# FLARM COLLISION AVOIDANCE SYSTEM

| Registration: SE-ICL | | Date: 2021-03-26 | |
|---|---|---|---|
| | **Manufacturer** | **Type** | **Serial No.** |
| Aircraft | PIPER AIRCRAFT, INC. | PA-28 | 28-7990371 |
| PowerFLARM | | | |
| FLARM Display | | | |

This document must be carried in the aircraft at all times. It describes the operating procedures with FLARM installed.

This supplement must be attached to the approved Aircraft Flight Manual. The information contained in this document supplements or supersedes the basic manual only in those areas listed. For limitations, procedures, performance, and loading information not contained in this supplement, consult the original Aircraft Flight Manual.

This supplement is only approved for the individual aircraft listed above. The supplement can be validated by scanning the QR Code below.

https://flarm.com/validate/3be9461b

**This Flight Manual Supplement is EASA approved.**

**Approval Number: 10074703**
**Date of issue: 30 October 2020**

## Log of Revisions

| Ver. | Date | Summary of changes |
|---|---|---|
| **1** | 2020-10-28 | Initial version |
| | | |
| | | |

## Copyright Notice

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# 1 General Description

FLARM is the collision avoidance system and traffic awareness/electronic conspicuity technology used by General Aviation, light aircraft, and UAVs. It has been designed to support self-separation for both VFR and IFR in applicable airspace classes. Aircraft with a FLARM system alert the pilots when on a collision course with another aircraft. Similar to TCAS/TAS, visual and aural warnings indicate that a collision is imminent, requiring the pilots to take action. However, unlike TCAS, FLARM does not issue Resolution Advisories (RA), so pilots need to select the appropriate course of action themselves.

FLARM works by calculating and broadcasting its own predicted future 3D flight path to nearby aircraft. At the same time, it receives the future flight path from surrounding aircraft. An intelligent motion prediction algorithm calculates a collision risk for each aircraft based on an integrated risk model.

The system determines its position, altitude, and movement with a sensitive GNSS receiver. Based on those and other parameters, a precise projected flight path can be calculated. The flight path, together with additional information such as an identification number, is encoded before being broadcast over an encrypted radio channel twice per second. Flight models are available for most aircraft types, including piston-engine airplanes, jets, helicopters, gliders, hang gliders, paragliders, UAVs, etc.

PowerFLARM Fusion also incorporates an ADS-B and transponder (SSR) Mode-S receiver. This enables aircraft that are not yet equipped with FLARM to also be detected and included in the collision prediction algorithm. However, these aircraft will not be able to detect FLARM-equipped aircraft, so a reciprocal FLARM-installation is recommended for all aircraft.

FLARM was invented in 2004 following an increasing number of mid-air collisions. Research and accident investigations had shown that the see-and-avoid principle was insufficient to reliably detect approaching aircraft in time. It initially spread in the domain of non-powered aircraft but was soon followed by rapid expansion in powered airplanes and helicopters. Over 50,000 manned aircraft and many more UAVs already have a FLARM-system installed. In Europe, more than 50% of all General Aviation aircraft have FLARM (including nearly 100% of gliders). The technology has additionally spread to other parts of the world and is today also used most prominently in North and South America, Australia, New Zealand, South Africa, Israel, and some Asian countries.

In addition to annunciating collision warnings, many FLARM systems can also show nearby aircraft on a radar-like screen (CDTI). Similar to the use of weather radar to

avoid thunderstorms, this can sometimes be helpful for short to medium term strategic planning in high traffic density situations.

FLARM can also warn about fixed obstacles like masts and power lines. Obstacle collision warnings are based on an optionally installed database, which needs to be kept up to date.

FLARM systems are available from many different manufacturers under different product names. A system normally consists of a remotely installed FLARM device, a panel-mounted FLARM Compatible display, one or two externally mounted FLARM antennas, and internally mounted GNSS and ADS-B/SSR antennas. There are also portable FLARM devices available (usually with an integrated display), as well as FLARM systems integrated into other avionics (e.g. EFIS systems).

FLARM is recommended by many aviation authorities and organizations. Several General Aviation airports have started requiring FLARM for all aircraft. FLARM is also mandatory in France for gliders and a similar requirement for light powered aircraft is under investigation.

## 1.1 Additional Documents

This document contains mandatory information for the Aircraft Flight Manual. A detailed system description and full operating instructions are available in the following documents:

- **FTD-078 PowerFLARM Fusion User and Maintenance Manual**
- **The display operating manual** (from the display manufacturer)

The PowerFLARM Fusion User and Maintenance Manual and other relevant documents can be downloaded from the FLARM website:

https://flarm.com/support/manuals-documents/

## 1.2 General Notes on the Use of FLARM

FLARM is not required by any Certification Specification or operational regulations but is recognized by regulators as an important step toward improved flight safety. Therefore, it is not considered as essential for flight and may be used for situation awareness only on basis of non-interference with certified equipment necessary for safe flight and no hazard to persons on board.

Correct antenna installation has a decisive effect on the transmission and receiving radio range. The pilot-in-command must ensure that there is no masking of the antennas, especially when the antennas are located in the cockpit.

FLARM will only warn about other aircraft that are likewise equipped with a FLARM system. PowerFLARM Fusion does, however, also receive ADS-B and Mode-S transponder-equipped aircraft and will warn about them as well. FLARM is not detected by ACAS/TCAS/TAS or ATC.

The firmware must be updated to the latest version at least every 12 months according to the Instructions for Continued Airworthiness. Failure to do so can lead to the device not being able to communicate with other aircraft or not operate at all.

A dedicated switch or combined circuit breaker/switch provides disconnection of all equipment connected to the FLARM installation from the electrical bus in case of fumes, fire, interference, or when flying over territories where the SRD860/ISM frequency band is not available for air-to-air communication. This switch is labeled "FLARM".

By using FLARM, you agree to the **End User License Agreement (EULA)** and **Terms of use of FLARM** (part of the EULA) valid at time of use. The EULA that was valid when this AFM Supplement was published can be found in Appendix A.

## 1.3 PowerFLARM Fusion

PowerFLARM Fusion is installed behind the instrument panel or at another suitable location. A dedicated USB data loader socket is normally installed in the instrument panel.

## 1.4 FLARM Display

The FLARM display is normally installed in the instrument panel.

For detailed information and instructions, refer to the display manufacturer's operating manual.

Approved displays are listed in the document "FTD-007 Approved displays for FLARM Devices" available from the FLARM website.

# 2 Operating Limitations

1. **This FLARM installation is approved for situation awareness only.** A corresponding placard is installed on the instrumental panel, in proximity of the display.

2. **Maneuvering must not be based solely on the use of information presented on the FLARM display or aural annunciations.** FLARM does not issue resolution advisories. The azimuth and height accuracy of the received traffic cannot always provide reliable warnings and only the calculated most threatening traffic is announced. Therefore, it is the pilots' responsibility to evaluate by any means traffic position and altitude, obstacle shape, terrain, the meteorological situation, and flying the aircraft at all times, prior to executing any evasive maneuver.

   **Under no circumstances should a pilot or crewmember adopt different tactics or deviate from the normal principles of safe airmanship.**

3. **It is the pilot-in-command's responsibility to verify, prior to entering any state's territory, that the SRD860/ISM frequency band is permitted for use in air-to-air communication.** When such an acceptance does not explicitly or implicitly exist, the equipment shall be turned OFF. This verification is part of flight planning.

4. **The pilots shall not intentionally generate uncoordinated warnings that might startle pilots of other aircraft.** Any intentional maneuver of this kind has to be carefully coordinated and agreed upon in advance. Unexpected reactions might be especially hazardous when lateral, vertical, or time separations are small.

5. **The system shall be turned off when operating in IMC.**

# 3 Emergency Procedures

In case of **Fire, Smoke, Electrical Burning Smell, or Electromagnetic Interference**, follow the Emergency procedure of the basic AFM.

FLARM is normally installed on a non-essential bus. However, on old aircraft it is possible that only an avionics bus or even only a main bus is available for all electrical consumers. The basic Emergency procedure might require this bus to be disconnected, which will generate a total loss of Navigation, Communication and ATC detection. This is classified as a catastrophic failure condition under IMC conditions.

**The dedicated FLARM switch will help to rapidly determine if the FLARM installation is faulty or not**, allowing resumption of operation of essential equipment as per the Emergency procedure of the basic Aircraft Flight Manual.

# 4 Normal Operating Procedures

It is recommended to carry the PowerFLARM Fusion User and Maintenance Manual and the display operating manual on board the aircraft.

## 4.1 Self-test

To switch on FLARM, the aircraft electrical power shall be available on the corresponding bus and the dedicated FLARM switch must be turned ON.

After switching on, the system performs a self-test routine and lights up all LEDs (normally not visible to the flight crew). The display operating manual describes how errors and version numbers are shown. If an error is shown, the system is not ready for operation.

When FLARM shifts to normal operation, it waits until it has acquired an adequate GNSS position fix. When switching on the device after a long period or in a new location, this procedure can take several minutes. Without a proper GNSS position fix, the system is not ready for operation.

Before departure, the pilots must ensure that FLARM has acquired a GNSS fix and that no errors are shown (refer to the display operating manual).

## 4.2 Presentation of Information and Collision Warnings

FLARM can show and warn about other aircraft, obstacles, and alert zones.

When there is no threat, FLARM can show information about proximate aircraft. The types of aircraft that are shown (FLARM/ADS-B/Mode-S, range limits, etc.) are defined in the configuration during installation. How the information is shown is described in the display operating manual.

When FLARM calculates a risk for an imminent collision, it will give visual and/or aural warnings depending on the installation. There are three levels of warnings, depending on time to impact. The different warnings start at approximately 18, 12, and 8 seconds respectively. The display will normally show the distance, relative bearing, and vertical angle or altitude difference to the intruder (Mode-S traffic will only be shown as approximate distance and vertical angle or altitude difference). When receiving a warning, immediately identify the intruder visually and take corrective action, if required. Do not make an evasive maneuver based solely on collision warnings or displayed traffic.

If there are several threats, FLARM will only warn about the calculated most imminent threat.

Depending on the phase of the flight, FLARM uses different movement models, forecasting methods, and warning calculations to provide the pilots with the best possible support without causing a distraction. For example, when an aircraft is circling, the system sensitivity is reduced. These models and processes have been optimized but are nevertheless a compromise and may not be optimal for each situation.

Obstacle collision warnings are given without bearing when there is an obstacle in the calculated future flight path. Warnings are only given about obstacles that are in the installed and valid database. The database should be updated at least once per year. AIRAC updates are available on request.

For detailed information on annunciations, see the display operating manual.

## 4.3 Radio Range

Aircraft with interoperable FLARM systems must be within range in order to be able to provide warnings. The range is determined by the type, installation, and position of the radio antennas, as well as the relative position of the two aircraft. Under optimal conditions, the system can give a range of over 10 km. Normally, range should be minimum 3-10 km. The radio signals can only be received by line of sight. There is e.g. no FLARM communication between two aircraft on opposite sides of the same mountain. If there is only one FLARM antenna on top of the aircraft, the range directly below the aircraft will be zero or limited. Using multiple antennas (antenna diversity) is strongly recommended during installation. It is not allowed to use antenna splitters.

## 4.4 GPS Signal Quality

FLARM has to know its current position in order to operate. For this reason, FLARM will only operate in the presence of a high-quality 3D GNSS position. GPS reception is greatly influenced by the installation and position of the GPS antenna and aircraft attitude. This is particularly true during turns, when flying close to mountain slopes, and in areas known for poor reception. If the installation is poor, the GPS signal quality may be reduced. In particular, there can be rapid degradation of altitude calculations. FLARM resumes operation as soon as the GPS reception quality is adequate.

## 4.5 Mode-S and Pressurized Cabins

When available, PowerFLARM Fusion uses the altitude reported by the own Mode-S transponder to determine the altitude difference to non-directional targets. If a Mode-S transponder is not installed and On, or the transponder and FLARM are not correctly configured, FLARM will use an internal pressure sensor to determine the

pressure altitude. In such cases, in aircraft with a pressure cabin, the FLARM system will not operate correctly.

## 4.6 Predicted Flight Path and Accuracy

When two aircraft are close to each other and they are at the same or similar altitude, or if GNSS reception is poor, the vertical angle indication is imprecise and might fluctuate.

FLARM calculates the predicted flight path for the next 20 seconds. This prediction is based on past data, current position and movement data, plus a movement prediction model that is optimized for the configured aircraft type. This forecast is associated with a number of uncertainties that increase with the extension of the forecast period. There is no guarantee that an aircraft will actually follow the predicted flight path. For this reason, the warnings issued might not be accurate in all cases.

## 4.7 Effect of Wind

The aircraft's track calculated from the GNSS position fixes is the ground track. In strong wind, there may be a substantial difference between aircraft heading and track, leading to an incorrect relative bearing to other aircraft. If the wind speed is one third of True Airspeed (TAS) and the aircraft heading is perpendicular to the wind, the displayed relative bearing has an error of about 18°. If the wind is very strong, the track can deviate up to 180° from the heading. Under such circumstances, the relative bearing indicated is unusable.

## 4.8 Data protection

The transmitter has little control over what the receiver does with the data — especially when the receiver is not of an approved design. It is possible that such data may be captured and stored by other aircraft, or by ground stations, or used for other purposes. This opens up a range of possibilities, some of which may be in the pilots' own interest (e.g. aircraft tracking, search & rescue, and automated generation of an aircraft launch logging system), while others may not be (e.g. detecting airspace infringements or failure to take avoiding action prior to a collision). When FLARM makes a transmission, the signal also bears identification elements.

# 5 Performance

No change to the basic flight manual.

# 6 Weight and Balance

No change to the basic flight manual.

# 7 System Description

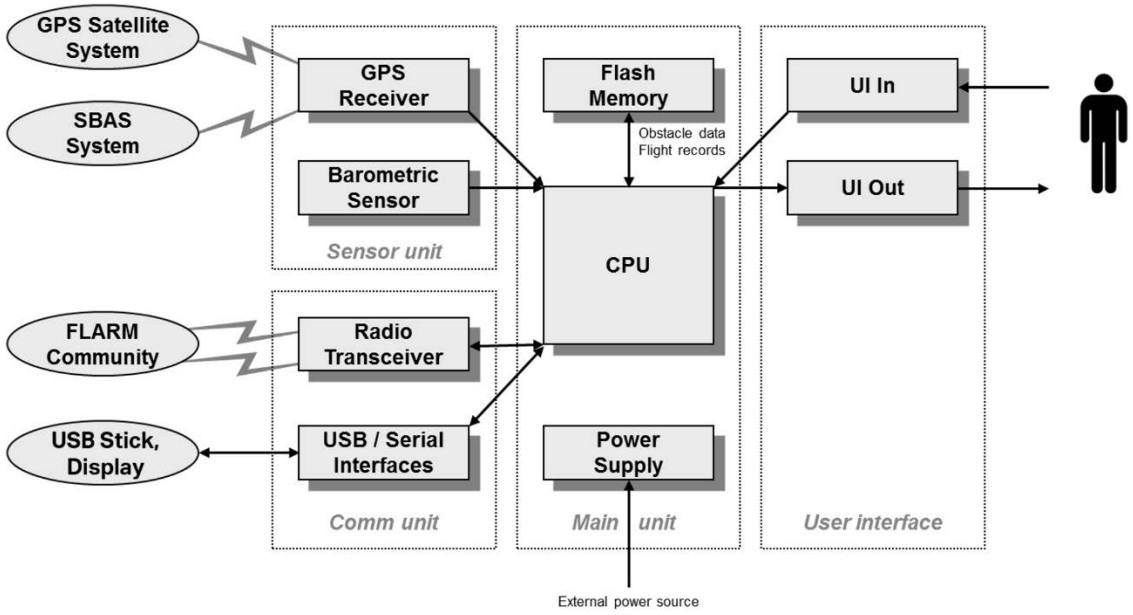
FLARM receives position and movement information from an internal GNSS receiver with a GPS antenna usually mounted on the glareshield. The predicted flight path is calculated by FLARM and the information is broadcast by radio. Provided they are within receiving range, the signals are received by other aircraft also equipped with FLARM systems. The received information is compared with the own predicted flight path by both aircraft. At the same time, FLARM compares its own predicted flight path with data on fixed obstacles in the obstacle database, if installed, as well as received Alert Zone airspace volumes.

PowerFLARM Fusion also receives ADS-B and Mode-S transponder-equipped aircraft.

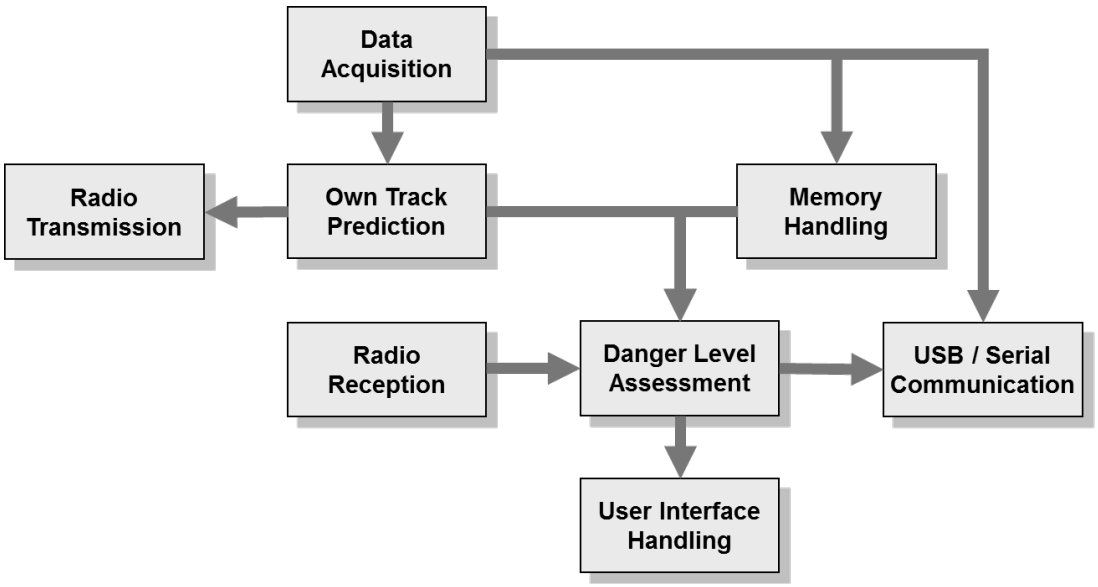
The GNSS and collision information can also be made available for connected equipment (e.g. additional displays, speech synthesizers, EFBs) via a serial data output and Wi-Fi/Bluetooth.

Obstacle information relating to line obstacles has been simplified. For example, FLARM assumes that a power line is absolutely straight between two fixed points with no slack.

## 7.1 Hardware Scheme




## 7.2 Software Scheme



## 7.3 Radio Transmission

The FLARM system uses a data communication frequency in the SRD860 band or in an ISM band in different parts of the world. PowerFLARM Fusion will automatically select the applicable frequency based on the GNSS position. Both bands are free to use within prescribed limitations. The bands are however also free to use by anybody else who adheres to the limitations. Because of the limitations in power output and duty cycle, other users of these frequency bands do not have an effect on FLARM communication.

The antennas should be designed for the frequency band applicable in the geographic area where the aircraft is being operated. Internally mounted antennas, including the antennas that are shipped with Fusion, are normally designed for only one of the frequency bands. The external AV-75 antenna is designed and approved for both frequency bands and worldwide use. Only antennas supplied or approved by FLARM Technology should be used.

The radio transmission protocol employed by FLARM places no limit on the number of devices that may be operated within a given range. An increasing number of devices within range is only associated with a reduction in the probability that a particular coded signal will be received ("graceful degradation"). The probability is small that subsequent signals will not be received from the same transmitter.

The following frequencies are used within the specified areas.

| Area | Frequency |
|---|---|
| **Africa** | 868.2 – 868.4 MHz |
| **Australia** | 917.0 – 926.6 MHz |
| **Europe** | 868.2 – 868.4 MHz |
| **Israel** | 916.2 MHz |
| **New Zealand** | 869.2 MHz |
| **North America** | 902.2 – 927.8 MHz |
| **South America** | 917.0 – 926.2 MHz |

## 7.4 Electrical Installation

FLARM is normally installed on a non-essential bus. This is not always possible as certain older aircraft only have one avionics bus that is essential when flying under IFR. The FLARM installation is protected with a circuit breaker. A dedicated power switch or combined circuit breaker/switch is installed to disconnect the FLARM system when required by emergency or operational needs. The pilots must be confident with the electrical bus topology of the FLARM installation.

# 8 Continuing Airworthiness

## 8.1 Pre-flight Inspection

Inspect the external and accessible internal antennas to verify that they are clean and not damaged. Power on FLARM and verify that no error occurs during the boot sequence. If an error occurs, check the severity and type of error (error code) to determine if the system can be operated for the flight. Error codes are listed in Appendix B of the PowerFLARM Fusion User and Maintenance Manual. After power-on, the system should indicate GPS and TX (Transmit).

**Note:** The system will not indicate GPS and TX if the GPS does not have a clear view of the sky (e.g. if inside a hangar).

## 8.2 Annual Maintenance

Annual maintenance is required every 12 months as part of the Aircraft Maintenance Program (AMP). This includes, but is not limited to, installing the latest available firmware version.

The complete instructions are available in "Instructions for Continued Airworthiness" (document FTD-085-60) and the PowerFLARM Fusion User and Maintenance Manual.

## 8.3 Service Life Limit / Overhaul

All Parts are "**on condition**".

# Appendix A – EULA

## END USER LICENSE AGREEMENT

By purchasing or using a FLARM device or by downloading, installing, copying, accessing, or using any FLARM Technology Ltd, Cham, Switzerland (hereafter "FLARM Technology") software, firmware, license key, or data, you agree to the following terms and conditions. If you do not agree with the terms and conditions do not purchase or use the FLARM device and do not download, install, copy, access, or use the software, firmware, license key, or data. If you are accepting these terms and conditions on behalf of another person, company, or other legal entity, you represent and warrant that you have full authority to bind that person, company, or legal entity to these terms and conditions.

If you are purchasing or using a FLARM device, the terms "firmware", "license key", and "data" refer to such items installed or available in the FLARM device at time of purchase or use, as applicable.

1. **License and Limitation of use**
   - 1.1. **License**. Subject to the terms and conditions of this Agreement, FLARM Technology hereby grants to you a non-exclusive, non-transferable right to download, install, copy, access, and use the software, firmware, license key, or data in binary executable form solely for your own personal or internal business operations. You acknowledge that the software, firmware, algorithms, license key, or data and all related information are proprietary to FLARM Technology and its suppliers.
   - 1.2. **Limitation of use**. Firmware, license keys, and data may only be used as embedded in and for execution on devices manufactured by or under license from FLARM Technology. License keys and data may only be used in the specific devices, by serial number, for which they were sold or intended. Software, firmware, license keys, and data with an expiration date may not be used after the expiration date. Right to download, install, copy, access, or use software, firmware, license key, or data with an expiration date does not imply right to upgrade or extension of the license beyond the expiration date. No other licenses are granted by implication, estoppel or otherwise.
2. **Terms of use of FLARM**
   - 2.1. Every FLARM installation must be approved by licensed Part-66 certifying staff or the national equivalent. A FLARM installation requires an EASA Minor Change Approval or the national equivalent.
   - 2.2. FLARM must be installed according to the Installation Instructions and the EASA Minor Change Approval, or the national equivalent.
   - 2.3. FLARM cannot warn in all situations. In particular warnings may be incorrect, late, missing, not being issued at all, show other threats than the most dangerous or distract the pilot's attention. FLARM does not issue resolution advisories. FLARM can only warn of aircraft that are equipped with FLARM, SSR transponders (in specific FLARM devices), or of up-to-date obstacles stored in its database. The use of FLARM does not allow a change of flight tactics or pilot behavior. It is the sole responsibility of the pilot in command to decide upon the use of FLARM.
   - 2.4. FLARM may not be used for navigation, separation, or under IMC.
   - 2.5. FLARM does not work if GPS is inoperative, degraded, or unavailable for any reason.
   - 2.6. The most recent Operating Manual must be read, understood and followed at all times.
   - 2.7. The firmware must be replaced once per year (every 12 months). The firmware must also be replaced earlier if a Service Bulletin or other information is published with such instruction. Failure to replace the firmware may render the device inoperable or incompatible with other devices, with or without warning or notice thereof.
   - 2.8. Service Bulletins are published as a Newsletter by FLARM Technology. You are required to sign up for the Newsletter on www.flarm.com to ensure that you are informed of published Service Bulletins. If you are entering into this agreement in a form where your email address is available (e.g. online shop) you may be automatically signed up for the Newsletter.
   - 2.9. After power-up, FLARM performs a self-test which must be monitored by the pilots. If a malfunction or defect is observed or suspected, FLARM must be disconnected from the aircraft by maintenance before the next flight and the device inspected and repaired, as applicable.
   - 2.10. The pilot in command is solely responsible to operate FLARM according to applicable national regulations. Regulations might include, but are not limited to, airborne usage of radio frequencies, aircraft installation, safety regulations, or regulations for sports competitions.
3. **Intellectual Property**. No part of the software, firmware, license keys, data (including obstacle databases), the FLARM radio protocol and messages, and the FLARM hardware and design may be copied, altered, reverse engineered, decompiled or disassembled without an explicit and written approval by FLARM Technology. Software, firmware, license keys, data (including obstacle databases), the FLARM radio protocol and messages, the FLARM hardware and design, and the FLARM logos and name are protected by copyright, trademark and patent laws.
4. **Manipulation**. It is forbidden to intentionally feed artificially generated signals to the FLARM device, its GPS antenna or the external/internal GPS antenna connections, unless agreed with FLARM Technology in writing for limited R&D activities.
5. **FLARM Data and Privacy**
   - 5.1. FLARM devices receive, collect, store, use, send, and broadcast data to enable the system to work, improve the system, and to enable troubleshooting. This data may include, but is not limited to, configuration items, aircraft identification, own positions, and such data of other aircraft. FLARM Technology may receive, collect, store, and use this data for said or other purposes including Search and Rescue (SAR).
   - 5.2. FLARM Technology may share data with its partners for aforementioned or other purposes. FLARM Technology may in addition publicly make available data from a FLARM device (Flight Tracking). If a FLARM device has been configured to limit tracking, SAR and other services may not be available.
   - 5.3. Data sent or broadcast by FLARM devices may only be used at own risk and under the same conditions as the FLARM device itself, and is encrypted partially to ensure message integrity, system safety and provide protection for the relevant content against eavesdropping, namely by article 3 of the Budapest Convention on Cybercrime as signed and ratified by most countries respectively its national implementations. FLARM Technology is not responsible for any third-party device, software, or service receiving, collecting, storing, using, sending, broadcasting, or making publicly available data regardless of whether legally or illegally.

6. **Warranty, Limitation of Liability, and Indemnification**

6.1. **Warranty**. FLARM devices, software, firmware, license keys, and data are provided on an "as is" basis without warranty of any kind — either expressed or implied — including, without limitation, any implied warranties of merchantability or fitness for a particular purpose. FLARM Technology does not warrant the performance of the device, software, firmware, license key, or data or that the device, software, firmware, license key, or data will meet your requirements or operate error free.

6.2. **Limitation of Liability**. In no event shall FLARM Technology be liable to you or any party related to you for any indirect, incidental, consequential, special, exemplary, or punitive damages (including, without limitation, damages for loss of business profits, business interruption, loss of business information, loss of data or other such pecuniary loss), whether under a theory of contract, warranty, tort (including negligence), products liability, or otherwise, even if FLARM Technology has been advised of the possibility of such damages. In no event will FLARM Technology's total aggregate and cumulative liability to you for any and all claims of any kind arising hereunder exceed the amount of fees actually paid by you for the device, license keys or data giving rise to the claim in the twelve months preceding the claim. The foregoing limitations will apply even if the above stated remedy fails of its essential purpose.

6.3. **Indemnification**. You will, at your own expense, indemnify and hold FLARM Technology, and all officers, directors, and employees thereof, harmless from and against any and all claims, actions, liabilities, losses, damages, judgments, grants, costs, and expenses, including reasonable attorneys' fees (collectively, "Claims"), arising out of any use of a FLARM device, software, firmware, license key, or data by you, any party related to you, or any party acting upon your authorization.

7. **General terms**

7.1. **Governing Law**. This Agreement shall be governed by and construed in accordance with the internal law of Switzerland (to the exclusion of Swiss Private International Law and of international treaties, in particular the Vienna Convention on the International Sale of Goods dated April 11, 1980).

7.2. **Severability**. If any term or provision of this Agreement is declared void or unenforceable in a particular situation, by any judicial or administrative authority, this declaration shall not affect the validity or enforceability of the remaining terms and provisions hereof or the validity or enforceability of the offending term or provision in any other situation. To the extent possible the provision will be interpreted and enforced to the greatest extent legally permissible in order to effectuate the original intent, and if no such interpretation or enforcement is legally permissible, shall be deemed severed from the Agreement.

7.3. **No Waiver**. The failure of either party to enforce any rights granted hereunder or to take action against the other party in the event of any breach hereunder shall not be deemed a waiver by that party as to subsequent enforcement of rights or subsequent actions in the event of future breaches.

7.4. **Amendments**. FLARM Technology reserves the right, in its sole discretion, to amend this Agreement from time to time by posting an updated version of the Agreement on www.flarm.com, provided that disputes arising hereunder will be resolved in accordance with the terms of the Agreement in effect at the time the dispute arose. We encourage you to review the published Agreement from time to time to make yourself aware of changes. Material changes to these terms will be effective upon the earlier of (i) your first use of the FLARM device, software, firmware, license key, or data with actual knowledge of such change, or (ii) 30 days from publishing the amended Agreement on www.flarm.com. If there is a conflict between this Agreement and the most current version of this Agreement, posted at www.flarm.com, the most current version will prevail. Your use of the FLARM device, software, firmware, license key, or data after the amended Agreement becomes effective constitutes your acceptance of the amended Agreement. If you do not accept amendments made to this Agreement, then it is your responsibility to stop using the FLARM device, software, firmware, license key, and data.

7.5. **Governing Language**. Any translation of this Agreement is done for local requirements and in the event of a dispute between the English and any non-English versions, the English version of this Agreement shall govern.