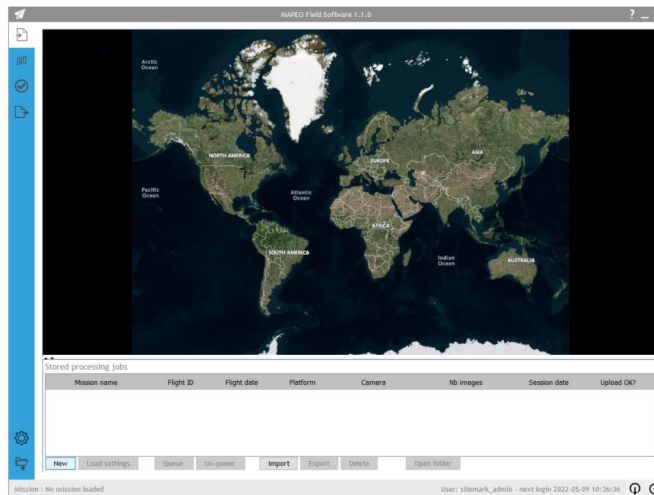




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Field Software – Quick start guide



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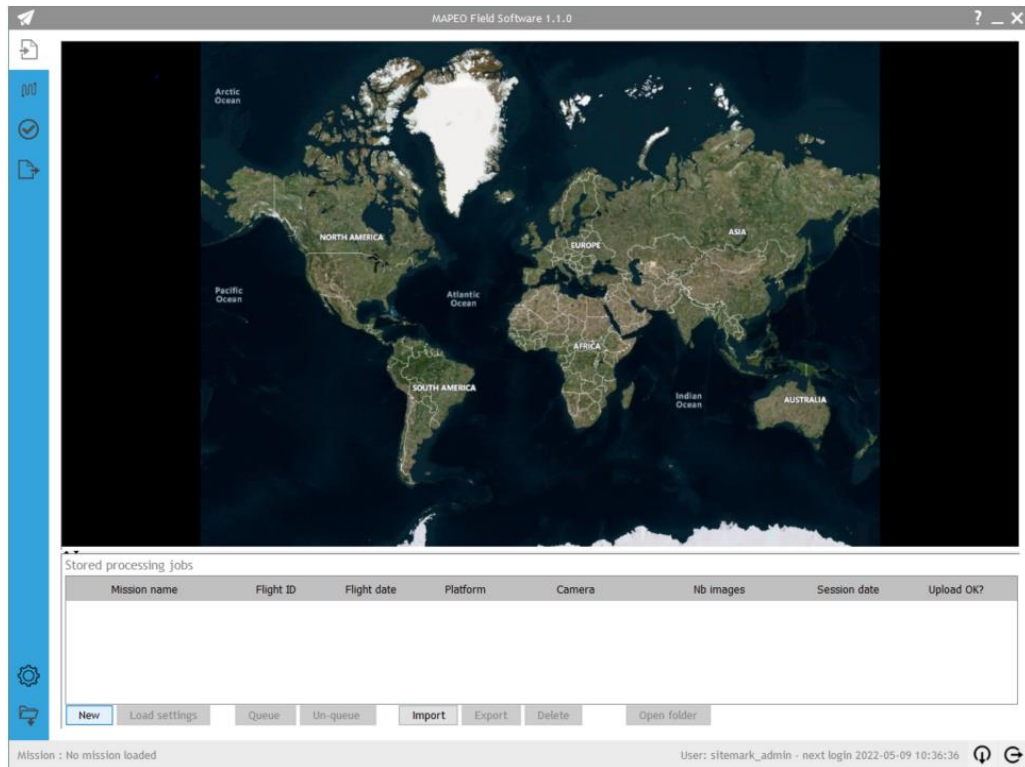
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Field Software – Quick start guide



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Field Software

1. Download & Authenticate

1. Download field software tool and manual

<https://remotesensing.vito.be/software/uav-pc/fieldsoftware/MAPEO-Field-Software.jar>

https://remotesensing.vito.be/software/uav-pc/documentation/generic/MAPEO_field_software_manual.pdf

2. Make sure JAVA 11 (or higher) is installed (Windows, IOS, Linux), if not: Install Java via <https://adoptium.net/>

3. Open MAPEO-Field-Software.jar application and authenticate yourself.

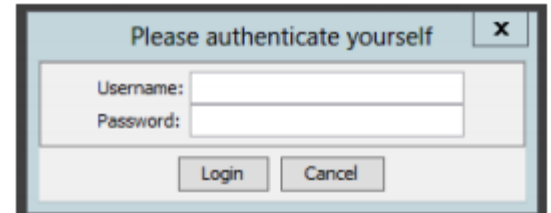
User credentials (customer-specific) can be requested from your drone coordinator.



First time login requires internet access.

After successful authentication, you are no longer required to login for a period of 60 days. The username is cached on the user account on the pc.

So, before going in the field without internet access, you should have run the jar at least once and logged in with the active user!



Please authenticate yourself

Username:

Password:

Login Cancel



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2. Start a new project and select the drone flight and camera

On the opening page, you will see a map & table with all the locations which have been flown by you.
Add a “new” mission

The interface shows a map of a field with a green overlay. Below the map is a table titled "Stored processing jobs".

Mission name	Flight ID	Flight date	Platform	Camera	Nb images	Session date	Upload OK?
WIKI-2021-Inagro-MSP	1080	2021-10-26	MicaSense RedE...	RedEdge-M	970	2022-03-18 10:...	<input checked="" type="checkbox"/>
WIKI-2021-Inagro-RGB	1077	2021-10-26	DJI FC6510	FC6510	126	2022-03-18 11:...	<input checked="" type="checkbox"/>

At the bottom, there is a "New" button circled in orange.

Select the drone mission and the camera you are using for the mission. In case the camera is missing, notify support@mapeo.be and continue with the default “Base profile”.

The "Mission Creation - Step 1/3: Select flight and profile" screen is shown. A "Search flight" input field is circled in orange. Below it is a table of missions. The "Micasense RedEdge-M(X)" camera is selected in the "Camera" dropdown menu, which is also circled in orange.

Mission ID	Date	Application	Location	Drone Mission Spec	Resolution (mm)	Hardware	Address
1080	2022-03-28	mixed	WIKI-2021-Inagro-MSP	MSP-30-1	10	Micasense RedEdge M, Micasense RedEdge MX, Micasense Alt...	Dadzeleleer...
1077	2022-03-16	mixed	WIKI-2021-Inagro-RGB	RGB-10-1	10	Phantom4 pro, Mavic 2 pro, Zenmuse X4s, Zenmuse X5s, Zen...	Dadzeleleer...

The "Next" button is circled in orange.



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3. Check the location and the ROI and GCP info

Mission Creation - Step 2/3 : Image selection

Mission data

Select image folder

Mouse mode ☒ View image ☐ Select Start ☐ Select Stop ☐ + ☐ - ☐ N

Select GPS csv file

Flight height: 0.0 m

Validate overlap

GPS? Images (0/0)

Lon[X] Lot[Y] Alt[Z] Rel Alt

Geomatic ground control points

Wiki-2021-Inagro-MSP

GCP name	X	Y	Z	Timestamp
1	509,362...	5,639,7...	22,957	2022-03-08 09:30:0...
6	509,341...	5,639,8...	24,17	2022-03-08 09:30:0...
3	509,372...	5,639,8...	23,649	2022-03-08 09:30:0...
4	509,360,3	5,639,8...	23,91	2022-03-08 09:30:0...
2	509,400...	5,639,7...	23,101	2022-03-08 09:30:0...
5	509,377...	5,639,8...	23,91	2022-03-08 09:30:0...

Previous Next Finish

Cancel

Mission : No mission loaded

User: sitemark_admin - next login 2022-05-09 10:36:36

After selecting the location of the drone mission, following information will be automatically loaded: the mission boundaries (purple box) and ground control points (red dots + information displayed)



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4. Add image data

Select folder containing the drone images

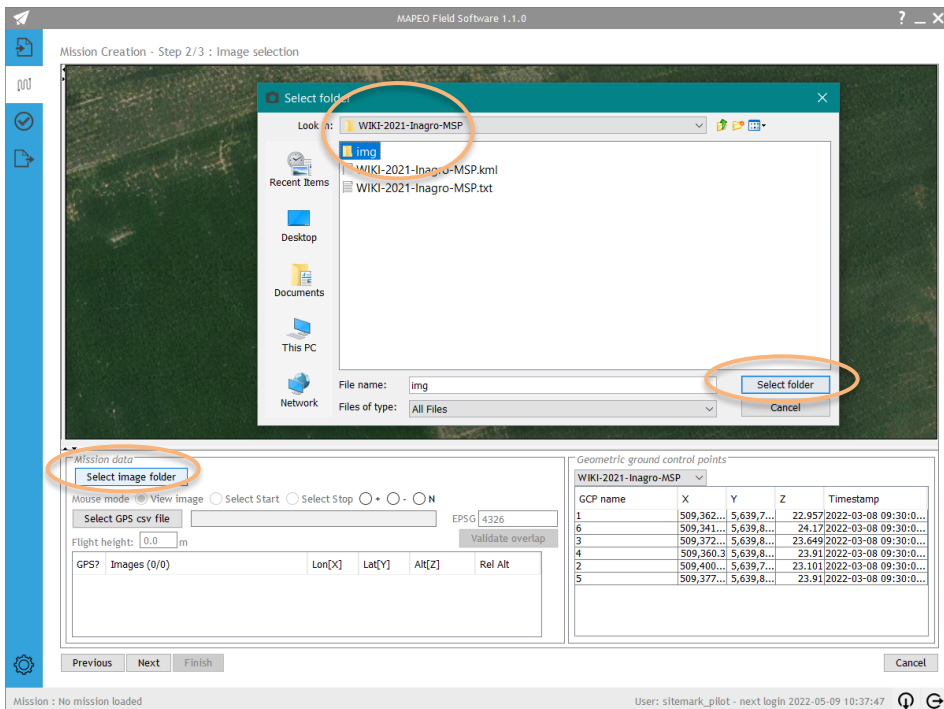
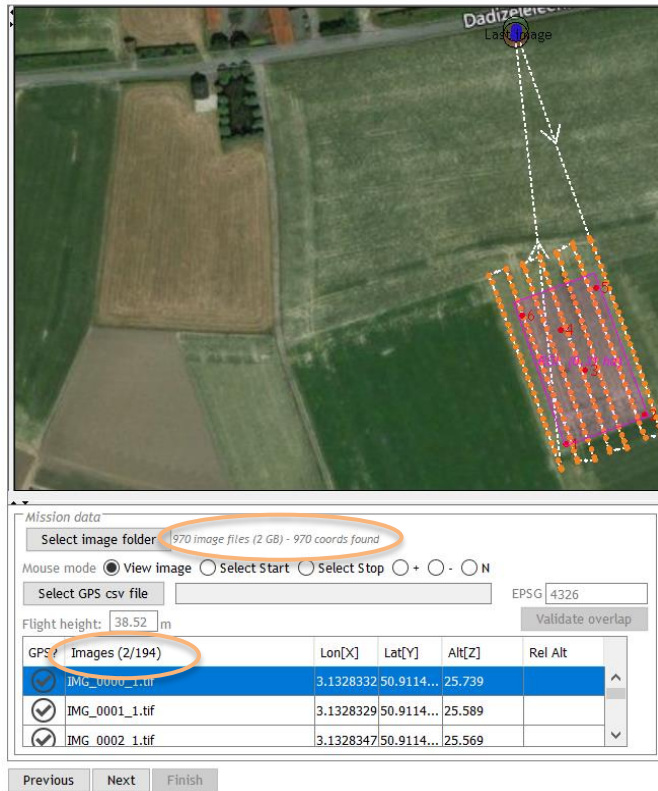


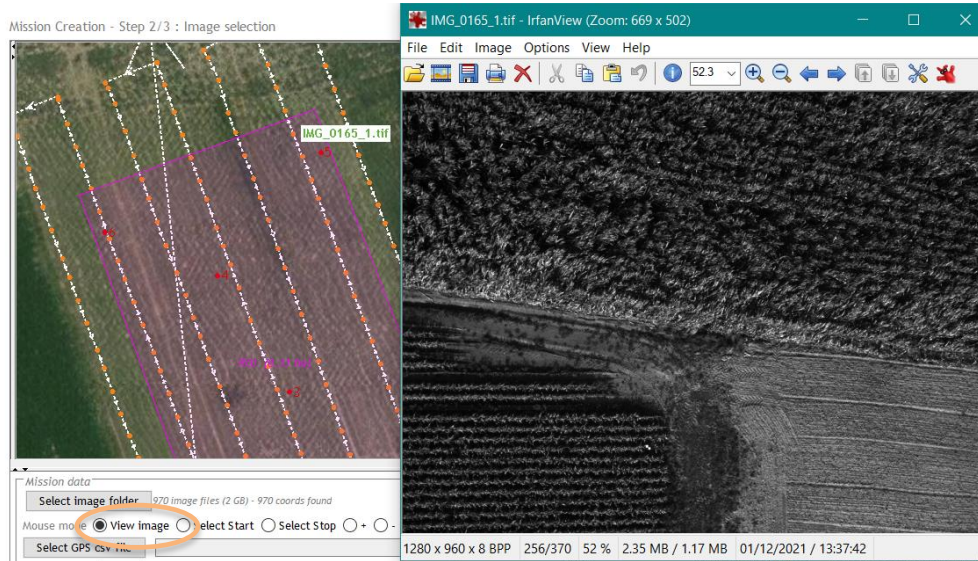
Image locations are read from metadata and displayed on the screen

Mission Creation - Step 2/3 : Image selection



5. Verify image quality

In “View image” mode select at least 3 images and verify image quality



IMPORTANT - Zooming:

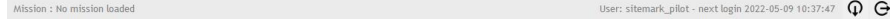
Use the mouse SCROLL to zoom in/out in steps
 Use SHIFT mouse drag to zoom in to the selected square
 Click anywhere on the screen to return to default zoom level for the mission



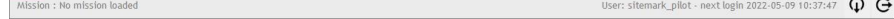
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6. Select start and stop position of the mission

Select start position (\neq first image)



Select stop position (\neq last image)





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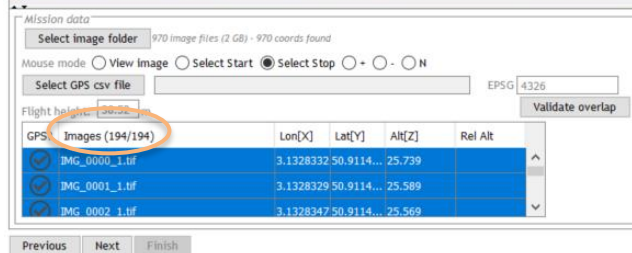
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7. Verify images selected for upload

Mission Creation - Step 2/3 : Image selection



- All images which are part of a flight line will be selected for upload. These will have a **black** color.
- Images in turns or which are taken from-to the first/last way point are **orange** and will not be uploaded
- For multispectral flights, calibration images are shown as **blue** dots and are always selected for upload
- Check whether the flight lines are drawn parallel and whether their numbering is consistent





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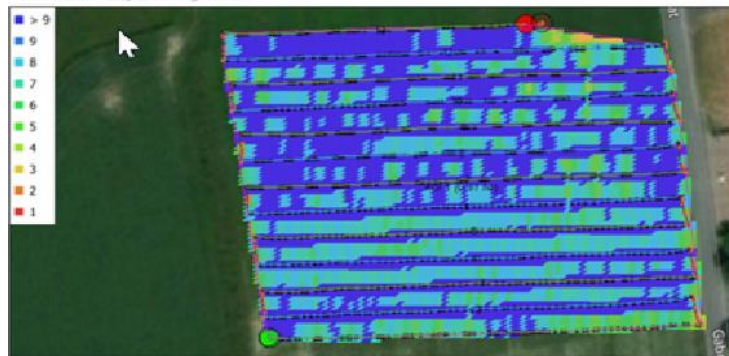
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8. Verify image overlap

Visual check on image overlap

1. Fill in correct flying height
2. Press “**Validate overlap**”
3. Number of images per location in the field should be >5 for the entire ROI

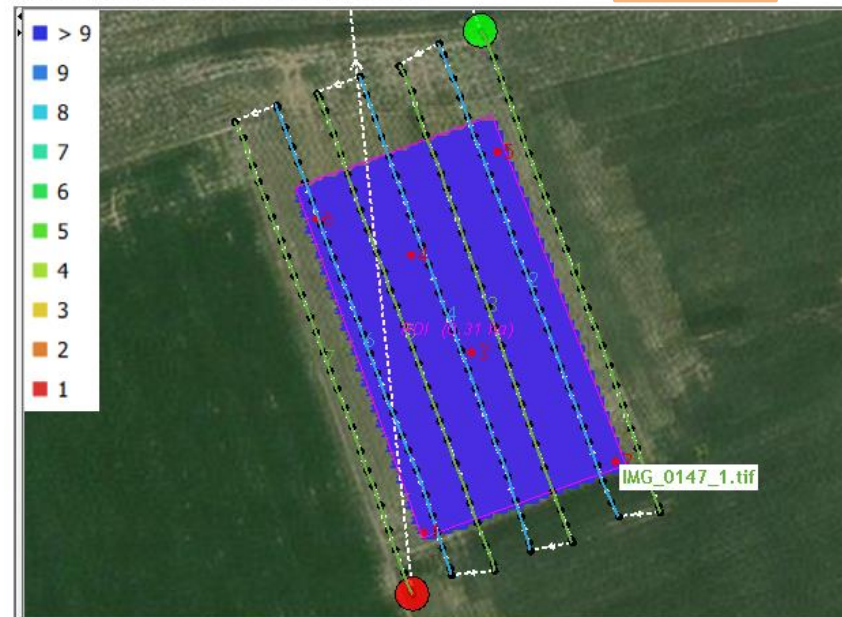
Mission Creation - Step 2/3 : Image selection



Not acceptable

Mission Creation - Step 2/3 : Image selection

Perfect



Mission data

Select image folder 970 image files (2 GB) - 970 coords found

Mouse mode ☒ View image ☐ Select Start ☐ Select Stop ☐ + ☐ - ☐ N

Select GPS csv file

EPSG 4326

Flight height: 38.52 m

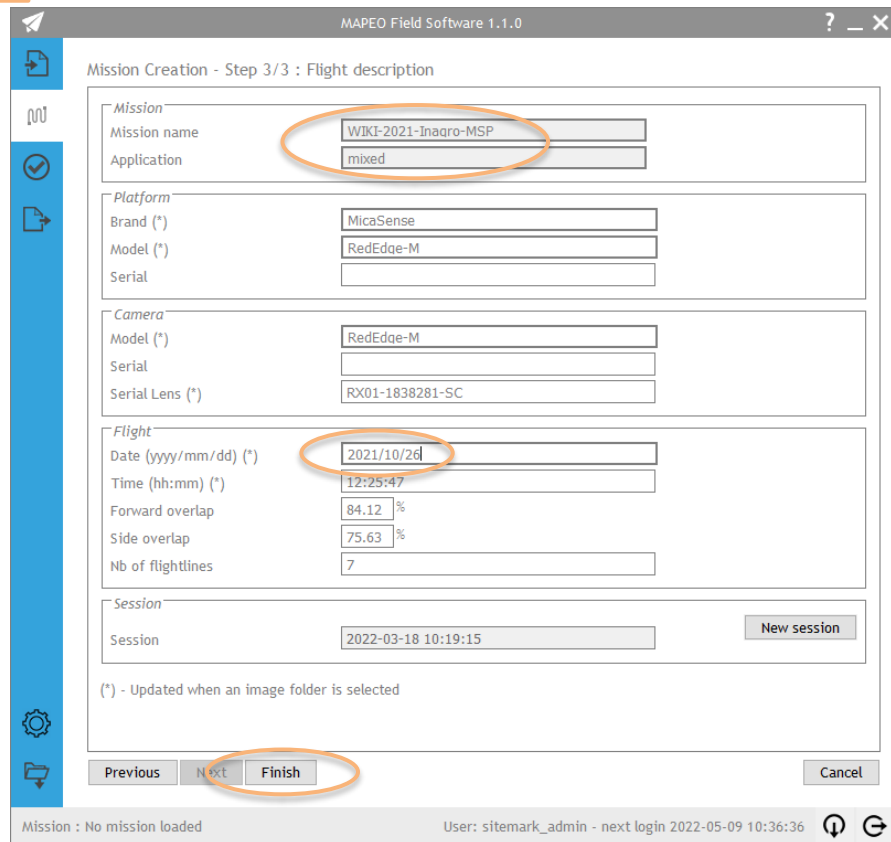
Remove overlap

Validate overlap

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9. Verify mission metadata

- Verify mission name and application type
- Verify mission date, set to the correct value if needed
- Press “Finish”



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Mission Creation - Step 3/3 : Flight description

Mission

Mission name: WIKI-2021-Inagro-MSP

Application: mixed

Platform

Brand (*): MicaSense

Model (*): RedEdge-M

Serial:

Camera

Model (*): RedEdge-M

Serial:

Serial Lens (*): RX01-1838281-SC

Flight

Date (yyyy/mm/dd) (*): 2021/10/26

Time (hh:mm) (*): 12:25:47

Forward overlap: 84.12 %

Side overlap: 75.63 %

Nb of flightlines: 7

Session

Session: 2022-03-18 10:19:15 New session

(*) - Updated when an image folder is selected

Previous Next Finish Cancel

Mission : No mission loaded

User: sitemark_admin - next login 2022-05-09 10:36:36

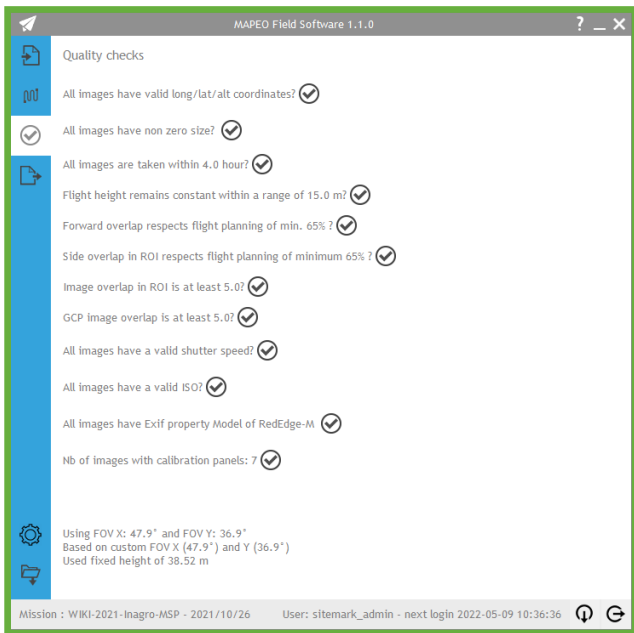
Field Software

10. Verify drone mission quality

Verify the quality of the mission data, see manual for details.
In case a quality parameter is not met, refly the mission.
In case no reflight is possible, contact the drone coordinator.

Perfect

Not accepted



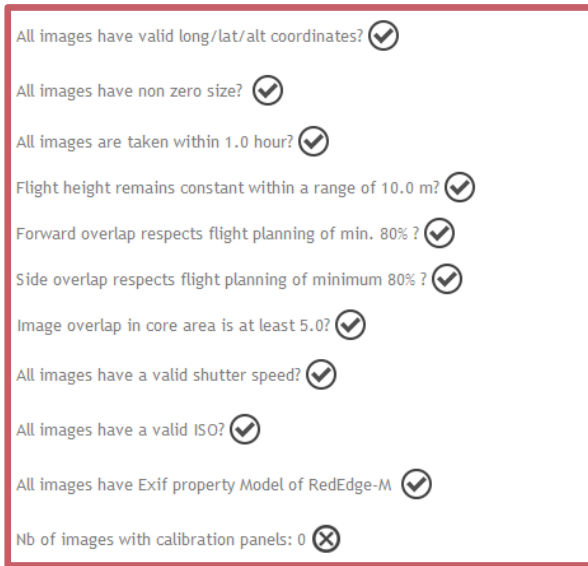
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Quality checks

- All images have valid long/lat/alt coordinates? ✓
- All images have non zero size? ✓
- All images are taken within 4.0 hour? ✓
- Flight height remains constant within a range of 15.0 m? ✓
- Forward overlap respects flight planning of min. 65%? ✓
- Side overlap in ROI respects flight planning of minimum 65%? ✓
- Image overlap in ROI is at least 5.0? ✓
- GCP Image overlap is at least 5.0? ✓
- All images have a valid shutter speed? ✓
- All images have a valid ISO? ✓
- All images have Exif property Model of RedEdge-M ✓
- Nb of images with calibration panels: 7 ✓

Using FOV X: 47.9° and FOV Y: 36.9°
Based on custom FOV X (47.9°) and Y (36.9°)
Used fixed height of 38.52 m

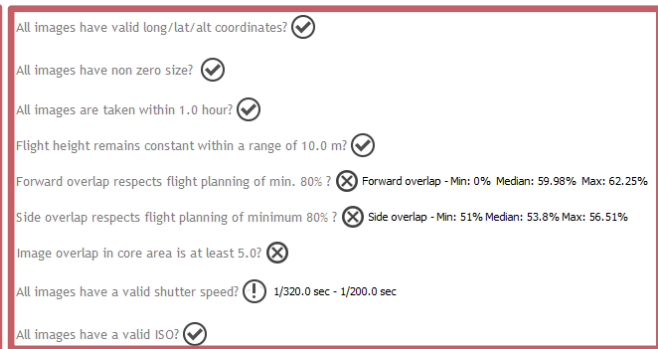
Mission : WIKI-2021-Inagro-MSP - 2021/10/26 User: sitemark_admin - next login 2022-05-09 10:36:36



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Quality checks

- All images have valid long/lat/alt coordinates? ✓
- All images have non zero size? ✓
- All images are taken within 1.0 hour? ✓
- Flight height remains constant within a range of 10.0 m? ✓
- Forward overlap respects flight planning of min. 80%? ✓
- Side overlap respects flight planning of minimum 80%? ✓
- Image overlap in core area is at least 5.0? ✓
- All images have a valid shutter speed? ✓
- All images have a valid ISO? ✓
- All images have Exif property Model of RedEdge-M ✓
- Nb of images with calibration panels: 0 ✗



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Quality checks

- All images have valid long/lat/alt coordinates? ✓
- All images have non zero size? ✓
- All images are taken within 1.0 hour? ✓
- Flight height remains constant within a range of 10.0 m? ✓
- Forward overlap respects flight planning of min. 80%? ✗ Forward overlap - Min: 0% Median: 59.98% Max: 62.25%
- Side overlap respects flight planning of minimum 80%? ✗ Side overlap - Min: 51% Median: 53.8% Max: 56.51%
- Image overlap in core area is at least 5.0? ✗
- All images have a valid shutter speed? ! 1/320.0 sec - 1/200.0 sec
- All images have a valid ISO? ✓



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11. Upload drone data

- Select the “Mission upload” tab and press the “Start” button.
- It can take some seconds before the actual upload is starting, the progress can be followed on the screen
- When upload is successful, this is indicated in the mission overview table



Leave the application open and do not shut down the pc before upload is finished!

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Flight jobs to process

Mission name	Flight ID	Flight date	Nb images	Session date	Status	Files uploaded
WIKI-2021-Inagro-MSP	1080	2021-10-26	970	2022-03-18 10:19...	Awaiting upload action	0/970
WIKI-2021-Inagro-RGB	1077	2021-10-26	126	2022-03-18 11:56...	Awaiting upload action	0/126

Start Cancel

Upload progress

0%

Upload details >>>

Stored processing jobs

Mission name	Flight ID	Flight date	Platform	Camera	Nb images	Session date	Upload OK?
WIKI-2021-Inagro-MSP	1080	2021-10-26	MicaSense RedEdg...	RedEdge-M	970	2022-03-10 12:33...	✓
WIKI-2021-Inagro-RGB	1077	2021-10-26	DJI FC6510	FC6510	126	2022-03-10 12:50...	✓

Mission : WIKI-2021-Inagro-RGB - 2021/10/26

User: sitemark_admin - next login 2022-05-09 10:36:36