

# Iris Service Provision Monthly Report October 2024



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## **EXECUTIVE SUMMARY**

This report presents the IRIS services performance during October 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 Service Availability**

In October, the Iris Service Availability (whose target value is 99.4%) was 99.74%.

Further details can be found in Section 1.

### 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 (which means that in 22 of 28 ACCs where some SATCOM communications took place during October, the Iris SDD commitments values were fulfilled).

The overall observed SL1 performance values are:

- SL1 Nominal Transaction Time (≤10 seconds at 95%): 8.5s
- SL1 ATN B1 Expiration Time (≤18 seconds at 99%) 10.1s
- SL1 ATS B2 Expiration Time (≤24 seconds at 99.5%): 7.1s
- SL1 Technical Continuity (≥95%) was 98.33%
- SL1 ATN B1 Technical Continuity (≥99%) was 99.12%
- SL1 ATS B2 Technical Continuity (≥99.5%) was 100%

From above 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.

## 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 (which means that in the only one ACC where Iris Service is declared (EDYY ACC), the Iris SDD commitments values were fulfilled).

The overall observed SL2 performance values are:

- SL2 Nominal Delivery Time (≤9 seconds at 95%): 5.5s
- SL2 Overdue Delivery Time (≤17 seconds at 99.5%): 7.9s
- SL2 Technical Continuity (≥95%): 100%
- SL2 Technical Continuity (≥99.5%): 100%

From above 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 3.

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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.

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# **1** IRIS SERVICE AVAILABILITY

The service availability is defined as the probability that the Iris service is available to provide the required level of communication service.

Operationally significant outages are considered where TP4 or CM, CPDLC / ADS-C messages are not exchanged anymore for more than 6 minutes and validated by taking into consideration the type of IDRP messages (e.g. IDRP error rate) sent or received by the Inmarsat Air/Ground Router during this period to avoid wrong measurements at low traffic periods.

The Iris Service Availability during October was 99.74%, being observed the minimum value 92.79% on the 08/10 and being above of the target (99.4%) for the rest of days.

A daily distribution of Iris Service Availability is shown in the following graph:



#### Figure 1: Daily Iris Service Availability

#### 1.1 Performance evolution

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

| Parameter                 | 2024-05 | 2024-06 | 2024-07 | 2024-08 | 2024-09 | 2024-10 |
|---------------------------|---------|---------|---------|---------|---------|---------|
| Iris Service Availability | 99.42%  | 99.62%  | 99.98%  | 97.70%  | 99.98%  | 99.74%  |

Table 1: Iris Service availability performance – 6 months evolution



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# 2 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.

#### 2.1 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        |
|--------------------|--------------|
| Π                  | 8.5 seconds  |
| ET (RCP as ED-120) | 10.1 seconds |
| ET (RCP130/A1)     | 7.1 seconds  |

Table 2: Iris SL1 latency

#### 2.2 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  |
|------------------------|--------|
| С [ТТ]                 | 98.33% |
| C [ET (RCP as ED-120)] | 99.12% |
| C [ET (RCP130/A1)]     | 100%   |

Table 3: 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%.



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Figure 2: Cumulative performance distribution for ISP (SL1), for October 2024

LATVIA DENMARK SMOLENSK OBL LITHUANIA СМОЛЕНСКА ОБЛАСТЬ 3.976 4.433 4.095 4.633 3.905 WOJEWÓDZTWO WARMIŃSKO----BELARUS 4.415 4.702 5.042 4.85 4.94 4.499 4.43 2.457 MAZURSKIE Berlin POLAND VOLYN OBLAST 4.34 5.314 / 5.01 5.08 4.691 4.851 4.988 5.071 4.988 5.071 THURINGEN WOJEWÓDZTWO ОБЛАСТЬ 5.078 4.654 5.441 5.085 5.286 4.692 4.756 4.941 4.635 4.749 3.729 UKRAINE \*Paris 4.418 5.374 4.835 5.137 4.866 4.761 5.031 4.592 1.816 3.699 5.039 4.85 MOLDOVA 4.978 4.789 4.643 4.978 4.635 4.718 5.271 4.8 5.103 5.685 4.875 3.677 4 586 5.001 5.078 5.112 4,548 5.023 4.538 4.78 4.805 5.305 4.421 5.011 3.675 MONTENEGRO 4.893 4.424 4.679 4.835 5.076 4.462 4.573 4.978 4.77 4.394 4.492 4.067 1.256 4.462 4.843 KASTAMON ALBANTA İstanbul 3.816 5.138 5.028 5.109 4.152 4.369 4.746 4.215 4.687 4.434 4.788 4.331 2.597 CANAKKALE TUR UŞAK Athens \* 3.89 4.577 5.543 5.107 4.864 3.346 4,461 4.65 Αθήνα BURDUR Algiers MERSIN الجزائر 3.743 4.977 5.069 4.467 4.435 4.306 4,438 **CYPRUS** Casablanca TUNISIA \* Tripoli 4.278 الدار البيضاء طرابلس AL MARJ المزج MOROCCO NALUT Cairo 3.796 MATROUH AL WAHAT GOVERNORATE SURT نالوت القاهرة سزت الواجات 3.824 ALGERIA LIBYA GHAT EGYPT غات TAMANRASSET MURZUQ IDTS ZEMMOUR

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

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Figure 3: SL1 TT – October 2024



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|                   | Ma 3                       | 2            |               | DENIMARK                    |                       | LATVIA   |
|-------------------|----------------------------|--------------|---------------|-----------------------------|-----------------------|--|
|                   | 3.987 4.603                | 5.623 4.635  | 3.653         | DENWARK                     | WOJEWO                | LITHUANIA SMOLENSK OBL<br>CMOJEHCKA3<br>ODZTWO<br>INSKO- |
|                   | 4.663 6.277                | 5.808 5.247  | 4.069         | Hamburg<br>DERSACHSEN       | Berlin POLAND         | RSKIE  |
| 4                 | 4.512 6.445                | 5.804 5.733  | 4.029 3.70    | 05 4.954 5.129<br>THÜRINGEN | WOJEWÓDZTWO           | ОСЦУЛ ОВLАЯТ<br>ВОЛИНСЬКА<br>ОБЛАСТЬ                     |
| 5.352             | 4.782 6.64                 | 5.688 5.79   | 4.812 5.4     | 9 5.481 4.861<br>BAYERN     | 5.513 3.813           | UKRAINE  |
| 3.706             | 6.073 5.657                | 5.047 38.823 | 3 70.944 6.27 | 4 5.67 5.373<br>ECHTENSTEIN | 6.283 5.715 1.8       | MOLDOVA  |
|                   | 5.731 5.04                 | 5.255 4.982  | 5.601 4.99    | 03 5.715 7.612              | 12.676 10.444 13      | 41 3.692   |
| 4.67              | 5.355 5.519                | 5.159 4.763  | 5.94 4.62     | 23 7.113 5.308              | 5.556 3 4.4           | 23 5.678 3.691   |
| 1.256 5.412       | 5.159 5.316                | 5.227 5.1    | 4.824 5.16    | 61 4.657 5.848              | 4.932 5.509           | 4.5 5.24 4.091<br>Istanbul KASTAMON                      |
| 3.816 5.656       | 12.967 5.395               | 4.186 4.462  | 4.979 4.30    | 06 <b>4.</b> 929 4.563      | 5.369 4.442 2.5       |  |
| 3.912 4.588       | 12.868 5.694               | 4.978        | Algiers       | 3.404                       | 4,464 4.944           | Athens USAK<br>* Αθήνα BURDUR<br>MERSIN                  |
| 3.743 4.316 5.958 | 5.181 4.521                | 4.443        | الجزائر       | }                           | 4.458                 | CYPRUS   |
| 4.376             | asablanca<br>الدار البيضاء |              |               | TUNISIA *                   | Tripoli<br>طرابلس ALM | AARI   |
| 3.857 M           | OROCCO                     |              |               | NALUT<br>نالوت              | SURT                  | الم<br>MATROUH<br>GÓVERNORATE                            |
| 3.833 🗸 , 1       |                            | AL           | GERIA         | )                           | AL سری<br>ت           | القاهرة مطروح الواجار<br>الواجار                         |
|                   |                            | -            | AMANDACCET    | GHAT                        |                       | EGYPT  |

Figure 4: SL1 ET – October 2024 (RCP as ED-120)



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Figure 5: SL1 ET – October 2024 (RCP130/A1)

## 2.3 Performance evolution

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

| Parameter                          | 2024-05 | 2024-06 | 2024-07 | 2024-08 | 2024-09 | 2024-10 |
|------------------------------------|---------|---------|---------|---------|---------|---------|
| SL1 Nominal Transaction Time       | 4.9s    | 4.8s    | 4.9s    | 4.8s    | 8.5s    | 8.5s    |
| SL1 ATN B1 Expiration Time         | 7.0s    | 5.8s    | 6.2s    | 5.9s    | 10.5s   | 10.1s   |
| SL1 ATS B2 Expiration Time         | 12.2s   | 6.6s    | 7.0s    | 7.5s    | 6.5s    | 7.1s    |
| SL1 Technical Continuity           | 98.6%   | 99.7%   | 99.0%   | 99.4%   | 97.80%  | 98.33%  |
| SL1 ATN B1 Technical<br>Continuity | 99.0%   | 99.8%   | 99.2%   | 99.5%   | 98.79%  | 99.12%  |
| SL1 ATS B2 Technical<br>Continuity | 99.8%   | 100%    | 99.3%   | 99.9%   | 100%    | 100%    |

Table 4: Iris SL1 performance - 6 months evolution



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# 3 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.

#### 3.1 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        | 5.5 seconds |
| ОТ        | 7.9 seconds |

| Table | 5: | Iris | SL2 | Delivery | / time |
|-------|----|------|-----|----------|--------|
|-------|----|------|-----|----------|--------|

#### 3.2 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]    | 100%  |
| С [ОТ]    | 100%  |

Table 6: 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%.



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Figure 6: Cumulative performance distribution for ISP (SL2), for October 2024



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

Figure 7: SL2 DT – October 2024



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Figure 8: SL2 OT - October 2024

## 3.3 Performance evolution

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

| Parameter                 | 2024-05 | 2024-06 | 2024-07 | 2024-08 | 2024-09 | 2024-10 |
|---------------------------|---------|---------|---------|---------|---------|---------|
| SL2 Nominal Delivery Time | 5.7s    | 5.5s    | 5.6s    | 6.1s    | 5.6s    | 5.5s    |
| SL2 Overdue Delivery Time | 7.6s    | 7.5s    | 7.3s    | 8.1s    | 7.4s    | 7.9s    |
| SL2 Technical Continuity  | 99.6%   | 99.7%   | 99.9%   | 99.8%   | 99.89%  | 100%    |
| SL2 Technical Continuity  | 99.9%   | 99.8%   | 100%    | 100%    | 100%    | 100%    |

Table 7: Iris SL2 performance – 6 months evolution



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# 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 Management                         |
| 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                              |
| ТР      | Transport Protocol                         |
| TT      | Transaction Time                           |



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