

FlightDECK

Data access for state-of-the-art remote sensing



Seamless Data Access

FlightDECK is an online portal developed by Fulcrum3D to provide secure access to data and other information about your sites, deployment locations and Fulcrum3D monitoring systems.

It is secure, easy to use and accessible from your computer, tablet or mobile device.

FlightDECK's integrated system architecture provides secure access to all Fulcrum3D systems and third-party products from a simple web page.

How does it work?

Data from Fulcrum3D products is automatically retrieved by Fulcrum3D's call-home servers via a secure connection. After cleaning and processing, this data is pushed through to Fulcrum3D's data server for access via FlightDECK. All raw data from Fulcrum3D devices is stored for reanalysis at a later date if required.

Data from third party dataloggers can also be read directly into FlightDECK.

FlightDECK Clients are established by Fulcrum3D, generally in response to an equipment purchase. As part of the setup process, Fulcrum3D can set up and allocate any number of users.

Once a client user logs in (via a secure password), they can view and edit site and equipment information, and download data, depending on the access rights allocated by the Client Administrator.

Users who are allocated rights by multiple clients only need one login to access the data and information held by each of those clients. This is a particularly useful feature for consultants responsible for managing measurement campaigns for many clients.

Security

The FlightDECK web site has been verified as a secure online service in accordance with W3C standards to keep your data secure.

All data is securely stored behind a private and encrypted firewall. This is designed to separate web site access and data storage and thereby maintain data security and integrity.

Regular backups are also carried out to maximise data retention and prevent downtime.

What Information is Available

FlightDECK has been designed to provide as much information as possible about your Fulcrum3D systems:

- ▶ users can set up and view project sites, and locations within those sites, to make managing system deployment easy
- ▶ deployment locations are visible in map (shown below) and list formats for easy fleet summary information and management
- ▶ monitoring equipment can be deployed and redeployed at these locations and the full deployment history is retained
- ▶ monitoring equipment and other infrastructure (e.g. houses, wind turbines) can be located on a map for reference even if no measurements are underway at those locations
- ▶ equipment can be owned by one party and leased or rented to another – the leasing party is given access to the measurement data, but the owning party sees essential status data required for maintenance and health checks
- ▶ transfer of ownership of systems or datasets can be accommodated by contacting Fulcrum3D
- ▶ data can be downloaded for all Fulcrum3D and third-party equipment, and data access can be assigned to external parties like independent engineers



Click on map icons to zoom into Project/Sites and Site Locations

Project/Site 

Status

Fulcrum3D devices currently return a number of data file formats depending on the device:

- ▶ standard meteorological data (temperature, humidity, pressure, wind speed, solar radiation etc depending on sensors installed)
- ▶ Sodar wind profile data
- ▶ CloudCAM data
- ▶ Solar monitoring data
- ▶ location data (GPS reading from device including latitude, longitude, elevation, orientation, roll and tilt)
- ▶ status data (operating status, battery voltages, communications signal strength etc)
- ▶ met mast data
- ▶ online plotting for easy data access
- ▶ a web-based interface for receiving some data with less than a 10 second delay. Currently being used for solar forecasting by some clients. Applies to any data from a Fulcrum3D unit except Sodar wind data

Data is generally available in both raw and filtered formats based on automated filtering protocols established by Fulcrum3D.

Third party devices return the data in the input form available from the device. All data is available as CSV downloads.

Clients and users can view and edit sites, as well as download all available data from each site and/or device. Users can also review unit specific status information such as deployment history, ownership and lease history, communications details, additional sensor details etc. as shown below.

Adding, relocating or editing equipment profiles, as well as adding new Clients and Client Users is currently undertaken by Fulcrum3D on behalf of clients.

Location						
Location	From	Until	Latitude	Longitude	Elevation	Orientation North
Lelystad / LLY1 mast location	21 Mar 2014	12 Aug 2014	52.527910	5.586840		172.3 True North
- F3D Stock / Depot: Sealforth	20 Feb 2014	21 Mar 2014				
- CLIENT STORAGE / In transit	19 Feb 2014	20 Feb 2014				
Shoatoun W/F / SMO2 T25/T26 Mast & Sodar Location	10 Dec 2013	19 Feb 2014	-33.915724	138.129988		
- CLIENT STORAGE / On Site	29 Jun 2013	10 Dec 2013				
- CLIENT STORAGE / In transit	25 Jun 2013	29 Jun 2013				
- F3D Stock / Depot: Sealforth	28 Feb 2013	25 Jun 2013				
- hide location history						

Ownership			
Owner	From	Until	Notes
Flightdeck	01 Jan 2000	Present	
- show ownership history			

Communications				
Make / Model	Serial	Installed	Uninstalled	
Fulcrum3D / FS1 Electronics v1.0	FS1E_0001	01 Jan 2000	Present	

Instruments				
Make / Model	Serial	Installed	Uninstalled	
Fulcrum3D / Sodar FS1	M0001	01 Jan 2000	Present	

Components				
Make / Model	Serial	Installed	Uninstalled	

Continual Improvement

Fulcrum3D is continually improving and expanding the functionality available in *FlightDECK*. The following additional features are being developed:

- ▶ automated reporting to allow users to extract high level data summaries
- ▶ data plotting features such as time series, wind roses, scatter plots etc. to industry standards
- ▶ enhanced user ability to manage their Client account, User accounts and access rights, sites and site locations and equipment details
- ▶ inclusion of additional third party dataloggers
- ▶ status flags, maintenance watchdog and alarms
- ▶ device geo-fencing and alarms to identify unauthorised equipment movements and other errors such as data loss

We welcome your ideas and priorities as we develop new features.

FlightDECK Onboard

Fulcrum3D has also used the *FlightDECK* template in creating *FlightDECK* On-board which allows direct connection with a Fulcrum3D Sodar when in the field. *FlightDECK* On-board can be invaluable on site to confirm operation of the unit before leaving site. It is useful for:

- ▶ confirming that the Sodar is recording wind speed data before leaving site
- ▶ real time temperature and other meteorological data readings
- ▶ real time GPS location data
- ▶ communications (GSM, 3G, GPRS etc.) signal strength indicator including Fulcrum3D server connection check

Find Out More

If you are interested in finding out more, or wish to set up a Client or User account, please contact Fulcrum3D:

FlightDECK@fulcrum3d.com

Who is Fulcrum3D?

- ▶ an innovative renewable energy technology company located in Sydney
- ▶ supplying robust remote monitoring and data management systems since 2011

Fulcrum3D's technology platform relies on an integrated monitoring, communication & data delivery architecture designed for maintenance-free operation in remote environments.

Our unique range of high-tech remote sensing systems is specifically designed to support the renewable energy sector:

- ▶ Wind monitoring using our compact beam Sodar
- ▶ Solar forecasting and cloud tracking using CloudCAM
- ▶ Solar monitoring
- ▶ Integrated noise and weather monitoring

All data is measured in the field, available to local SCADA, and downloaded to our secure servers for web download via our FlightDECK data management system.

We look forward to providing you with great Australian technology supported by first class service and support.

