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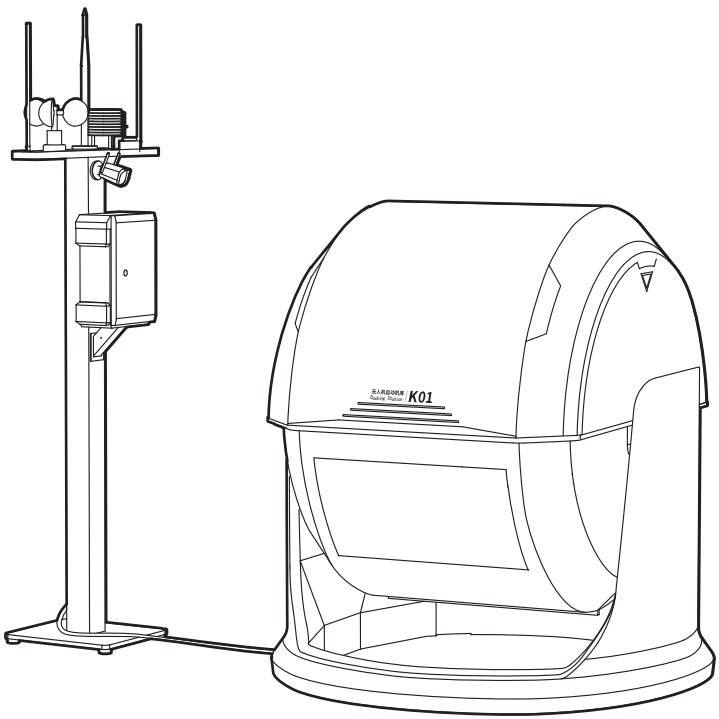
GDU



UVER Intelligent Management and Control Platform
Use Guidelines v3.0 2022.09

CONTENTS

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Product Overview

With the network as the media, GDU UVER Intelligent Management and Control Platform achieves a mutual connection between the command center, the docking station, and UAV in the operation field. The command center can remotely assign operation missions to the docking station and the UAV in the operation field anytime and anywhere. The docking station and the UAV will send back field views in real time and automatically upload results after operation.

Instructions Before Use

Configuration

The configuration is based on the following requirements:

Operating system: Windows 7 and Windows 10

Operating environment: NetFrameWork4.0 or above

Browser: Chrome browser v77.0.3865.75 (formal version) or above

Use Guidelines

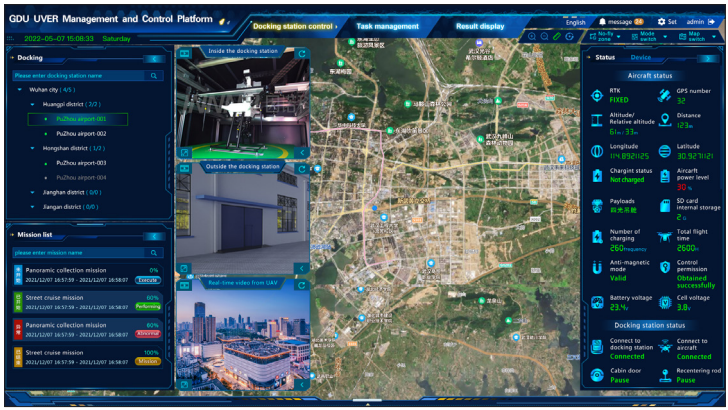
Log in

The user can visit the network link of GDU UVER Intelligent Management and Control Platform provided by GDU through a browser, and log in to the platform with the account name and password provided by the manufacturer.

System Interface

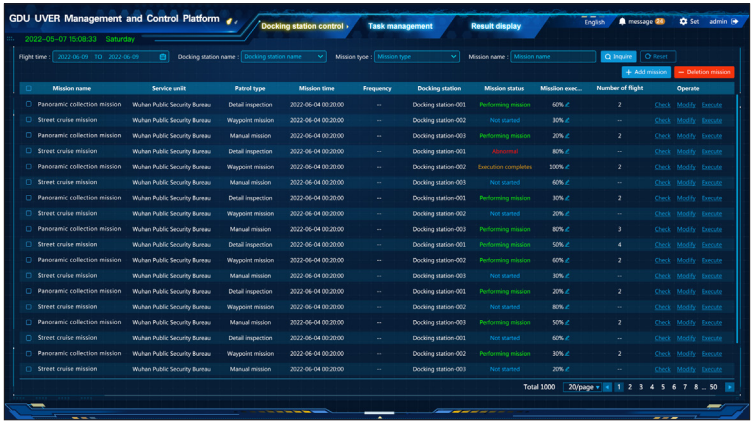
Management system of the GDU UVER Intelligent Management and Control Platform

The platform monitors videos, the weather, status of the unit, other information inside and outside of the K01 docking station, and the UAV's flight videos. It can also assign Control and Management commands at any time, such as turning on/off the K01 docking station, one-button takeoff or return of the UAV, control of the gimbal payload, etc. Uniform access and management of the K01 docking station devices and real-time positioning of device location are therefore made available. The device ledgers, operating logs, fault logs, and other data is automatically generated for connected devices.



Task management

Create docking station missions, including waypoint missions and manual missions. In addition, the K01 docking station can automatically execute and return related status and video data based on the set time.

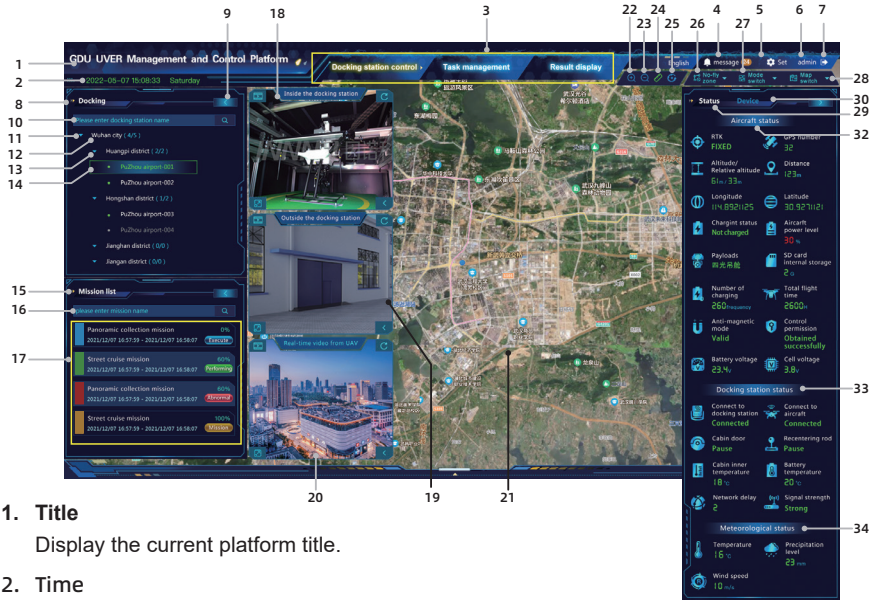


Result display

Display images and videos taken and recorded by different docking stations during each flight for uniform management.

Interface Description

Docking station management



1. **Title**
   Display the current platform title.
2. **Time**
   Display the current time, date, and other information.
3. **Navigation bar**
   Click to switch functions on the menu.
4. **Message**
   Click to check messages.
5. **Settings**
   Click to set the docking station and back-end management system.
6. **Personal information**
   Display the name of the user who is currently logged in.
7. **Exit**
   Click to exit the current log.
8. **Docking station list**
   Display the docking station's deployment location and the docking station's name.
9. **Hide the function list**
   Click to hide the current interface when the docking station list and the mission list interfaces are expanded.
10. **Search**
    Enter the docking station's name and click to search.

11. Expand/contract

Click ▼ / ▶ to expand/contract the docking station's deployment location and name.

12.Deployment location of docking station

The place where the docking station is located.

13. Number of docking stations

Number of online docking stations/total number of docking stations at the deployment location.

14. Select

(Green box): Selected the current information bar.

15. Mission list

Display the created mission information corresponding to the selected docking station.

16. Search

Enter the mission name and click to search.

17. Mission status

This mission has not started.

This mission has started.

This mission has an error.

This mission has ended.

Execute the mission/Mission performing/Mission abnormal/Mission complete:Click to check the mission's self-check status, then select "Cancel/execute" on the pop-up interface.

Panoramic collection mission :Display the mission's name.

2021/12/07 16:57:59 -- 2021/12/07 16:58:07 :Display the period from the mission's start and end times.

18. Real-time videos in the docking station

Display the real-time videos in the docking station; click once to expand the interface; click once to switch between the map interface and real-time video interface.

19. Real-time videos outside the docking station

Display the real-time videos outside the docking station; click once to expand the interface; click once to switch between the map interface to the real-time video interface.

20. Real-time video from UAV

Display the real-time video from UAV; click once to expand the interface of the real-time video from UAV; click once to switch between map interface and real-time video interface.

21. Real-time map

Place the mouse arrow on the map and scroll up/down with the mouse to adjust the map's size; left click and hold to move the map.

 :The location of the docking station on the real-time map.

 : Location of landing point.

 : Aircraft's real-time location.

22. Zoom in

:Click to zoom in on the map display.

23. Zoom out

:Click to zoom out on the map display.

24. Ranging

: Click the ranging tool to select the start point and destination points on the map, and the distance between these two points will be displayed.

25. Docking station position

:Click to automatically display the selected docking station location.

26. No-fly zone

Click to check for no-fly and restricted zones.

27. Mode switch

Click to switch the operation interface among normal mode, simple mode, and minimalist mode.

28. Map switch

Click to switch the map among vector, image, and mixed maps.

29. Status information

Display status information of the mission currently being executed.

30. Device control

Click to enter the device for control of the docking station, of UAV, and of payload; for details, refer to the “Device Control” section.

31. Alarm

: Display the abnormal status alarms of the docking station and the aircraft.

32. UAV status

Display the UAV’s status, including RTK, number of GPSs, altitude/relative altitude, distance, longitude, latitude, charging status, aircraft battery level, payload, SD card’s internal storage, percentage charged, total flight time, anti-magnetic mode, control right, etc.

33. Docking station status

Display the docking station’s status, including the connected docking station, connected aircraft, cabin cover, recentering rods, inner cabin temperature, battery temperature, network delay, signal strength, etc.

34. Meteorological statu

Display meteorological status, including temperature, precipitation level, wind speed, etc.

Device control

35. Docking station control

Control the docking station, including docking station turning on/off, turning on of the aircraft, enabling of battery charging, opening/closing of cabin cover, enabling/disabling of recentering, light band turning off, mission completion, etc.

36. UAV control

Click to enter the interface to control the UAV.

37. Aircraft control

Click to switch aircraft control modes.

38. One-button take-off

After clicking, the aircraft will execute one-button take-off.

39. Emergent hovering

After clicking, the aircraft will execute emergent hovering.

40. Accurate landing

After clicking, the aircraft will execute an accurate return.

41. Ready to land and return

After clicking, the aircraft will be ready to return and land.

42. One-button landing

After clicking, the aircraft will execute the control right operation.

43. Control permission

After clicking, the aircraft will execute the control right operation.

44. Gimbal direction control

:Click to control the gimbal camera direction.

: Drag to adjust the gimbal camera's pitch angle.

: Drag to adjust the gimbal camera's course angle.

Recenter: Click to move the gimbal camera to the middle position.

Downward: Click to move the gimbal camera angle downwards.

45. Recording mode

/ : Click to switch between photo and /video modes.

: Drag to adjust the camera's magnification.

46. Camera configuration

Click to switch and set camera mode.

47. UAV status

Display real-time UAV status.

48. Manual operation

When the aircraft's control mode is switched to manual,the user can operate the aircraft on this interface.

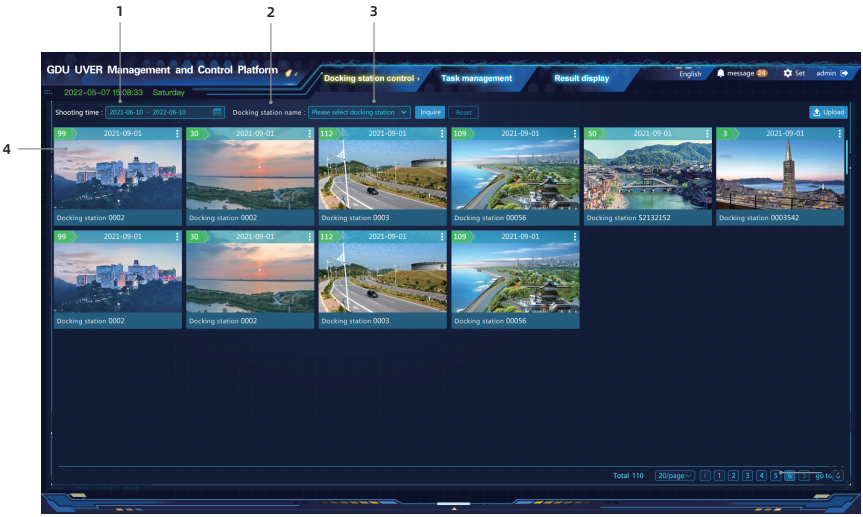
⚠ • When an error is displayed (in red) in the UAV status, the docking station status, and the meteorological status bar, please execute the mission with caution.

• Left click with the mouse to continue ranging, and double left click to stop ranging.

Task management

1. **Flight time**
   Select the start time and end time of the mission to be searched.
2. **Docking station name**
   Select the docking station of the mission to be searched.
3. **Mission type**
   Select the mission type of the mission to be searched.
4. **Mission name**
   Click the text box to enter the mission name.
5. **Inquire**
   Click to check the mission.
6. **Reset**
   Click to reset the current selected status.
7. **Add mission**
   Click to enter the mission adding interface to add a manual mission or a waypoint mission. For details, refer to the “Flight Track Mission Description” section.
8. **Deletion mission**
   On the mission list, check “☐”to delete the mission.
9. **Mission information bar**
10. **Check**
    Click to check parameters of the mapped flight track mission, which cannot be edited.
11. **Modify**
    Click to modify flight route parameters and waypoint parameters.
12. **Execute**
    Click to confirm execution on the pop-up interface and then start to execute the mission.
13. **Click to preview the total number of missions on the page. The browsing page can be adjusted.**
    ∨Click to adjust the number of cases and number of missions displayed on this page.

Result display



1. **Shooting time**
   Select the start time and end time of the result to be searched.
2. **Docking station name**
   Select the docking station of the result to be searched.
3. **Inquire**
   Click to check the mission.
4. **Result records**
   Click the displayed result to be checked on the interface.

   2021-09-01 : Result shooting time

   30 : Number of result photos or videos

   : Click to delete results/download results.

   Docking station 0002 : The name of the docking station of the result.

Flight track mission description

Add a flight track

Click “Mission Management” → “Create a Mission” to enter the Flight Track Adding page; after mapping the flight track, click “Confirm”, and save the flight track in “Mission Management“.

① **Mission type**

The waypoint mission is used for TapFly, cruising flights, and covering and scanning flights. After the waypoint mission is performed, assign it to the docking station. Then, the aircraft automatically executes the mission for simple operation. (Please note the height of buildings in the mission area and note the mission flight altitude. When planning a mission, pay attention and avoid risks).

Manual mission is used for manual control of flights. After the docking station hovers the aircraft at 5m, the aircraft is then manually controlled by the pilot. Given the difficulty of operation, beginners are advised to receive professional training before manual operation.

② **Flight track type**

Waypoint flight: After planning a waypoint, the UAV can automatically fly to all waypoints to complete the preset flight track and flight actions.

Orthodiagraph image: It is used for flight route planning when the area requires 2D mapping.

Tilt model: It is used to conduct flight route planning when the area requires 3D modeling.

③ **Create a flight track**

Upload a flight track file or a map to add a flight track.

④ **Basic information**

Click the text box to select or enter basic information.

⑤ **Docking station setting**

Select the docking station to be used.

⑥ **General settings**

Flight altitude: The flight altitude when the aircraft executes a mission in the flight route ranges from 10m to 1000m, and defaults to 60m;

Flight speed: The flight speed when the aircraft executes a mission in the flight route ranges from 3m/s to 15m/s, and defaults to 5m/s;

Pitch angle: The pitch angle when the aircraft executes a mission in the flight route ranges from -90° to 10°. When the pitch angle is -90°, the camera faces downwards; when the pitch angle is 10°, the camera faces forwards. The default angle is -90°.

Hover: After a mission is completed, the aircraft will hover at the last waypoint.

Complete mission: The action that the aircraft executes when a flight mission completes.

Lost communication: Select whether lost communication is responded during a flight mission.

⑦ **Advanced settings**

Course overlap ratio: The overlapping ratio between two adjacent photos on the master flight route, ranging from 0% to 100%, and the default ratio is 70%.

Side overlap ratio: The overlapping ratio between two adjacent photos on the master flight route, ranging from 0% to 100%, and the default ratio is 50%.

Angle of main flight route: The direction where the master flight route is generated Suppose that true north is 0° and clockwise is positive. From this perspective the setting range is from 1° to 360°.

Create a Mission

1. **Mission creation**

   a. On the Mission Management interface, click “Create a Mission” to enter the Edit mode.

   b. On the Mission Creation interface, the user may select the missions type, flight track type, docking station setting, enter basic information, etc. The user may also click “Upload File” to import a third-party flight route mission file.

2. **Plan flight routes**

   For a waypoint flight mission, the flight route is the one formed by the waypoints When a S400 aircraft is used, the max number of waypoints can be up to 1000.

   For a mapping mission, the software will automatically plan a flight route based on the parameter settings within the area formed by the boundary points added by the user.

   The user may add these points based on the methods below:

   a.Directly click the location on the map to add a point.

   b.Click “Upload file” on the Flight Track Creation interface to import a file. Then, the data in the file will be changed to points and displayed on the map.

3. **Edit waypoints**

   Click and select a waypoint or a boundary point. The selected point is orange, and the non-selected point is white. The user may drag a point to change the flight region’s shape or flight route. For a mapping mission, click a blank area on the map to insert a new point.

4. **Parameter setting**
   Set the points one by one on the New Mission List. After completion, click “OK” to save.

⚠ • The distance between two boundary points in the flight area must not be too close. Otherwise, flight route creation may fail.

Setting Advanced Networking Mode (GDU UVER Intelligent Management and Control Platform)

When the S400 is used with the docking station, the docking station can control the aircraft (one-control-one mode), or the docking station and remote controller can control the aircraft (two-control-one mode). After pairing, obtain operation permission.

1. Run the GDU UVER Intelligent Management and Control Platform.
2. Enter the Docking Station Settings page, and select “UAV Settings” → “Advanced Networking Mode” to start pairing the UAV with the docking station or remote controller.
3. Power on the unpaired aircraft, and press the aircraft’s power button 8 times continuously (ensuring that the dial button on the aircraft is in STA Status). Select the docking station and the remote controller, and click “Start Pairing” to complete pairing.
4. After pairing the docking station and the aircraft, the remote controller can be paired additionally. After that, use the remote controller to operate the aircraft. Change the networking mode to “two-to-one mode”, and select to pair the remote controller. Click “Start Pairing”. Simultaneously press and hold both the remote controller’s power button and the return button for 5 seconds. At this point, the remote controller’s status indicator lights blink alternately, indicating that the remote controller has entered the pairing status. Complete pairing.

Using the Docking Station’s Management System for Firmware Upgrades

1. Ensure that the aircraft and the docking station are connected and powered on.
2. Enter the GDU UVER Intelligent Management and Control Platform, and select the aircraft to be upgraded. Click “Settings” → “System Upgrade”, and upgrade various firmware based on the interface prompts.

Online Update

Online updates are available for the aircraft’s platform, visual system, and flight control co-processor. Click “⬆”one by one to start updating. Ensure that the Internet is connected during updates.

Offline Update

When the Internet is not available, obtain the offline firmware update package from GDU. Then, upload various firmware packages through the GDU UVER Intelligent Management and Control Platform. Click “Update” to complete the update.