NaviGuard

How-To Guide

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APG

AIRCRAFT PERFORMANCE GROUP

Introducing NaviGuard:
An Innovative Flight Safety Application for Pilots and Operators

In today's world of advanced technology and GPS-dependent navigation, pilots and flight operators need a reliable solution to ensure the accuracy and safety of their flight paths. Aircraft Performance Group is proud to present NaviGuard, a ground-breaking application designed to enhance flight safety.

As GPS spoofing and jamming incidents threaten aviators and passengers in crisis zones across the world, NaviGuard provides a crucial solution to safeguard commercial and business flight operators from these threats. The app detects abnormal GPS readings on the iPad and verifies GPS data using radio navigation.
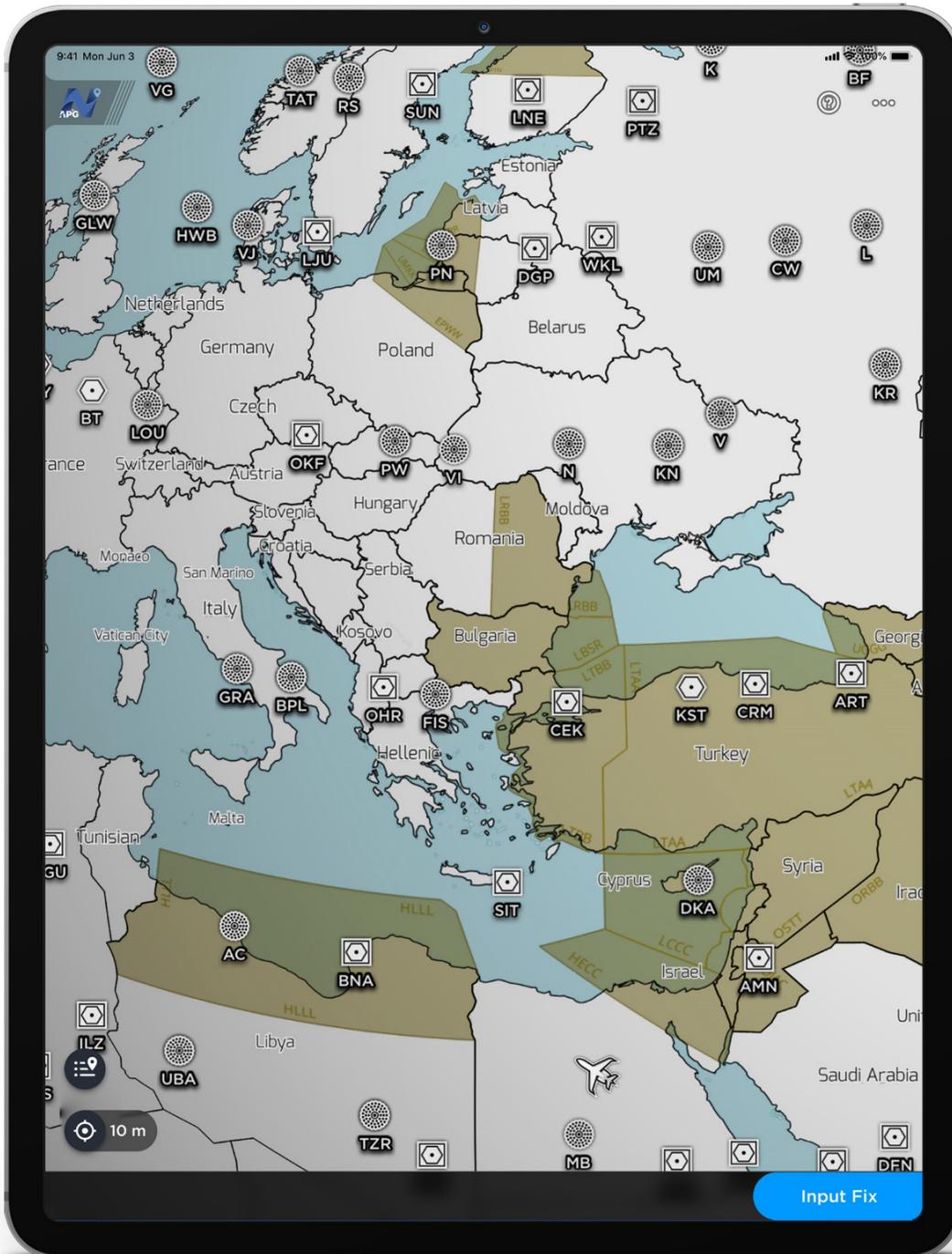
Key Benefits of NaviGuard:

1. **Anticipate Problems:** On-map visualised guidance of EASA reported problem areas enable pilots to foresee and circumvent issues stemming from GPS spoofing and jamming before they occur.

2. **Set Active Alerts:** Proactive in-app notifications alert pilots of rapid changes in speed or position during flights, presenting the option to reroute or proceed with complete awareness of potential hazards.

3. **Plot & Confirm:** In-flight GPS coordinate verification by mapping relative to Navigational Aids (NAVAIDs), removing any uncertainty about location accuracy.

NaviGuard is designed for commercial flight operators, business flight operators, commercial pilots, and general aviation pilots, providing a comprehensive safety net for all types of aviation professionals.
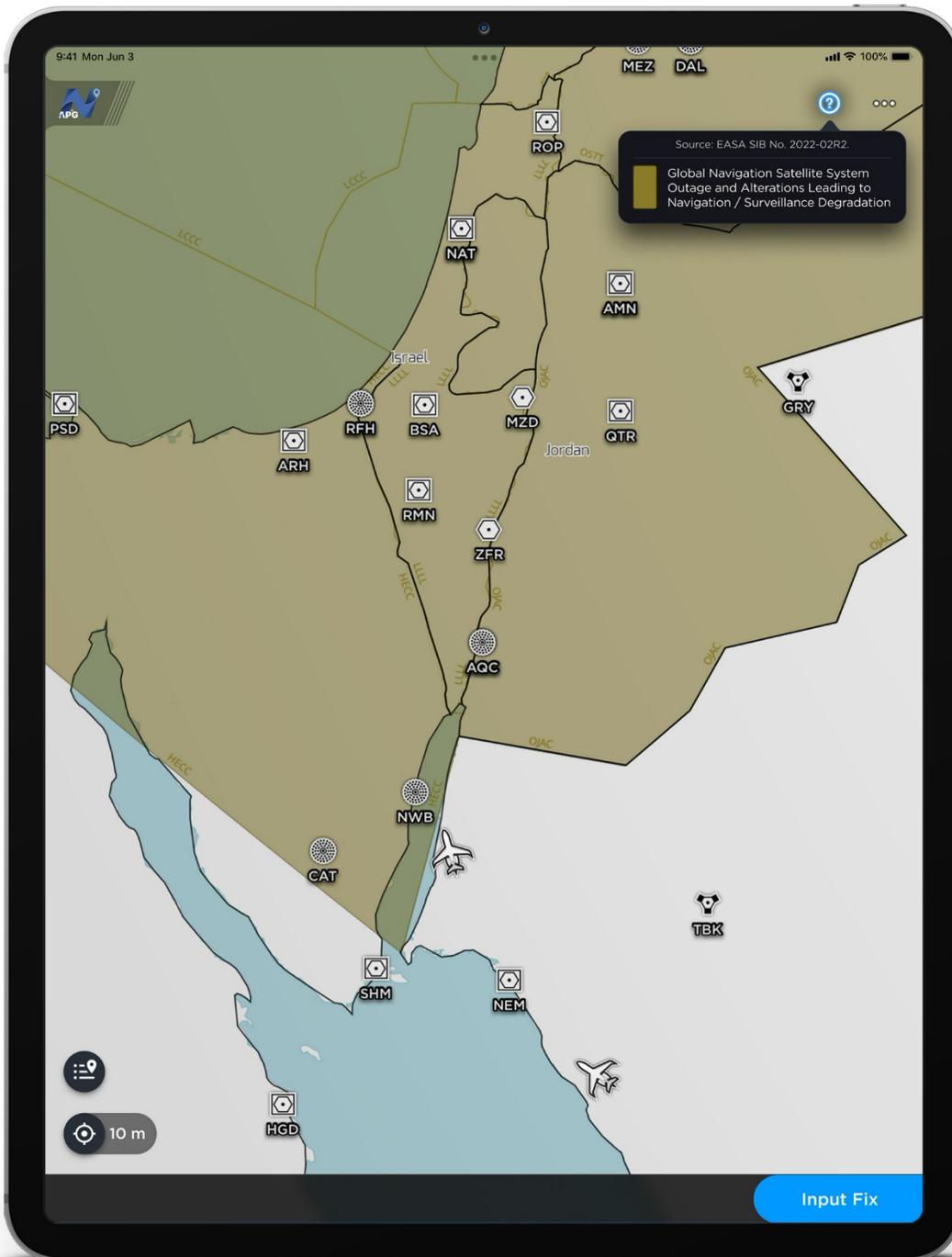
Aircraft Performance Group's commitment to innovation and aviation excellence is demonstrated through the development of NaviGuard. By providing this powerful feature we aim to enhance the safety and efficiency of the aviation industry. Regardless of potential technical issues or the presence of bad actors with hostile intent, don't leave your navigation to chance. Trust NaviGuard to secure your flight experience.

Visualize GPS Spoofing/Anomalies

Once logged into the application, you will see a map with blocks covering various regions of the map. These blocks demonstrate areas of EASA reported GPS Spoofing and Jamming.
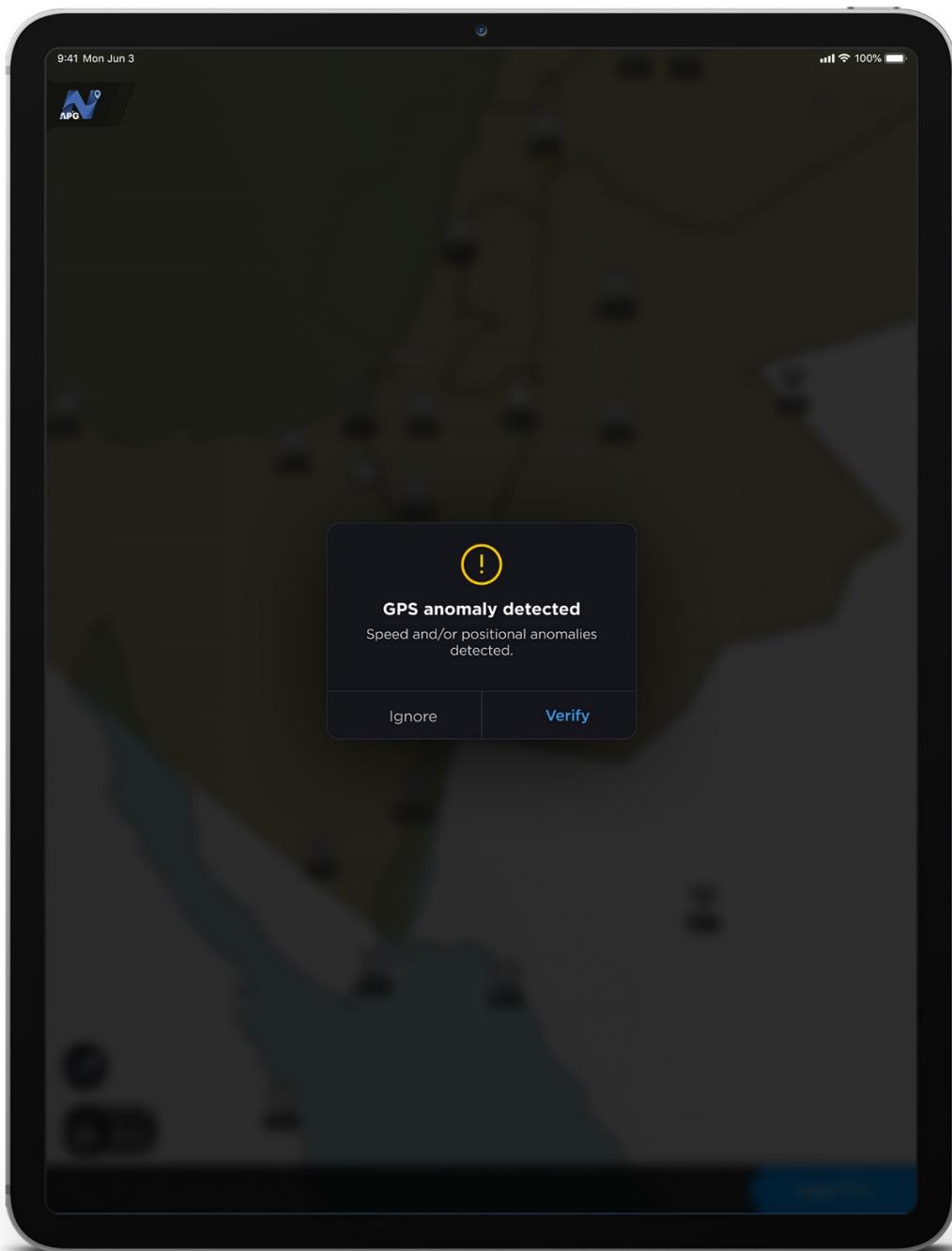
When you tap on the Legend icon at the top right you will be provided with the latest information about the source for the map data.
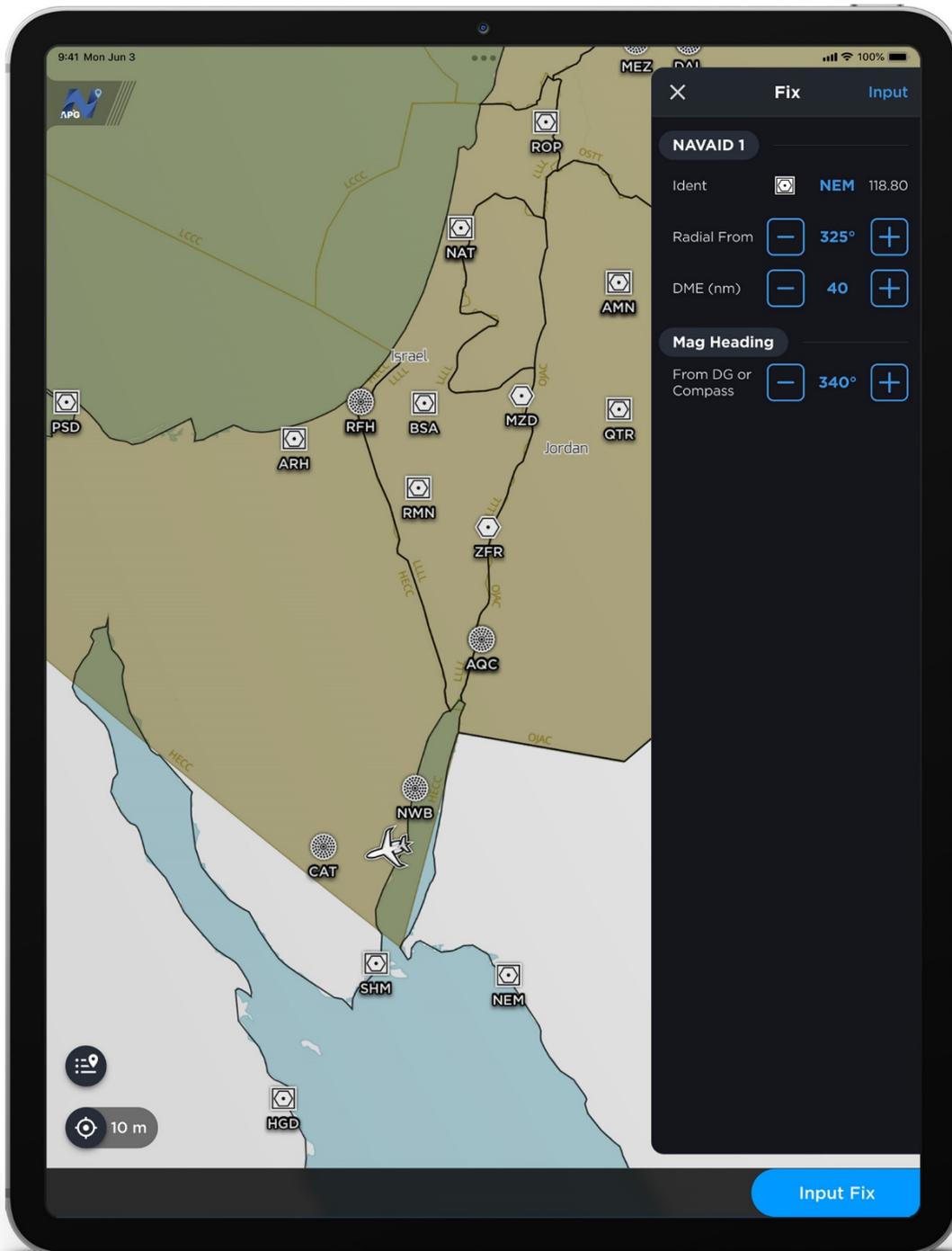
If the device detects the speed changes by more than 25 knots in less than 3 seconds, then the Anomaly Detection alert will be enabled. You may enter Input Fixes at any time, with or without an Anomaly Detection.

1) Alert received
2) Ignore (suppresses alerts for 1 minute)
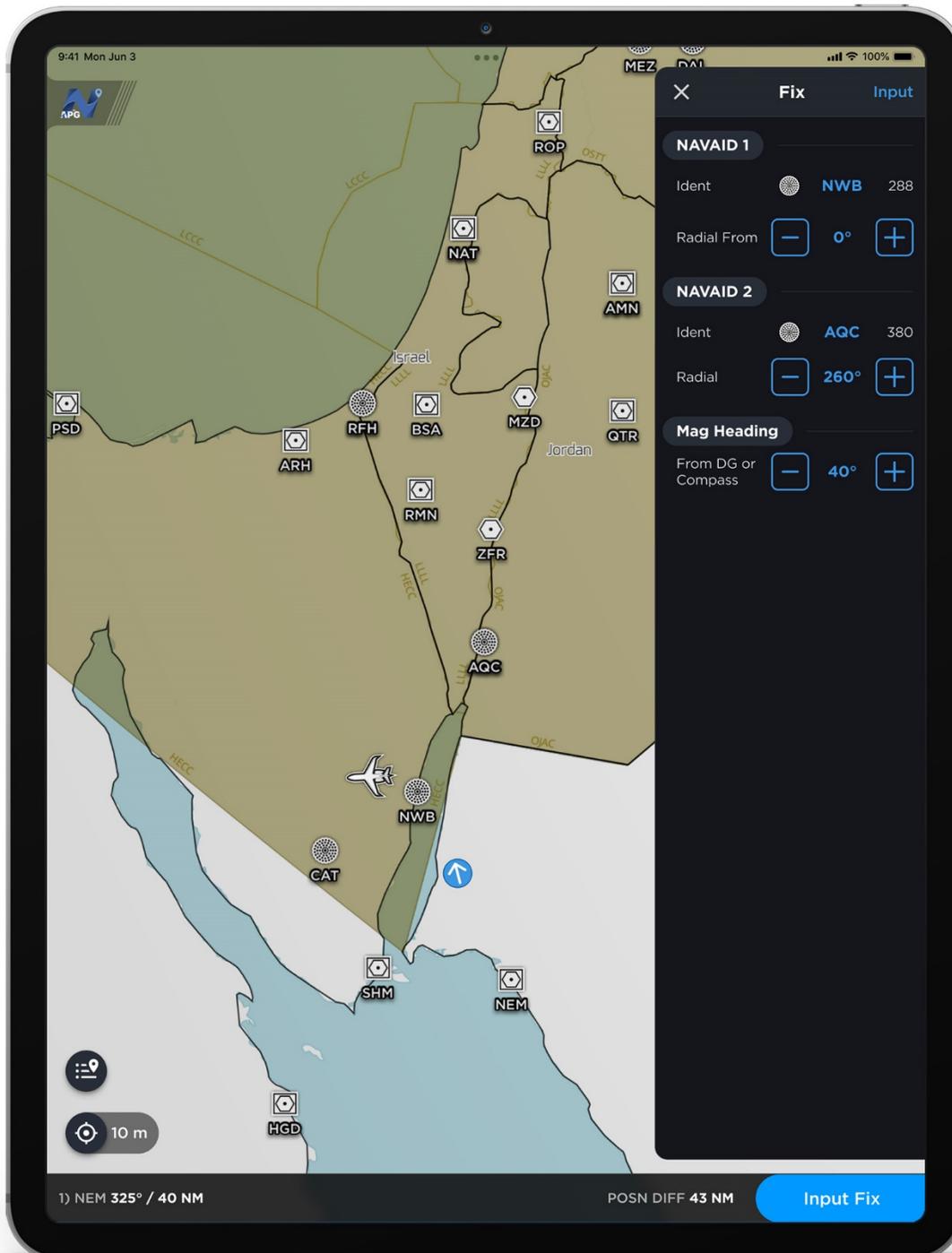3) Verify (launches Position Fix functionality)

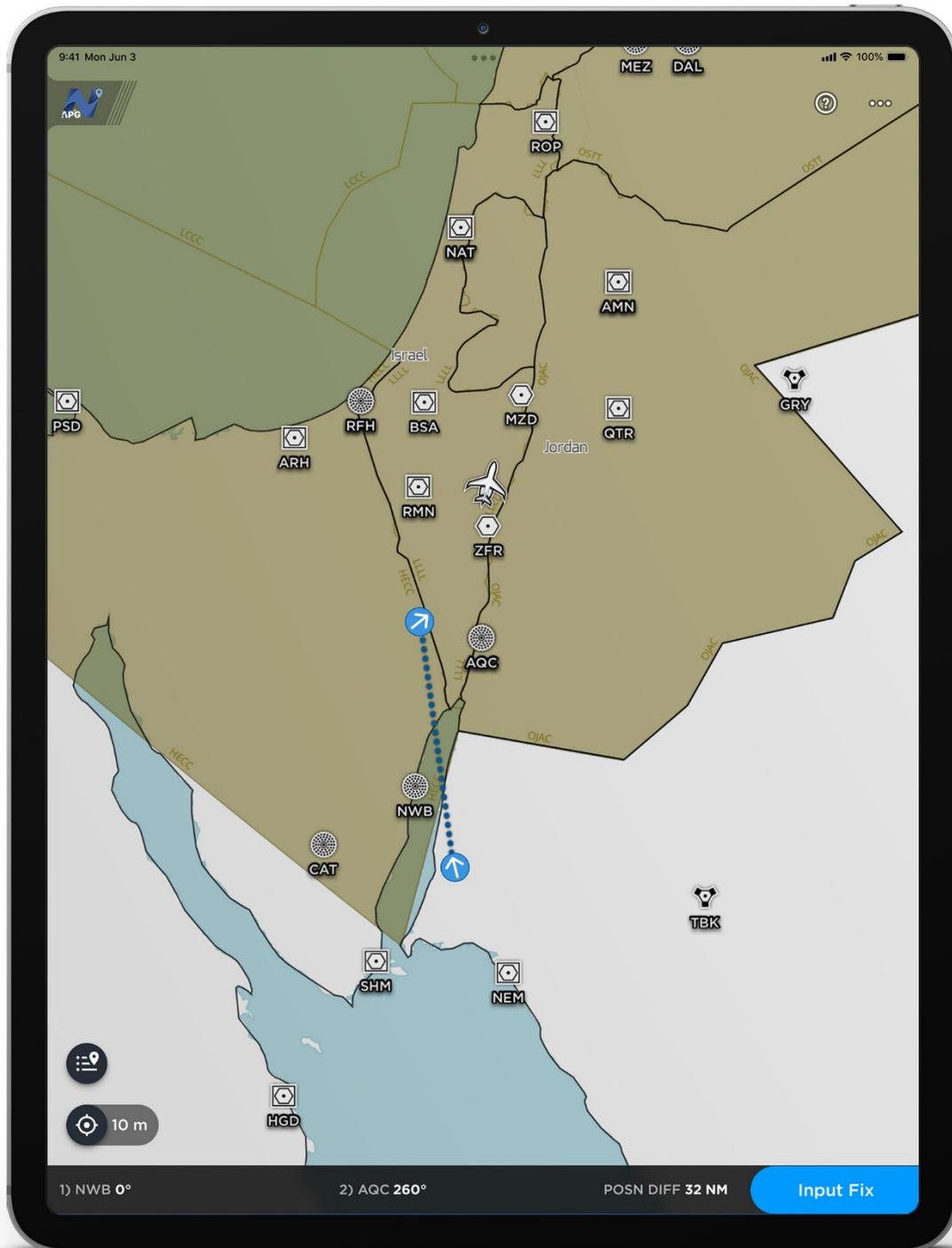The current aircraft location can be verified utilizing the Input Fix display.

1) Nearest NAVAID is presented (with frequency)
2) Tap on the NAVAID to search and choose from a list of available NAVAIDs
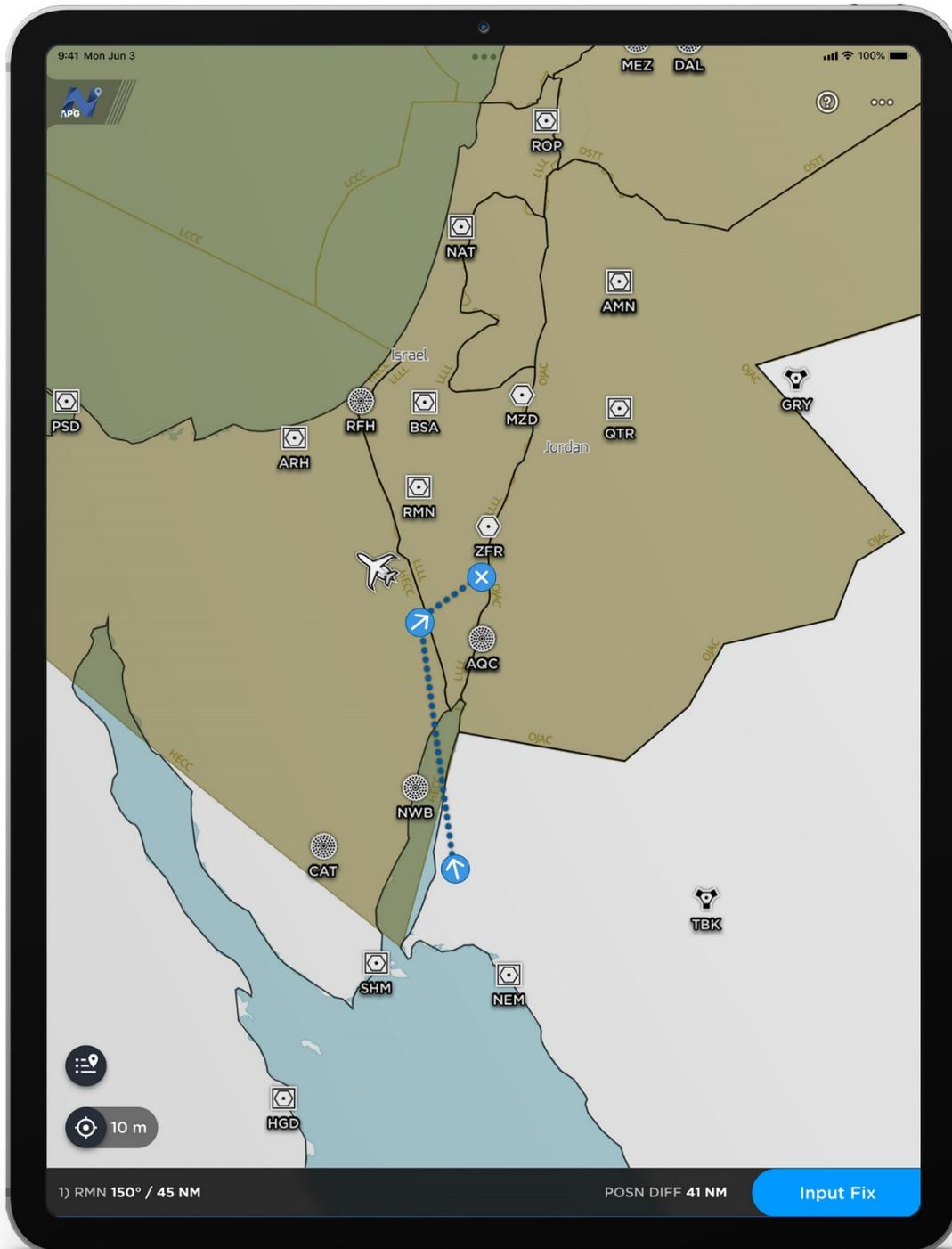3) Input the readings from your aircraft systems
4) Tap "Input" at the top right

1) If you select a NAVAID that does not provide DME (such as NDB or VOR) then you will see that the application prompts for the input of readings from 2 NAVAIDs
2) This will allow the application to work out the back-bearings and plot your location on the map

1) After clicking input, your fix is now plotted.
2) The fix icon is pointed in the direction of the Magnetic Heading you inputted.

1) As you plot more fixes they will appear on the map. The application will alert you every 10 minutes to input additional fixes.
2) Your fixes will be joined by blue dotted lines
3) Any fix you input without a Magnetic Heading will have the "X" icon

Click the GPS Log button on the bottom left to view the log of detected anomalies as well as the user input fixes

GPS Log

GPS Logging

1) You can now access a log of any detected anomalies and input fixes you have taken
2) Your GPS Log may be cleared by tapping the trash can icon, or it can be shared by tapping on the share icon
3) We recommend exporting your GPS Log after each flight