

SES		Active					ECAC+	
ITY-AGDL		Initial ATC Air-Ground Data Link Services						
REG	ASP	MIL	APO	USE	INT	IND	NM	

Subject matter and scope

This SES-related implementation objective is derived from Regulation (EU) No 2015/310 of 26 February 2015, amending Regulation (EC) No 29/2009 of 16 January 2009 and repealing Regulation (EU) No 441/2014, laying down requirements on data link services for the single European sky.

Regulation (EC) No 29/2009 applies to air-ground data communications systems, their constituents and associated procedures and to flight data processing systems serving air traffic control units providing services to general air traffic, their constituents and associated procedures [Ref. Article 1(2)].

Regulation (EC) No 29/2009 requires the interoperable implementation of the first set of en-route non-time critical air-ground data link services DLIC, ACL, ACM and AMC [Ref. Annex II].

This regulation applies to all flights operating as general air traffic in accordance with instrument flight rules above FL 285, within the defined airspace areas [Ref. Article 1.1 of Regulation (EU) 2015/310].

The terms used in this objective are defined in Article 2 of Regulation (EC) No 549/2004 and in Article 2 of Regulation (EC) No 29/2009.

In 2016, what is known as the ELSA Consortium Study was finalised. The Study addresses the recommendations made by EASA in their report from 2014 on the technical issues in the implementation of Data Link Services (DLS). Also in 2016, the SESAR Deployment Manager has been mandated by the EC to act as DLS Implementation Project Manager and on this basis the SDM has developed a DLS Recovery Plan.

The implementation objective is aligned with Regulation (EU) No 2015/310, amending Regulation (EC) No 29/2009 and repealing Regulation (EU) No 441/2014.

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

Applicability Area(s) & Timescale(s)

Applicability Area 1	All EU SES States. Plus: United Kingdom		
Applicability Area 2	Albania, Armenia, Azerbaijan, Bosnia and Herzegovina, Moldova, Montenegro, Morocco, North Macedonia, Serbia, Turkey, Ukraine		
Timescales:	From:	By:	Applicable to:
Entry into force	06/02/2009		Applicability Area 1
ATS unit operational capability		05/02/2018	Applicability Area 1 + Applicability Area 2
Aircraft capability		05/02/2020	Applicability Area 1 + Applicability Area 2

References

European ATM Master Plan

OI step -	[AUO-0301]-Voice Controller-Pilot Communications (En-Route) Complemented by Data Link						
Enablers -	A/C-31	ER ATC 154a	ER ATC 154b	PRO-044b	PRO-228a		

Legend:	WXYZ-001	Covered by SLoA(s) in this objective	WXYZ-002 zzz	Covered by SLoA(s) in another objective Objective covering the enabler	WXYZ-003	Not covered in the Implementation Plan
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Applicable legislation

Regulation (EU) 2015/310 amending Regulation (EC) No 29/2009 and repealing Implementing Regulation (EU) No 441/2014, laying down requirements on data link services for the single European sky

Essential Operational Changes

- none -

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SESAR Solution

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ICAO GANP ? ASBUs

B0-TBO	Improved Safety and Efficiency through the initial application of Data Link En-Route
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Deployment Programme

- none -	
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European Plan for Aviation Safety

RMT.0524	Data link services
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Operating Environments

En-Route Network

Stakeholder Lines of Action (SLoAs)

SloA ref.	Title	From	By
ITY-AGDL-REG01	Ensure that safety is assessed before any change to the existing system	DELETED	
ITY-AGDL-REG02	Ensure the processing and the distribution of the information on the data link capability by the IFPS	DELETED	
ITY-AGDL-REG03	Ensure the publication of relevant information in the national aeronautical information publication		05/02/2018
ITY-AGDL-REG04	Ensure ATN/VDL-2 availability, security policy and address management procedures		05/02/2018
ITY-AGDL-REG05	Approve the operational use of air-ground data link services	DELETED	
ITY-AGDL-REG06	Notify potential exemption cases to the European Commission	FINALISED	
ITY-AGDL-ASP01	Ensure the conformity of communications, flight data and initial flight plan processing systems and associated procedures		05/02/2018
ITY-AGDL-ASP02	Organise personnel awareness and training		05/02/2018
ITY-AGDL-ASP03	Ensure ground communication systems comply with air-ground communication requirements		05/02/2018
ITY-AGDL-ASP04	Deploy communication infrastructure to handle air-ground data link services		05/02/2018
ITY-AGDL-ASP05	Implement Logon Forward process		05/02/2018
ITY-AGDL-ASP06	Implement Next Authority Notified process		05/02/2018
ITY-AGDL-MIL01	Equip transport-type State aircraft		01/01/2019
ITY-AGDL-USE01	Equip aircraft with data link equipment supporting the identified services		05/02/2020
ITY-AGDL-USE02	Specify relevant operational procedures		05/02/2020
ITY-AGDL-USE03	Arrange air-ground ATS data link service provision		05/02/2020
ITY-AGDL-USE04	Organise personnel awareness and training		05/02/2020
ITY-AGDL-IND01	Provide avionics and ground systems for data link services	DELETED	

Description of finalised and deleted SLoAs is available on the eATM Portal @ https://www.eatmportal.eu/working/depl/essip_objectives

Expected Performance Benefits

Safety:

Through the delivery of standard and unambiguous messages (significant error and fatigue reduction), provision of a communications backup and the possibility of immediate message retrieval.

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Capacity:	Through both reduction of voice congestion and increase in controller and sector productivity. Capacity gain is expected from 3.4 % (if 25% of flights is equipped) up to 11% (if 75% of flights is equipped). This will lead to reduction of delays.
Operational Efficiency:	-
Cost Efficiency:	-
Environment:	-
Security:	-

Detailed SLoA Descriptions

ITY-AGDL-REG03	Ensure the publication of relevant information in the national aeronautical information publication	From: -	By: 05/02/2018
Action by:	State Authorities		
Description & purpose:	Ensure that relevant information on the use of data link services is published in the national aeronautical information publications [Regulation (EC) No 29/2009, Article 13(8)].		
Finalisation criteria:	1 - National aeronautical information publications have been updated appropriately.		

ITY-AGDL-REG04	Ensure ATN/VDL-2 availability, security policy and address management procedures	From: -	By: 05/02/2018
Action by:	State Authorities		
Description & purpose:	<p>Member States which have designated ATS providers in the applicable airspace shall:</p> <ul style="list-style-type: none"> - Ensure that air-ground communications services satisfying requirements for ATN and VDL-2 are available to operators for aircraft flying within that airspace under their responsibility for CM and CPDLC data exchanges, with due regard to possible coverage limitations inherent in the communication technology used [Regulation (EC) No 29/2009, Article 7(1)]; - Ensure that air navigation service providers and other entities providing communication services implement an appropriate security policy for data exchanges of the DLIC, ACM, ACL and AMC services, notably by applying common security rules to protect distributed physical resources supporting those data exchanges [Regulation (EC) No 29/2009, Article 7(2)]; - Ensure that harmonised procedures apply for the management of addressing information in order to unambiguously identify air and ground communications systems supporting data exchanges of the CM and CPDLC air/ground applications [Regulation (EC) No 29/2009, Article 7(3)]. 		
Finalisation criteria:	1 - Availability of ATN/VDL-2 service has been published in national aeronautical information publication. 2 - Security policy is available. 3 - Harmonised addressing procedures are available.		

ITY-AGDL-REG06	Notify potential exemption cases to the European Commission	From: -	By: -
Action by:	National Supervisory Authorities (NSAs)		
Description & purpose:	Where applicable, provide detailed information justifying the need for granting exemptions for aircraft types: (a) reaching the end of their production life and being produced in limited numbers; and (b) for which re-engineering costs required would be disproportionate due to old design, in cases where these circumstances prevent aircraft of specific types from complying with the requirements of Regulation (EC) No 29/2009 [Article 14(1)].		
Finalisation criteria:	1 - The NSA has notified exemption cases to the European Commission		

ITY-AGDL-ASP01	Ensure the conformity of communications, flight data and initial flight plan processing systems and associated procedures	From: -	By: 05/02/2018
Action by:	ANS Providers		

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Description & purpose:	<p>Ensure that air-ground communications systems, flight data processing systems and human-machine interface systems serving ATS units providing service to general air traffic within the applicable airspace areas comply with the following articles of Regulation (EC) No 29/2009:</p> <ul style="list-style-type: none"> - Article 1(3) on the operational coverage; - Article 3(1) on the capability to provide and operate the DLIC, ACM, ACL and AMC data link services; - Article 4 on procedures for CPDLC establishment, operation and termination, and for the filing of flight plans regarding information pertaining to data link capability; - Article 5(1) on ground systems support of CM and CPDLC; - Article 5(2) on seamless provision, message set and integrity requirements of end-to-end communications for data exchanges of the CM and CPDLC air-ground applications; - Article 5(3) on service level agreement for communication services for CM and CPDLC data exchanges that may be provided by other organisations (i.e. CSPs); - Article 5(4) on ensuring that data exchanges can be established with all compliant aircraft flying in the airspace under their responsibility; - Article 5(5) on automated notification, coordination and transfer of flights between ATC units (Note that this requires implementation of LOF/NAN processes in accordance with Regulation (EC) No 1032/2006 - as complemented by Regulation (EC) No 30/2009 - refer to SES-related implementation objective ITY-COTR); - Article 5(6) on performance monitoring; - Article 9 on the application of air-ground communications in ground communication systems and their constituents for CM and CPDLC data exchanges, allowing either ATN/VDL-2 or an alternative communication technology; - Article 13(1) and (2) on the ground-based recording of data link communications.
Supporting material(s):	<p>EUROCONTROL - SPEC 116 - EUROCONTROL Specification on Data Link Services - Edition 2.1 / 01/2009 Url : https://www.eurocontrol.int/publication/eurocontrol-specification-data-link-services</p> <p>ICAO - Annex 10, Volume III, Part 1 - Aeronautical Telecommunications, Volume III Communication Systems, Part 1 Digital Data Communication Systems - Edition 2.0 Url : http://store1.icao.int/</p> <p>EUROCAE - ED-111 - Functional specifications for CNS/ATM Recording - Including Amendment N°1 - 30 July 2003 07/2002 Url : https://eshop.eurocae.net/eurocae-documents-and-reports</p>
ATM Master Plan relationship:	<p>[ER ATC 154b]-Enhance En-route ATC sub-systems (internal processing, FDP and Controller Workstation) to enable CPDLC dialog with Pilot</p> <p>[PRO-044b]-ATC Procedures involving protocol for utilization of DataLink communications, message composition, receipt acknowledgement</p>
Finalisation criteria:	<p>1 - Air-ground ANSP communications systems enable data link communication between controllers and operators of equipped aircraft.</p> <p>2 - Flight data and initial flight plan processing systems are able to handle the information about the data link capability of flights.</p> <p>3 - Associated procedures are applied in operation.</p>

ITY-AGDL-ASP02	Organise personnel awareness and training	From: -	By: 05/02/2018
Action by:	ANS Providers		
Description & purpose:	<p>Develop and maintain operations manuals containing the necessary instructions and information to enable all personnel concerned to apply Regulation (EC) No 29/2009.</p> <p>Ensure that these manuals are accessible and kept up to date and that their update and distribution are subject to appropriate quality and documentation configuration management.</p> <p>Ensure that the working methods and operating procedures comply with Regulation (EC) No 29/2009.</p> <p>Ensure that all personnel concerned are made duly aware of the relevant provisions in Regulation (EC) No 29/2009.</p> <p>Ensure that all personnel concerned are adequately trained for their job functions.</p> <p>Note: In accordance with Regulation (EC) No 29/2009, Articles 13(3) and 13(5)</p>		
Finalisation criteria:	1 - Air Navigation Service Providers have produced the operations manuals and the training programmes.		

ITY-AGDL-ASP03	Ensure ground communication systems comply with air-ground communication requirements	From: -	By: 05/02/2018
Action by:	ANS Providers		
Description & purpose:	<p>Entities providing communication services shall ensure that the ground communication systems and their constituents apply air-ground communications for CM and CPDLC data exchanges in compliance with Article 9 of Regulation (EC) No 29/2009, allowing either ATN/VDL-2 or an alternative communication technology.</p>		
ATM Master Plan relationship:	[ER ATC 154a]-Basic air-ground datalink communications service derived from the CM and CPDLC applications		
Finalisation criteria:	1 - CSP has deployed and made available ground communication systems which allow ATN/VDL-2 or alternative communication technology.		

ITY-AGDL-ASP04	Deploy communication infrastructure to handle air-ground data	From:	By:
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	link services	-	05/02/2018
Action by:	ANS Providers		
Description & purpose:	Ensure that the entities providing communication services for data exchanges of the air-ground applications deploy the appropriate telecommunication infrastructure (e.g. based on ATN/VDL-Mode 2).		
Supporting material(s):	<p>EUROCONTROL - LINK 2000+ Network Planning Document - Edition 3.6 / 12/2012</p> <p>ARINC - 631-6 - VHF Digital Link (VDL) Mode 2 Implementation Provisions Standards - ARINC 600 Series / 11/2010 Url : https://www.arinc.com/cf/store/catalog.cfm?prod_group_id=1&category_group_id=3</p> <p>EUROCONTROL - Generic Requirements for a LINK 2000+ Air/Ground Communications Service Provider (ACSP) - Edition 1.6 / 12/2009</p> <p>ARINC - 631-5 - VHF Digital Link (VDL) Mode 2 Implementation Provisions - ARINC 600 Series / 12/2008 Url : https://www.arinc.com/cf/store/catalog.cfm?prod_group_id=1&category_group_id=3</p> <p>EUROCONTROL - SPEC 116 - EUROCONTROL Specification on Data Link Services - Edition 2.1 / 01/2009 Url : https://www.eurocontrol.int/publication/eurocontrol-specification-data-link-services</p>		
ATM Master Plan relationship:	[CTE-C02b]-A/G Datalink over ATN/OSI - Single frequency		
Finalisation criteria:	1 - Appropriate telecommunication infrastructure has been deployed in the specific locations selected by the State, and is ready to handle the selected air-ground data link services.		

ITY-AGDL-ASP05	Implement Logon Forward process	From: -	By: 05/02/2018
Action by:	ANS Providers		
Description & purpose:	<p>Implement a process for the transmission of logon parameters of flight data between ATC units as specified in the Annex to Regulation (EC) No 30/2009 amending Regulation (EC) No 1032/2006.</p> <p>The Logon Forward process is transmitted to provide the ATN or FANS/1A logon parameters to the receiving data-link equipped unit, to allow the unit to use the data link applications (CM, CPDLC, ADS, FIS).</p> <p>This process shall comply with the interoperability and performance requirements specified in Art. 3 of Regulation (EC) No 1032/2006.</p> <p>Note :This SLoA corresponds to ITY-COTR-ASP08 from ESSIP Plan Edition 2015.</p>		
Specific applicability:	Related to Commission Regulation 29/2009 laying down requirements on datalink services for the Single European Sky.		
Derogations:	It shall not apply to flight data processing systems for which the flight data are synchronised by means of a common system.		
Supporting material(s):	<p>EUROCONTROL - SPEC 107 - EUROCONTROL Specification for ATS Data Exchange Presentation (ADEXP) - Edition 3.2 / 12/2017 Url : https://www.eurocontrol.int/publication/eurocontrol-specification-ats-data-exchange-presentation-adexp</p> <p>EUROCONTROL - SPEC 106 - EUROCONTROL Specification for On-Line Data Interchange (OLDI) - Edition 4.3 - OJ 2011/C 146/11 / 12/2017 Url : https://www.eurocontrol.int/publication/eurocontrol-specification-line-data-interchange-oldi</p>		
ATM Master Plan relationship:	[ER ATC 154b]-Enhance En-route ATC sub-systems (internal processing, FDP and Controller Workstation) to enable CPDLC dialog with Pilot		
Finalisation criteria:	1 - The Logon Forward process has been implemented, documented and is in operational use.		

ITY-AGDL-ASP06	Implement Next Authority Notified process	From: -	By: 05/02/2018
Action by:	ANS Providers		
Description & purpose:	<p>Implement a process for the transmission of information of flight data between ATC units as specified in the Annex to Regulation (EC) No 30/2009 amending Regulation (EC) No 1032/2006.</p> <p>Information subject to the next authority notified process shall provide as a minimum: aircraft identification, departure aerodrome, destination aerodrome.</p> <p>This process shall comply with the interoperability and performance requirements specified in Art. 3 of Regulation (EC) No 1032/2006.</p> <p>Note :This SLoA corresponds to ITY-COTR-ASP09 from ESSIP Plan Edition 2015.</p>		
Specific applicability:	Related to Commission Regulation 29/2009 laying down requirements on datalink services for the Single European Sky.		
Derogations:	It shall not apply to flight data processing systems for which the flight data are synchronised by means of a common system.		

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Supporting material(s):	EUROCONTROL - SPEC 107 - EUROCONTROL Specification for ATS Data Exchange Presentation (ADEXP) - Edition 3.2 / 12/2017 Url : https://www.eurocontrol.int/publication/eurocontrol-specification-ats-data-exchange-presentation-adexp EUROCONTROL - SPEC 106 - EUROCONTROL Specification for On-Line Data Interchange (OLDI) - Edition 4.3 - OJ 2011/C 146/11 / 12/2017 Url : https://www.eurocontrol.int/publication/eurocontrol-specification-line-data-interchange-oldi
ATM Master Plan relationship:	[ER ATC 154b]-Enhance En-route ATC sub-systems (internal processing, FDP and Controller Workstation) to enable CPDLC dialog with Pilot
Finalisation criteria:	1 - The Next Authority Notified process has been implemented, documented and is in operational use with all partners within the applicability area.

ITY-AGDL-MIL01	Equip transport-type State aircraft	From: -	By: 01/01/2019
Action by:	Military Authorities		
Description & purpose:	States which decide to equip new transport type State aircraft entering into service from 1 January 2019 with data link capability relying upon standards which are not specific to military operational requirements, shall ensure that those aircraft comply with the following articles of Regulation (EC) No 29/2009: - Article 3(5), amended by Article 1.2.4 of COMMISSION IMPLEMENTING REGULATION (EU) 2015/310, on the capability to operate the data link services DLIC, ACM, ACL and AMC; - Article 8(1) on communications systems support of CM and CPDLC; - Article 8(2) on seamless provision, message set and integrity requirements of end-to-end communications for data exchanges of the CM and CPDLC air-ground applications; - Article 8(3) on requirements for air-ground communication systems and their constituents to apply air-ground communications for data exchanges of the CM and CPDLC applications, allowing either ATN/VDL-2 or an alternative communication technology.		
Supporting material(s):	EUROCONTROL - SPEC 116 - EUROCONTROL Specification on Data Link Services - Edition 2.1 / 01/2009 Url : https://www.eurocontrol.int/publication/eurocontrol-specification-data-link-services		
Finalisation criteria:	1 - Transport-type aircraft have been equipped with data link capabilities.		

ITY-AGDL-USE01	Equip aircraft with data link equipment supporting the identified services	From: -	By: 05/02/2020
Action by:	Airspace Users		
Description & purpose:	Operators shall ensure that: - Their aircraft operating IFR/GAT flights within the applicable airspace above FL285 have the capability to operate the DLIC, ACM, ACL and AMC services [Article 1.(2).2 of COMMISSION IMPLEMENTING REGULATION 2015/310] - Aircraft air-ground communication systems and their constituents support the CM and CPDLC air-ground applications [Regulation (EC) No 29/2009, Article 6(1)]; - Aircraft air-ground communication systems and their constituents apply end-to-end communications for data exchanges of the CM and CPDLC air-ground applications in compliance with Regulation (EC) No 29/2009, Article 6(2); - Aircraft air-ground communication systems and their constituents apply air-ground communications for data exchanges of the CM and CPDLC air-ground applications in compliance with Regulation (EC) No 29/2009, Article 6(3), allowing either ATN/VDL-2 or an alternative communication technology.		
Derogations:	Not applicable to: - Aircraft with an individual certificate of airworthiness first issued before 01.01.14 and fitted with FANS-1/A data link equipment certified against the requirements of EUROCAE ED-100 or ED-100A [Article 1.(2).3.a of COMMISSION IMPLEMENTING REGULATION 2015/310]; - Aircraft with an individual certificate of airworthiness first issued before 31.12.2003 which will cease operation in the applicable airspace by 31.12.2022 [Article 1.(2).3.b of COMMISSION IMPLEMENTING REGULATION 2015/310]; - State aircraft [Article 1.(2).3.c of COMMISSION IMPLEMENTING REGULATION 2015/310]; - Aircraft being flown for testing, delivery or for maintenance purpose or with data link constituents temporarily inoperative under conditions specified in the applicable minimum equipment list [Article 1.(2).3.d of COMMISSION IMPLEMENTING REGULATION 2015/310]; - Specific aircraft types for which exemptions are justified and granted according to the procedure in Article 5(3) of Regulation (EC) No 549/2004 [Article 14].		
Supporting material(s):	EUROCONTROL - SPEC 116 - EUROCONTROL Specification on Data Link Services - Edition 2.1 / 01/2009 Url : https://www.eurocontrol.int/publication/eurocontrol-specification-data-link-services		
ATM Master Plan relationship:	[A/C-31]-Data link exchange compliant with Link 2000+		
Finalisation criteria:	1 - Airworthiness certificate with evidence of compliance with the certification specification has been granted by EASA.		

ITY-AGDL-USE02	Specify relevant operational procedures	From: -	By: 05/02/2020
Action by:	Airspace Users		

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Description & purpose:	Specify and apply common standardised procedures consistent with relevant ICAO provisions for CPDLC establishment, operation and termination, and for the filing of flight plans regarding information pertaining to data link capability, in compliance with Regulation (EC) No 29/2009, Article 4.
Supporting material(s):	EUROCONTROL - SPEC 116 - EUROCONTROL Specification on Data Link Services - Edition 2.1 / 01/2009 Url : https://www.eurocontrol.int/publication/eurocontrol-specification-data-link-services
Finalisation criteria:	1 - Operators have updated flight manuals with relevant information for the use of data link equipment and for CPDLC operations.

ITY-AGDL-USE03	Arrange air-ground ATS data link service provision	From:	By:
		-	05/02/2020
Action by:	Airspace Users		
Description & purpose:	Make appropriate arrangements (with a CSP) to ensure that data exchanges can be established between their aircraft and all ATS units which may control the flights they operate in the applicable airspace, with due regard to possible coverage limitations inherent in the communication technology used [Regulation (EC) No 29/2009, Article 6(4)].		
Finalisation criteria:	1 - Operators have made appropriate arrangements with Communication Service Providers serving all relevant ATS units.		

ITY-AGDL-USE04	Organise personnel awareness and training	From:	By:
		-	05/02/2020
Action by:	Airspace Users		
Description & purpose:	Ensure that the personnel operating data link equipment are made duly aware of Regulation (EC) No 29/2009, and that they are adequately trained for their job functions, and that instructions for using data link equipment are available in the cockpit [Regulation (EC) No 29/2009, Article13(6)].		
Finalisation criteria:	1 - Operators have training package added to training courses. 2 - Operators have training plans. 3 - Operators have Flight Manual with relevant information for the use of data link equipment available in the cockpit.		