success and failure). For these safety assessments the Safety Reference Material
848 (SRM) guidance material [8] and template was provided by P16.06.01.

849 A.1.2 Security risk assessment

850 N/A

851 A.1.3 Environment impact assessment

852 N/A

853 A.1.4 OPA

854 The OPA is included in the SAR.

855 A.2 Deleted Requirements

856
857 Following consultation with those involved in the V2 and V3 validation trials and the Work Package
858 Manager, it was decided that the following requirements were not required in the SPR. Some of the
859 specific requirements and values deleted below are either rephrased, merged or updated and are
860 included to Safety and Performance Requirements above, in section 3 [3]

861

862 [REQ]

Identifier	REQ-06.07.01-SPR-AVDR.0001
Requirement	A-SMGCS shall provide position of aircraft taxiing on the manoeuvring area to AVDR
Title	Aircraft on manoeuvring area
Status	<Deleted>
Rationale	To define the position of the aircraft
Category	<Safety>
Validation Method	<Real Time Simulation>
Verification Method	

863

864 [REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	REQ-06.07.01-OSED-0034.0010	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-06.07.01-OSED-0034.0010a	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-06.07.01-OSED-0034.0011	<Partial>
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<SATISFIES>	<ATMS Requirement>	REQ-06.07.01-OSED-0034.0013	<Partial>
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<APPLIES TO>	<Operational Focus Area>	OFA01.02.01	N/A

865

866 [REQ]

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Identifier	REQ-06.07.01-SPR-AVDR.0002
Requirement	A-SMGCS shall provide position of vehicle on the manoeuvring area to AVDR
Title	Vehicle on manoeuvring area
Status	<Deleted>
Rationale	To avoid hazardous situation. This requirement was derived within the SAR document
Category	<Safety>
Validation Method	<Real Time Simulation>
Verification Method	

867

868

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	REQ-06.07.01-OSED-0034.0010	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-06.07.01-OSED-0034.0010a	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-06.07.01-OSED-0034.0011	<Partial>
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<SATISFIES>	<ATMS Requirement>	REQ-06.07.01-OSED-0034.0013	<Partial>
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<APPLIES TO>	<Operational Focus Area>	OFA01.02.01	N/A

869

870

[REQ]

Identifier	REQ-06.07.01-SPR-AVDR.0003
Requirement	FIS-B shall provide information about defined areas to AVDR system
Title	Defined areas
Status	<Deleted>
Rationale	To ensure that AVDR system is updated with active defined areas
Category	<Safety>
Validation Method	<Real Time Simulation>
Verification Method	

871

872

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	REQ-06.07.01-OSED-0034.0010	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-06.07.01-OSED-0034.0010a	<Partial>
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<APPLIES TO>	<Operational Focus Area>	OFA01.02.01	N/A

873

874

[REQ]

Identifier	REQ-06.07.01-SPR-AVDR.0004
Requirement	Vehicle Alerting system shall compare Map database and data from Ground function managing closed areas and display restricted areas on HMI
Title	Map database
Status	<Deleted>
Rationale	To avoid hazardous situation. This requirement was derived within the SAR

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	document
Category	<Safety>
Validation Method	<Real Time Simulation>
Verification Method	

875

876 [REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
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<SATISFIES>	<ATMS Requirement>	REQ-06.07.01-OSED-0034.0017	<Partial>
<APPLIES TO>	<Operational Focus Area>	OFA01.02.01	N/A

877

878 [REQ]

Identifier	REQ-06.07.01-SPR-AVDR.0005
Requirement	AVDR shall detect direction and speed of aircraft
Title	AVDR direction and speed of aircraft
Status	<Deleted>
Rationale	To avoid hazardous situation. This requirement was derived within the SAR document
Category	<Safety>
Validation Method	<Real Time Simulation>
Verification Method	

879

880 [REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	REQ-06.07.01-OSED-0034.0010	<Partial>
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<SATISFIES>	<ATMS Requirement>	REQ-06.07.01-OSED-0034.0011	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-06.07.01-OSED-0034.0012	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-06.07.01-OSED-0034.0013	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-06.07.01-OSED-0034.0014	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-06.07.01-OSED-0034.0018	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-06.07.01-OSED-0034.0019	<Partial>
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<SATISFIES>	<ATMS Requirement>	REQ-06.07.01-OSED-0034.0024	<Partial>
<APPLIES TO>	<Operational Focus Area>	OFA01.02.01	N/A

881

882 [REQ]

Identifier	REQ-06.07.01-SPR-AVDR.0006
Requirement	AVDR shall detect direction and speed of own vehicle
Title	AVDR direction and speed of vehicle
Status	<Deleted>
Rationale	To avoid entering closed or restricted areas or to collide with the Aircraft
Category	<Safety>
Validation Method	<Real Time Simulation>
Verification Method	

883

884 [REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	REQ-06.07.01-OSED-0034.0010	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-06.07.01-OSED-0034.0010a	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-06.07.01-OSED-0034.0011	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-06.07.01-OSED-0034.0012	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-06.07.01-OSED-0034.0013	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-06.07.01-OSED-0034.0014	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-06.07.01-OSED-0034.0018	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-06.07.01-OSED-0034.0019	<Partial>
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<SATISFIES>	<ATMS Requirement>	REQ-06.07.01-OSED-0034.0021	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-06.07.01-OSED-0034.0022	<Partial>
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<SATISFIES>	<ATMS Requirement>	REQ-06.07.01-OSED-0034.0024	<Partial>
<APPLIES TO>	<Operational Focus Area>	OFA01.02.01	N/A

885

886 [REQ]

Identifier	REQ-06.07.01-SPR-AVDR.0007
Requirement	AVDR shall provide alert to driver within 1 second after detection any conflicting situation
Title	AVDR alert within 1 second
Status	<Deleted>
Rationale	To avoid hazardous situation. This requirement was derived within the SAR document
Category	<Safety>
Validation Method	<Real Time Simulation>
Verification Method	

887

888 [REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	REQ-06.07.01-OSED-0034.0010	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-06.07.01-OSED-0034.0010a	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-06.07.01-OSED-0034.0011	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-06.07.01-OSED-0034.0012	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-06.07.01-OSED-0034.0013	<Partial>

889

890 [REQ]

Identifier	REQ-06.07.01-SPR-AVDR.0008
Requirement	Vehicle Alerting system shall compare restricted areas with position of vehicle
Title	Position of vehicle
Status	<Deleted>
Rationale	To avoid hazardous situation. This requirement was derived within the SAR document
Category	<Safety>
Validation Method	<Real Time Simulation>
Verification Method	

891

892 [REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	TBD	<Partial>
<SATISFIES>	<ATMS Requirement>	TBD	<Partial>
<APPLIES TO>	<Operational Focus Area>	OFA01.02.01	N/A

893

894 [REQ]

Identifier	REQ-06.07.01-SPR-AVDR.0009
Requirement	Vehicle Alerting System shall distinguish Caution Alert situation and Warning Alert situation.
Title	Distinction between caution and warning alert
Status	<Deleted>
Rationale	To avoid hazardous situation. This requirement was derived within the SAR documentpaul
Category	<Safety>
Validation Method	<Real Time Simulation>
Verification Method	

895

896 [REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	TBD	<Partial>
<SATISFIES>	<ATMS Requirement>	TBD	<Partial>

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<APPLIES_TO>	<Operational Focus Area>	OFA01.02.01	N/A
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897
898

[REQ]

Identifier	REQ-06.07.01-SPR-AVDR.0010
Requirement	The vehicle driver shall receive clearances related to its vehicle operations shown on a HMI.
Title	Receiving of clearances
Status	<Deleted>
Rationale	To avoid hazardous situation. This requirement was derived within the SAR document
Category	<Safety>
Validation Method	<Real Time Simulation>
Verification Method	

899
900

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	TBD	<Partial>
<SATISFIES>	<ATMS Requirement>	TBD	<Partial>
<APPLIES_TO>	<Operational Focus Area>	OFA01.02.01	N/A

901
902

[REQ]

Identifier	REQ-06.07.01-SPR-AVDR.0012
Requirement	AVDR shall receive and treat clearances.
Title	AVDR receiving and treating of clearances
Status	<Deleted>
Rationale	To avoid hazardous situation. This requirement was derived within the SAR document
Category	<Safety>
Validation Method	<Real Time Simulation>
Verification Method	

903
904

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<SATISFIES>	<ATMS Requirement>	TBD	<Partial>
<SATISFIES>	<ATMS Requirement>	TBD	<Partial>
<APPLIES TO>	<Operational Focus Area>	OFA01.02.01	N/A

905
906

[REQ]

Identifier	REQ-06.07.01-SPR-AVDR.0014
Requirement	The accuracy of position determination of vehicle shall be at least 3 meters
Title	Accuracy of vehicle position
Status	<Deleted>
Rationale	To be able displaying correct vehicle position to avoid hazardous situation.
Category	<Safety>
Validation Method	<Real Time Simulation>
Verification Method	

907
908

[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
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909
910

[REQ]

Identifier	REQ-06.07.01-SPR-AVDR.0015
Requirement	The accuracy of mode a/c information of aircraft domain shall not be less

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	than 1x10 ⁻⁵
Title	Accuracy of A/C transponder mode a/c
Status	<Deleted>
Rationale	To be able to display correct identity and position of specific A/C
Category	<Safety>
Validation Method	<Real Time Simulation>
Verification Method	

911

912 [REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
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913

914 [REQ]

Identifier	REQ-06.07.01-SPR-AVDR.0016
Requirement	The latency of mode a/c information from aircraft domain shall not be less than 1x10 ⁻⁴ second
Title	Latency of A/C transponder mode a/c
Status	<Deleted>
Rationale	To get essential information on time
Category	<Safety>
Validation Method	<Real Time Simulation>
Verification Method	

915

916 [REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
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917

918 [REQ]

Identifier	REQ-06.07.01-SPR-AVDR.0017
Requirement	The accuracy of aircraft domains state vector data shall not be less than 1x10 ⁻⁵
Title	Accuracy of A/C state vector
Status	<Deleted>
Rationale	To avoid hazardous situation
Category	<Safety>
Validation Method	<Real Time Simulation>
Verification Method	

919

920 [REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
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921

922 [REQ]

Identifier	REQ-06.07.01-SPR-AVDR.0018
Requirement	The accuracy of Aircraft Domains identity data shall not be less than 1x10 ⁻⁵
Title	Accuracy of Aircraft domain identity
Status	<Deleted>
Rationale	To be able to display correct identity and position of specific A/C
Category	<Performance>
Validation Method	<Real Time Simulation>
Verification Method	

923

924 [REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
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925

926 [REQ]

Identifier	REQ-06.07.01-SPR-AVDR.0020
Requirement	The latency of a position report between GNSS and processing Own ship Navigation shall not be greater than 1 second
Title	Latency of processing own ship position

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Status	<Deleted>
Rationale	To get essential information on time
Category	<Performance>
Validation Method	<Real Time Simulation>
Verification Method	

927

928 [REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
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929

930 [REQ]

Identifier	REQ-06.07.01-SPR-AVDR.0021
Requirement	The transmission rate of TIS-B shall be less than 5 seconds, if the mobile is not moving
Title	Latency of TIS-B transmission rate not moving mobiles
Status	<Deleted>
Rationale	To determine suitable transmission rate for TIS-B
Category	<Safety>
Validation Method	<Real Time Simulation>
Verification Method	

931

932 [REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
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933

934 [REQ]

Identifier	REQ-06.07.01-SPR-AVDR.0022
Requirement	The transmission rate of TIS-B shall be less than 1 second, if the mobile is moving
Title	Latency of TIS-B transmission rate moving mobiles
Status	<Deleted>
Rationale	To determine suitable transmission rate for TIS-B
Category	<Safety>
Validation Method	<Real Time Simulation>
Verification Method	

935

936 [REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
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937

938 [REQ]

Identifier	REQ-06.07.01-SPR-AVDR.0023
Requirement	The transmission rate of FIS-B shall be less than 5 seconds, if the mobile is not moving
Title	Latency of FIS-B transmission rate not moving mobiles
Status	<Deleted>
Rationale	To determine suitable transmission rate for FIS-B
Category	<Safety>
Validation Method	<Real Time Simulation>
Verification Method	

939

940 [REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
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941

942 [REQ]

Identifier	REQ-06.07.01-SPR-AVDR.0024
Requirement	The transmission rate of FIS-B shall be less than 1 second, if the mobile is moving
Title	Latency of FIS-B transmission rate moving mobiles
Status	<Deleted>

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Rationale	To determine suitable transmission rate for FIS-B
Category	<Safety>
Validation Method	<Real Time Simulation>
Verification Method	

943

944 [REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
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945

946 [REQ]

Identifier	REQ-06.07.01-SPR-AVDR.0025
Requirement	Processing Own ship Navigation shall detect direction and speed of vehicle
Title	Processing own ship movements
Status	<Deleted>
Rationale	To be able to detect vehicle movements
Category	<Safety>
Validation Method	<Real Time Simulation>
Verification Method	

947

948 [REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
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949

950 [REQ]

Identifier	REQ-06.07.01-SPR-AVDR.0026
Requirement	The vehicle driver shall receive clearances related to its vehicle operations shown on a HMI
Title	Clearances on HMI
Status	<Deleted>
Rationale	Situational awareness
Category	<Safety>
Validation Method	<Real Time Simulation>
Verification Method	

951

952 [REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
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953

954 [REQ]

Identifier	REQ-06.07.01-SPR-AVDR.0028
Requirement	Vehicle system shall be able to treat received clearances and corresponding inputs from the driver
Title	Processing clearances
Status	<Deleted>
Rationale	System must check status of clearances and if necessary start the alerting function
Category	<Safety>
Validation Method	<Real Time Simulation>
Verification Method	

955

956 [REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
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957

958 [REQ]

Identifier	REQ-06.07.01-SPR-AVDR.0029
Requirement	Vehicle processing functions shall provide alert to driver within 1 second after detection any conflicting situation
Title	Alert generation
Status	<Deleted>
Rationale	System must generate the alert at given time

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Category	<Safety>
Validation Method	<Real Time Simulation>
Verification Method	

959

960 [REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
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961

962 [REQ]

Identifier	REQ-06.07.01-SPR-AVDR.0030
Requirement	Alert Generating Function shall compare position of other mobiles with position of own vehicle
Title	Position compare towards the mobiles in order to trigger correct alert
Status	<Deleted>
Rationale	To avoid false alerts
Category	<Safety>
Validation Method	<Real Time Simulation>
Verification Method	

963

964 [REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
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965

966 [REQ]

Identifier	REQ-06.07.01-SPR-AVDR.0031
Requirement	Alert Generating Function shall compare restricted areas with position of vehicle
Title	Alert generation in adequacy of vehicle position towards the Defined Areas
Status	<Deleted>
Rationale	To avoid false alerts
Category	<Safety>
Validation Method	<Real Time Simulation>
Verification Method	

967

968 [REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
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969

970 [REQ]

Identifier	REQ-06.07.01-SPR-AVDR.0032
Requirement	Alert Generating function shall distinguish Caution Alert situation and Warning Alert situation
Title	Alert types
Status	<Deleted>
Rationale	To trigger correct type of alert
Category	<Safety>
Validation Method	<Real Time Simulation>
Verification Method	

971

972 [REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
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973

974 [REQ]

Identifier	REQ-06.07.01-SPR-AVDR.0033
Requirement	Alert Generating Function shall provide alert to driver within 1 second after detection of any conflicting situation
Title	Latency of alert generation
Status	<Deleted>
Rationale	To provide vehicle driver with on time alert

Category	<Safety>
Validation Method	<Real Time Simulation>
Verification Method	

975

976 [REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
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977

978 [REQ]

Identifier	REQ-06.07.01-SPR-AVDR.0034
Requirement	Alert generating function shall provide Caution Alert to driver within 1 second after detection of any conflicting situation
Title	Latency and accuracy of caution alert generation
Status	<Deleted>
Rationale	To provide vehicle driver with on time caution alert
Category	<Safety>
Validation Method	<Real Time Simulation>
Verification Method	

979

980 [REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
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981

982 [REQ]

Identifier	REQ-06.07.01-SPR-AVDR.0035
Requirement	Vehicle processing functions shall provide Warning Alert to driver within 1 second after detection of any conflicting situation
Title	Latency and accuracy of warning alert generation
Status	<Deleted>
Rationale	To provide vehicle driver with on time warning alert
Category	<Safety>
Validation Method	<Real Time Simulation>
Verification Method	

983

984 [REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
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985

986 [REQ]

Identifier	REQ-06.07.01-SPR-AVDR.0036
Requirement	Alert Generating Function shall provide a Warning Alert to driver within 1 second after detection of any conflicting situation
Title	Latency of warning alert generation in conflicting situation
Status	<Deleted>
Rationale	To generate warning alert on time when conflicting situation appears
Category	<Safety>
Validation Method	<Real Time Simulation>
Verification Method	

987

988 [REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
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989

990 [REQ]

Identifier	REQ-06.07.01-SPR-AVDR.0037
Requirement	Up-Linked System shall be able to process at least 200 targets
Title	Minimum capability of up-linked system
Status	<Deleted>
Rationale	To ensure that system is able to process high number of targets
Category	<Safety>
Validation Method	<Gaming Technique (Agent Based Analysis)>

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Verification Method	
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991

992 [REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
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993

994 [REQ]

Identifier	REQ-06.07.01-SPR-AVDR.0038
Requirement	The vehicle must be equipped with ADS-B out to send state vectors to the ground server
Title	ADS-B equipment(state vector)
Status	<Deleted>
Rationale	To ensure that vehicles are equipped with correct ADS-B out
Category	<Safety>
Validation Method	<Real Time Simulation>
Verification Method	

995

996 [REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
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997

998 [REQ]

Identifier	REQ-06.07.01-SPR-AVDR.0039
Requirement	The vehicle must be equipped with ADS-B out to send identity to the ground server
Title	ADS-B equipment (identity)
Status	<Deleted>
Rationale	To ensure that vehicles are equipped with correct ADS-B out
Category	<Safety>
Validation Method	<Real Time Simulation>
Verification Method	

999

1000 [REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
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1001

1002 [REQ]

Identifier	REQ-06.07.01-SPR-AVDR.0040
Requirement	Data uplink from ground server shall be serviceable
Title	Data Link
Status	<Deleted>
Rationale	To verify that data link is suitable for required specifications
Category	<Safety>
Validation Method	<Real Time Simulation>
Verification Method	

1003

1004 [REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
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1005

1006 [REQ]

Identifier	REQ-06.07.01-SPR-AVDR.0041
Requirement	The accuracy of uplink information shall be at least 1×10^{-5}
Title	Accuracy of uplinked information
Status	<Deleted>
Rationale	To ensure that accuracy uplinked information is on desired level
Category	<Safety>
Validation Method	<Real Time Simulation>
Verification Method	

1007

1008 [REQ Trace]

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Relationship	Linked Element Type	Identifier	Compliance
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1009

1010 [REQ]

Identifier	REQ-06.07.01-SPR-AVDR.0044
Requirement	The vehicle must be equipped with ADS-B out to send position reports to the ground server
Title	Vehicle position reports to the ground server
Status	<Deleted>
Rationale	To ensure that vehicle is equipped with necessary devices
Category	<Safety>
Validation Method	<Real Time Simulation>
Verification Method	

1011

1012 [REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
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1013

1014 [REQ]

Identifier	REQ-06.07.01-SPR-AVDR.0045
Requirement	The ground Domain must receive data from A-SMGCS in a timely manner
Title	Interaction between Ground domain and ASMGCS system
Status	<Deleted>
Rationale	To ensure interaction between Ground domain and ASMGCS system
Category	<Safety>
Validation Method	<Real Time Simulation>
Verification Method	

1015

1016 [REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
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1017

1018 [REQ]

Identifier	REQ-06.07.01-SPR-AVDR.0046
Requirement	The ground Domain must receive Map and Area information in a timely manner
Title	Map and area updates to Ground domain
Status	<Deleted>
Rationale	To ensure that map and area updates are available to the Ground system
Category	<Safety>
Validation Method	<Real Time Simulation>
Verification Method	

1019

1020 [REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
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1021

1022 [REQ]

Identifier	REQ-06.07.01-SPR-AVDR.0047
Requirement	The accuracy of the directions of mobiles shall not be less than 10 meters
Title	Accuracy of Mobiles
Status	<Deleted>
Rationale	To get accurate position of the vehicles
Category	<Safety>
Validation Method	<Real Time Simulation>
Verification Method	

1023

1024 [REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
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1025

1026 [REQ]

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Identifier	REQ-06.07.01-SPR-AVDR.0048
Requirement	Alert generating function shall provide Warning Alert to driver within 1 second after detection any conflicting situation
Title	Latency of alert generating system
Status	<Deleted>
Rationale	To ensure that vehicle driver is alerted on time
Category	<Safety>
Validation Method	<Real Time Simulation>
Verification Method	

1027

1028 [REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
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1029

1030 [REQ]

Identifier	REQ-06.07.01-SPR-AVDR.0050
Requirement	Procedures shall be defined and controller shall be trained to take appropriate decision in case of alert
Title	Procedures and Training for controllers
Status	<Deleted>
Rationale	To make sure that controllers are properly trained
Category	<Safety>
Validation Method	<Real Time Simulation>
Verification Method	

1031

1032 [REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
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1033

1034 [REQ]

Identifier	REQ-06.07.01-SPR-AVDR.0051
Requirement	In case of aircraft is having a deficient transponder; ATC shall focus on the aircraft and shall warn the drivers against the specific aircraft.
Title	Aircraft with deficient transponder
Status	<Deleted>
Rationale	Guideline in case of abnormality
Category	<Safety>
Validation Method	<Real Time Simulation>
Verification Method	

1035

1036 [REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
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1037

1038 [REQ]

Identifier	REQ-06.07.01-SPR-AVDR.0052
Requirement	In case of aircraft is having a deficient transponder; an emergency extraction procedure shall be defined to vehicle-clear the area
Title	Aircraft with deficient transponder an emergency extraction
Status	<Deleted>
Rationale	Guideline in case of abnormal situation
Category	<Safety>
Validation Method	<Real Time Simulation>
Verification Method	

1039

1040 [REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
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1041

1042

1043 [REQ]

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Identifier	REQ-06.07.01-SPR-AVDR.0053
Requirement	In case of aircraft having a deficient transponder Flight Crew shall inform the ATC about the malfunction of the own transponder
Title	Flight crew obligations in case of abnormality
Status	<Deleted>
Rationale	Guideline in case of abnormal situation
Category	<Safety>
Validation Method	<Real Time Simulation>
Verification Method	

1044

1045 [REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
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1046

1047 [REQ]

Identifier	REQ-06.07.01-SPR-AVDR.0054
Requirement	In case of aircraft having a deficient transponder ATC shall inform the flight crew about the malfunction of the transponder
Title	Information of the flight crew
Status	<Deleted>
Rationale	Guideline in case of abnormal situation
Category	<Safety>
Validation Method	<Real Time Simulation>
Verification Method	

1048

1049 [REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
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1050

1051 [REQ]

Identifier	REQ-06.07.01-SPR-AVDR.0055
Requirement	In case of runway/taxiway sudden opening or unplanned closure, an emergency extraction procedure shall be defined to vehicle-clear the area
Title	Sudden opening of runway/taxiway
Status	<Deleted>
Rationale	Guideline in case of abnormal situation
Category	<Safety>
Validation Method	<Real Time Simulation>
Verification Method	

1052

1053 [REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
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1054

1055 [REQ]

Identifier	REQ-06.07.01-SPR-AVDR.0056
Requirement	The controller shall be able to open or close a defined area
Title	Opening and closing Defined areas
Status	<Deleted>
Rationale	Defined areas must be opened or closed on request of controller
Category	<Safety>
Validation Method	<Real Time Simulation>
Verification Method	

1056

1057 [REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
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1058

1059 [REQ]

Identifier	REQ-06.07.01-SPR-AVDR.0057
Requirement	FIS-B shall be able to make map updates in a timely manner

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Title	Updating map via FIS-B
Status	<Deleted>
Rationale	Time interval must be determined for map updates
Category	<Safety>
Validation Method	<Real Time Simulation>
Verification Method	

1060

1061 [REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
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1062

1063 [REQ]

Identifier	REQ-06.07.01-SPR-AVDR.0058
Requirement	Driver shall get an alert when area status is changing
Title	Area status change
Status	<Deleted>
Rationale	Increase the situational awareness
Category	<Safety>
Validation Method	<Real Time Simulation>
Verification Method	

1064

1065 [REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
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1066

1067 [REQ]

Identifier	REQ-06.07.01-SPR-AVDR.0059
Requirement	Concept of operations (nature of the traffic, complexity of the platform, number of vehicles and/or aircraft) shall be validated to ensure that it is coherent with human performance
Title	Human performance
Status	<Deleted>
Rationale	To ensure human performance is coherent with traffic
Category	<Safety>
Validation Method	<Real Time Simulation>
Verification Method	

1068

1069 [REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
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1070

1071 [REQ]

Identifier	REQ-06.07.01-SPR-AVDR.0060
Requirement	Procedures shall be defined to help controller to take appropriate decision in case of deficiency of Vehicle Alerting System
Title	Deficiency of Vehicle Alerting System
Status	<Deleted>
Rationale	Guideline in case of abnormal situation
Category	<Safety>
Validation Method	<Real Time Simulation>
Verification Method	

1072

1073 [REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
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1074

1075 [REQ]

Identifier	REQ-06.07.01-SPR-AVDR.0061
Requirement	Drivers shall have a driving licence and proper training delivered by the regulator to have the authorization to evolve on the manoeuvring area
Title	Requirement for drivers

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Status	<Deleted>
Rationale	To ensure drivers skills
Category	<Safety>
Validation Method	<Real Time Simulation>
Verification Method	

1076

1077 [REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
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1078

1079 [REQ]

Identifier	REQ-06.07.01-SPR-AVDR.0063
Requirement	Adequate means of radio capability must be ensured
Title	Radio capability
Status	<Deleted>
Rationale	To be able to receive instructions from controllers within manoeuvring area
Category	<Safety>
Validation Method	<Real Time Simulation>
Verification Method	

1080

1081 [REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
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1082

1083 [REQ]

Identifier	REQ-06.07.01-SPR-AVDR.0064
Requirement	Adequate emergency situations are addressed to cope with malfunctions of radio capability (e.g. use of mobile phone an emergency phone number)
Title	Radio failure
Status	<Deleted>
Rationale	Guideline in case of abnormal situation
Category	<Safety>
Validation Method	<Real Time Simulation>
Verification Method	

1084

1085 [REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
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1086

1087 [REQ]

Identifier	REQ-06.07.01-SPR-AVDR.0065
Requirement	Radio capability shall be ensured across the manoeuvring area
Title	Radio coverage
Status	<Deleted>
Rationale	To ensure constant and flawless radio communication within the manoeuvring area
Category	<Safety>
Validation Method	<Expert Group (Judgement Analysis)>
Verification Method	

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1090 [REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
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1092 [REQ]

Identifier	REQ-06.07.01-SPR-AVDR.0506
Requirement	The transmission rate of ADS-B out shall be less than 1 second.
Title	Latency of transmission rate
Status	<Deleted>
Rationale	To send essential information on time

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Category	<Performance>
Validation Method	<Analytical Modelling>
Verification Method	<Analysis>

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[REQ Trace]

Relationship	Linked Element Type	Identifier	Compliance
<APPLIES TO>	<Operational Focus Area>	OFA01.02.01	N/A
<SATISFIES>	<ATMS Requirement>	REQ-06.07.01-OSED-AVDR 0215	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-06.02-DOD-6200.0005	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-06.02-DOD-6200.0008	<Partial>
<SATISFIES>	<ATMS Requirement>	REQ-06.02-DOD-6200.0011	<Partial>
<APPLIES_TO>	<Operational Process>	PCS-06.02- DOD- Manage safety nets systems for airport vehicles	N/A
<APPLIED_IN_ENVIRONMENT>	<Environment Class>	Intercontinental Hub	N/A
<APPLIED_IN_ENVIRONMENT>	<Environment Class>	European Hub	N/A
<APPLIED_IN_ENVIRONMENT>	<Environment Class>	Primary Node	N/A
<APPLIED_IN_ENVIRONMENT>	<Environment Class>	Secondary Node	N/A

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