Iris Service Provision Monthly Report

April 2024

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EXECUTIVE SUMMARY

This report presents the IRIS services performance during April 2024. The report contains global results for the reported period, including maps and tables with the performance through different parameters.

Additional and more detailed information about IRIS performance can be found at the Iris User Support website Iris User Support Website.

Iris ATN/OSI Service Level 1 (SL1)

This Service Level enables the following RCP specifications supporting CPDLC application for ATN B1 and ATS B2 data link services:

- RCP specified in the ED-120 as interpreted in the Eurocontrol guidelines.
- RCP130/A1 specified in the ED-228A / DO-350A and referred in the ED-242C / DO-343D

The SL1 performance values fulfilled the Iris SDD commitments in the 78.6% of the Service Area.

The overall observed SL1 performance values fulfilled are:

- SL1 Nominal Transaction Time (≤10 seconds at 95%): 4.4s
- SL1 ATN B1 Expiration Time (≤18 seconds at 99%) 5.5s
- SL1 ATS B2 Expiration Time (≤24 seconds at 99.5%): 5.8s
- SL1 Technical Continuity (≥95%) was 99.3%
- SL1 ATN B1 Technical Continuity (≥99%) was 99.4%
- SL1 ATS B2 Technical Continuity (≥99.5%) was 100%

From previous results, it can be observed that the overall Iris performance during the reported period have been compliant for the latency and continuity parameters.

Further details can be found in section 1.

Iris ATN/OSI Service Level 2 (SL2)

This Service Level 2 which enables the following RSP specification supporting ADS-C application for ATS B2 data link services:

- RSP160/A1 specified in the ED-228A / DO-350A and referred in the ED-242C / DO-343D

The SL2 performance values fulfilled the Iris SDD commitments in the 100% of the Service Area.

The overall observed SL2 performance values are:

- SL2 Nominal Delivery Time (≤9 seconds at 95%): 7.0s
- SL2 Overdue Delivery Time (≤17 seconds at 99.5%): 8.3s
- SL2 Technical Continuity (≥95%): 99.8%
- SL2 Technical Continuity (≥99.5%): 99.9%

From previous results, it can be observed that the overall Iris performance during the reported period have been compliant for the latency and continuity parameters.

Further details can be found in section 2.

During the reported period, the total number of Iris aircrafts connected and handled has been 3, which represents the same number of planes than during the previous month.

1 IRIS ATN/OSI SERVICE LEVEL 1 (SL1)

Iris ATN/OSI Service Level 1 corresponds to the Controller Pilot Data Link Communications (CPDLC), which is the application that allows ATC data communications between controllers and pilots.

1.1 Latency

SL1 Nominal Transaction Time (TT) is defined as the maximum time at which 95 percent of all transactions, that are initiated, are completed.
It is computed as the time from when the uplink message is sent by the end-user ground system (as time-stamped by the ground system in the uplink message) and the time when the downlink LACK is received by the end-user ground system for the 95 percent.

SL1 ATN B1 and ATS B2 Expiration Time (ET) is defined as the maximum time at which 99 (for ATN B1) or 99.5 (for ATS B2) percent of all transactions, that are initiated, are completed, after which the initiator is required to revert to an alternative procedure.
It is computed as the time from when the uplink message is sent by the end-user ground system (as time-stamped by the ground system in the uplink message) and the time when the downlink LACK is received by the end-user ground system for the 99 or 99.5 percent.

The achieved performance values for the reported period are:

Parameter	Value
TT	4.4 seconds
ET (RCP as ED-120)	5.5 seconds
ET (RCP130/A1)	5.8 seconds

Table 1: Iris SL1 latency

1.2 Technical Continuity

SL1 Technical Continuity and SL1 ATN B1/SL1 ATS B2 Technical Continuity is defined as probability that a transaction completes before the Transaction Time (TT) (for SL1 Technical Continuity), or the Expiration Time (ET) (for SL1 ATN B1/SL1 ATS B2 Technical Continuity) expires.
It is computed as the number of uplink messages requiring a LACK (ACK = 1) for which a DM100 LACK or a DM62 ERROR response is received within the ET target value (as per the Iris SDD) or less / total number of uplinks requiring a LACK (ACK = 1).

The achieved performance values for the reported period are:

Parameter	Value
C [TT]	99.3%
C [ET (RCP as ED-120)]	99.4%
C [ET (RCP130/A1)]	100%

Table 2: Iris SL1 Technical Continuity

The following figure presents the delays of the messages for Service level 1, both RCP as ED-120 and RCP130/A1, for the percentile between 90% and 100%.

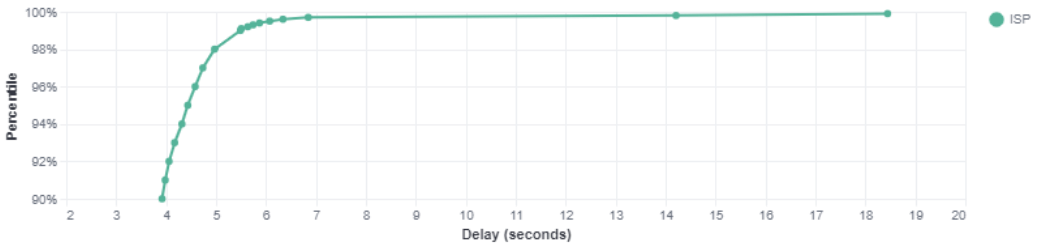

Figure 1: Cumulative performance distribution for ISP (SL1), for April 2024

The following maps present the delays displayed over the service area.

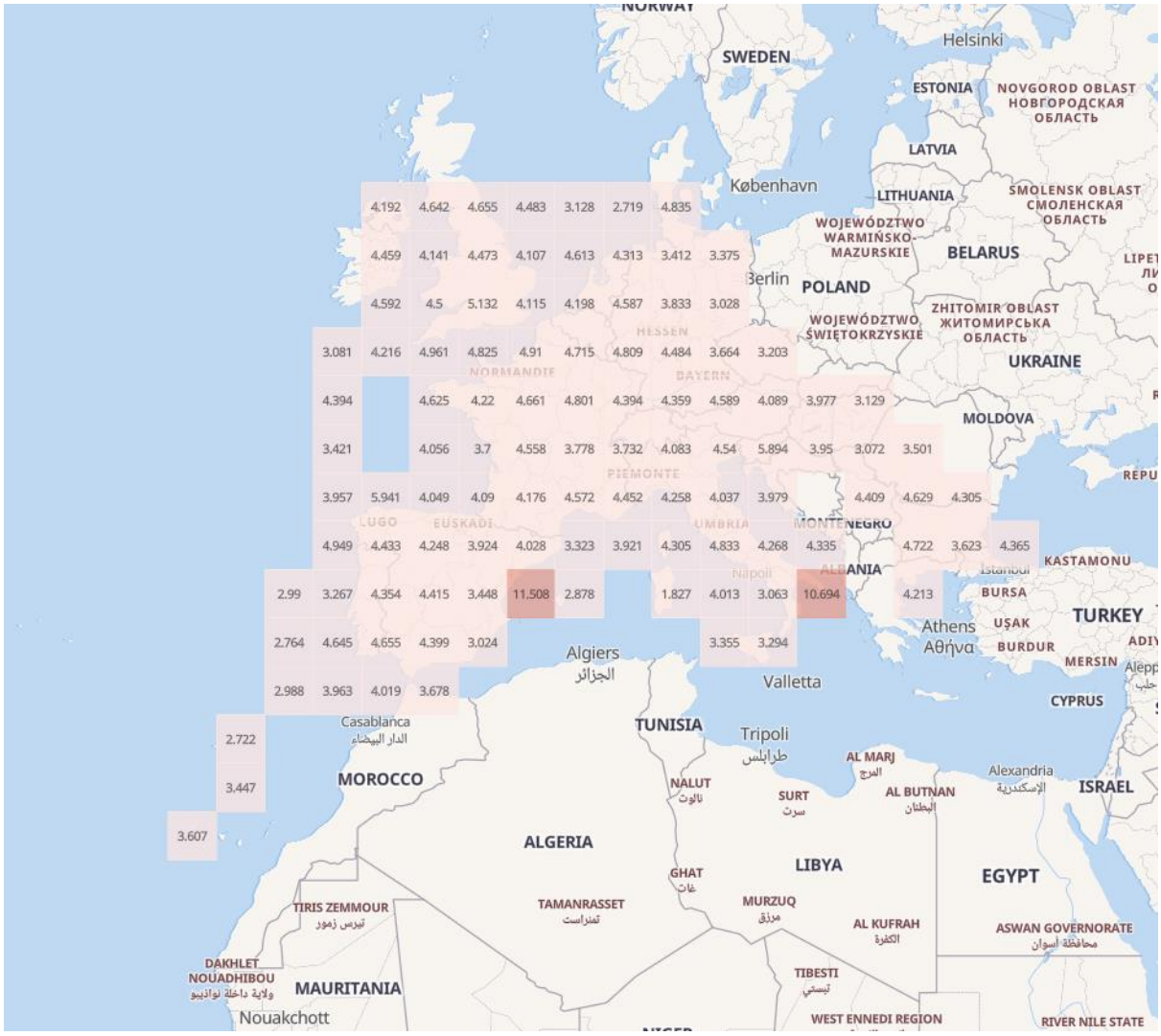

Figure 2: SL1 TT – April 2024

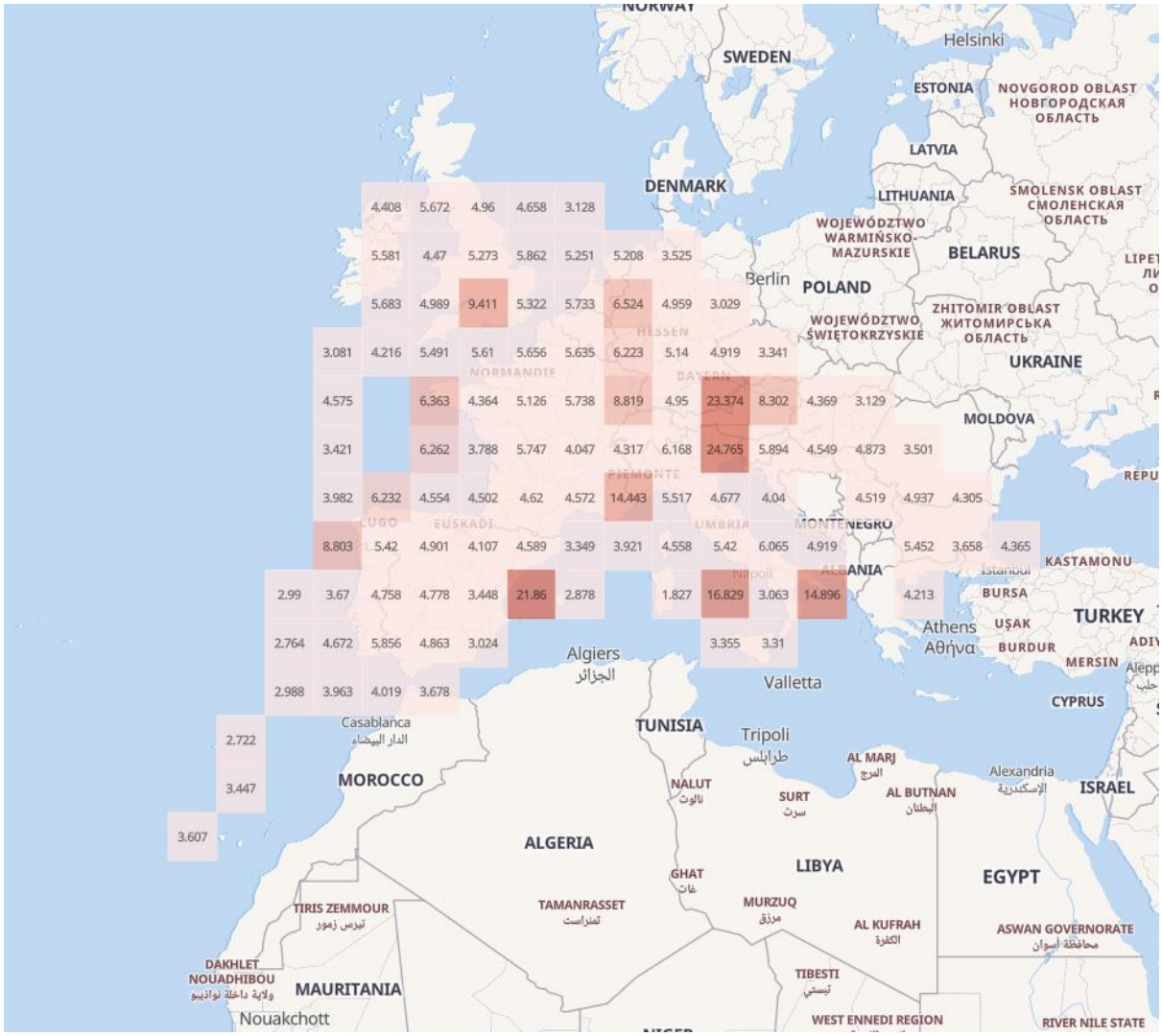

Figure 3: SL1 ET – April 2024 (RCP as ED-120)

Figure 4: SL1 ET – April 2024 (RCP130/A1)

1.3 Performance evolution

The following table shows the evolution of the previously presented performance parameters for last 6 months.

Parameter	2023-11	2023-12	2024-01	2024-02	2024-03	2024-04
SL1 Nominal Transaction Time	--	--	4.8s	4.2s	4.7s	4.4s
SL1 ATN B1 Expiration Time	--	--	5.2s	5.1s	6.2s	5.5s
SL1 ATS B2 Expiration Time	--	--	7.8s	6.9s	13.9s	5.8s
SL1 Technical Continuity	--	--	98.6%	99.3%	99.2%	99.3%
SL1 ATN B1 Technical Continuity	--	--	98.7%	99.4%	99.7%	99.4%
SL1 ATS B2 Technical Continuity	--	--	98.3%	100.00%	100.00%	100.00%

Table 3: Iris SL1 performance – 6 months evolution

2 IRIS ATN/OSI SERVICE LEVEL 2 (SL2)

Iris ATN/OSI Service Level 2 corresponds to the Automatic Dependent Surveillance – Contract (ADS-C). A mean by which the terms of an ADS-C agreement will be exchanged between the ground system and the aircraft, via a data link, specifying under what conditions ADS-C reports would be initiated, and what data would be contained in the reports.

2.1 Delivery time

SL2 Surveillance nominal delivery time (DT) is defined as the maximum nominal time within which 95% of surveillance data deliveries are required to be successfully delivered.

It is computed as the time from when the downlink message is sent by the aircraft (as time-stamped by the aircraft system in the Basic Group downlink message) and the time when the downlink message is received by the Organization ground system for the 95 percent.

SL2 overdue delivery time of surveillance data (OT) is defined as maximum time for the overdue delivery time of surveillance data at which 99.5 percent of all transactions, that are initiated, are completed, after which the initiator is required to revert to an alternative procedure.

It is computed as the time from when the downlink message is sent by the aircraft (as time-stamped by the aircraft system in the Basic Group downlink message) and the time when the downlink message is received by the Organization ground system for the 99.5 percent.

The achieved performance values for the reported period are:

Parameter	Value
DT	7.0 seconds
OT	8.3 seconds

Table 4: Iris SL2 Delivery time

2.2 Technical Continuity

SL2 Technical Continuity is defined as probability that a transition completes before the Delivery Time, or the Surveillance overdue delivery time (OT) expires.

It is computed as the number of ADS-C downlink messages which are forwarded to the Organization within the target value (as per the Iris SDD) or less / total number of ADS-C downlink messages.

The achieved performance values for the reported period are:

Parameter	Value
C [DT]	99.8%
C [OT]	99.9%

Table 5: Iris SL2 Technical Continuity

The following figure presents the delivery time of the messages for the Service level 2, for the percentile between 90% and 100%.

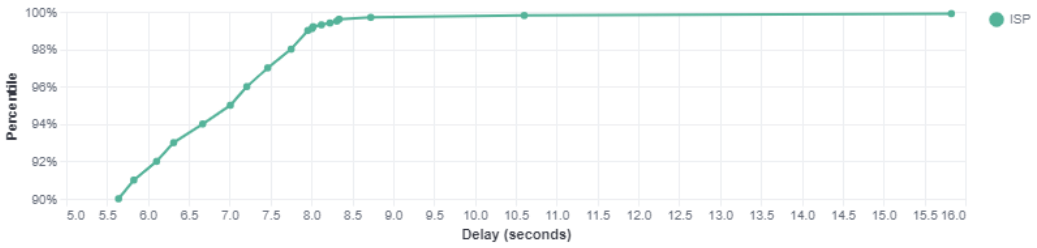

Figure 5: Cumulative performance distribution for ISP (SL2), for April 2024

The following maps present the delivery time displayed over the service area.

Figure 6: SL2 DT - April 2024

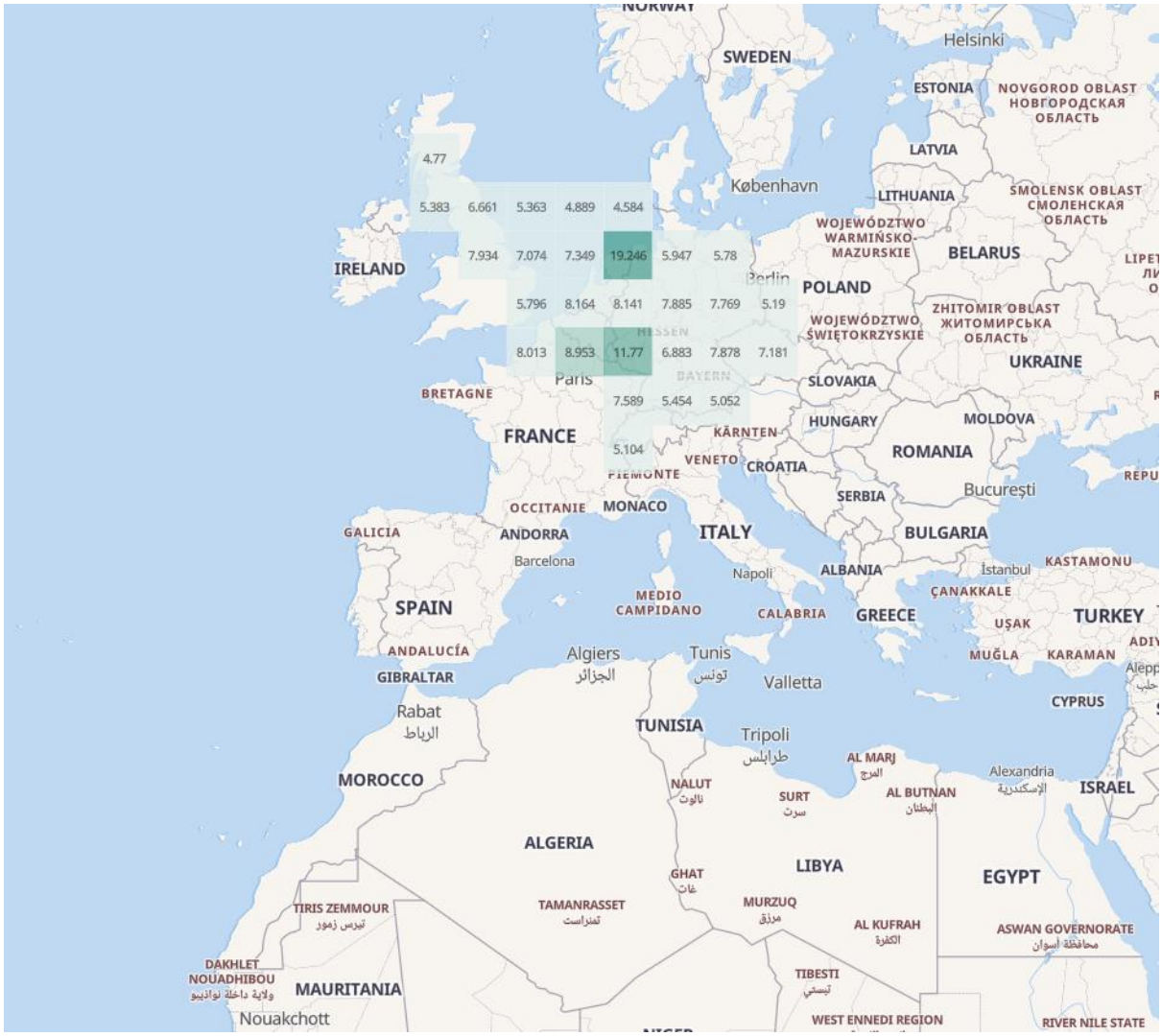

Figure 7: SL2 OT - April 2024

2.3 Performance evolution

The following table shows the evolution of the previously presented performance parameters for last 6 months.

Parameter	2023-11	2023-12	2024-01	2024-02	2024-03	2024-04
SL2 Nominal Delivery Time	--	--	5.5s	5.5s	5.5s	7.0s
SL2 Overdue Delivery Time	--	--	6.6s	6.0s	18.3s	8.3s
SL2 Technical Continuity (95%)	--	--	100%	100%	98.8%	99.8%
SL2 Technical Continuity (99.5%)	--	--	100%	100%	99.3%	99.9%

Table 6: Iris SL2 performance – 6 months evolution

APPENDIX A LIST OF ACRONYMS

The following table provides the definition of the acronyms used in this document.

Acronym	Definition
ACC	Air Control Center
ADS-C	Automated Dependent Surveillance- Contract
ATC	Air Traffic Control
ATN	Aeronautical Telecommunication Network
ATS	Application Transport Service
B1	Baseline 1
B2	Baseline 2
CM	Context Mana
CPDLC	Controller Pilot Data Link Communications
DM	Downlink Message
DT	Delivery Time
ESSP	European Satellite Services Provider
ET	Expiration Time
IDRP	Inter-Domain Routing Protocol
ISP	Iris Service Provider
OSI	Open System Interconnection
OT	Overdue Time
RCP	Required Communications Performance
RSP	Required Surveillance Performance
SDD	Service Definition Document
SL	Service Level
TP	Transport Protocol
TT	Transaction Time

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