VAISALA

RELEASE NOTE WINDCUBE SCAN SOFTWARE SUITE

Version 23.b*

Package containing

- Windforge server   3.6.0   WF
- Windforge GUI   3.6.0   GUI
- API version   2.2.1   API
- Tools version   1.2.0   Tools
- OS version   3.3.0   OS

This release includes internal version 23.a, which was not made available to the public (see appendix)

Commercial_Release_Note-WindCubeScan_Software-v23.b from v21.c.docx

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Table of Contents

1 Introduction

The present release adds the compatibility for WindCube Scan with the powerful tool of Insights Fleet for the management of your Lidar fleet. A new API is also available for streaming data from Windforge, which will further facilitate integration of your Lidars inside sensor network and monitoring platforms. Other improvements and new features, such as an automatic defrost mode inside Windforge, are also detailed in this document.
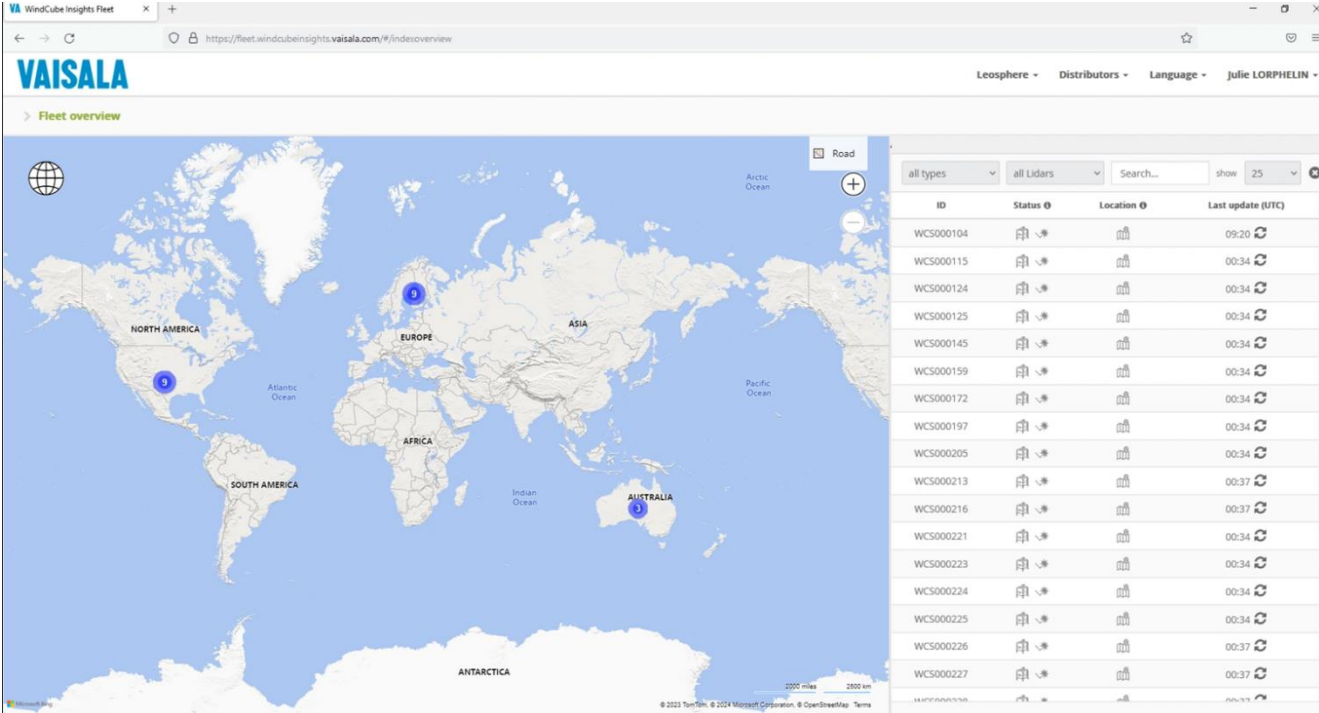
2 Major improvements

2.1 WindCube Insights — Fleet `WF` `GUI`

It is now possible to use **Insights — Fleet** management for WindCube Scan, a modern software for lidar fleet and campaign management. It allows you to have a comprehensive **fleet overview**, with **status** reporting and convenient geographical mapping, and to **monitor** your measurement campaigns with access to various information about your Lidars. WindCube Insights — Fleet enables you to put wind data to use quickly and efficiently, whether they are in the office or in the field. It provides **full visibility into campaigns and lidar networks**, enabling better, more confident decision-making and allowing your organization to get the most from your lidar investments (compatible with our entire product range of Lidars).

After this upgrade, the connection to fleet is made on https://fleet.windcubeinsights.vaisala.com/

It is essential that you connect your WindCube Scan to Insight Fleet to beneficiate to our best level of services. If needed, you can subscribe to the 4G Modem option for network connection.

Insights — Fleet is designed for real-time monitoring of Lidar fleet and is complimentary to Windforge. The statuses of the Lidar are especially available in a diagnostic menu which gives a meaningful overview of the current state of the WindCube Scan. Monitoring data is stored on a secure server with restricted access,

protecting it against theft and archiving it without time limitation. This keeps it safe and available whether the Lidar is in service, being moved, etc.

2.2 Automatic defrost WF GUI

The automatic defrost activation is based on external temperature measurement and allows to always be in the best conditions for Lidar measurement, even in case of extremely cold weather.

The user can choose between manual and automatic activation of defrost in Scanner Settings Choice. In automatic mode, depending on the read temperature on the external sensor, a certain percentage of defrost power will be applied. For example, if the external temperature is between -20°C and -15°C, a defrost level of 60% will automatically be applied (see below):

Level and mode have been added to the scanner status:

The use of automatic defrost mode is recommended.

You need the PTH option to activate the automatic defrost. Please contact your sales representative to buy one.

2.3 New Lidar streaming API API

Streaming API makes it possible to subscribe to some types of data and receive it in real time. This data can be measurement data (for example, radial wind data subscription will give access to radial data, CNR and metadata), environmental data, and/or general lidar information (lidar status, services status, lidar activities…).

This streaming API is complimentary to the REST API and allows to receive the information as soon as it becomes available. Contrary to REST API, is it not required to request the information several time but just to subscribe to the data type (and have access to the data flow).

This feature will further facilitate the deployment of your own program for WindCube Scan. As an example, you will be able to monitor the inclination returned by the inclinometer in real time.

For more information, please find API documentation link directly In the Windforge GUI:
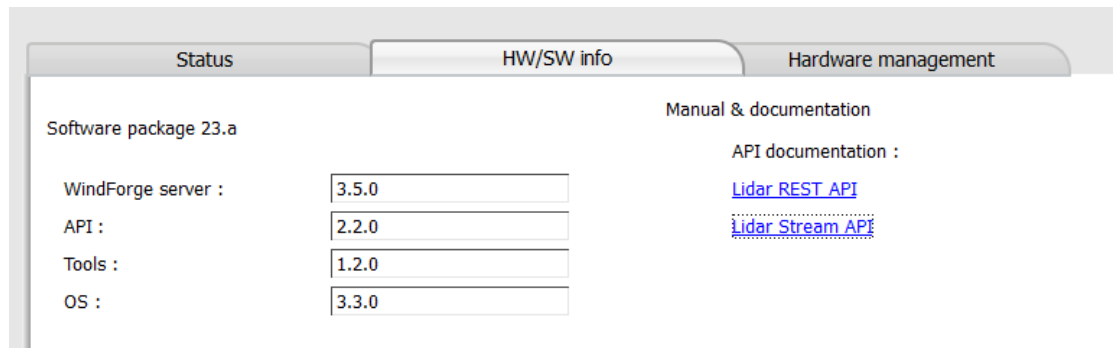
or here Lidar streaming API documentation (https://lidarapi.github.io/WindCubeScanStreaming)

2.4 Improved acceleration profile for non-measuring movements `WF`

The acceleration and speed management on the **non-measuring** movement of the scanning head is now optimized. This results in smoother movements with reduced jerks, especially for DBS and VAD scans.

2.5 Increased elevation choice `WF` `GUI` `API`

It is now possible to measure down to -20° (or 200°), increasing your scanning possibilities when your Lidar is placed high enough (on a hill or building for instance).

2.6 Fine Defrost `WF` `GUI`

It is now possible to fine-tune the level of defrost in manual mode, from 0 to 100 (percentage of heating power).

Refer to the table above in 2.2 to see the relationship between external temperature and defrost level.

The use of fine defrost should be reserved to specific cases. We strongly recommend using automatic defrost instead, if possible.

Please never use a higher defrost value than required by the external temperatures (see table). Power above 50% is only designed for very cold regions.

3 Important bug fixes

3.1 Delete & Clean option `WF` `GUI`

In the DATABASE tab, a "Delete & Clean" option is introduced. This new button allows to free up space on disk more efficiently than the "Delete" button.

Important notices:

- this action can be long. For example, deleting 3 months (nearly 300GB) of data lasts 15 hours.
- during the deletion, the Lidar is not able to measure.
- the disk occupation will first grow during the process of "Delete & Clean" before decreasing.

- ▪ "Delete & Clean" process will fail when there is not enough free space on the disk (around 35% of free space). In that case the only way remaining to free up space is to perform a factory purge.

Please refer to the latest version of the user manual for further recommendations on data deletion.

3.2 Missing lines in CNR mapper `WF` `GUI`

White lines of hard target could appear in some extremely specific cases in CNR mapper. This bug has been fixed.

3.3 Improvement of available languages `WF` `GUI`

We welcome any feedback or suggestions for improvement on the languages.

4 Low level optimizations, bug corrections and stability improvements

- ▪ 3 other evolution of user graphical interface and messages
- ▪ 4 other communication bug fixes or optimization
- ▪ 6 other various bug fixes or code optimization

5 Change in data access and format

In NetCDF format, scan_id and settings_id are now *int* values (and no more *strings*).

6 Change in conventions

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# 7 Impact of current release on metrological certifications

None.

8 Software limits and regressions

None.

9 Software compatibility

The WindCube Scan software suite version 23.b is compatible with the Wind and Aerosol Post Processing Software (WAPP) suite version 23.a. This WAPP version is compatible with the new post-processing tool called Volume Wind, which is a powerful reconstruction and visualisation tool of the horizontal wind speed direction and intensity in a defined volume.
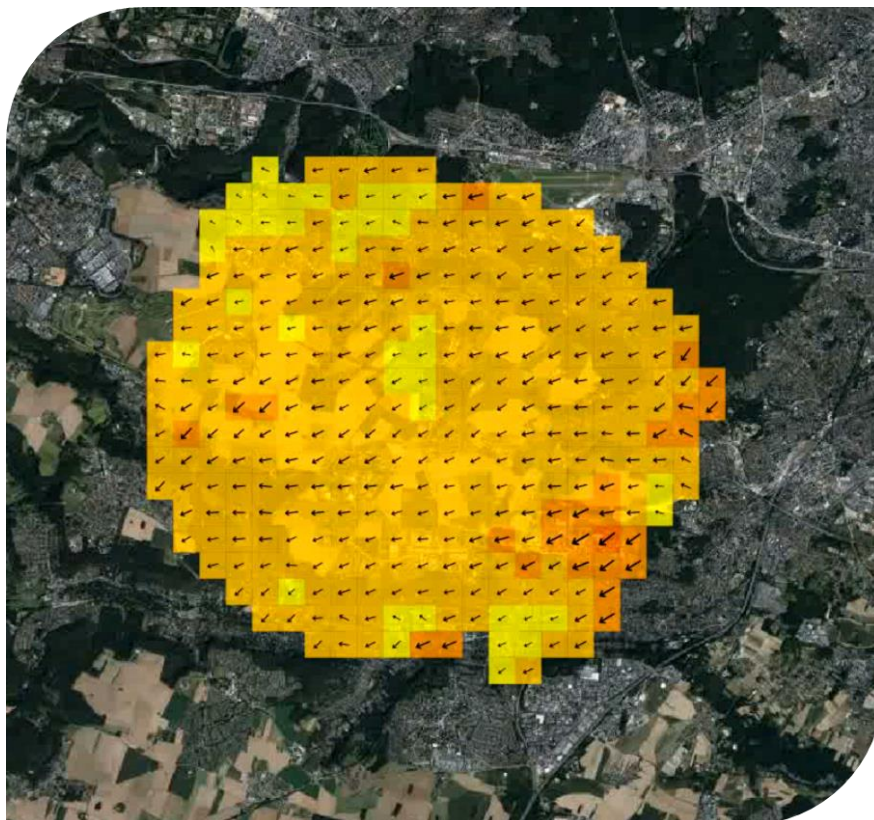
10 Upgrade procedure

This latest version is complimentary and highly recommended. The upgrade from previous version can be done remotely.

We would recommend you to buy a PTH option (external temperature sensor) to fully exploit this upgrade and benefit from the automatic defrost mode. Please contact your sales representative to buy this option.

A new format is applied for the second disk for Live disk extraction. This formatting will be realized during the upgrade and so data from the second disk only will be erased. For users using their own disk, we highly recommend making a backup of their data prior to upgrade.

We strongly recommend exporting all data from your system before performing the upgrade.

Please contact our technical support service (helpdesk@vaisala.com) to confirm that your unit is eligible and organize your upgrade.

Appendix: Release overview