EGNOS, it's there. Use it.

EGNOS SERVICE NOTICE

Number: 013 **Revision: 1.0**

To: EGNOS SoL and Open Service Users
Date: 29/06/2015
Subject: **Upgrade of EGNOS performances status**

This Service Notice provides an update of the status of the EGNOS APV-I (Availability and Continuity) and Open Service (OS) performances after the improvement observed in the last months with respect to the periods when the degradations reported in EGNOS Service Notices #10 and #12 were detected. SN10 and SN12 are therefore replaced by this SN.

En Route to NPA SoL service levels were not impacted by those degradations described in EGNOS Service Notices #10 and #12 and therefore not updated in this Service Notice.

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

The analyses performed to explain the degradations and underperformances described in EGNOS Service Notices #10 and #12 with respect to the corresponding EGNOS OS and SoL Service Definition Documents (SDDs) in force confirmed that the main reason was the behaviour of the ionosphere due to periods with very high geomagnetic activity during several days. The impact in terms of service, which also affected other SBAS systems, was directly related to the intensity and duration of the geomagnetic activity.

From beginning of May 2015 a decrease of the geomagnetic activity was detected and lower values of Kp (planetary K) indexes and TEC (Total Electron Content) gradients were observed. This reduction of the ionosphere activity directly implied an improvement of the EGNOS performances especially in the Northern and Southern borders of the coverage area.

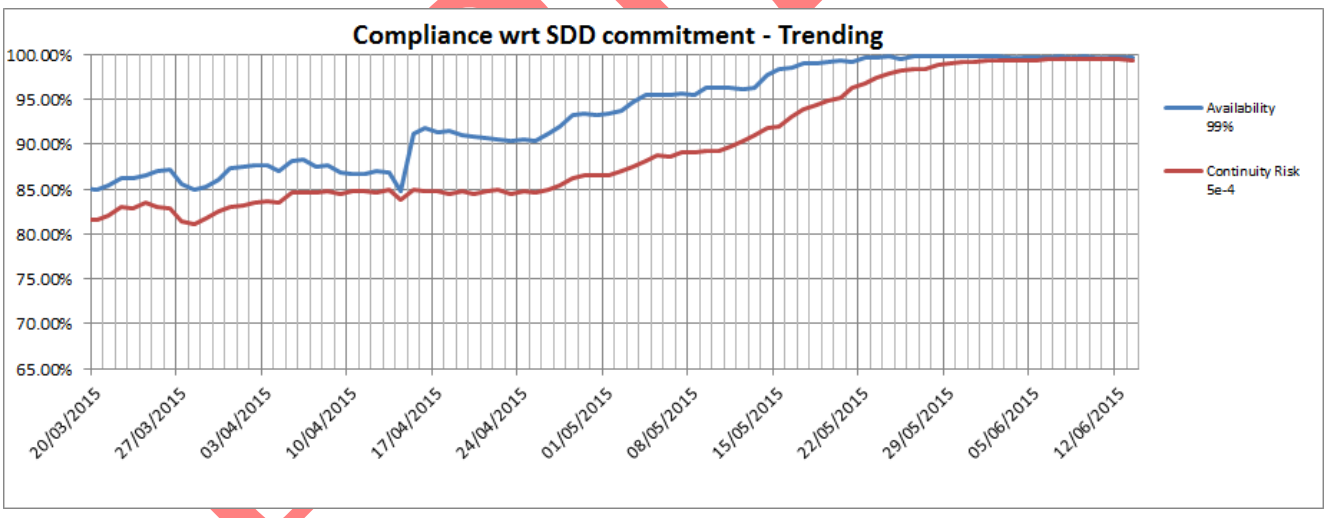
In addition to this change of the ionosphere behaviour, the introduction of GPS PRN 26 in the EGNOS mask in mid May 2015 (11th May in GEO PRN 126 mask and 19th May in GEO PRN 120 mask) provided a significant geometry improvement. During previous months, the lower number of

satellites in view (due to the configuration of the GPS constellation) in the South-western region during some periods late on the afternoon contributed to degrade the performance over that area.

2 STATUS ON THE EGNOS PERFORMANCES

This section provides the evidences firstly of the improvement of the EGNOS performances with respect to the previous months and finally the current status of the performances.

Next plot shows the trending of the level of compliance of the EGNOS APV-I availability and continuity performance with respect to the SoL SDD commitment areas (99% and 5e-4 levels respectively) from 20th March 2015 to 16th June 2015. The trending is represented over a sliding window of 30 days, this is, that each point of the plot represents the % of the commitment area in which the requirement is fulfilled for the previous 30 days.

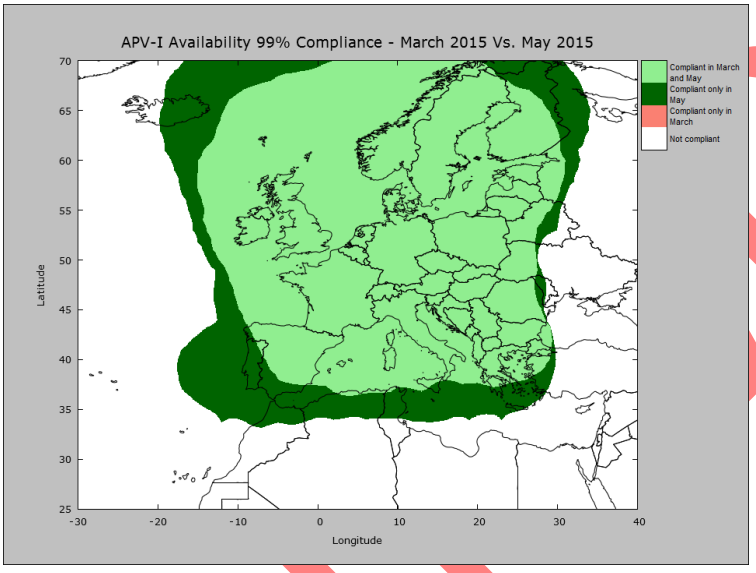


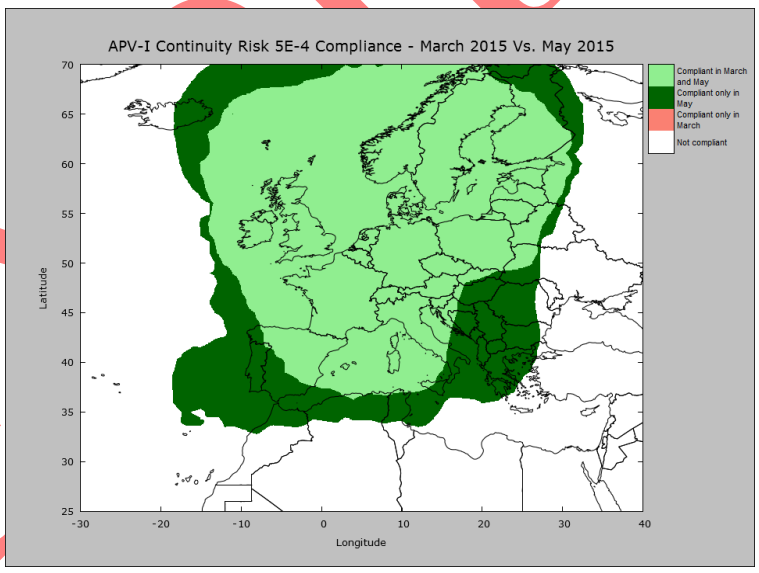
Next two plots show the comparison between March 2015 and May 2015 in terms of APV-I availability and continuity respectively.

EGNOS, it's there. Use it.

EGNOS SERVICE NOTICE

Number: 013 **Revision: 1.0**





European Global Navigation Satellite Systems Agency

ESSP

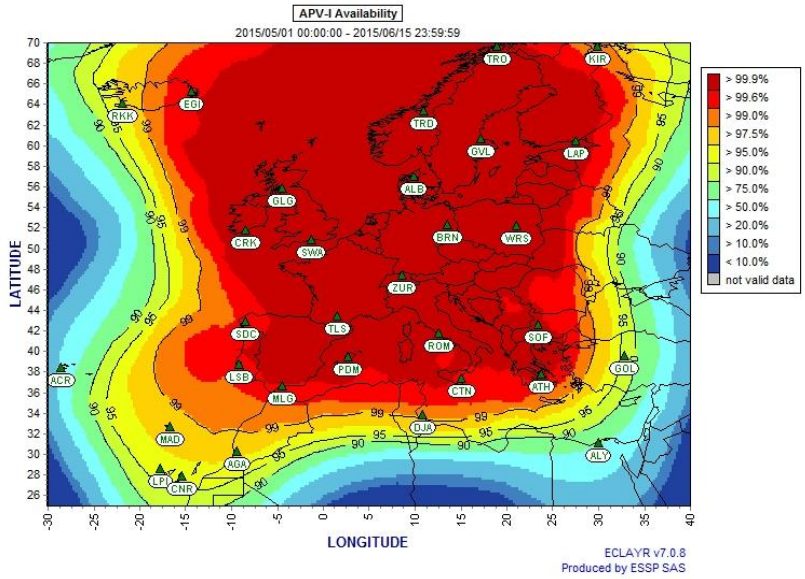
Precise navigation, powered by Europe

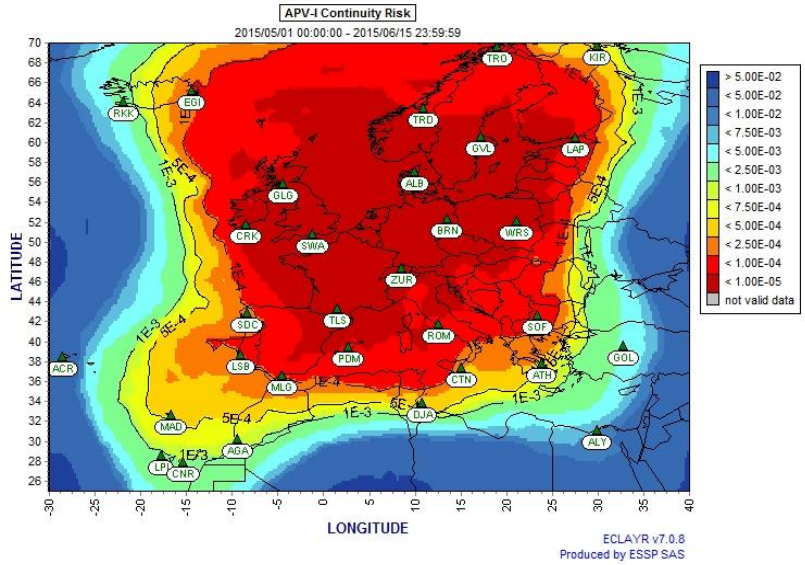
EGNOS, it's there. Use it.

EGNOS SERVICE NOTICE

Number: 013 **Revision: 1.0**

As evidence of the current status of the EGNOS performances, next two plots show the APV-I availability and continuity since beginning of May (from 1st May to 15th June 2015).





EGNOS, it's there. Use it.

EGNOS SERVICE NOTICE

Number: 013 **Revision: 1.0**

It is important to remark that the occurrence of degradations due to the variability of the geomagnetic activity is sporadic, unpredictable and could randomly impact the EGNOS performances. Consequently, even when the current EGNOS performances have been recently improved and next version of EGNOS system (ESR 2.4.1M), foreseen to be completely deployed before next equinox, is more robust against some of these degradations, EGNOS users should be aware that limited periods of APV-I and/or OS underperformance could still be observed in the North and South West of the EGNOS Service Area owing to certain degradations of the ionosphere behaviour linked to the intensity of the geomagnetic activity.

More detailed information and results can be found at the EGNOS User Support website http://egnos-user-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.

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 EGNOS user support website at http://egnos-user-support.essp-sas.eu