

EGNOS SERVICE NOTICE

Number: 012

Revision: 1.0

To: EGNOS SoL and Open Service Users
Date: 15/01/2015
Subject: Status of EGNOS performances – North of Service Area

This Service Notice provides details on the status of the EGNOS APV-I (Availability and Continuity) and Open Service (OS) performances in the North of Europe which, since November 2014, have shown some degradation with respect to the corresponding EGNOS [OS](#) and [SoL](#) Service Definition Documents (SDDs) in force. En Route to NPA SoL service levels are not impacted.

EGNOS SoL service integrity was not compromised at any moment remaining safe at all times and locations within the EGNOS coverage area.

1 DESCRIPTION OF THE ISSUE

Since November 2014, APV-I (Availability and Continuity) and OS performances over the North of the respective EGNOS SoL and OS Service Areas (as defined in the corresponding EGNOS SDDs) are presenting, during certain periods of time, degraded values, with daily APV-I and OS Availability values lower than 99% and daily APV-I Continuity risk figures above $5 \times 10^{-4}/15\text{sec}$.

As evidence of how these underperformances are distributed in time, next figures show the:

1. Hourly distribution in the day (from hour 0 to 23) of the APV-I Availability underperformances observed at RIMS TRO¹ for the period 26th December 2014 to 09th January 2015.
2. Histogram of the duration of all the underperformances observed at RIMS TRO in the period 26th December 2014 to 09th January 2015.
3. Hourly APV-I availability at one impacted airport with EGNOS-based operations published, (Røst in Norway) from 1st to 09th January 2015.

¹ RIMS Tromso (TRO) is located in the impacted zone of the Service Area.

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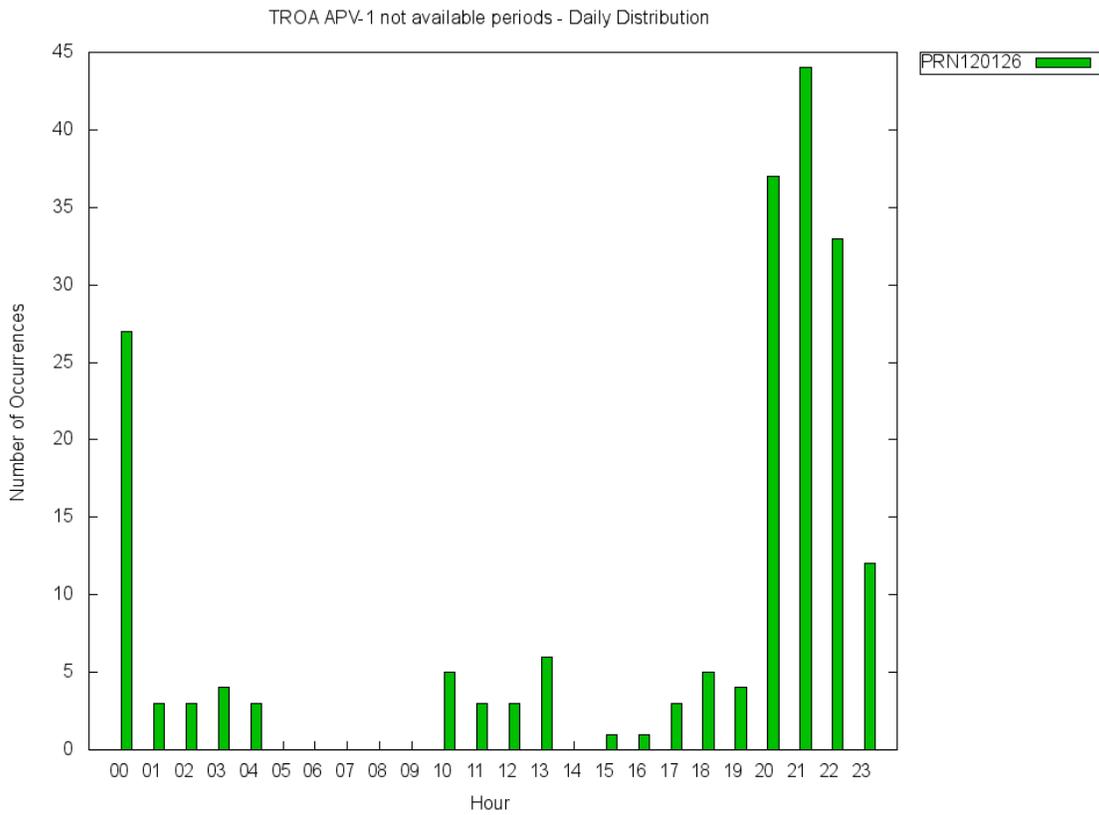


Figure 1. Hourly distribution in the day of the APV-I Availability underperformances at RIMS TRO for the period 26th December 2014 to 09th January 2015

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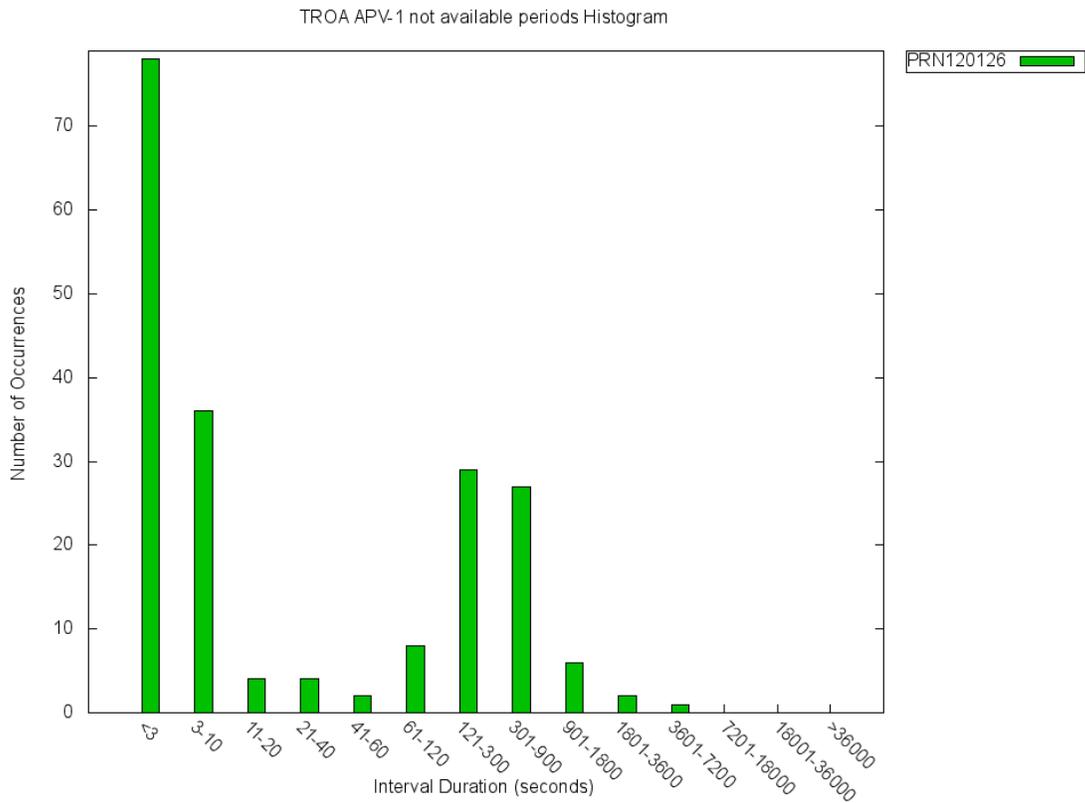


Figure 2. Histogram of the duration of all the underperformances observed at RIMS TRO in the period 26th December 2014 to 09th January 2015

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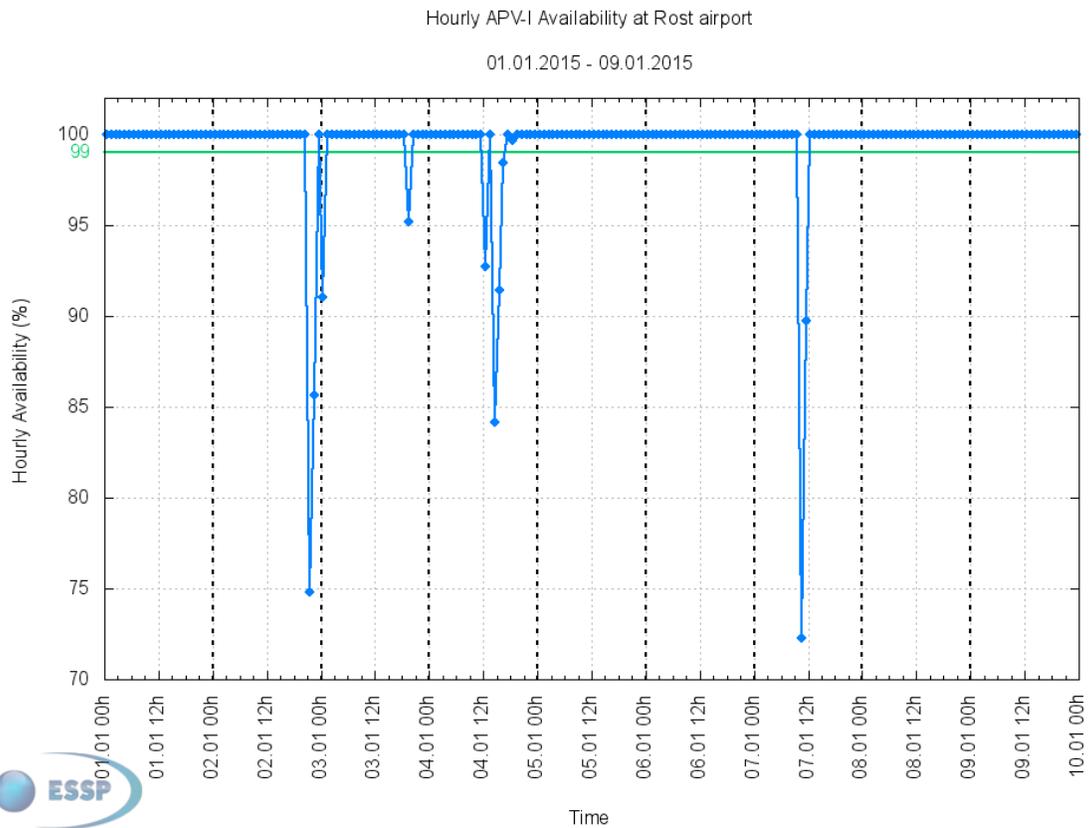


Figure 3. Hourly² APV-I availability at Røst airport (1st to 09th January 2015)

The previous three figures allow inferring a general characterization of this sort of underperformances observed in the North of the Service Area: They are mainly observed during the night and the duration in most of the cases is less than 15min (900 seconds).

² Line in green corresponds to 99% value.

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Complementarily, next maps show the APV-I Availability and Continuity performances in the period 26th December 2014 to 09th January 2015.

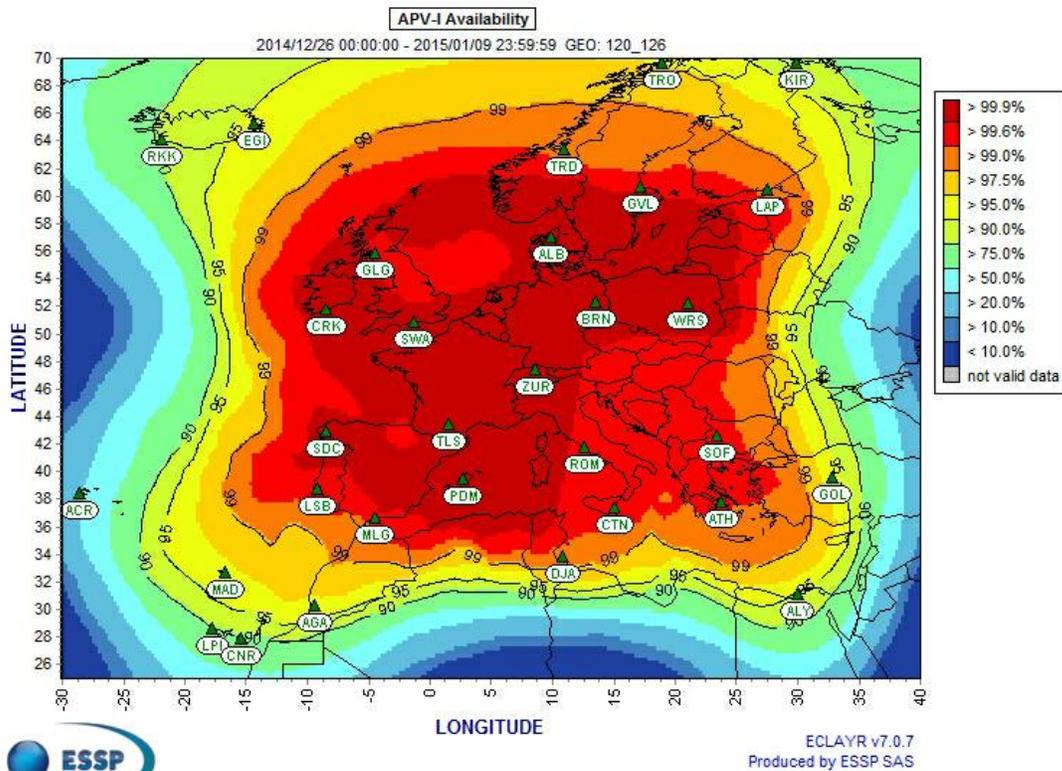


Figure 4. APV-I availability map (26th December 2014 - 09th January 2015)

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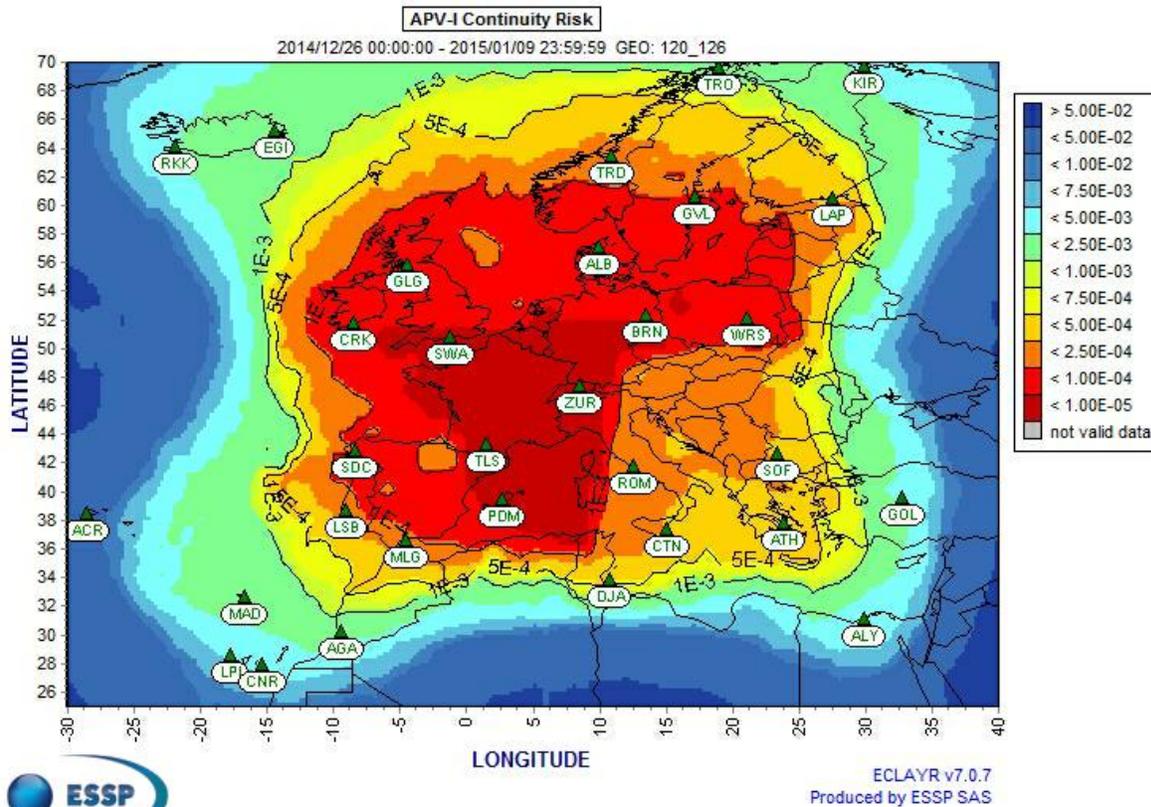


Figure 5. APV-I Continuity map (26th December 2014 - 09th January 2015)

The analyses performed confirm that the main reasons of these performance degradations are directly caused by the behaviour of the ionosphere over this period, which has presented an important geomagnetic activity during several days. This problem is related to the increase of the solar activity owing to the closeness of this period of time to the peak of the solar cycle #24, when high values of Kp (planetary K) indexes and TEC (Total Electron Content) gradients have been observed.

The next version of EGNOS (2.4.1M), which is foreseen to be deployed by mid-2015, is more robust against some of these degradations.

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2 STATUS ON THE EGNOS SERVICE AND WAYFORWARD

Due to the nature of this problem, the impact in terms of service is directly related to the intensity and duration of the geomagnetic activity, which is being particularly high during the abovementioned period. As a result, the EGNOS service is currently deviated from the normal levels in the North of Europe with regards to APV-I (Availability and Continuity) and Open Service (OS) performances.

The occurrence of these underperformances is known to be sporadic and highly linked to the ionospheric behaviour; however, it is not possible to estimate the number of occurrences which can be expected and consequently of the expected evolution of this degradation. The abnormal behaviour of the ionosphere during the last weeks is still being observed although, at the date of publication of this Service Notice, there is a positive trend with regards to the EGNOS performances behaviour in the North of the Service Area owing to the decrease of the intensity of the geomagnetic activity.

Since the identification of this degradation in November 2014, ESSP has been actively working on this issue with the GSA to keep the EGNOS users duly informed. ESSP continues monitoring the evolution and as soon as the situation changes, this Service Notice will be updated.

More detailed information and results can be found at the EGNOS User Support website (<http://egnosuser-support.essp-sas.eu>) including daily performance results, real-time status of EGNOS performances, trending for the last 14 days and real-time LPV availability for all the airports with EGNOS-based operations published (specific information for the aviation users can be found at section "Service Performances -> Aviation").

2.1 CONTACT US

Should you have any question related to this Service Notice or EGNOS Service Provision, please, contact egnos-helpdesk@essp-sas.eu or +34 911 236 555 (H24/7)

For more information about EGNOS Service Provision, please, visit ESSP website at www.essp-sas.eu and user support website at <http://egnos-user-support.essp-sas.eu>