

Appendix 12-8 - Lidar Unit Installation Report



Project: Broemountain - LIDAR Installation Report - Co. Waterford

Client: Coillte



Galetech Energy Developments, Clondargan, Stradone, Co. Cavan, Ireland

Tel: +353-49-555 5050

Document Control

Responsible for	Function	Name	Date	Signature
Content	Site Technician	Gary Fannin	05/05/2021	G.F
Checked	Technical Services Manager	Cormac McPhillips	05/05/2021	C.M.P
Approved	Project Manager	Kieran Elliott	05/05/2021	K.E
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Record of Changes

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0					
1					
2					
3					

Distribution List

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1	Project File		
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LIDAR Unit Details	
Customer	Coillte
Deployed by	Fergal McConnell, Gary Fannin & Paddy Tuite - Galetech Energy Developments Ltd
LIDAR installation date	26/04/2021 - 27/04/2021
LIDAR ID number	ZX755
Unit Orientation Checks	
Bearing (Compass)	Aligned to ITM Grid North using a submeter GPS
Met station marker and correctly aligned	✓
Unit Level (Spirit Level)	✓
External System Checks	
Mains or off grid power	Off grid
Power Solution	Solar/Methanol Hybrid
Battery bank size	6 x 100AH 12V
Battery bank voltage	24V
Generator hours	N/A
Fuel Supply/ Fuel Level	4 x M28 Fuel Cartridge
PV Cleaned	✓
Generator voltage >11.2V	N/A
External Unit Checks	
Observation	None
No damage or trapped cables	✓
Clear Optics	✓
System check lights, Modem light flashing green after 2 minutes	✓
Screen wash/Protection	Yes /-20°C protection
Amount of fluid in washer bottle	Full
ZephIR configured to wipe when rain sensor is triggered	✓
Force wash wipe tested	✓

LIDAR Check	
Version of Waltz used to test	Version 4.7
Status lights green	✓
Check lens height	1.0 m
Met Station Checks	
Tilt Value (degrees)	0 Degrees
Met station wind direction changing	✓
Met station wind speed changing	✓
Met Pressure (Pa)	990.20
Ambient temperature (C)	11 Degrees
GPS Coordinates	614102, 603679 ITM
Elevation at ground level at the lidar position	201.4m
Communication Checks	
Iridium check	N/A
Cellubi IP address	10.130.128.3
Modem/aerial (Connection Test)	N/A - Internal Modem & Antenna
Internet available flag	✓
Email on power on	Not sent
System Checks	
ZephIR Firmware version	2.2034 ZX300
ZephIR Serial Number	ZX755
Clear wind data using Waltz	NA
Input Voltage (v)	12.17
Super Capacitor Voltage (v)	N/A
Check Pod Humidity	0%
Pod temperatures	Upper. 38 degrees
	Lower. 40 degrees

Final Checks					
Actual Measurement Heights (Including Height of Lidar Window)	185	170	150	125	110
	100	80	65	50	30
Time	ZephIR Time 29/04/2021 11:48:57 GMT+0				
	Local Time 29/04/2021 12:48:57 GMT+1				
Log off WIFI connection before leaving	✓				
Other Notes					
The GSM data coverage at the LIDAR location is very weak. An external modem with a high gain directional antenna may be required to achieve stable remote communication.					

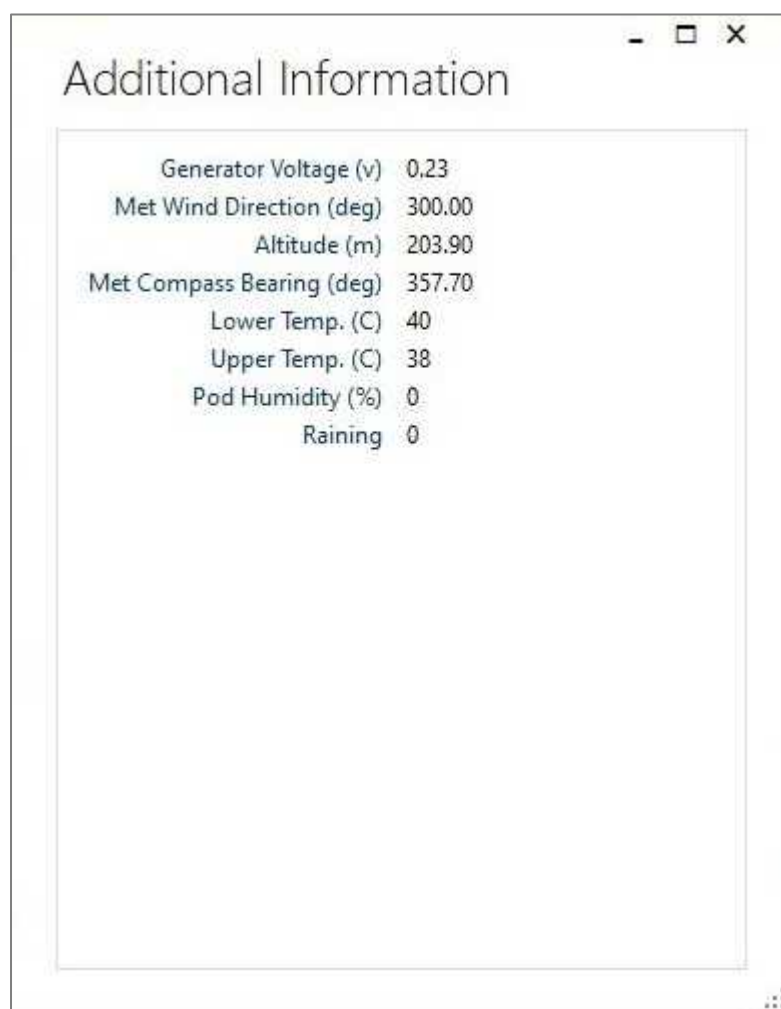


Fig. 1 – Additional information regarding the LIDAR unit.

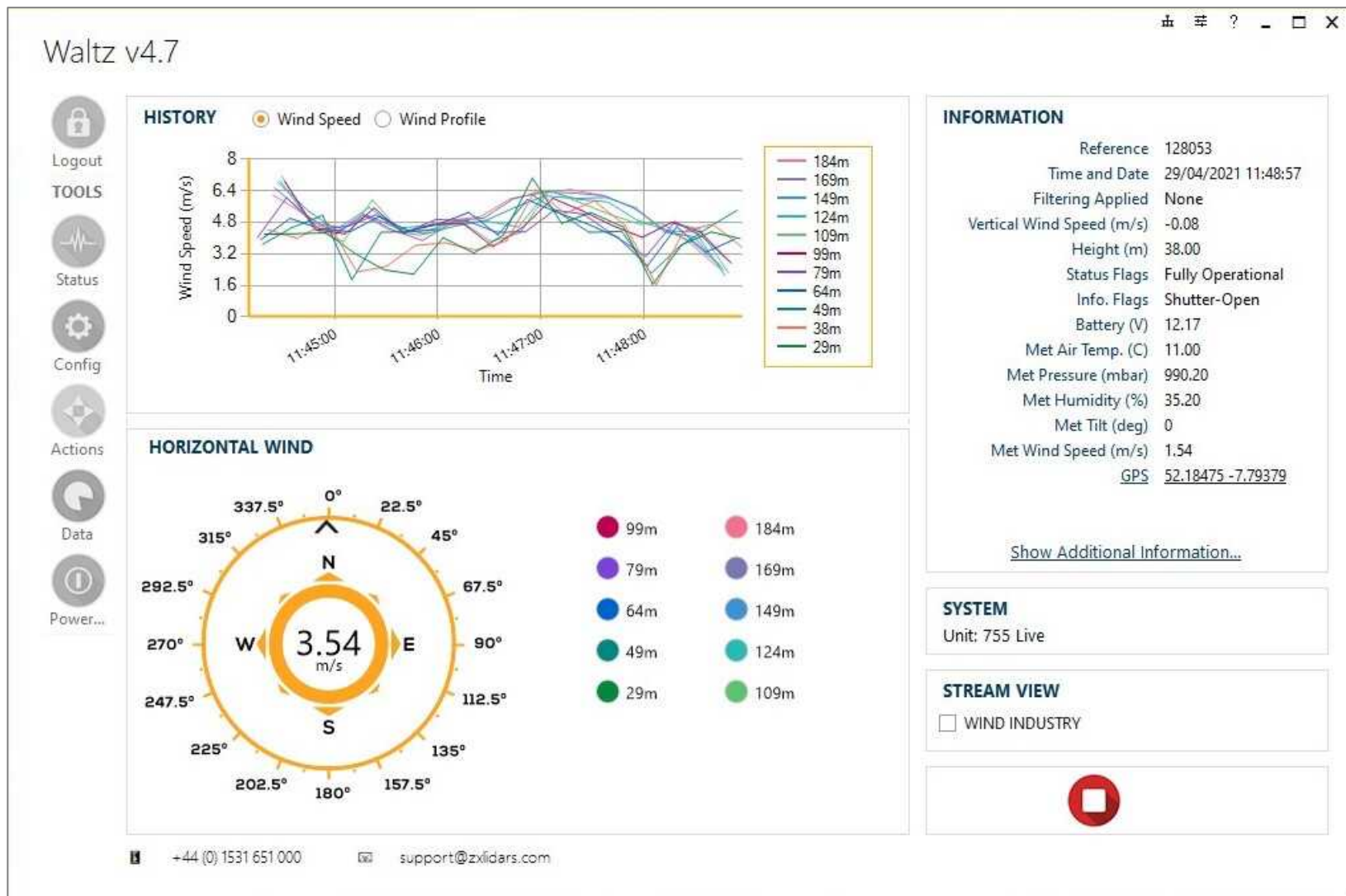


Fig. 2 - Image of initial measurements of the LIDAR unit.

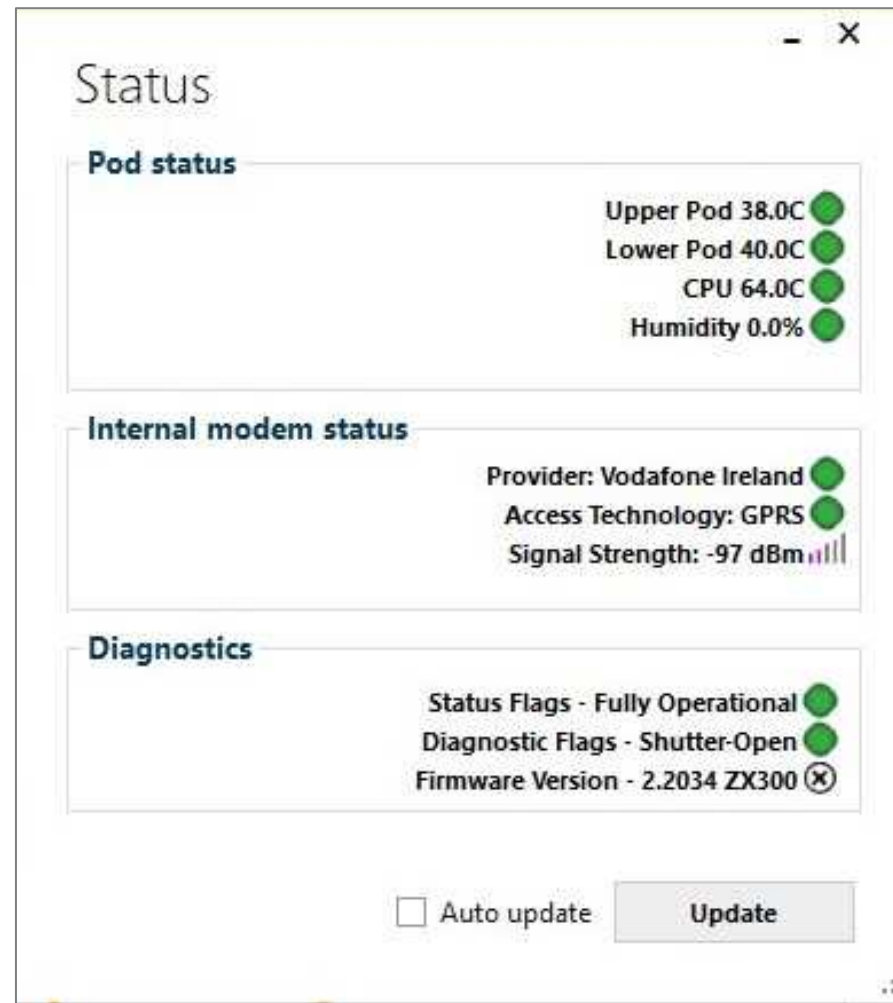


Fig. 3 - LIDAR system status after initial setup.

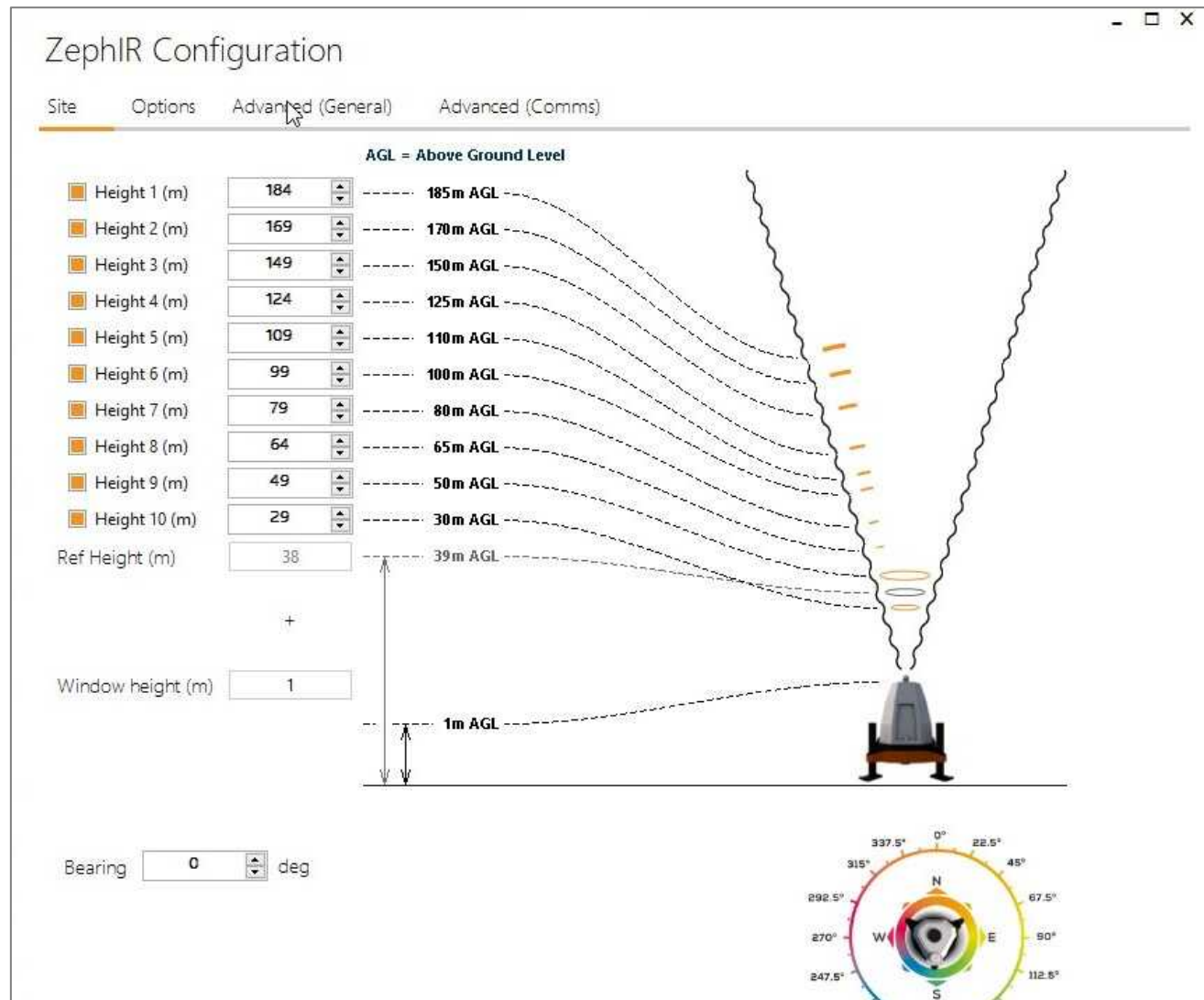


Fig. 4 - Image of LIDAR equipment measurement height setup.

ZephIR Configuration

Site

Options

Advanced (General)

Advanced (Comms)

Status Email Address

status@zephirlidar.com,cormac@galetechenergy.com,Colm.OKane@Coillte.ie,data@brightwindanalysis.com

Data Email Address

status@zephirlidar.com,cormac@galetechenergy.com,mesimmsdata@gmail.com,Colm.OKane@Coillte.ie,data@brightwin

Data file format

☒ .ZPH File

☐ .CSV File

☐ Both .CSV and .ZPH Files

Distribution method

☒ Email

☐ Custom FTP server

CSV generation options

☐ Generate CSV files on ZephIR

Data to distribute

☐ Don't send data

☒ Send ten minute data daily

☐ Send fine resolution data daily

☐ Send both, fine resolution and averaged data daily

Fig. 5 - Image of LIDAR configuration.

ZephIR Configuration

Site

Options

Advanced (General)

Advanced (Comms)

☐ Wash and wipe when dirty

☐ Wipe when raining

Backup settings

Restore settings

Change password

Current password

.....

New password

.....

New password (again)

.....

Change

GPS and time options

☐ Use GPS Position Input

☐ Use GPS time input

Hours offset from coordinated universal time (UTC)

0.0


GPS location reporting options

☒ Never report

☐ Always report on startup

☐ Report on startup if location has changed by more than ~500 metres

Fig. 6 - Image of LIDAR GPS, time and wiper settings.

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Broemountain LIDAR Installation Report

ZephIR Configuration

Site Options Advanced (General) **Advanced (Comms)**

GSM network selection

☒ Auto

☐ Manual with auto-fallback

Modem internet connection

☒ Use internal modem only

☐ Use external modem or LAN

☐ Use external modem or LAN with internal modem fallback

☐ BGAN

☐ Iridium

Internal Modem

☒ Enable internal modem

Fig. 7 - Image of LIDAR configuration.

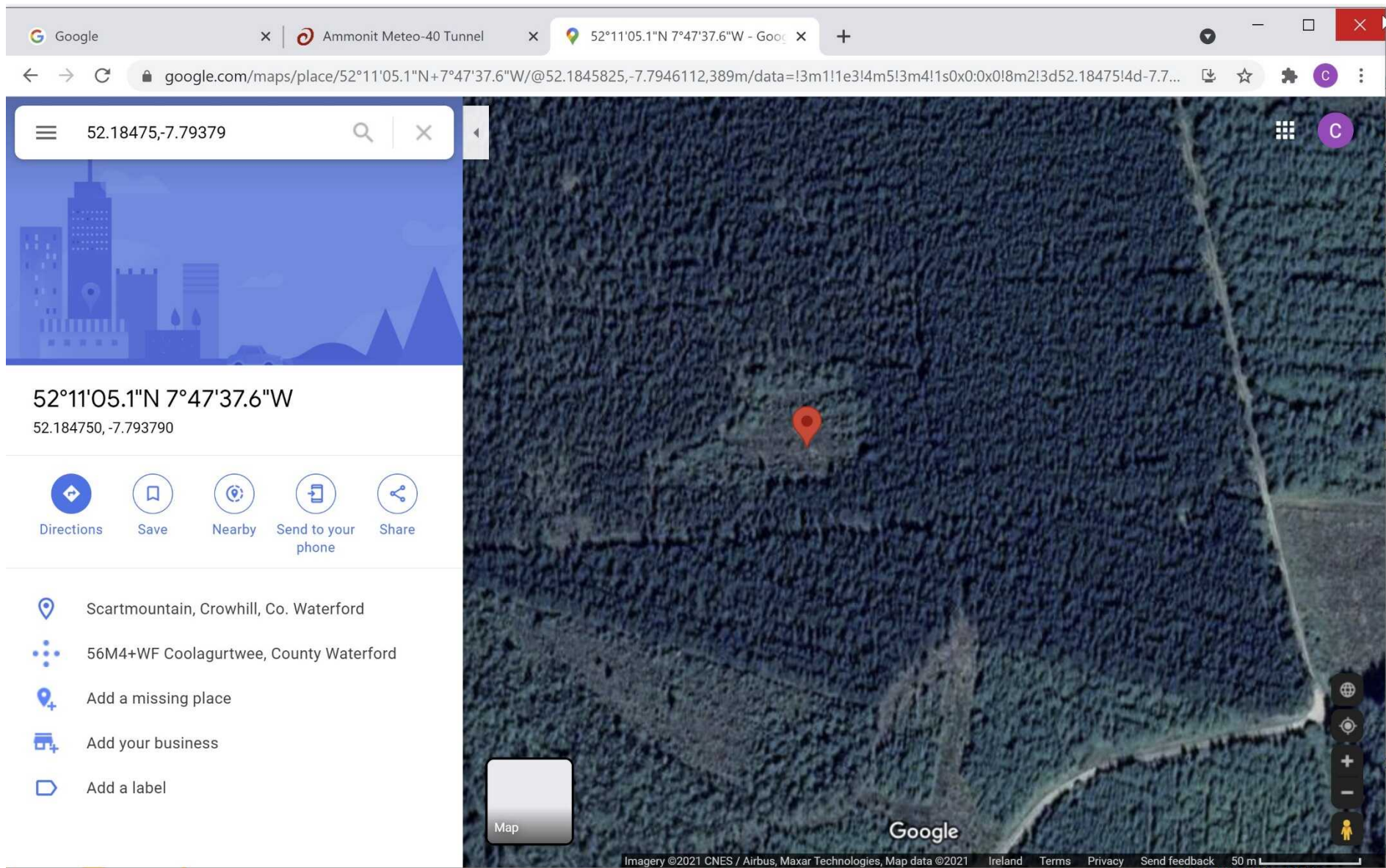


Fig. 8 - Equipment location based on LIDAR GPS.



Fig. 9 – Image of LIDAR setup.



Fig. 10 - Image of LIDAR setup.



Fig. 11 - Image of LIDAR setup.



Fig. 12 - Image of LIDAR bubble level 1.



Fig. 13 - Image of LIDAR bubble level 2.



Fig. 14 - Image of LIDAR power supply setup.

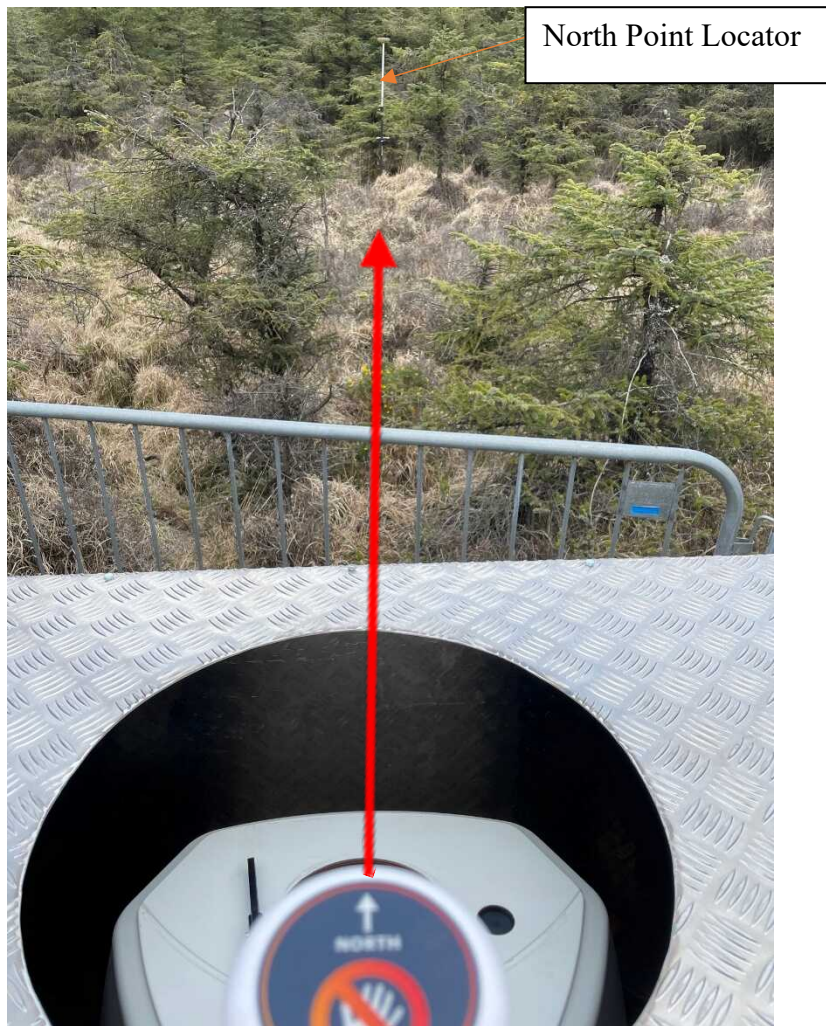


Figure 15 - LIDAR Orientation Photograph

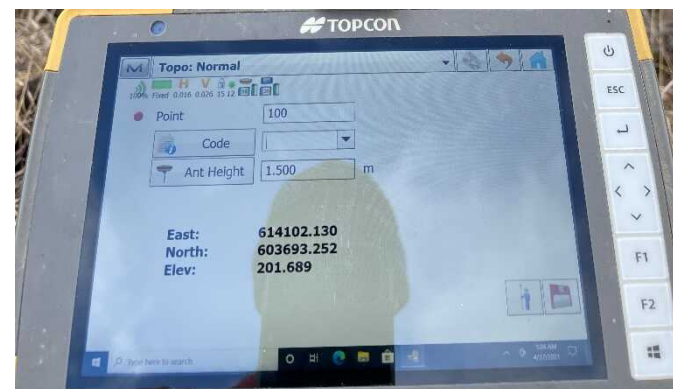


Figure 16 - GPS Coordinate at North Point Locator (ITM)

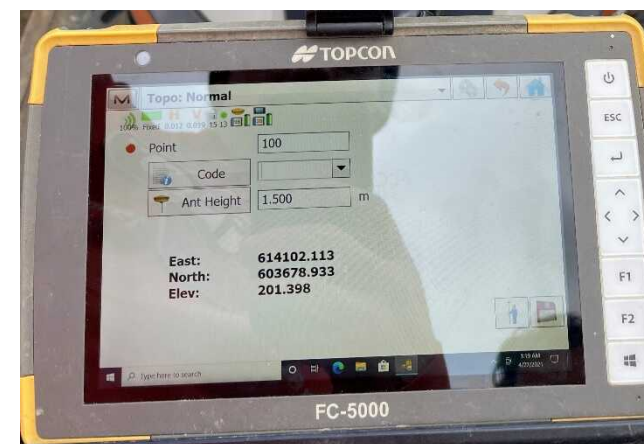


Figure 17 - GPS Coordinate at Lidar Location (ITM)

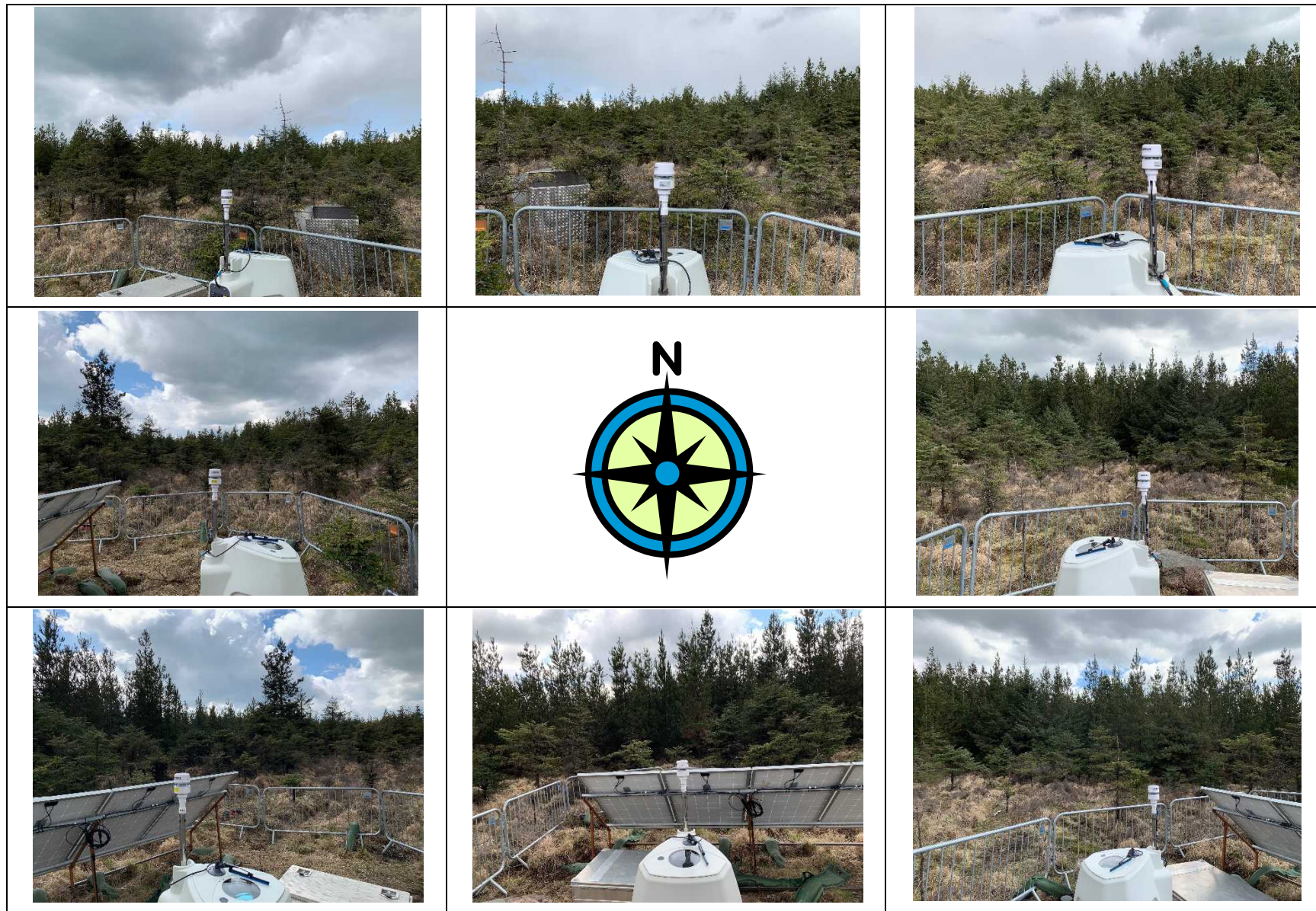


Fig. 18 - Photographs of the area surrounding the LIDAR Position.

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TOBIN Consulting Engineers



@tobinengineers

Galway

Fairgreen House,
Fairgreen Road,
Galway,
H91 AXK8,
Ireland.
Tel: +353 (0)91 565 211

Dublin

Block 10-4,
Blanchardstown Corporate Park,
Dublin 15,
D15 X98N,
Ireland.
Tel: +353 (0)1 803 0406

Castlebar

Market Square,
Castlebar,
Mayo,
F23 Y427,
Ireland.
Tel: +353 (0)94 902 1401

London

17 Bowling Green Lane
Clerkenwell
London,
EC1R 0QB,
United Kingdom.
Tel: (+44) (0)203 915 6301