## 1.0 RELEASE SNAPSHOT

| FIELD | INFORMATION |
|---|---|
| **Platform(s)** | Black Widow sUAS™ / Hellcat sUAS™ / Warfighter Electronic Bridge™ (WEB) |
| **Software Version** | 2.10.5 |
| **Release Date** | August 18, 2026 |
| **Components Updated** | Aircraft Firmware 2.10.5, WEB Control (formerly Teal Settings) 2.10.5, and Teal QGroundControl (QGC) 2.10.5. |

## 2.0 RELEASE SUMMARY

Version 2.10.5 is a cumulative software release for the Black Widow small Uncrewed Aircraft System (sUAS), Hellcat sUAS, and WEB Ground Control Station (GCS). The release updates Aircraft Firmware, WEB Control (formerly Teal Settings), and Teal QGroundControl (QGC) to version 2.10.5 and incorporates enhancements and resolved issues introduced across versions 2.5.0 through 2.10.5. These updates improve system functionality, reliability, and the overall operator experience.

## 3.0 APPROVED THIRD-PARTY SOFTWARE VERSIONS

The following software versions are the currently approved and validated configurations for use with version 2.10.5 of the Black Widow system. Operators should remain on these approved versions and should not independently update Android Team Awareness Kit (ATAK-CIV) applications or third-party software through the ATAK App Store unless directed through an official Teal software release.

| Third Party Software | Version |
|---|---|
| **ATAK** | 5.7.0.11 (ACADB7B5) |
| **UAS Tool** | 13.0.4-dev (63b90090) or 13.0.4 (2FCEA3D5) |
| **Network Monitor** | 7.8.4 (24D9060) |

## 4.0 NEW FEATURES AND IMPROVEMENTS

| Feature | User Benefit |
|---|---|
| **WEB Control (formerly Teal Settings)** | |
| **Doodle Sense Improvements** | Improves the usability of anti-jamming features. |


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| **External Radio Support** | Enables aircraft operation using an external radio without the internal radio. |
| **Health System Check** | Displays real-time aircraft health and flight readiness before takeoff, helping operators identify conditions that are unsafe for flight. |
| **WEB Radio Default Off – Hellcat** | Keeps the Hellcat WEB internal radio disabled by default across power cycles, supporting intentional standoff-radio-only operation. |
| **ShakeBugs Integration** | Allows alpha and beta users to submit feedback with logs and device information, reducing troubleshooting and response time. |
| **Aircraft Firmware** | |
| **Target Tracking Improvements** | Maintains target tracking when a target location is temporarily unavailable by using bounding box size to improve tracking continuity and target reacquisition. |
| **Simplified Stealth Mode Configuration** | Combines Time of Flight (ToF) and buzzer stealth settings into a single toggle, making stealth configuration faster and less error prone. |
| **Improved Command Protocol Messaging** | Improves gimbal command and calibration communications for more reliable operation. |
| **Visual Obstacle Avoidance (VOA) Camera Calibration Improvements** | Improves VOA camera calibration and validation during manufacturing, reducing obstacle avoidance issues caused by poor calibration. |
| **SINE Module USB-C Integration** | Integrates the SINE module over USB-C with proper MAVLink routing, enabling the aircraft to use SINE navigation data. |
| **GPS-Corrected Barometric Altitude** | Uses GPS to correct the barometric altitude offset when available, improving above ground level (AGL) and mean sea level (MSL) accuracy at startup. |
| **Enhanced Return-to-Launch Dead Reckoning (RTL-DR) with SINE Navigation** | Uses SINE-filtered position data to improve RTL-DR bearing and distance calculations, increasing return accuracy in GPS-denied environments. |
| **Teal QGC** | |
| **Center Field of View (CFOV) Improvements** | Improves CFOV messaging, selection retention, and indicator behavior to provide clearer targeting feedback. |
| **RTL in GPS-Denied Environments** | Adds RTL guidance using azimuth and distance when GPS is unavailable, providing operators with a practical return path. |
| **Improved Keyhole Markup Language (KML) Processing** | Processes all objects within a KML file instead of only the first, preserving complete mission and map overlays. |


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## 5.0 RESOLVED KNOWN ISSUES

| Type | ID | Feature |
|---|---|---|
| Bug | SW-1781 | Corrected radio values displaying "N/A" in Teal Settings. |
| Bug | SW-1925 | Improved compatibility with newer gimbal firmware. |
| Bug | SW-2214 | Improved connection manager reinitialization reliability. |
| Bug | SW-2217 | Improved gimbal controller calculation stability. |
| Bug | SW-2286 | Improved Doodle Sense bandwidth configuration. |
| Bug | SW-2299 | Improved VOA enable and disable functionality. |
| Bug | SW-2301 | Prevented inadvertent propeller spin-up during pairing. |
| Bug | SW-2334 | Improved motor startup stability. |
| Bug | SW-2335 | Prevented the Upload Required notification from obscuring mission planning controls in QGC. |
| Bug | SW-2487 | Improved map loading reliability. |
| Bug | SW-2490 | Improved VOA warning messaging. |
| Bug | SW-2630 | Improved obstacle avoidance messaging for greater clarity. |
| Bug | SW-2634 | Improved Network Monitor Internet Protocol (IP) configuration handling. |
| Bug | SW-2688 | Improved RTL behavior when VOA is enabled. |
| Bug | SW-2733 | Improved Doodle Manager reliability. |
| Bug | SW-2764 | Corrected altitude drift during descent to the final landing waypoint. |
| Bug | SW-2784 | Improved simulated battery reporting in SIH mode. |
| Bug | SW-2792 | Corrected inaccurate battery state-of-charge reporting. |
| Bug | SW-2798 | Improved mission resume behavior following GCS disconnection. |
| Bug | SW-2846 | Corrected pairing configuration display in WEB Control. |
| Bug | SW-2858 | Improved Target Tracking position validation. |
| Bug | SW-2861 | Improved radio distance configuration handling. |
| Bug | SW-2914 | Restored loading of saved network configurations in WEB Control. |
| Bug | SW-2931 | Preserved calibration parameters during parameter reset. |
| Bug | SW-3072 | Improved battery reliability during flight. |
| Bug | SW-3189 | Corrected photo metadata display. |
| Bug | SW-3195 | Improved radio disable handling and overall reliability. |
| Bug | SW-3322 | Reduced "Heading estimate not stable" messages that could prevent arming. |
| Bug | SW-3337 | Reduced excessive preflight warning messages. |


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| Bug | SW-3383 | Improved mesh network association handling. |
| Bug | SW-3384 | Improved Doodle radio frequency band validation. |
| Bug | SW-3385 | Improved USB network gadget initialization reliability. |
| Bug | SW-3403 | Restored expected flight mode transition behavior while on the ground. |
| Bug | SW-3421 | Removed the Bandwidth setting from Doodle Sense. |
| Bug | SW-3430 | Corrected aircraft LED indication while connected to the WEB. |
| Bug | SW-3440 | Improved network interface teardown during gadget network activation. |
| Bug | SW-3488 | Improved standoff radio connectivity in WEB Control and Teal QGC. |
| Bug | SW-3489 | Improved UI scaling in Teal QGC. |
| Bug | SW-3491 | Restored loss-of-link failsafe behavior for RTL-DR. |
| Bug | SW-3496 | Improved RC quality stability when using the standoff radio with SINE. |
| Bug | SW-3497 | Corrected RTL-DR hold behavior during return. |
| Bug | SW-3505 | Restored aircraft LED functionality after upgrading to version 2.10.4.3326. |

## 6.0 KNOWN ISSUES

| ID | Title | Status | Details |
|---|---|---|---|
| **SW-3568** | Power Menu button is unresponsive | Open | Enable Accessibility Mode to restore functionality. |
| **SW-3567** | Network Monitor hyperlink is unresponsive | Open | Network Monitor remains accessible through an alternate path outside of WEB Control. |
| **SW-3566** | WEB Control may close unexpectedly if Radio Profiles is opened immediately after a radio disconnect | Open | Rare edge case expected to affect very few users. |
| **SW-3555** | Maps may not load when switching map sources in Teal QGroundControl | Open | Rare edge case expected to affect very few users. |
| **SW-3524** | WEB Control brightness slider does not adjust device brightness | Open | Adjust display brightness using the device Settings or Control Center. |
| **SW-3550** | Gimbal movement may appear overcompensated during maneuvers in QGroundControl | Open | Occurs only in an unsupported QGroundControl configuration when the SINE module is not in use. |


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| ID | Title | Status | Details |
|---|---|---|---|
| **SW-3549** | EO camera video may appear less smooth than IR video | Open | Behavior is consistent with previous releases and is not a regression. |
| **SW-3579** | ATAK unable to load old missions from a saved file (Including AFLR) | Open | Older mission files may not be compatible after updating. Recreate and save the mission in the updated version of ATAK. |
| **SW-3577** | QGC freezes when toggling between video modes multiple times | Open | Observed once during testing and has not been consistently reproducible. Restart QGC if the issue occurs. |
| **SW-3576** | Missing (not enabled via json) camera during video-core startup results in unusable video-core state | Open | Occurs only when a required camera is missing or not enabled in the system configuration. Standard configurations are not affected. |
| **SW-3573** | Enabling Stealth Mode while the drone is beeping from loss connection doesn't mute the beeps | Open | Enable Stealth Mode before a connection-loss alert begins to prevent the audible alert. |


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