Document status

Published status		Confidentiality status	
☐	Draft	☐	Internal
☒	Published	☒	NDA
☐	Canceled	☐	Public

Version control

Ver.	Date	Summary of changes
1.0	2015-12-16	Initial version
1.1	2017-06-27	Requirement for aircraft colors in SD6 removed. Requirement for firmware version in DM7 removed. Requirement for logo in HL1 removed. Requirements for alarm colors in SD4 amended. Amended requirement for how the EULA is published in DM9. Editorial changes.
1.2	2017-08-23	Appendix 2 (EULA) updated.
2.0	2021-01-28	Removed secondary display Category (2.1). Clarified when deviations can be approved (2.2). Added Continual Conformity requirement (2.3). Added statement about revocation (2.4). Added requirement for updatable firmware (HS3 & DM4). Added info about Device ID (SI1). Added info about higher baud rates (SC1). Increased required ICD protocol version (SC4). Added requirement for head-on warnings (SD4). Removed requirement to state certification category in the manual (DM2). Several smaller and editorial changes.

Scope and summary

This document establishes requirements for displays and other types of equipment to be labelled as "FLARM Compatible". Once approved, equipment may use the "FLARM Compatible" logo.

This document does not apply to FLARM devices without an integrated display.

Table of contents

1   Abbreviations and definitions

Term	Meaning/Explanation
A	Ampere
AFMS	Aircraft Flight Manual Supplement
CS-23	Certification Specifications for Normal, Utility, Aerobatic, and Commuter Category Aeroplanes. Amendment 4. Annex to EASA ED Decision 2015/018/R.
DC	Direct Current
FT	FLARM Technology Ltd
g	Gram
mA	Milliampere
MCA	(EASA) Minor Change Approval
V	Volt

2   General

In addition to regulatory approvals and certifications, equipment manufacturers who want to use the FLARM Compatible logo and/or claim compatibility with FLARM need to conform to the requirements in this document for design and manufacturing and receive approval from FT. Only FLARM Compatible displays can be used as the sole display for a FLARM installation.

The approval is based on a self-declaration using the published compliance list form with relevant explanations as well as references to manuals, design documents, specifications, and test reports. FT issues the approval based on the information it receives. The responsibility for the correctness of the implementation and the documentation is with the manufacturer. Likewise, it is the manufacturer's responsibility to update the equipment as the FLARM ecosystem and this document evolve.

Note: You need to show **how** the equipment conforms to the requirements and make the relevant references. Only stating that it conforms is not sufficient.

The main document defining the interface between FLARM devices and equipment (e.g. displays) is the FLARM ICD (document FTD-012). This document must be adhered to when designing the equipment and appurtenant software, as well as when releasing updates. In addition, the Configuration Specification (FTD-014) is applicable for reading and setting configuration items and for reading device information items.

When approved, equipment may use the FLARM Compatible logo. Conditions for logo usage are laid down in document FTD-011. In addition, approved displays and other equipment are listed in the Product Selector:

https://flarm.com/products/powerflarm/product-selector/

Approval is based on the following two steps:

1. **Design**: Select in which category the equipment should be approved. For new designs, ensure that the specification is conformed to during the design phase. For existing designs, design changes may be required. Perform the necessary tests and checks, as applicable, to ensure that all requirements are fulfilled.
2. **Approval**: Document how each requirement is conformed to in the compliance list (FTF-003). Submit the compliance list together with the installation and operating manuals to FT. If anything is unclear, FT will contact the applicant for explanation and/or amendments. FT may require

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the applicant to send a specimen of the equipment to FT for testing. However, the applicant is always responsible for ensuring that the requirements are conformed to.

When FT has verified conformity to all requirements, an approval is given to the applicant. The applicant is informed about the conditions under which the FLARM logo and name may be used.

There is no fee for the approval process.

The requirements for "hardware" may be implemented in "software", and vice versa, depending on type and design of the equipment.

2.1   Approval Categories

Equipment may be approved in different categories. Some of the requirements are specific to one or more categories. Each requirement indicates to which categories it applies.

The categories are exclusive, i.e. equipment may only be approved in one category.

The following table lists the categories together with a short description.

Category	Description
Standalone display	A display whose only purpose is to give collision warnings and show traffic from a FLARM device. The display can be installed as part of the MCA held by FT.
Integrated display	A display which also has other functions than giving collision warnings and showing traffic from a FLARM device. The display cannot be installed as part of the MCA held by FT. For example, a navigation computer with a traffic display overlay.
Other equipment	Other types of equipment that communicate with a FLARM device. Equipment approved in this category shall conform to the requirements for "Integrated display", as applicable, based on the function of the equipment.

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2.2   Deviations

Deviations from the requirements may be approved by FT. Deviations may be approved if it would not be practicable to implement a requirement and if alternative means of accommodating the underlying motivation behind the requirement have been implemented.

Approval of a deviation may require that the installation and/or operating manual specify the deviation and/or any consequential limitations.

Note: Deviations may especially be applicable for LED-based displays.

2.3   Continual Conformity

Updates to this specification will occasionally be issued. This may especially be the case when the FLARM ICD is updated, e.g. to accommodate new features. Equipment manufacturers are required to implement new and amended requirements in both new products as well as in products already on the market. Changes must be made available to operators within 6 months of the new version of this specification being released, e.g. as a firmware update. If requested by FT, a delta compliance list detailing the conformity to new and amended requirements shall be completed and submitted to FT.

2.4   Revocation

FT may revoke an approval if the equipment no longer conforms to the latest version of this document or to any limitation or requirement related to any deviation approval.

3 Requirements

3.1 Requirements for Hardware

3.1.1 Power

Req. No.	Applicability
HP1	☒ Standalone ☐ Integrated

Requirement
a) Usable input voltage shall be +3 V DC ± 5% and/or include the full range +8–32 V DC. b) Maximum current if using the +3 V DC supply from FLARM during any operation shall be 200 mA. c) Maximum current if using +8–32 V DC during any operation shall be 200 mA @ 12 V DC and 80 mA @ 32 V DC.

Req. No.	Applicability
HP2	☒ Standalone ☒ Integrated

Requirement
a) The equipment must have an integral visual power annunciator to indicate when power is not adequate to sustain proper instrument performance. The power must be sensed at or near the point where it enters the instrument. b) If the equipment is only using the +3 V DC supply from the FLARM device, no internal sensing of power level is required.
Note: This is a requirement from CS-23. The visual power annunciator can be combined with the indication of power problems following the reception of the relevant `$PFLAE` sentence.

3.1.2 Connections

Req. No.	Applicability
HC1	☒ Standalone ☒ Integrated

Requirement
If the connection to the FLARM device is not via an RJ45 socket which has pinouts as defined in the PowerFLARM Fusion installation manual, connection cables to the RJ45 socket in the FLARM device shall be specified and available for purchase. The pinout shall be specified in the installation manual.

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3.1.3 Size, Mass, and Construction

Req. No.	Applicability
HS1	☒ Standalone ☐ Integrated
Requirement	
The mass shall be maximum 500 g.	

Req. No.	Applicability
HS2	☒ Standalone ☐ Integrated
Requirement	
Instrument panel vibration may not damage, or impair the accuracy of, the equipment.	

Req. No.	Applicability
HS3	☒ Standalone ☒ Integrated
Requirement	
The equipment must have field-updatable firmware. The update may not require that the equipment or any part of the installation be removed. The update may not require the use of special tools and must be possible to be performed by maintenance personnel or the pilots.	

3.1.4 Labelling

Req. No.	Applicability
HL1	☒ Standalone ☒ Integrated
Requirement	
If the FLARM Compatible logo is visible on the equipment, the logotype "Compatible" shall be readable without difficulty.	

3.1.5 Display and Visualization

Req. No.	Applicability
HD1	☒ Standalone ☒ Integrated

Requirement
Displays and all visualizations shall be easily legible under all lighting conditions encountered in the cockpit, including direct sunlight, considering the expected brightness level at the end of an electronic display indicator's useful life. **Note:** This includes luminance and other characteristics during night conditions, unless a deviation is approved, and the operating manual clearly states that the display is not approved for night conditions. **Note:** Guidance is available in AC 23.1311–1C.

Req. No.	Applicability
HD2	☒ Standalone ☒ Integrated

Requirement
Warning, caution, and advisory lights must comply with CS 23.1322. **Note:** This relates primarily to LED lights, not LCD colors. CS 23.1322 is referenced in Appendix 1. **Note:** Specifically, an aircraft collision warning (alarm level 1-3) should be considered as a warning light. An obstacle collision warning should be considered as a warning light (must be distinguished from an Alert Zone warning; see `$PFLAU` sentence in the FLARM ICD). An Alert Zone warning should be considered as a caution light. **Note:** Additional guidance for displaying traffic information is available in AC 20-172B and DO-317.

3.2   Requirements for Software

3.2.1   Information About the FLARM Device

Req. No.	Applicability
SI1	☒ Standalone ☒ Integrated

Requirement

The following information about the FLARM device shall be shown during start-up of the equipment and/or be available under a menu:
   a. Hardware version
   b. Device ID/Serial number
   c. Firmware version
   d. Installed obstacle database with expiry date
The information shall be unambiguous and not mistakable for error codes or other information.
 	
Note: The serial number has to be requested with `$PFLAC,R,SER`. On PowerFLARM-based devices, the Device ID can be requested with `$PFLAC,R,DEVICEID`. The other information is available from the `$PFLAV` sentence. See the FLARM ICD for details.
 	
Note: If the `$PFLAV` sentence has not been correctly received by the equipment after start-up (when the first `$PFLAU` sentence is received), the information can be requested using the `$PFLAV` command. See the FLARM ICD for details.

3.2.2   Communication

Req. No.	Applicability
SC1	☒ Standalone ☒ Integrated

Requirement
The RS-232 connection shall support at least one of the following baud rates: 19.2, 38.4, or 57.6 kBaud. The connection shall use 8 data bits, no parity, no handshake, and 1 stop bit. **Note:** PowerFLARM-based devices also support 115.2 and 230.4 kBaud.

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Req. No.	Applicability	
SC2	☒ Standalone	☒ Integrated

Requirement
The equipment shall receive and parse sentences latest 20 seconds after power-up.

Note: Presuming the equipment is powered up at the same time as the FLARM device, this is to ensure that $PFLAE sentences are received in time, as well as to maximize the chance that the $PFLAV sentence is received in time. Parsing should normally start as soon as possible after power-up and not wait for 20 seconds. See also SD1 and SI1.

Req. No.	Applicability	
SC3	☒ Standalone	☒ Integrated

Requirement
The processing power shall be sufficient to process the maximum number of characters/sentences possible with the supported baud rate(s) without losing sentences.

Req. No.	Applicability	
SC4	☒ Standalone	☒ Integrated

Requirement
The equipment shall at least support FLARM ICD protocol versions 4–9.

SC5: Deleted.

Req. No.	Applicability	
SC6	☒ Standalone	☒ Integrated

Requirement
Received sentences that are not used by the equipment or that do not conform to the specification in the FLARM ICD (including, but not limited to, incorrect or missing checksum) shall be disregarded.

Req. No.	Applicability	
SC7	☒ Standalone	☒ Integrated
Requirement		
Undocumented or unnecessary sentences shall not be sent to FLARM.		

3.2.3 Display and Visualization

Req. No.	Applicability	
SD1	☒ Standalone	☒ Integrated

Requirement
FLARM error conditions (i.e. as received in `$PFLAE` sentences) must be clearly indicated and it must be clear that the device is not operational, when applicable. Specifically: a) An error shall be indicated whenever a `$PFLAE` sentence is received (during startup or operation). The indication shall remain until such time or event, at which the pilots have had adequate opportunity to recognize or acknowledge the error.   b) If a `$PFLAE` sentence is received before it can be indicated, it shall be stored in memory and indicated when possible.   c) The indications shall distinguish between the `<Severity>` types.   d) The `<ErrorCode>` value shall be indicated (in hex).   e) If the `<Message>` parameter is received and is nonempty, it shall be indicated in addition to `<ErrorCode>`.   f) The error indication shall be unambiguous and not mistakable for other information.   **Note:** Description of the possible `<ErrorCode>` values can be found in the FLARM ICD. If the `<Message>` parameter is not received or is empty, a text based on the `<ErrorCode>` value may be indicated in addition to `<ErrorCode>`.   **Note:** The `$PFLAE` sentence can be received at any time. The `$PFLAE` sentence is always sent during start-up when there are one or several errors during self-test. When there are errors during start-up, the same sentence is normally sent once per second for 30 seconds. If there are more errors, the same procedure is then repeated for the other errors.

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Req. No.	Applicability	
SD2	☒ Standalone	☒ Integrated

Requirement
a) After start-up, equipment shall indicate that there is no communication with FLARM if no `$PFLAU` sentence has been received for 3 seconds. This trigger shall be reset every time a `$PFLAU` sentence is received. b) During start-up, equipment shall indicate that there is no communication with FLARM if no proprietary FLARM sentence (`$PFLA*`) has been received for 10 seconds. **Note:** Start-up has ended when the first `$PFLAU` sentence is received. **Note:** That there is no communication can be indicated e.g. with the text "Waiting for FLARM" or similar.

Req. No.	Applicability	
SD3	☒ Standalone	☒ Integrated

Requirement
If a `$PFLAU` sentence is received with `<GPS>` equal to 0 (0x30), and if 3 seconds later still no `$PFLAU` sentence has been received with `<GPS>` nonzero, equipment shall indicate that FLARM has no GPS reception. The indication shall remain as long as the condition exists.

Req. No.	Applicability	
SD4	☒ Standalone	☒ Integrated

Requirement

a) If a `$PFLAU` sentence is received with `<AlarmLevel>` nonzero and `<AlarmType>` **other than** 0, 1, and 4, equipment shall indicate an alarm.

b) A directional intruder shall be visualized in such way, that the (relative) bearing, vertical angle or altitude difference, and distance to the intruder are correct and unambiguous.

c) A non-directional intruder shall be visualized in such way, that it gives an unambiguous indication of the approximate distance and altitude difference to the intruder.

d) A non-directional intruder shall be visualized in such way, that it cannot be mistaken for a directional intruder.

e) An obstacle alarm shall be visualized in such way, that it cannot be mistaken for any other alarm.

f) An alert zone alarm shall be visualized in such way, that it cannot be mistaken for any other alarm.

g) Intruders and obstacles generating an alarm, as well as the alarm annunciation, shall be indicated with red color when the `<AlarmLevel>` is 3.

h) Alert zones generating an alarm, as well as the alarm annunciation, shall be indicated with a distinct color.

i) The alarm condition shall be sustained until 2 seconds after the relevant `$PFLAU` sentence has been received, or until a `$PFLAU` sentence indicating no alarm condition is received, whichever comes first.

j) On LED displays and similar indications where there is no centered straight-ahead indication (0°), when the relative bearing to a directional intruder is between the two most forward indications (one on each side of the centerline), the relative bearing to the intruder shall be indicated by using both of these two indications simultaneously (i.e. as 0°) during alarm conditions.

Note: Regarding j), this requirement exists to not preempt the decision of the pilot regarding the direction of the avoidance maneuver, as the direction of the intruder may be indicated incorrectly in situations with crosswind (track vs. heading). Applicable e.g. to LED displays with no LED at 0° and displays emulating similar visual annunciations.

SD5: Deleted.

Req. No.	Applicability	
SD6	☒ Standalone	☒ Integrated
Requirement		
If $PFLAA sentences are parsed and used to indicate proximate traffic which does not generate an alarm, such indications shall not be mistakable for alarms. **Note:** Guidance for displaying traffic information is available in AC 20-172B and DO-317.		

Req. No.	Applicability	
SD7	☒ Standalone	☒ Integrated
Requirement		
$PFLAQ sentences shall be indicated in an unambiguous way. At least the <Operation> and <Progress> parameters shall be indicated.		

3.3 Requirements for Documentation

3.3.1 Manual

Req. No.	Applicability	
DM1	☒ Standalone	☒ Integrated
Requirement		
An installation manual and an operating manual shall be provided. Both manuals must be provided in English. The manuals may be combined.		

DM2: Deleted.

Req. No.	Applicability	
DM3	☒ Standalone	☒ Integrated
Requirement		

The operating manual and/or the AFMS shall contain all relevant and generic information about the FLARM system that is included in the AFMS published by FT (Document Number FTD-085-AFMS) as well as the PowerFLARM Fusion User and Maintenance Manual (FTD-078).

Note: Many standalone FLARM devices do not come with an operating manual. All operating instructions, including the description of the FLARM system, must be published in the display documentation.

Req. No.	Applicability	
DM4	☒ Standalone	☒ Integrated
Requirement		

a) The installation manual shall specify the applicable data stated in section 3.1. This includes, but is not limited to, power ranges, connections, and mass.
b) The installation or maintenance manual shall include instructions for how the firmware can be updated.

Req. No.	Applicability	
DM5	☒ Standalone	☒ Integrated
Requirement		

a) The installation manual shall specify the baud rates with which the equipment can communicate with the FLARM device.
b) If the baud rate is configurable, the installation manual shall state how the baud rate can be configured, together with a recommendation that the highest baud rate supported by the FLARM device should be selected.

Note: See SC1 for required baud rates.

Req. No.	Applicability
DM6	☒ Standalone ☒ Integrated
Requirement	

a) The operating manual shall specify all visualizations, indications, and warnings specified in section 3.2.
b) The operating manual shall specify where and how the information required in section 3.2.1 is shown.

Req. No.	Applicability
DM7	☒ Standalone ☒ Integrated
Requirement	

The installation manual shall specify the ICD protocol version(s) that it supports.

Req. No.	Applicability
DM8	☒ Standalone ☒ Integrated
Requirement	

The operating manual shall specify the normal start-up sequence. The manual shall contain a troubleshooting section.

Req. No.	Applicability
DM9	☒ Standalone ☒ Integrated
Requirement	

a) The operating manual shall contain the **End User License Agreement (EULA)** and **Terms of use of FLARM** (part of the EULA) as specified in Appendix 2. The EULA shall be published in full and legibly.
b) The following text, amended as applicable, shall prefix the EULA:
This appendix/section contains the End User License Agreement issued by FLARM Technology Ltd, the licensor of FLARM devices.

Appendix 1

The following is the specification in CS 23.1322 Amendment 4, as referenced in requirement HD2.

CS 23.1322 Warning, caution and advisory lights

If warning, caution or advisory lights are installed in the cockpit, they must, unless otherwise approved by the Agency, be –

(a) Red, for warning lights (lights indicating a hazard which may require immediate corrective action);

(b) Amber, for caution lights (lights indicating the possible need for future corrective action);

(c) Green, for safe operation lights; and

(d) Any other colour, including white, for lights not described in sub-paragraphs (a) to (c), provided the colour differs sufficiently from the colours prescribed in sub-paragraphs (a) to (c) to avoid possible confusion.

(e) Effective under all probable cockpit lighting conditions.

Appendix 2

The following EULA shall be published in the operating manual as referenced in requirement DM9.

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.

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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.