JRC Europe

# Frequently Asked Questions – FiXed Piloting Unit

1 What does the FiXed Piloting Unit delivery consist of?

*The FiXed Piloting Unit package is a fully self-contained unit consists of:*

- *a sturdy enclosure with integrated modular equipment and a UPS*
- *two high-precision GNSS antennas*
- *two Wi-Fi antennas for indoor use*
- *one VHF antenna for receiving AIS signals*
- *one UHF antenna for receiving RTK signals*
- *Antenna brackets for outdoor antennas*

** Antenna cables are not included*

---

2 We noticed that some parties mentioned; "Wi-Fi is optional". If it is optional, how Panama Canal Pilot's tablet would communicate with the system?

*Wi-Fi is NOT optional as the only way to communicate with the FiXed Piloting Unit is by Wi-Fi. Pilots use the Safepilot App on their iPad by use of proprietary ethernet protocol.*

---

3 Are there any audible alarms on jamming and spoofing of the GNSS?

*Currently, not. There is a NMEA output with information about jamming and spoofing. On the FiXed Piloting Unit itself there is a button with a LED ring that will be lit red if GNSS status is not available. Normal status of the FiXed Piloting Unit will be indicated by a green lit LED ring.*

---

4 Is there a feature for IMU-based Dead Reckoning, especially in failure cases up to several hours? If not, are there timelines to implement this feature in the product? Will this feature be useful if shore based RTK corrections are not available?

*No, a few hours of failure can never be solved by IMU alone, because the drift of an IMU causes drift in the heading. So, passing a bridge or other short-term interruptions are resolved.*

---

5 Does the hardware need to be upgraded for these two functions mentioned at item 3 and 4, or will a software update suffice?

*The FiXed Piloting Unit is equipped with a solid-state IMU from which, at most, firmware updates are possible, and as described in section 4, anomalies are resolved.*
*Spoofing and jamming can be detected by the quality of GNSS reception through the software.*

---

6 If no GPS signal is available, can the FiXed Piloting Unit also work on standalone Glonass, Galileo or BeiDou constellations?

*All constellations (GPS, Glonass, Galileo, BeiDou and QZSS) are supported. The FiXed Piloting Unit receives all constellations and can calculate up to 4 different constellations simultaneously. If a constellation such as GPS is not available, the system will still work (slightly reduced accuracy) by using the constellations that are available.*

*To be completely clear, it is not possible to simply set one constellation, as for example only Glonass.*

---

# Frequently Asked Questions – FiXed Piloting Unit

| | |
|---|---|
| 7 | How will the performance of the FiXed Piloting Unit be in the open sea and coastal areas other than Panama where no shore based RTK corrections are available?<br><br>*Since the FiXed Piloting Unit receives all constellations and calculates with up to 4 different constellations anyway, accuracy is usually within 1 meter, even without RTK.* |
| 8 | Can the system installation be done by crew? If yes, would they provide Installation Instructions for crew?<br><br>*This is not recommended, as part of the delivery involves an IMU that has specific alignment requirements, and also the GNNS antennas must be correctly positioned and commissioned in the software.* |
| 9 | Is there a length restriction for the AIS receiving cable?<br><br>*All is integrated in one enclosure with N connectors (female bulkhead) for connecting the external antennas such as VHF, UHF, GNSS and Wi-Fi. The restrictions therefore apply to the antenna cable according to the respective specifications of the cables used. The AIS antenna we supply within our package is equipped with a female N-connector as well.* |
| 10 | Is there any length restriction for GNSS receiver Cable?<br><br>*All is integrated in one enclosure with N connectors (female bulkhead) for connecting the external antennas such as VHF, UHF, GNSS and Wi-Fi. The restrictions therefore apply to the antenna cable according to the respective specifications of the cables used. The GNSS antennas we supply within our package are equipped with a female TNC-connectors.* |
| 11 | Is a tablet for crew provided or it is an optional unit?<br><br>*The only tablet usable is an iPad for using SafePilot, this is not part of our package. However, besides the of proprietary ethernet protocol for SafePilot, our FiXed Piloting Unit will also send out all data on a normal ethernet protocol. This means our unit can also be used together with AlphaMINDS in the near future as well as any other navigation software used on any tablet or PC with Wi-Fi.* |
| 12 | Are there plans for more features in the navigation software in the future?<br><br>*Software plans from other vendors are not known to us. AlphaMINDS software, on the other hand, can be used over Wi-Fi with our FiXed pilot unit. Hardwired connection is currently not allowed by Panama Canal authorities, but in fact can be added to our system already and easily. AlphaMINDS software extensions and add-ons are released regularly.* |
| 13 | Will the FiXed Piloting Unit be supported globally by the JRC service network?<br><br>*Yes, the FiXed Piloting Unit will be supported by the JRC service network in the near future.* |
| 14 | When is Panama Canal Authority approval and certification expected?<br><br>*Depending on the Panama Canal Authority, however, we expect October 2023.* |