AeMission - Software

- App developed by AEROLASER
- AeMission is a FMS, Flight Management System.
- It allows the control of all systems at all times, including all sensors.
- All sensors data are visualized in real time.
- A well organized and effective structure for data storage.
- AePC uses removable SSD disks.

"Full control of all system sensors during data acquisition"

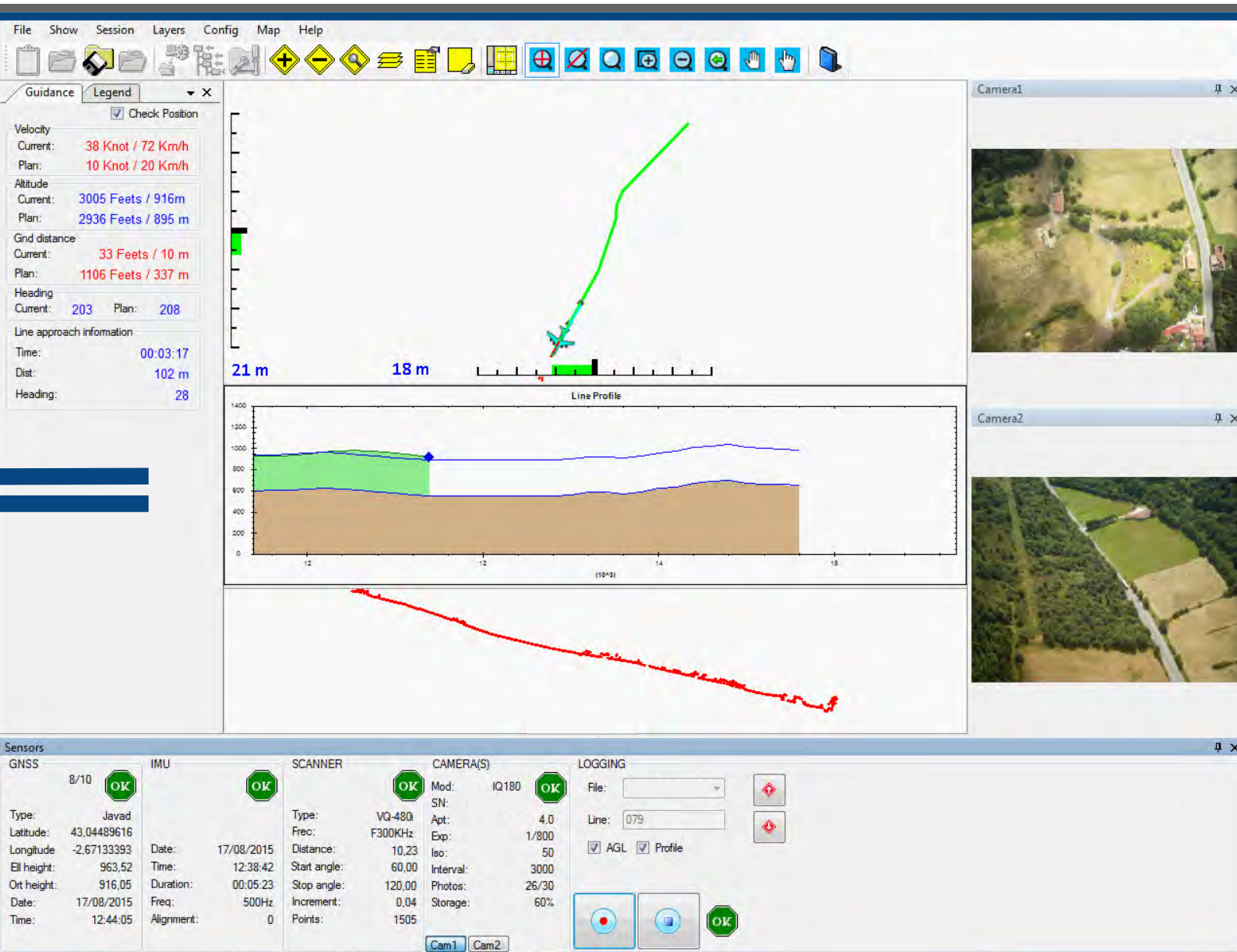
AEROLASER
ADVANCED LIDAR TECHNOLOGIES

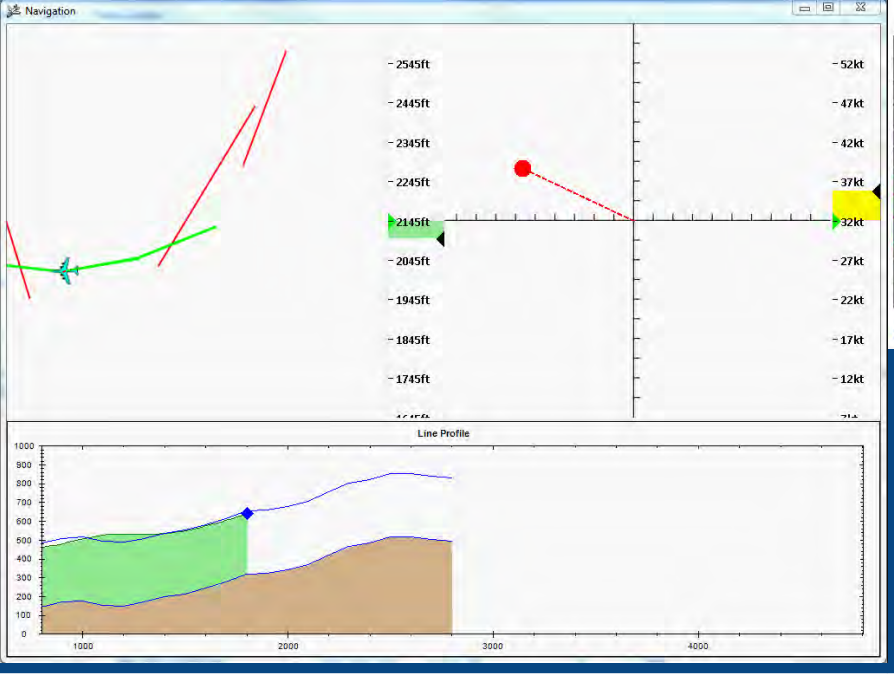
AeMission

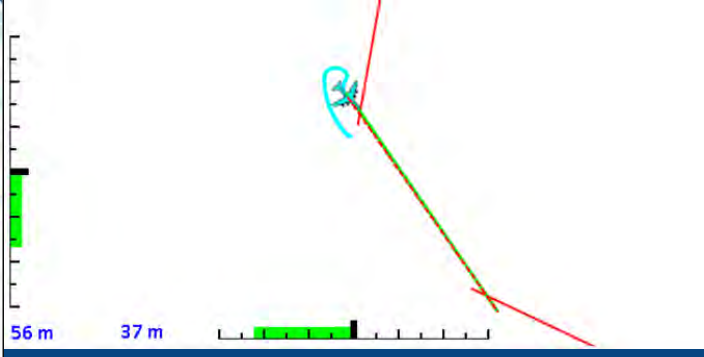
AEROLASER software

AeMission is an app developed by AEROLASER SYSTEM. It is a Flight Management System, and it helps the flight engineer to have full control at all times of the whole system throughout the data acquisition. AeMission allows you to configure, parameterize, control and collect the data of each of the sensors in the system. Using AeMission no third-part software is required.

After loading the flight plan of the area to study, it presents all the information helping the pilot with the navigation, as well as all the parameters needed for the flight engineer.



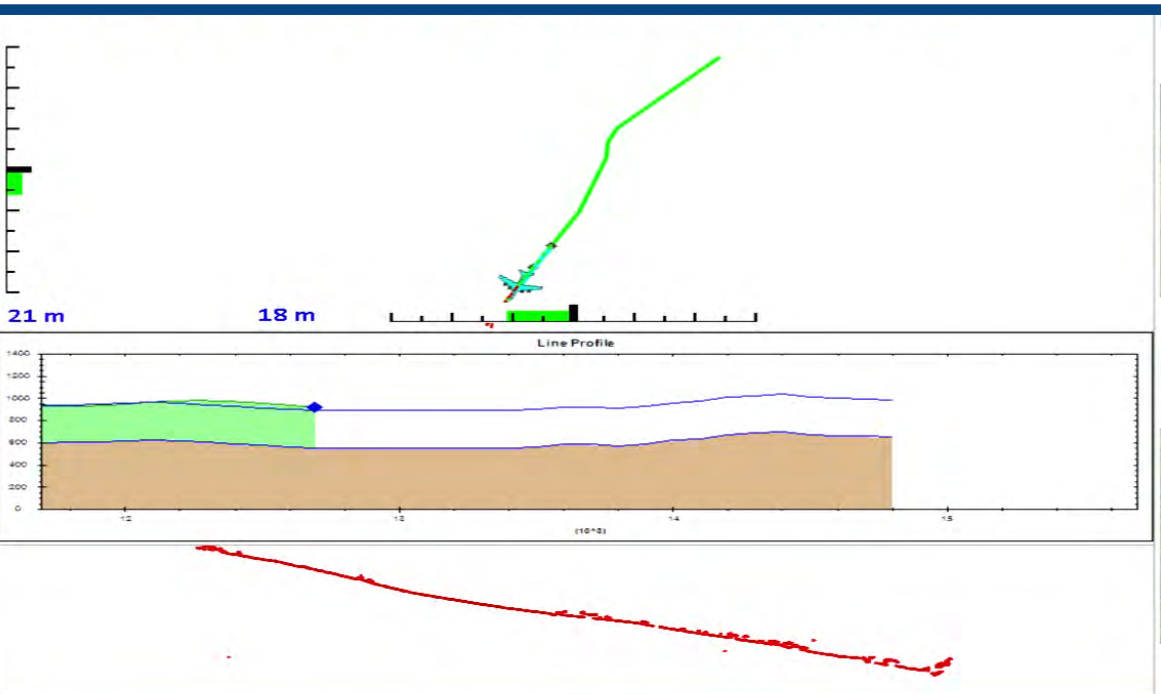




Pilot screen

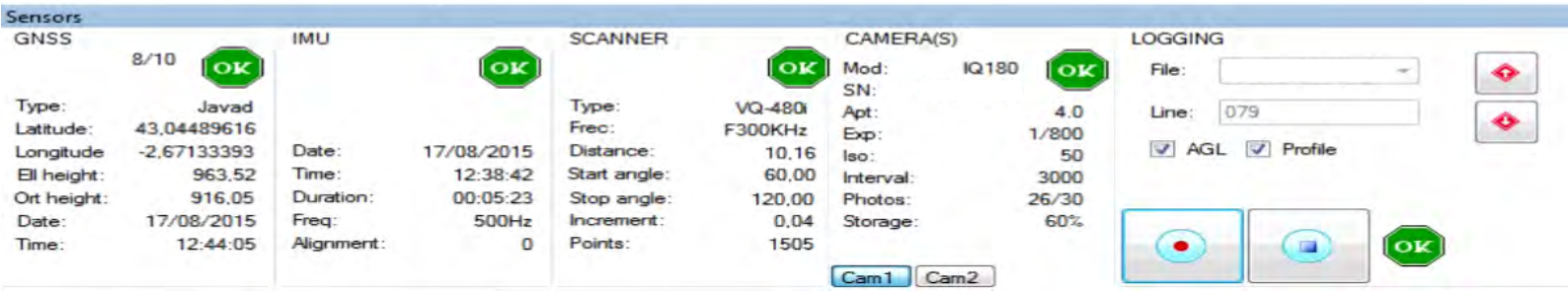
On the left screen, the pilot screen is shown during the flight. It shows the height and the direction that the aircraft must take during the data acquisition flight.

In real time, the data of all the sensors are displayed, also showing graphically the laser profile and the frames of the different cameras in use. All of the data is geo-referenced in the exact place of the shot; thanks to the inertial unit AeCU.



In the above image, the profile of the laser scanner is shown in red, to the right the images of the cameras at the same specific time and in the same position as the laser (camera 1: vertical RGB and camera 2: oblique RGB). And at the top we see the route to follow and the profile of height that the flight must take with respect to the surface of the terrain.

In the image below we see the different parameters of each of the sensors that are being used in the referenced flight.



Configuration of sensors in AeMission

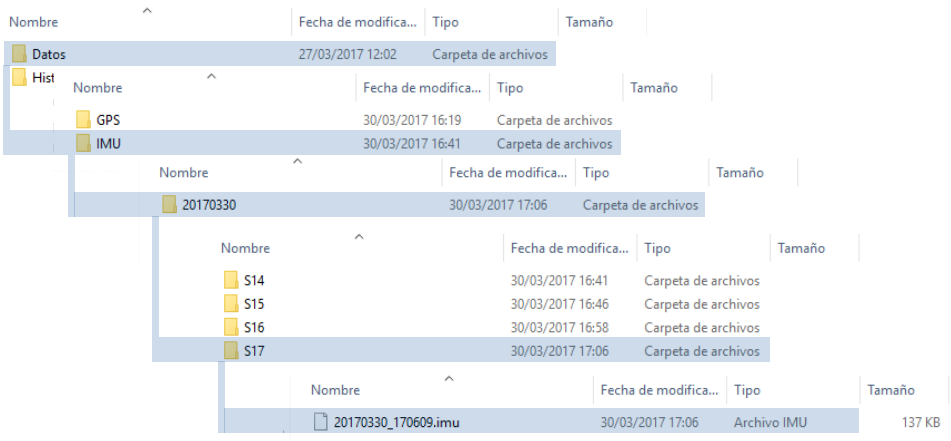
D) AECU configuration	
E) SCANNER configuration	
Enabled	True
Type	Riegl_VQ480i
Address	192.168.0.128
Meas Prog	F200KHz
Start angle	60
Stop angle	120
Angle increment	0.1
Atmos Altitude	0
Atmos Pressure	1000
Atmos humidity	60
Atmos Temperature	20
GPS Synchronization mode	NONE
GPS Baud Rate	B9600
GPS NMEA	GPZDA
GPS Flag	POSITIVE
GPS Sequence	PPS_FIRST
Point Reduction Factor	1
Line Reductor Factor	50
Profile Distance Filter	10
Enable split files by number of lines	False
Timeout	2000
F) Camera1 configuration	
G) Camera2 configuration	
H) Camera3 configuration	

On the left picture, the configuration screen is shown where you can modify the parameters of the Riegl VQ-480i laser scanner that was in use at the time of capture.

A) General configuration	
B) Logging quality	
C) GNSS configuration	
D) AECU configuration	
E) SCANNER configuration	
F) Camera1 configuration	
Enabled	True
Camera Serial Number	XXXXXXXXXX
Type	ePhaseOneCamera
Photo interval	3000
Timeout	10000
Photo size	70
Internal storage	65536
Exposure Mode	Manual
Aperture	5.6
Exposure	1/1600
Iso	50
Storage Mode	Auto
FMC enabled	False
FMC mode	kFmcMode_Off
FMC GSD	5
Shutter Release Type	eHardware
Enable GPS Communication	True
G) Camera2 configuration	
H) Camera3 configuration	
J) Geoswath configuration	

On the right image, the configuration is shown where you can modify the parameters of one of the PhaseOne cameras that was in use at the time of capture.

Storage estructure



Another important factor of this application is the cleaning and order that follows when the data is registered in the AePC's discs. All data collected are stored in a single project folder, and are sorted by session, sensor type, flight axis, date and time. This way, everything is saved with a clear and clean structure, which streamlines later tasks of processes or file search. The disks used by the AePC are interchangeable solid state disks, so the disk can be simply extracted from the computer and transported to the office.

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