

A novel combination of mast and lidar enabling 300m reference measurements

Seyi Latunde-Dada
ZX Lidars

By mounting a verified lidar on top of a 91m mast, the normal mast reference measurement heights were extended to above 200m.

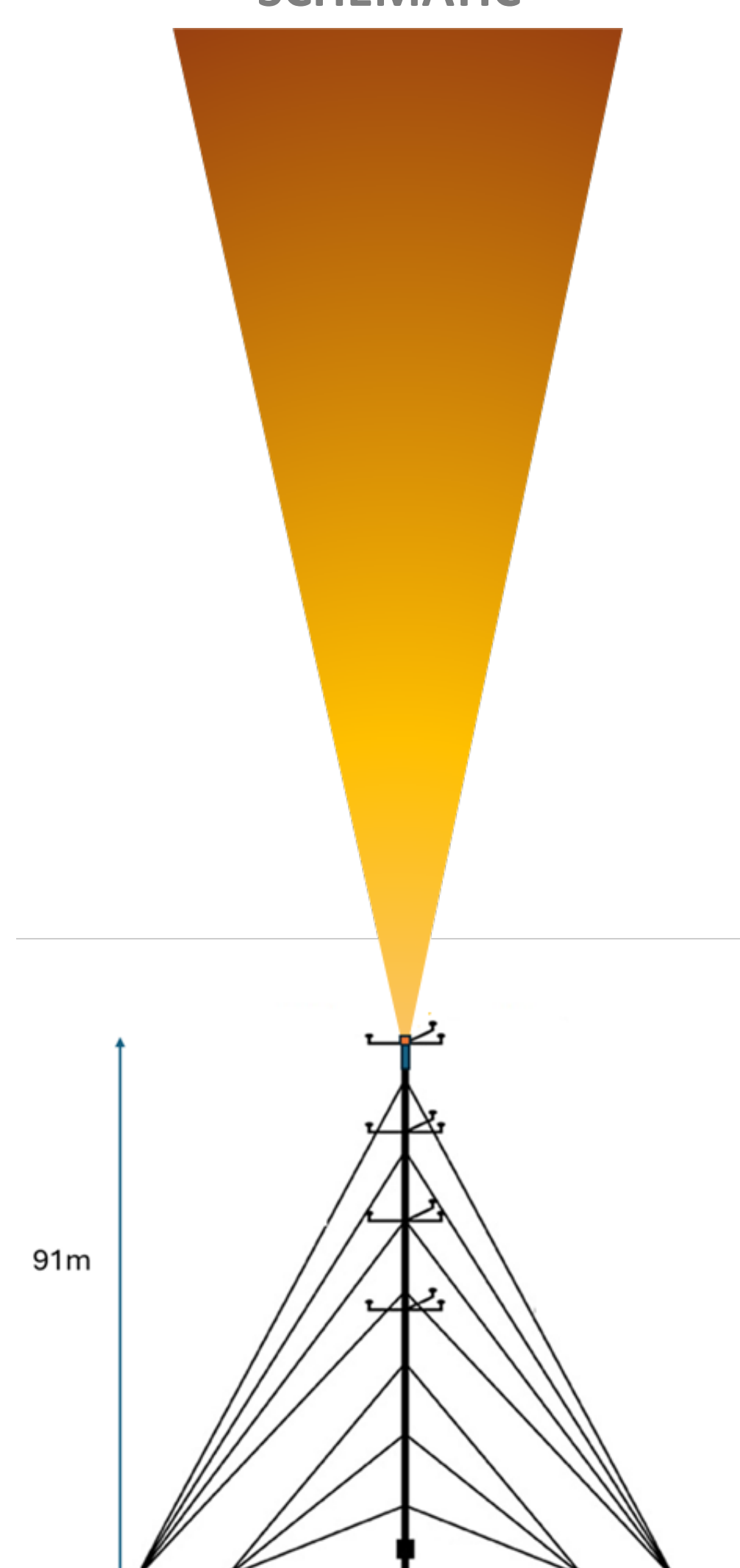
This configuration is called the Midar ('Mast' + 'Lidar') and was validated successfully against a 200m classified ground-based lidar.

This demonstrates the operational capability of the Midar as a reference for wind speeds and a fleet of lidars were verified against it up to 300m.

- The **Midar** consists of a verified continuous-wave lidar mounted at the top of a 91 m meteorological mast, extending reference measurement heights to above 200 m.
- The system employs a 30-degree scanning wedge and is operated at the UK Remote Sensing Test Site jointly managed by ZX and DNV.
- The unit belongs to the ZX300 series which is classified up to 100m and was verified against the mast at the UK Remote Sensing Test Site from the 1st of October to the 1st of December 2021.
- At all heights, the DNV/IEC verification requirements were met with gradients within +/- 1% of unity and coefficients of determination (R^2) greater than 0.99.
- A fleet of 25 ZX 300e units was deployed at the UK Remote Sensing Test Site with measurement heights configured up to 300 m, exceeding the height range of existing tall-mast reference infrastructure.
- Across the full fleet and at all measurement heights up to and including 300 m, fleet-averaged correlation gradients were found to be within $\pm 2\%$ of unity, meeting DNV best-practice acceptance criteria. The averaged coefficients of determination exceeded 0.985 at all heights, with data availability greater than 94% throughout the measurement range [1].

[1] ZX 300e Introduction and Performance Credentials, 24 Sept. 2025

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KPIs AGAINST THE MIDAR UP TO 300m

