

February 7, 2018

Inmarsat C I-3 to I-4 Satellite Migration

Important Action May Be Required for Inmarsat C Users

As you may be aware, the Inmarsat-3 (I-3) constellation of satellites is reaching the end of its lifespan, which has made it necessary for Inmarsat to roll out the end of life process for several of their legacy services and to migrate those services that will continue (including Inmarsat C) onto the Inmarsat-4 (I-4) constellation of satellites. Inmarsat will migrate traffic for the Inmarsat C service from I-3 to I-4 satellites in four phases, starting with the Atlantic Ocean Region West (AOR-W).

This migration applies to all users of Inmarsat C, but you are in safe hands with COMSAT. In partnership with Inmarsat, COMSAT has actively participated in preparations for this important operation. COMSAT's engineering and technical support professionals are fully briefed on all elements of the migration plan, and they will be available to support any Inmarsat C customer impacted by the move from the I3 to the I4 constellation.

Please find the corrected maps for the AOR-W and AOR-E at the end of this letter.

The anticipated transition schedule is provided below.

Transition Schedule:

- Phase 1 : I-3 AOR-W at 54°W transition to I-4 AMER satellite at 98° W on April 4, 2018
- Phase 2: I-3 POR at 178°E transition to I-4 APAC satellite during Q3 2018
- Phase 3: I-3 AOR-E at 15.5°E transition to I-4 AOR-E satellite at 54°W during Q4 2018
- Phase 4 : I-3 IOR at 64°E transition to I-4 EMEA satellite at end of 2018

Specific dates for the Phases 2 through 4 will be communicated as soon as they are available.

During and after the migration, COMSAT will continue to provide Inmarsat C services to its customers using LES ids x01.

AFFECTED SERVICES

-) Polling & Data Reporting (this service is potentially the most affected)
-) Enhanced Group Calling (EGC) SafetyNET

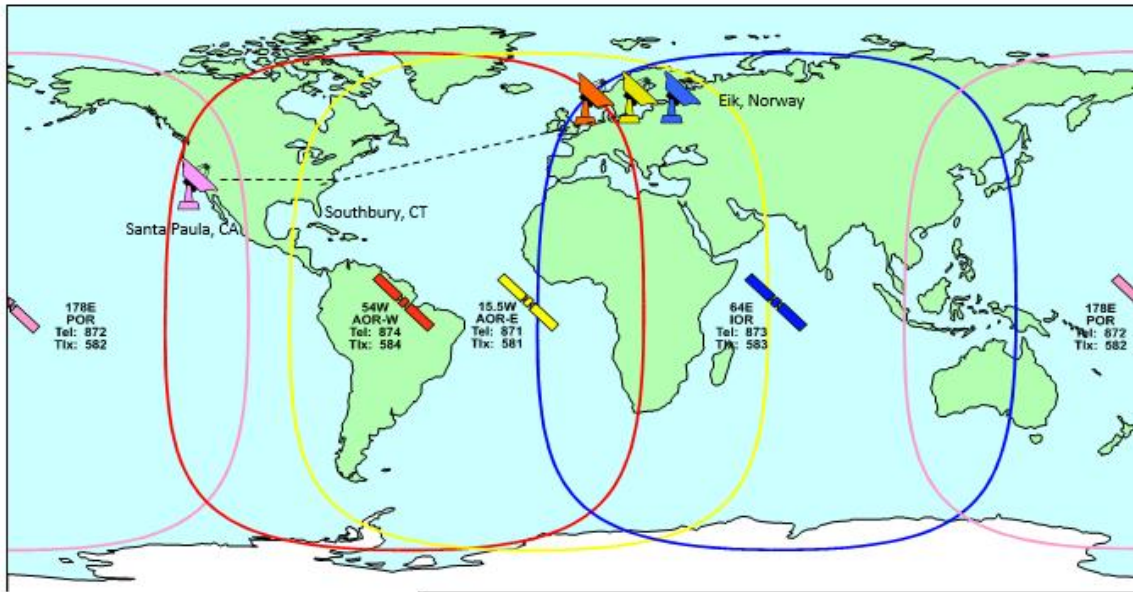
Ship-to-Shore and Shore-to-Ship messaging will not be affected by this operation. If your Inmarsat C terminal is used for GMDSS and messaging only, you will not need to take any actions.

EXISTING AND NEW SATELLITE COVERAGE MAPS

The new coverage areas and teleports that will provide for Inmarsat C service are shown in the figure below.



The existing I-3 coverage areas and teleports that are providing for COMSAT's Inmarsat C service are shown in the figure below.



HOW WILL USERS BE AFFECTED?

During each phase of the migration plan, there will be an approximate shift of 40 degrees westward of the coverage area as shown in the maps at the end of this document. This change in coverage area will affect a small number of users. If your terminals are affected, then you must follow a simple process to reconfigure the affected terminal(s) to the new satellite coverage area.

1. Check if your terminals are affected by the migration by referring to the maps showing the old and new coverage areas included at the end of this notification. If your terminal is currently operating in an area that will be affected due to migration, you must follow procedures listed below in steps 2-3. If your terminals are unaffected, you are not required to take any further action.
2. If your terminals are affected (terminals located in affected regions), we recommend that you to switch your Inmarsat C devices to an adjacent Ocean Region before the migration. Please refer to the Transition schedule for the migration for all Ocean regions.
3. If you are unable to switch your STD-C terminal to an adjacent ocean region prior to the migration, you must re-program your terminals to the new satellite region after the migration has been completed. You may have to reload your DNID in the new satellite coverage area and re-program your terminal(s) for automatic reports. Our Customer care group/technical specialists can provide support to facilitate the transition.

Here are some important directions/recommendations:

-) Following the migration process, many STD-C terminals will likely send poll commands. These excessive numbers of messages can overload the system. Please be prepared to expect delays in getting responses.
-) If you are using older hardware that is no longer supported, we recommend considering a replacement ahead of time to mitigate service disruptions.

In summary, if your terminal is affected by the I-3 to I-4 transition:

1. Before Phase #1 (04/2018), switch devices located between 24°E and 20°W to AOR-E
2. Before Phase #2 (06/2018), switch devices located between 104°W and 138.5°W to AMER/AORW
3. Before Phase #3 (09/2018), switch devices located between 62.5°E and 24°E to IOR
4. Before Phase #4 (11/2018), switch devices located between 142°E and 70°E to APAC/POR

END USER BENEFITS

A number of new benefits will result from this migration:

-) **More secure flow of data:** In parallel with the migration, COMSAT, together with Inmarsat, has invested in a redundant (back-up) Network Coordination Station (NCS) to direct and manage frequencies. This will ensure that data flows more securely, with significantly less room for error or latency.

Simplified and optimized network process: Whereas Inmarsat C messages today are transmitted via COMSAT's Santa Paula and Eik Land Earth Stations, following the transition Inmarsat C traffic will be transmitted over the satellite via the NCS facilities managed by Inmarsat and then routed to the existing terrestrial interfaces and host computers managed by COMSAT. COMSAT customers will continue to use LES IDs x01 and receive direct support from COMSAT, but satellite traffic will now be routed through these newly constructed, state-of-the art facilities.

-) **Improved accuracy and speed of position tracking:** As part of COMSAT's ongoing commitment to Inmarsat C, we will upgrade to transmission of messages over IP following the migration. This modernization will ensure more secure, faster transmission for customers and subsequently,



improved tracking and positioning for applications such as LRIT.

OUR COMMITMENT TO YOU!

We would like to assure our customers and partners that a comprehensive planning process has been undertaken to prepare for this migration. A number of considerations, potential issues and technical aspects have been reported in advance to Inmarsat by COMSAT Engineers and Inmarsat C experts to minimize any negative impacts on our customers. While we work in very close coordination with Inmarsat, ultimately the migration process is under their control.

Please know that COMSAT's dedicated support team will be available throughout the migration phases to support and help our partners and end users. Should you have any questions or require support, please contact your Key Account Manager or COMSAT Customer Care at:

Tel: +1.571.599.3605 (worldwide)
Tel: +1.800.685.7898 (U.S. toll free)
Fax: +1.203.346.3301
Email: customercare@comsat.com

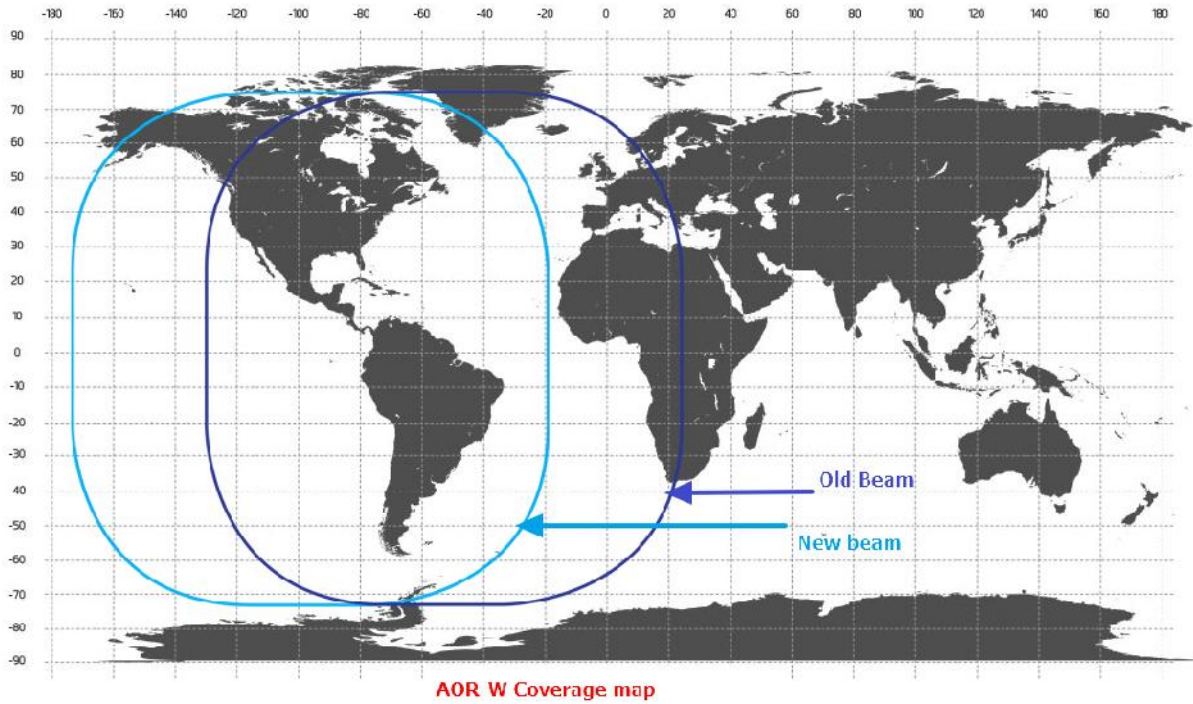
Note: This email is addressed to our database of Inmarsat C customers and Service Providers. If you are not the intended recipient, please ensure you forward this message to the IT department within your company. If you are not a subscriber to Inmarsat C services, you may disregard this message.

Best regards,

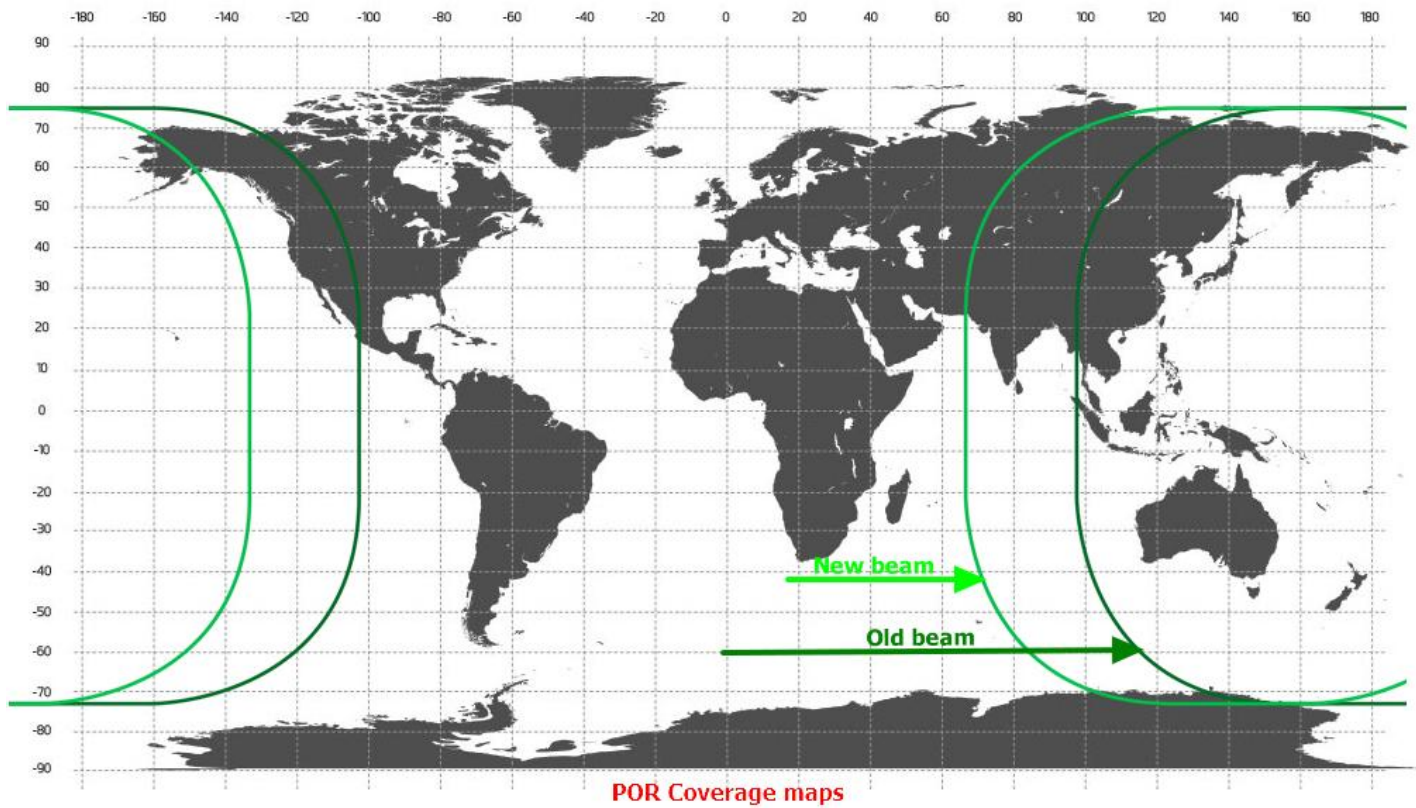
A handwritten signature in cursive script that reads "Michelle Wagner".

Michelle Wagner
Senior Director, Business Delivery

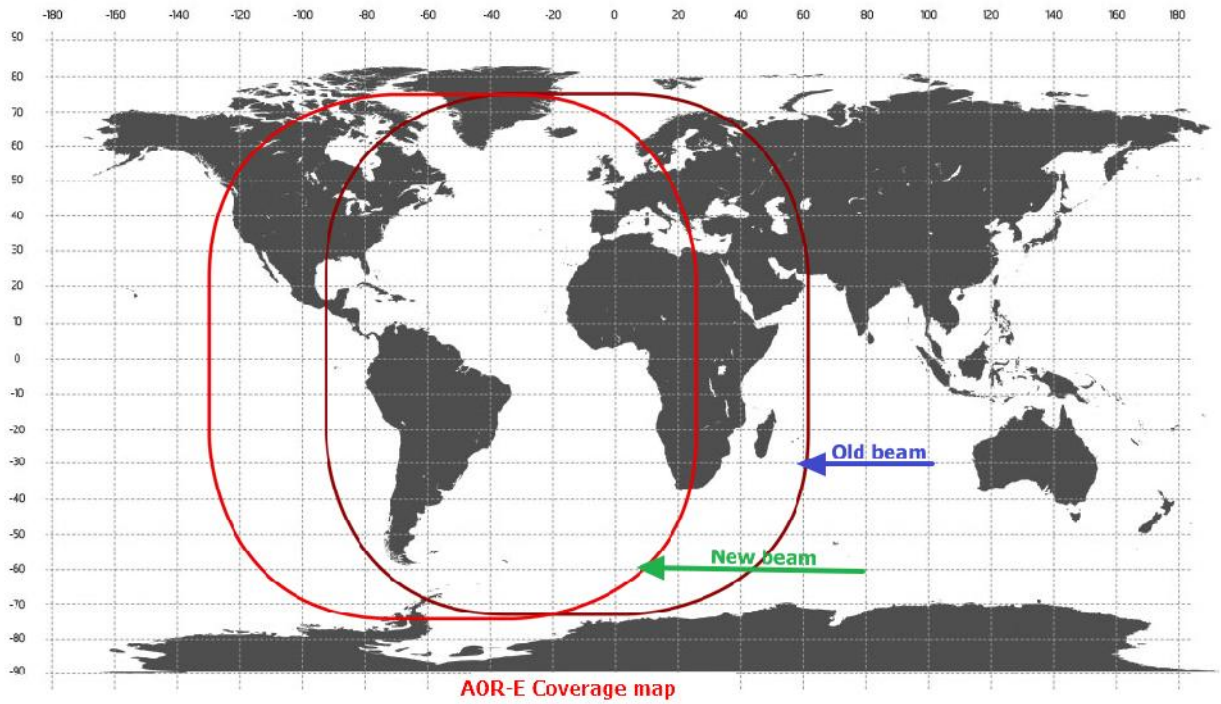
Phase 1: Atlantic Ocean Region West (AORW) to Americas (AMER)
04/04/2018



Phase 2: Pacific Ocean Region (POR) to Asia Pacific (APAC)- 06/2018:



Phase 3: Atlantic Ocean Region East (AORE)- 09/2018



Phase 4: Indian Ocean Region (IOR) to Europe/Middle East Ocean Regions (EMEA)- 11/2018

