IGIS Drive Monitor

Version 0.1.2

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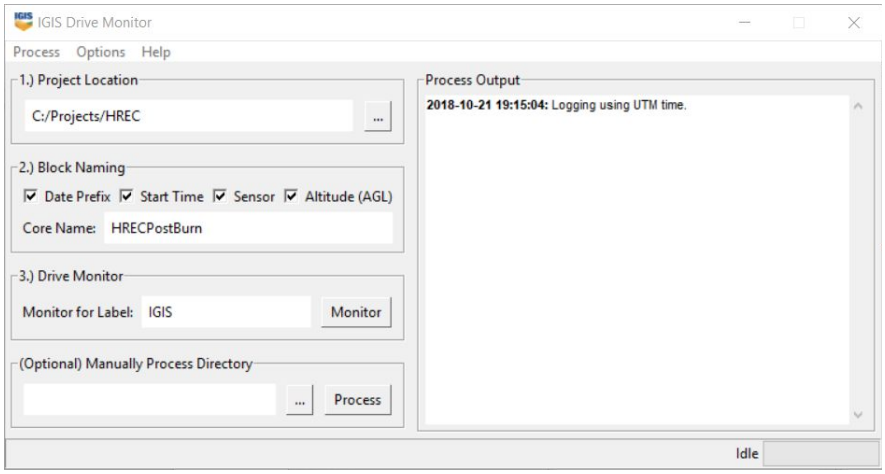
Overview

The IGIS Drive Monitor copies drone data from SD cards to a backup location. It will search for drives with a user specified label and automatically find all images, consolidate, copy and rename them according to a block naming scheme.



Project Folder Structure (Theoretical)

As examples, we use projects (HREC and LREC) that have flights conducted throughout them in different locations as well as temporal data collections. When using data and time for automated block naming, the structure is as follows:

```
Project List
|--> Project 1 Name (Ex: HREC)
|     |--> Block 1 Name (Ex: 2018-09-08_Block1024_x3)
|     |--> Block 2 Name
|--> Project 2 Name (Ex: LREC)
...
```

Block naming can be done manually as well, using the options in the software.

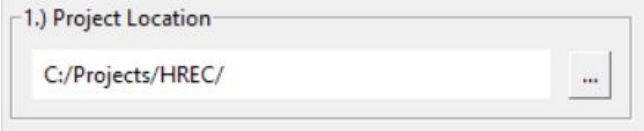
Getting Started

After starting the program, follow the steps to get up and running:

1.) Project Location
2.) Block Naming
3.) Drive Monitor

Project Location

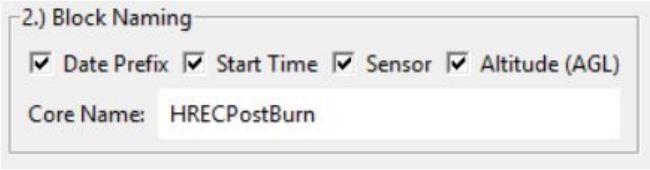
Choose the directory that contains the drone project (Ex: HREC). It's recommended to use directory selector to correctly format the input location.



Block Naming

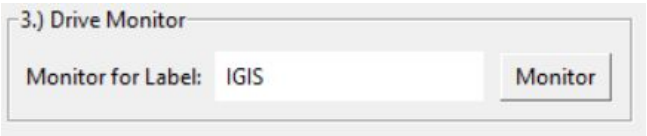
Use the options for automatic naming; using date and start time will uniquify each block based on the date and time of the flight. Additionally, the sensor name can be prefixed to each block to “human” recognition (this data management really benefits the person who is initially organizing the data).

The core name allows for further “human” recognition, naming them so they can be quickly identified within the project. It is recommended that this be something that represents a sub-project (Ex: “HRECPostBurn” - This could be a data collections done after a fire at the HREC project site).



Drive Monitor

When executed, the monitor will start looking for SD cards (and drive on windows) that get plugged in that contain the specified label. Make sure the cards that contain the drone data have the correct label to get recognized by the software.



As an example, the image above indicates a label “IGIS” that will drives will be monitored for.

Executing the Monitor

Once all the steps have been set up, clicking “Monitor” will execute the monitoring process to start looking for drives with the specified label. It is intended to continue running during data collections. After a data collection, remove the SD card from the drone and plug into the computer (make sure the SD card has the correct label, this can even be done after a flight) - the software will recognize the card and start copying the data into a new block (note that each time you insert an SD card with the correct label, it gets copied as a new block).

Images will be renamed to ensure they are unique. This is done using the blockname, image directory structure and the original image name ([blockname]_[directory structure]_[original image name]). For example, if an image is stored at:

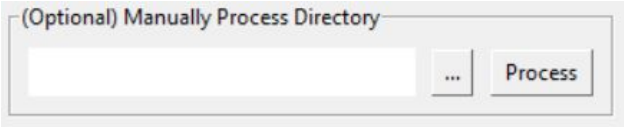
D:\DCMI\000\img_0001_1.jpg

and the block naming was set to 2018-09-08_HRECPostBurn1045_redEdge, the resulting filename after being copied to the new project directory will be:

2018-09-08_HRECPostBurn1045_redEdge_DCMI_000_0001_1.jpg

Manually Process a Directory

Using this option, a directory can be processed in the same way an SD card is processed during the monitoring process. This is useful if there are existing data that was copied straight from an SD card into a directory.



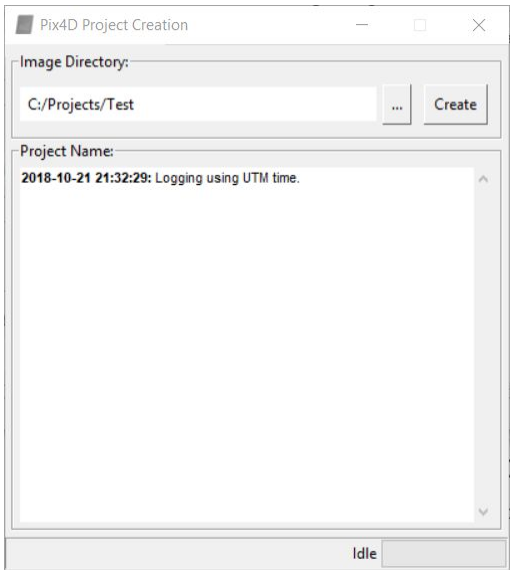
This uses the options set in steps 1-2 to copy into a new location. Select the directory containing the images and select “Process”.

Tools

Creating a Pix4D Project

The creation of a Pix4D project can be automated for a block using the “Create Pix4D Project” option. This is useful for investigating the image locations for data verification.

This option is found under the File menu by going to Tools > Create Pix4D Project.



Use the directory selector (the "..." button) and choose the directory containing images. Click "Create" to create and open the Pix4D project.

Create Image List with Processing Flag

A directory with images can be verified using an image list which contains a list of the images and their corresponding MD5 checksums; the later ensures files are original and intact (useful if copying somewhere remotely and verifying they have finished syncing). In addition, this option adds a processing flag as an extension on the image list (imagelist.process0) which indicates the images are prepared for initial processing.

This option is found under the File menu by going to Tools > Create Image List/Processing Flag.

Note: The imagelist with processing flag can be automatically created during the copying of images using the option explained in the Options section below.

Options

These options pertain to the copy process, during drive monitoring or while manually processing a directory.

Keep Copied Files

This option prevents the software from removing the original images from an SD card or manually processed directory after they are copied. This would allow the user to manually control how the data is removed from the SD Card (**Warning**: when using this option, inserting

the SD card again while the monitoring is executed will result in the images being copied again over the previous copied files).

Create Image List with Processing Flag

Automatically creates an imagelist with processing flag during a copy (read more about this in the Create Image List with Processing Flag Tool).

Settings on Exit

All settings used during a current session are saved to a settings.json upon exit and will be used to restore a new session with the software is used again.