EGNOS SERVICE NOTICE

This Service Notice informs EGNOS users that from the 9th January 2020 to 23rd March 2020 the EGNOS Space segment configuration will undergo temporal changes.

Due to planned activities required for the current operational EGNOS geostationary satellites (GEOs), three GEO Swaps are planned in the first quarter of 2020:

- First GEO Swap (9th-16th January): INMARSAT 4F2 (PRN 126) will be introduced in the operational platform replacing satellite ASTRA 5-B (GEO-2/PRN 123).
- Second GEO Swap (20th-27th February): ASTRA 5-B (GEO-2/PRN 123) will be reintroduced in the operational platform replacing satellite ASTRA SES-5 (GEO-1/PRN 136).
- Third GEO Swap (16th-23rd March): Finally, ASTRA SES-5 (GEO-1/PRN 136) will be reintroduced in the operational platform replacing satellite INMARSAT 4F2 (PRN 126).

Please note that the process to swap two EGNOS GEOs include a temporary period with all the satellites providing EGNOS operational signal.

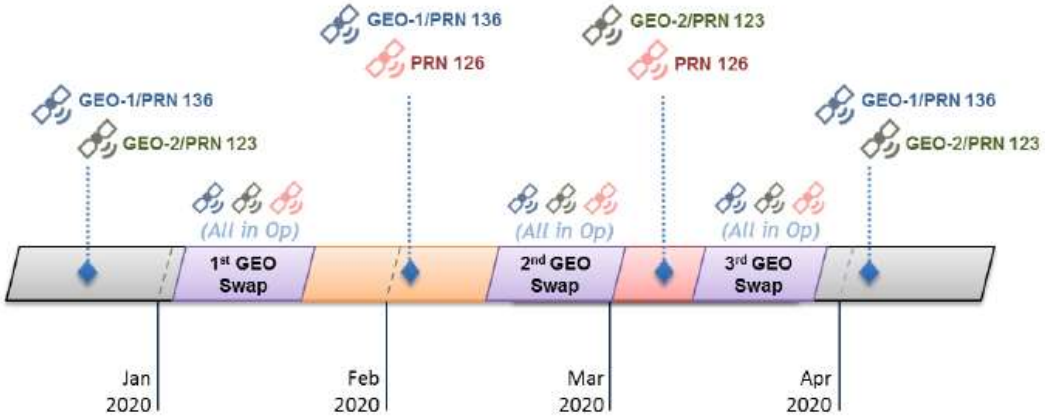

Figure 1. GEO Swaps Roadmaps

This Service Notice provides information about the timeframes, GEO coverages, outcomes and analysis of the EGNOS Safety of Life service in each of the phases.

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EGNOS Open Service users are advised to tune the best PRN in each of the phases, according to the operational satellites during each GEO Swap explained in the following sections. References to guidelines for equipment configuration are provided in section 4.

The latest information can be found in the EGNOS User Support website, as described in section 4.

1. DESCRIPTION OF 1ST GEO SWAP PROCESS AND OUTCOMES

DESCRIPTION

The first GEO Swap will consist in the following changes:

- On 9th January 2020, the GEO satellite INMARSAT 4F2 (PRN 126) will become part of the EGNOS operational platform broadcasting the Operational Signal-In-Space (OP SIS).
- On 16th January 2020, the GEO satellite ASTRA 5-B (GEO-2/PRN 123) will become part of the EGNOS TEST Platform broadcasting the TEST SIS.

			1st GEO Swap		
EGNOS GEO Name	PRN Number	Orbital Slot	Status BEFORE 9th January 2020	Status FROM 9th January 2020 TO 16th January 2020	Status FROM 16th January TO 20th February 2020
ASTRA SES-5 (GEO-1)	PRN 136	5 E	Operational	Operational	Operational
ASTRA 5-B (GEO-2)	PRN 123	31.5 E	Operational	Operational	Test
INMARSAT 4F2	PRN 126	64 E	Test	Operational	Operational

Table 1 – 1st GEO Swap period

OUTCOMES

The new Space Segment configuration will last from 16th January to 20th February 2020, when the second GEO Swap starts.

In this phase, a section of the EGNOS Service area (the pink area in Figure 2 below) will be covered by a single GEO: the SES-5 (GEO-1/PRN 136).

The Safety of Life (SoL) Service users in this area will remain covered by the GEO mentioned above, with no impact in the existing levels of performance. The EGNOS SoL service integrity will remain unaffected at all times and locations within the EGNOS coverage area.

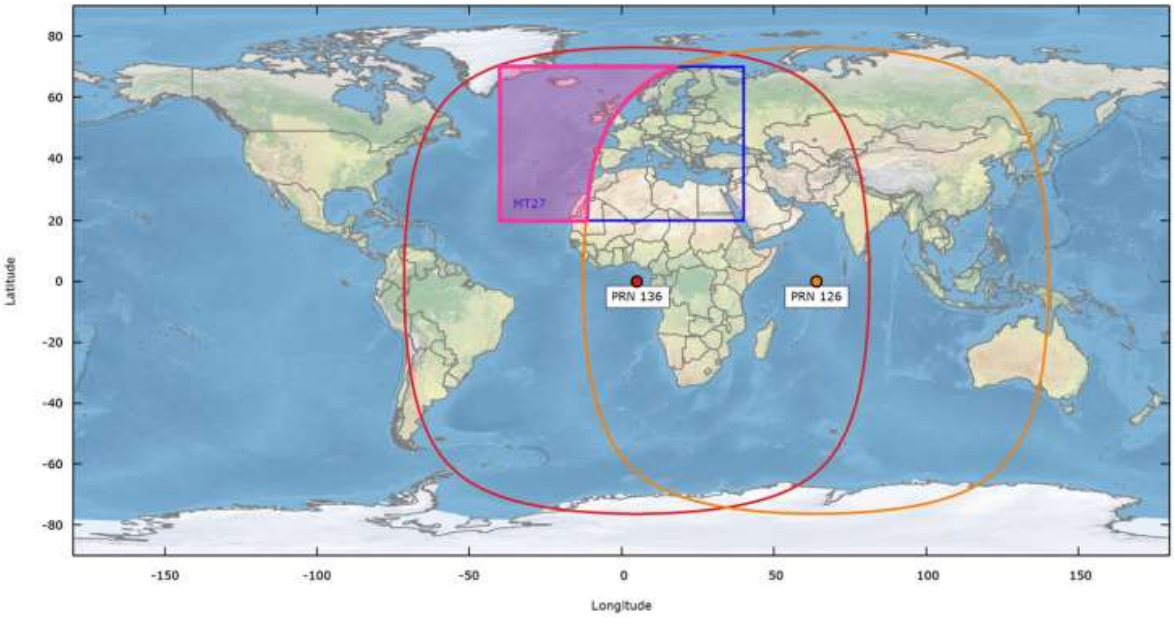

Figure 2. Coverage of EGNOS GEOs with 5° masking angle after 1st GEO Swap

2. DESCRIPTION OF 2ND GEO SWAP PROCESS AND OUTCOMES

DESCRIPTION

The second GEO Swap will consist in the following changes:

- On 20th February 2020, the GEO satellite ASTRA 5-B (GEO-2/PRN 123) will become part of the EGNOS operational platform broadcasting the OP SIS.
- On 27th February 2020, the GEO satellite ASTRA SES-5 (GEO-1/PRN 136) will become part of the EGNOS TEST Platform broadcasting the TEST SIS.

			2nd GEO Swap		
EGNOS GEO Name	PRN Number	Orbital Slot	Status BEFORE 20th February 2020	Status FROM 20th February 2020 TO 27th February 2020	Status FROM 27th February 2020 TO 16th March 2020
ASTRA SES-5 (GEO-1)	PRN 136	5 E	Operational	Operational	Test
ASTRA 5-B (GEO-2)	PRN 123	31.5 E	Test	Operational	Operational
INMARSAT 4F2	PRN 126	64 E	Operational	Operational	Operational

Table 2 – 2nd GEO Swap period

OUTCOMES

The Space Segment configuration resulting from the 2nd GEO Swap will last from 27th February to 16th March 2020, when the third and final GEO Swap starts.

In this phase, a section of the EGNOS Service area (pink area in Figure 3) will be covered by a single GEO: the ASTRA 5-B (GEO-2/PRN 123). As in the period after the 1st GEO Swap, no impact is envisaged in the existing levels of SoL APV-I and LPV-200 performances.

It is also important to remark that the North-West corner of the EGNOS service area (the grey area in Figure 3) will not be covered by any of EGNOS GEOs, resulting in an NPA service outage in the area during this short phase.

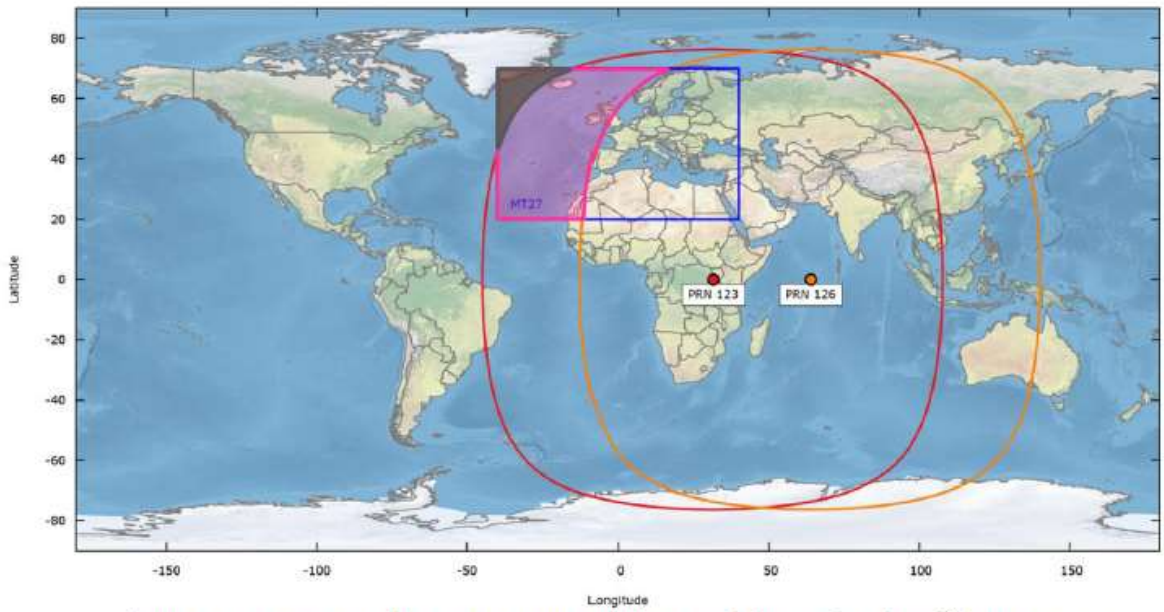

Figure 3. Coverage of EGNOS GEOs with 5° masking angle after 2nd GEO Swap

3. DESCRIPTION OF 3RD GEO SWAP PROCESS AND OUTCOMES

DESCRIPTION

The third GEO Swap will consist in the following changes:

- On 16th March 2020, the GEO satellite ASTRA SES-5 (GEO-1/PRN 136) will become part of the EGNOS operational platform broadcasting the OP SIS.
- On 23rd March 2020, the GEO satellite INMARSAT 4F2 (PRN 126) will become part of the EGNOS TEST Platform broadcasting the TEST SIS.

			3rd GEO Swap		
EGNOS GEO Name	PRN Number	Orbital Slot	Status BEFORE 16th March 2020	Status FROM 16rd March 2020 TO 23th March 2020	Status FROM 23th March 2020 ONWARDS
ASTRA SES-5 (GEO-1)	PRN 136	5 E	Test	Operational	Operational
ASTRA 5-B (GEO-2)	PRN 123	31.5 E	Operational	Operational	Operational
INMARSAT 4F2	PRN 126	64 E	Operational	Operational	Test

Table 3 – 3rd GEO Swap period

OUTCOMES

Finally, after the 3rd GEO swap is completed on 23th March 2020, the Space Segment will be back to nominal with both ASTRA GEOs in the EGNOS operational platform.

Only the North-West corner of the EGNOS service area (the pink area in Figure 4) will be covered by a single GEO: SES-5 (GEO-1/PRN 136). Only SoL En-route to NPA users will be concerned by this situation. The entire SoL APV-1 and LPV200 service areas will remain covered by two GEOs.

The EGNOS SoL service integrity will remain unaffected at all times and locations within the EGNOS coverage area.

According to the above GEO coverage, depending on masking angle receiver configuration, 'En-Route to NPA' users in the North-West corner of the EGNOS service area could experience periods of EGNOS unavailability during SES-5 (GEO-1/PRN136) outages. Nevertheless, the navigation should not be affected as MOPS compliant receivers should always automatically switch to GPS RAIM during those interruptions, ensuring the "En-Route to NPA" service when EGNOS is not available.

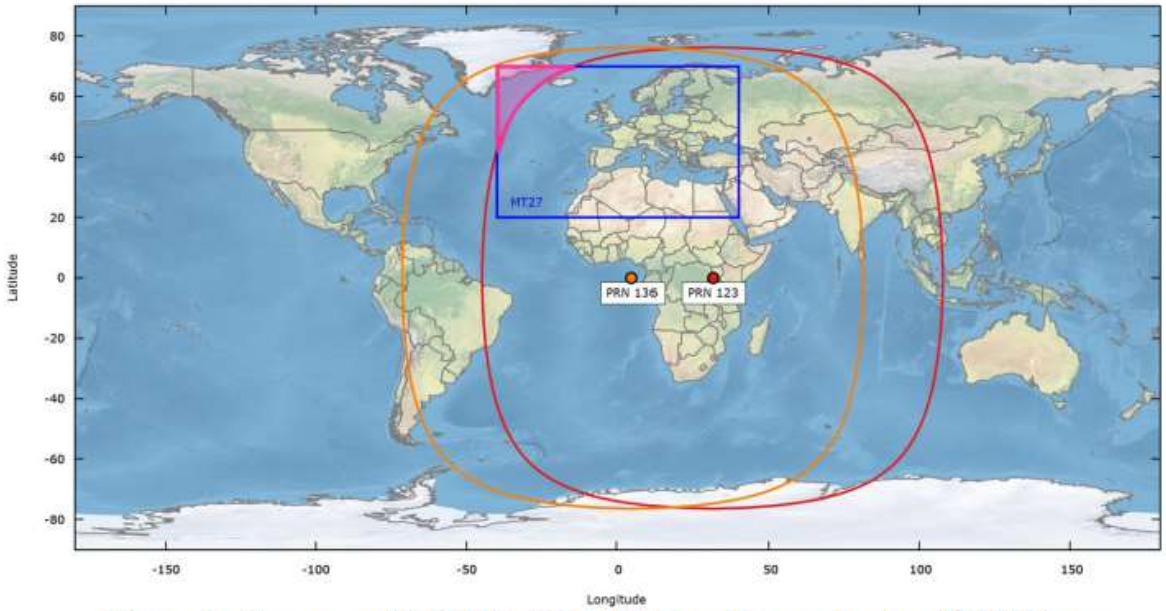

Figure 4. Coverage of EGNOS GEOs with 5° masking angle after 3rd GEO Swap

4. MORE INFORMATION ON EGNOS

EGNOS STATUS AND PERFORMANCES

Latest information on EGNOS system status and performances can be found at the EGNOS User Support website https://egnos-user-support.essp-sas.eu.

Users can subscribe to notifications about planned GEO outages and configuration changes and to real-time notifications of unplanned GEO SIS outages and recoveries in the EGNOS User Support website (https://egnos-user-support.essp-sas.eu).

CONFIGURATION GUIDELINES FOR OPEN SERVICE EQUIPMENT

Guidance material can be found in the Resources and Tools section of the EGNOS User Support Website: https://egnos-user-support.essp-sas.eu/new_egnos_ops/resources-tools/guidance-material

This section contains several documents among others which describe how to configure some EGNOS capable receivers, including examples and detailed pictures.

CONTACT US

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

For more information about EGNOS, please, visit the EGNOS User Support website at https://egnos-user-support.essp-sas.eu