SKY-HERO
by ▲ AXON

Unified Indoor Tactical
Recon Robotic System

RELEASE NOTE
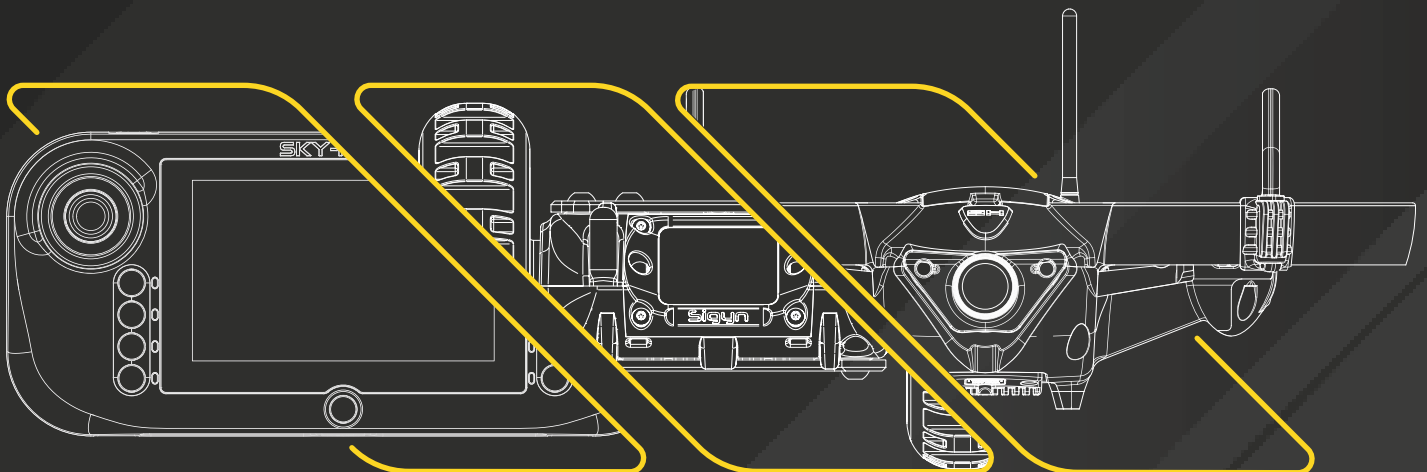
FIRMWARE GCS MkII v3.3.2

FIRMWARE Loki MkII v3.3.2

FIRMWARE Sigyn MkI v1.1.5

FIRMWARE Narfi MkI v1.0.3

FIRMWARE Wrist Screen v1.4.0

July 2024

⚠ Please carefully read this supplement to the user manual instructions before use

▲ AXON

FOREWORD

This change log document details the enhancements introduced in the new version of the firmware for the SKY-HERO by AXON Tactical Robotic System. The new features, bug fixes and other enhancements significantly augment the capabilities and options of the unified indoor tactical recon robot system. The current document offers a comprehensive overview of the revamped firmwares for each devices.

We strongly advise that, to maximize the effectiveness of your initial tactical deployment, you carefully review the following information and instructions prior to your next operation. Adhering to these guidelines will help ensure your safety and protect the integrity of related components and devices.

This release brings an array of new functionalities and options for the GCS MkII, as well as for the associated unmanned vehicles and accessory, including the Loki MkII drone, the Sigyn MkI rover, the Narfi MkI Camera, and the Tactical Wrist Screen.

SYSTEM UPGRADE INSTRUCTIONS

To take full advantage of the features introduced in this change log guide, it is imperative that all components are updated to their latest firmware version. Please verify the currently installed version by navigating to the GCS MkII menu and selecting 'Version|Remote'. If version 3.3.2 is not displayed, please proceed with the update or contact your local distributor or your AXON representative for assistance in acquiring the appropriate firmware.

To facilitate the upgrade of your system, please adhere to the following guidelines:

1. **Memory Card Specification:** Utilize a Micro-SD card with a maximum capacity of 32GB.

2. **Formatting:** Format the Micro-SD card using the FAT32 file system.

3. **Previous Firmware Removal:** If applicable, delete any existing SKY-HERO firmware provided by the AXON system to ensure the Micro-SD card is empty.

4. **Firmware Upload:** Upload the five newly released firmware versions onto the formatted Micro-SD card.

5. Once these steps are complete, proceed with updating all your devices by following their respective update procedures:

   - **Upgrade your GCS MkII Controller:**
     https://my.axon.com/s/article/Sky-Hero-videos-Robotics#GCS

   - **Upgrade your Loki MkII UAV:**
     https://my.axon.com/s/article/Sky-Hero-videos-Robotics#LokiFirmware

   - **Upgrade your Sigyn MkI UGV:**
     https://my.axon.com/s/article/Sky-Hero-videos-Robotics#SigynFirm

   - **Upgrade your Narfi MkI Camera:**
     https://my.axon.com/s/article/Sky-Hero-videos-Robotics#NarfiFirm

   - **Upgrade your Tactical Wrist Screen:**
     https://my.axon.com/s/article/Sky-Hero-videos-Robotics#ScreenFirm

Note 1 : During the upgrade of the Loki MkII drone and the Wrist Tactical Screen, it may be necessary to insert the Micro-SD card directly into the designated small slot of the USB-C SD adapter, bypassing the standard SD adapter (large card). This adjustment may be required due to compatibility issues with the provided USB-C SD adapter.

Note 2 : All custom settings and dedicated bindings will be lost after upgrading.

Note 3 : The system will now verify compatibility with configured devices and will either issue a warning or refuse to connect/bind with devices running an incompatible version.

Only GCS 3.3.2, Loki 3.3.2, Sigyn 1.1.5, Narfi 1.0.3 and Wrist Screen 1.4.0 firmware are compatible.

Future upgrades of firmware for devices and the controller (excluding the Loki MkI) will maintain compatibility.

USING THIS CHANGE LOG GUIDE

Read it fully and carefully at least once | Please read this document thoroughly and attentively. It contains critical in formation regarding the installation, usage, and safety of the system and its components.

Keep this guide for future reference | Ensure this guide is always kept with your SKY-HERO by AXON devices to keep your teamswell-informed about new functionalities and features.

Properly upgrading is essential to maintaining the stability of the system and its associated unmanned devices | Remain vigilant for updates, which will be communicated directly by AXON or through your local distributor.

DISCLAIMER

To ensure the safe and effective operation of your SKY-HERO by AXON Unified Indoor Tactical Recon Robots System, it is imperative to adhere to the supplemental operating instructions and procedures outlined in this release note.

Non-compliance with these guidelines will absolve AXON of any responsibility for direct or indirect damage, loss, or legal consequences arising from the use of the product. Additionally, warranty service will not be provided. Unauthorized modifications or the use of non-approved components are strictly prohibited and may result in operational failure.

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GCS MkII CONTROLLER
FIRMWARE CHANGE LOG v3.3.2

These pages include the change log for the SKY-HERO by AXON GCS MkII Controller release v3.3.2.

These changes enhance functionality and address specific issues reported in previous versions.

/ New Features

■ **R&D PAYLOAD COMPATIBILITY**

▪ **Flight Parameter Adjustments:** Introduced specific flight parameters for optimized performance when the R&D payload is connected.

▪ **Distance-Dependent Shot:** Added options to configure distance settings that affect the angle and timing for the second deployment.

▪ **Re-Energize Function:** Implemented a re-energize feature for improved operational efficiency.

▪ **Movable Aiming Reticle:** Enabled a movable aiming reticle to enhance targeting accuracy.

■ **DISPLAY OPTIMIZATION**

▪ **Center Screen Cross Display:** Added an option to display a cross at the center of the GCS screen during flight operations.

■ **NEW BOOTLOADER IMPLEMENTATION** (👁 'Bootloader' section - p.8)

▪ **Update Mechanism Revision:** Updates now require two files for the GCS MkII, streamlining the update process.

▪ **Reduced Firmware Update Time:** Optimized the update process to significantly reduce the time required for firmware updates.

▪ **Progress Information:** Added detailed progress indicators during the update process for better user awareness.

▪ **Branding Update:** Updated to feature the SKY-HERO by AXON logo.

▪ **Enhanced Recovery Support:** Incorporated support in the bootloader for application firmware recovery in case of unsuccessful updates.

/ Changes

- **Enhanced Menu Consistency:** Refinements made to selection menus ensure uniformity throughout the interface, enhancing user experience and navigational clarity.

- **Updated communication protocol:** Both GCS MkII and Loki MkII must be updated to version 3.3.2 for compatibility.

- **Enhanced region and channels:** Modified region selection functionality and updated the list of available video channels ('Region Selection' section - p.7).

- **Improved battery status display:** After a factory reset, if the battery has been calibrated but not yet fully charged, the status will indicate «???».

/ Fixes

- **Bug Resolution:** Resolved a bug introduced in v3.3.0 where transitioning from compliant to FCC Open mode did not accurately configure video compliance, resulting in lower than expected video power.

- **Overlay Correction:** Corrected an issue where an incorrect overlay was displayed upon long-pressing R button.

- **Charger Detection Adjustment:** Adjusted the charger detection threshold to ensure proper recognition of plugged-in chargers, addressing instances where battery calibration was hindered.

- **Settings Transmission Enhancement:** Improved the transmission of settings to devices, ensuring all configurations are properly applied.

- **VCAM Toggle Enablement:** Enabled the VCAM toggle functionality on Sigyn MkI devices even when no Vertical Camera payload is detected, allowing users to utilize the Vertical Camera payload despite hardware challenges.

/ Region Selection

The region selection process on the GCS MkII has undergone significant restructuring to ensure compliance with regulatory requirements, particularly aligning with FCC waivers in the United States of America. Users can no longer set the region by directly choosing FCC or CE options. Instead, access to specific regions now requires users to upload a region-specific code file via a Micro-SD card onto the GCS MkII.

Prior to use, the GCS MkII must successfully read this file from the Micro-SD card. This new protocol ensures regulatory adherence and secures operational compliance, effectively safeguarding regional settings until the requisite file is processed.
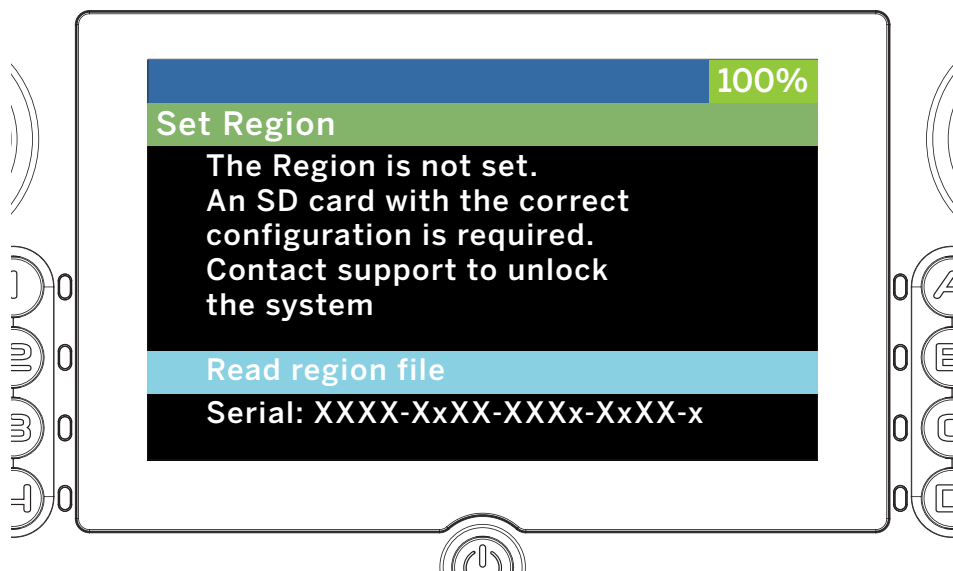
There are 4 regions that can be configured now:

- ■ FCC compliant
- ■ FCC open
- ■ CE compliant
- ■ CE open

The open variants remain identical to the previous CE and FCC configurations. Users can continue to toggle between open and compliant settings as before. Existing customers upgrading will automatically transition to the open version corresponding to their region, ensuring zero disruption to their current usage. New customers will configure their region using the file provided by AXON.

The file required is named «gcs.cfg» and will be provided by your AXON representative or local distributor.

■ IN PRACTICE

To unlock to the GCS MKII, upload the file into a Micro-SD card formatted with FAT32 (compatible with cards up to 32GB). Insert the Micro-SD card into the designated slot on the GCS MkII and proceed to select the option «Read region file».

/ Bootloader

The latest release of the GCS MkII introduces an upgraded bootloader, significantly enhancing the system's capabilities. This engineering-driven update effectively doubles the available internal flash space for the firmware. In previous releases, we were compelled to remove infrequently used or non-critical features to accommodate new functionalities.

With the expanded capacity provided by the new bootloader, we have reinstated all previously removed features and introduced additional enhancements, including support for the taser payload.

Starting from version 3.3.0, each GCS MkII update will necessitate the inclusion of two files:

- **The bootloader updater** (e.g. gcs-blu.131.bin)

  This release includes both the bootloader and an application designed to update the bootloader. Should the current bootloader already be up-to-date, the update process will automatically bypass the bootloader update step.

- **The application** (e.g. gcs_app-3.3.0.bin)

  This is the actual GCS MkII firmware. You can note that the name has changed from gcs-x.y.z.bin to gcs_app-x.y.z.bin for technical reasons.

If you have successfully installed the new bootloader, it will show the SKY-HERO by AXON logo at startup of the GCS MkII and the bootloader version in the lower left corner. It should show BL 3 for this version.

LOKI MkII UAV
FIRMWARE CHANGE LOG v3.3.2

This page includes the change log for the SKY-HERO by AXON Loki MkII UAV release v3.3.2.

These changes enhance functionality and address specific issues reported in previous versions.

/ New Features

■ **R&D PAYLOAD CONSIDERATION**

  ■ **R&D payload support :** With the release of this firmware update, the R&D payload, specifically designed for the Loki MkII, is now fully compatible and operational with the drone.

    The integration of R&D payload considerations marks a significant enhancement in our operational capabilities. This update aligns with our commitment to safety, accuracy, and efficiency.

/ Fixes

  ■ **LED Payload Consistency:** Resolved inconsistencies in LED payload behavior between Loki MkII and Sigyn MkI models.

  ■ **Floor Mode Stability:** Addressed an issue causing potential flyaway incidents in floor mode.

  ■ **Trigger Payload Reset:** Corrected the automatic reset of the trigger payload post-activation.

  ■ **Post-Turtle Flyaway:** Fixed an issue where the drone could experience erratic behavior leading to a potential flyaway after a turtle recovery.

  ■ **Motor Shutdown Stability:** Resolved an issue where the drone could exhibit erratic behavior leading to a potential flyaway following a motor shutdown.

SIGYN MkI UGV
FIRMWARE CHANGE LOG v1.1.5

This page includes the change log for the SKY-HERO by AXON Sigyn MkII UGV release v1.1.5

These changes enhance functionality and address specific issues reported in previous versions.

/ Fixes

- **VCAM Toggle Improvement:** Enabled the VCAM toggle functionality on Sigyn MkI, even in the absence of detected VCAM hardware. This enhancement ensures VCAM usability on Sigyn MkI despite hardware issues.

- **LED Payload Consistency:** Standardized the LED payload behavior across Loki2 and Sigyn to ensure uniform performance and reliability

- **Streamlined for clarity:** Addressed recurring camera orientation switching issue to enhance user experience.

NARFI MkI CAMERA
FIRMWARE CHANGE LOG v1.0.3

These pages include the change log for the SKY-HERO by AXON Narfi MkI Camera release v1.0.3

This change enhances functionality and address specific issues reported in previous versions.

/ Fixes

■ **Resolve Startup Crashes:** Resolved issue of intermittent system shutdowns occurring immediately after boot.

■ **Improved Crossfire Compatibility:** Rectified interference with binding during Crossfire updates when stealth mode was active.

TACTICAL WRIST SCREEN
FIRMWARE CHANGE LOG v1.4.0

This page includes the change log for the SKY-HERO by AXON Tactical Wrist Screen release v1.4.0

This change enhances functionality and address specific issues reported in previous versions.

/ Changes

- **Enhanced Brand Representation**: Updated boot logo to «Sky-Hero by Axon» for a more distinctive brand identity.

- **Visual Quality Improvements:** Enhanced color fidelity and minimized black-and-white distortion under poor signal conditions.

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