

IEA Wind TCP Task 32

# Wind lidar for wind energy applications

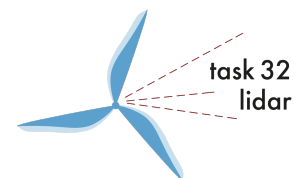


Image © U. Stuttgart

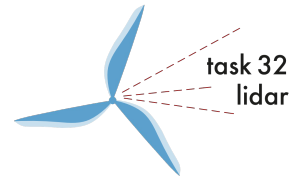
Presented at the CFARS 2021 General Meeting

Andy Clifton · 13 April 2021

[www.iea-wind.org/task32](http://www.iea-wind.org/task32)



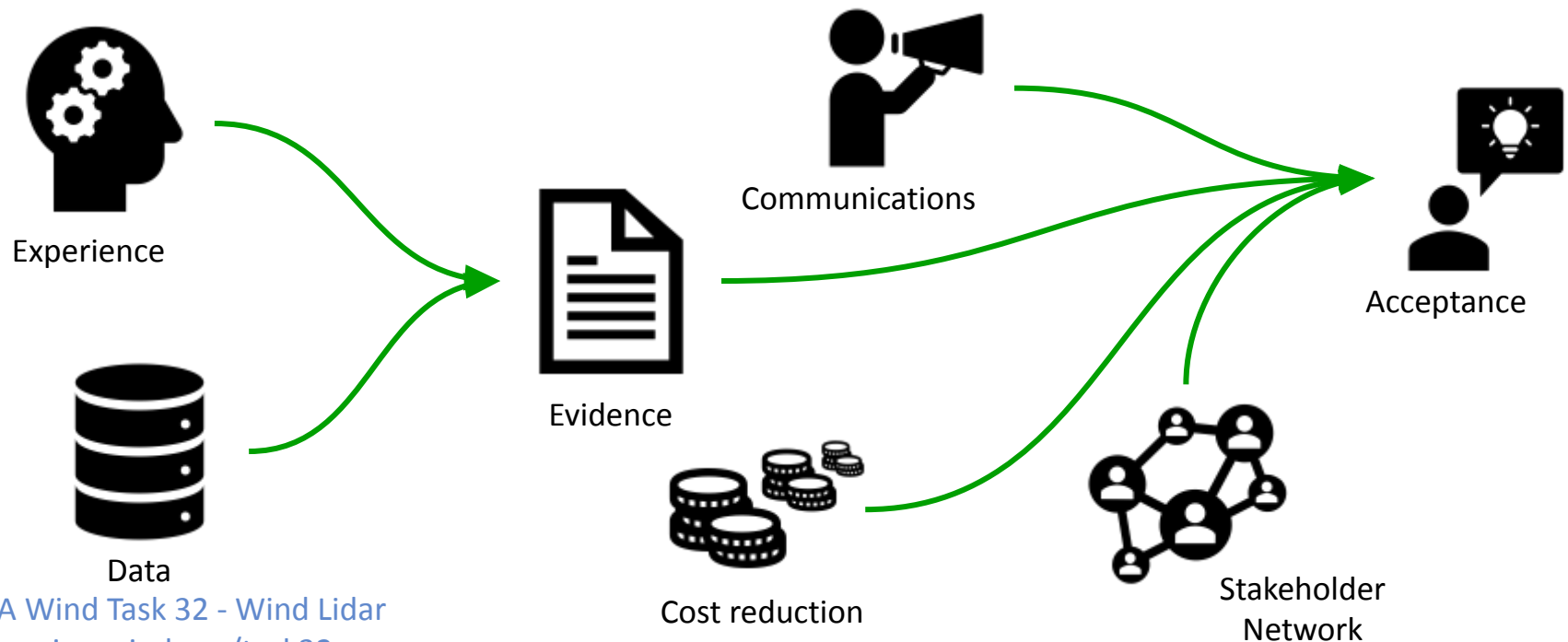
# A collaborative research network



**Our goal:** Identify and mitigate the barriers to adoption of wind lidar for wind energy application

**Our tools:** community engagement & involvement

**The outcome:** increased *acceptance* of wind lidar



# We target future needs & opportunities



**An Overview of Lidar-Assisted Control Part I**

Main questions today

- Part I: How can we obtain useful information for controls from lidar systems?
- Part II: How can these signals be used to improve wind turbine control?
- Part III: What are practical considerations when implementing lidar-assisted control in the field?

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IEA Wind Task 32 Webinar:  
An Overview of Lidar-Assisted Control  
April 22, 2020

## Turbines in new locations

Image: T. Karlsson (VTT)

Task 32 Working Group  
**Wind lidar in cold climates**

Task 32 Working Group  
**Wind lidar in complex terrain**

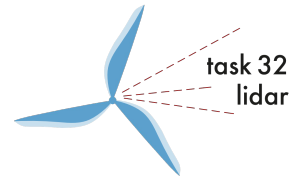
Image: A. Clifton (U. Stutt)

## Larger turbines in bigger farms on- and offshore

- Lidar-assisted controls
- Floating lidar systems
- Induction-zone measurements

# The next phase: 2021-2025

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## 1. Universal inflow characterisation

Tools and methodologies to get and use the best information about inflow conditions to any wind turbine, anywhere.

## 2. Replacing met masts

Creating guidelines for the selection and use of different types of wind lidar and software for site assessment

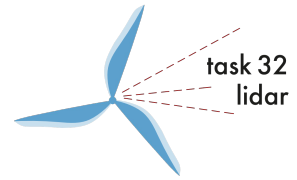
## 3. Connecting wind lidar

Helping users to improve measurements and extract value from their lidar(s) by connecting them to an ecosystem of service providers

## 4. Accelerating offshore wind deployment

Promoting wind lidar as a key enabling technology throughout the offshore wind project lifecycle

# Get in touch with Task 32



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IEA Wind Task 32 - Wind Lidar  
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