ForestMap
The next generation of forest maps - adapting a Nordic success story across the globe

ForestValue Final Conference, Madrid, 28-29 September

Project name: The next generation of forest maps - adapting a Nordic success story across the globe
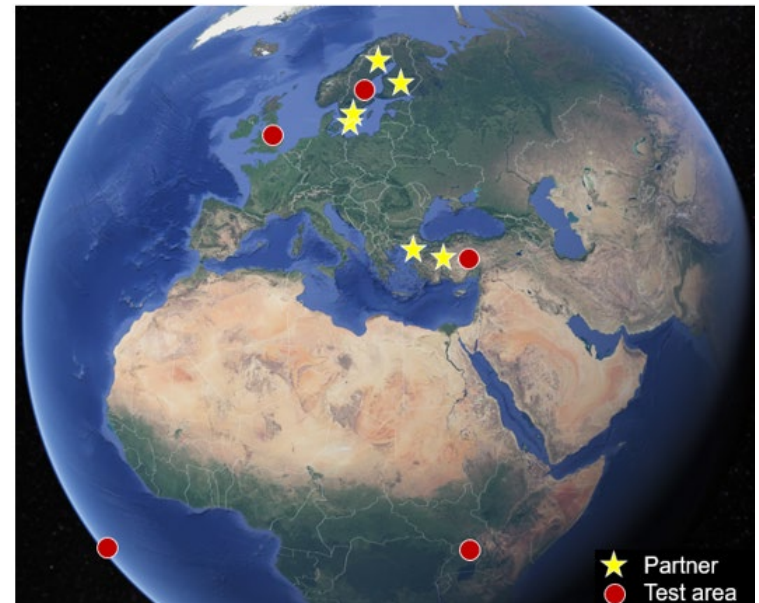Project acronym: ForestMap

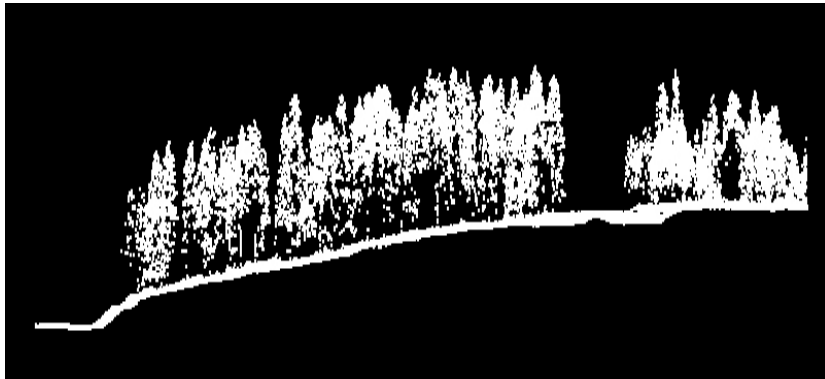Prof. Johan Fransson (Linnæus University, Sweden)

Project partners

- Linnæus University, Sweden
- Swedish University of Agricultural Sciences, Sweden
- Katam Technologies AB, Sweden
- Marmara University, Turkey
- Istanbul Technical University, Turkey
- University of Helsinki, Finland

- 1 M€ for 2022-01-01 to 2024-12-31

★ Partner
● Test area

Linnæus University SLU MARMARA ÜNIVERSITESI 1883 HELSINGIN YLIOPISTO HELSINGFORS UNIVERSITET UNIVERSITY OF HELSINKI **KATAM**
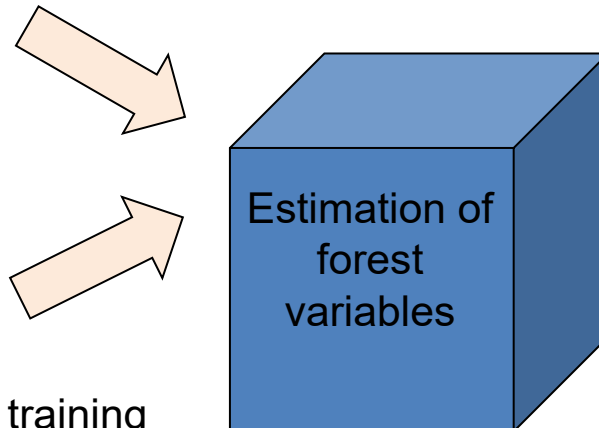
National forest maps – the good examples from Scandinavia

Remote sensing data
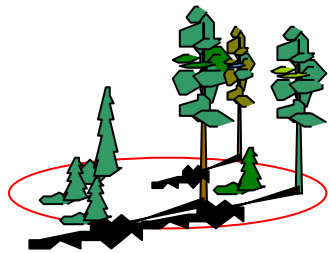
Field surveyed plots, training data, from the Swedish National Forest Inventory

Estimation of forest variables

Raster databases with estimated forest variables

Total Wood Volume in m3/ha

m3/ha
- 0 - 1
- 2 - 50
- 51 - 100
- 101 - 150
- 151 - 200
- 201 - 250
- 251 - 300
- 301 - 350
- 350 - 700
- No Data

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National forest maps from satellite image data

Time-series of maps for years 2000, 2005, 2010, and 2015. Produced by combining satellite image data (Landsat, SPOT, Sentinel-2), canopy height from aerial images (year 2015), and field data from the Swedish National Forest Inventory.

Provided as open data by SLU (SLU Forest Map).

Variables
- Stem volume
- Mean tree height
- Mean diameter
- Basal area
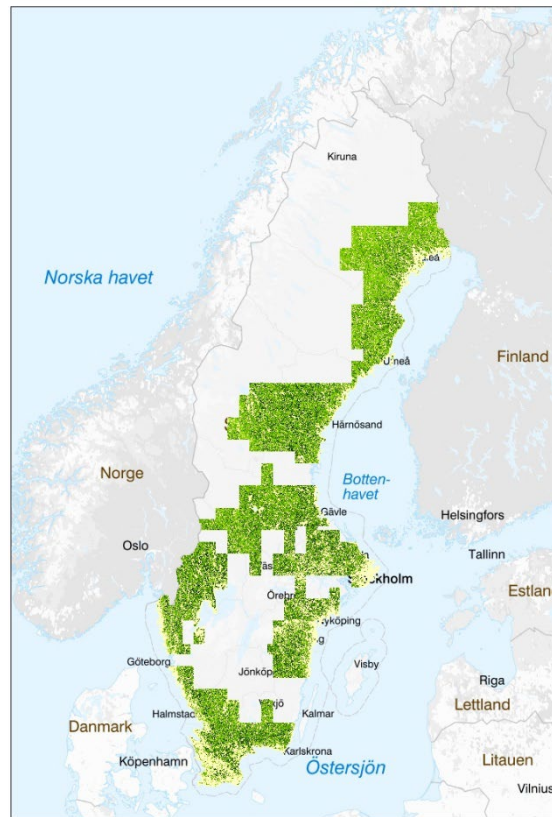- Above-ground biomass
- Tree species

Cell size
- 25 m × 25 m

National forest maps from airborne laser scanning

Version 1
2009-2019

Version 2
2021-11-17

Produced by combining laser data from the Swedish National Land Survey and field data from the Swedish National Forest Inventory.

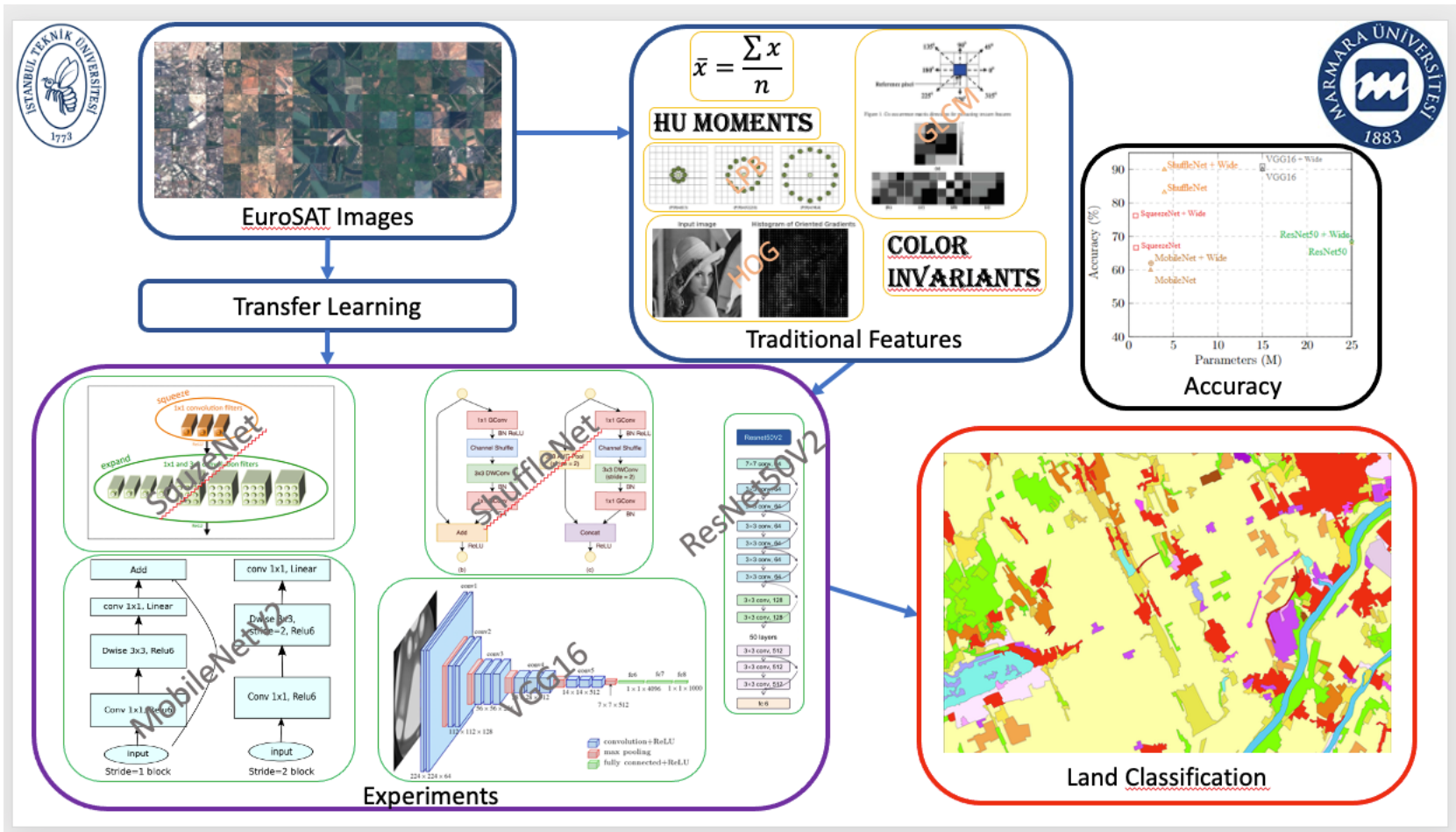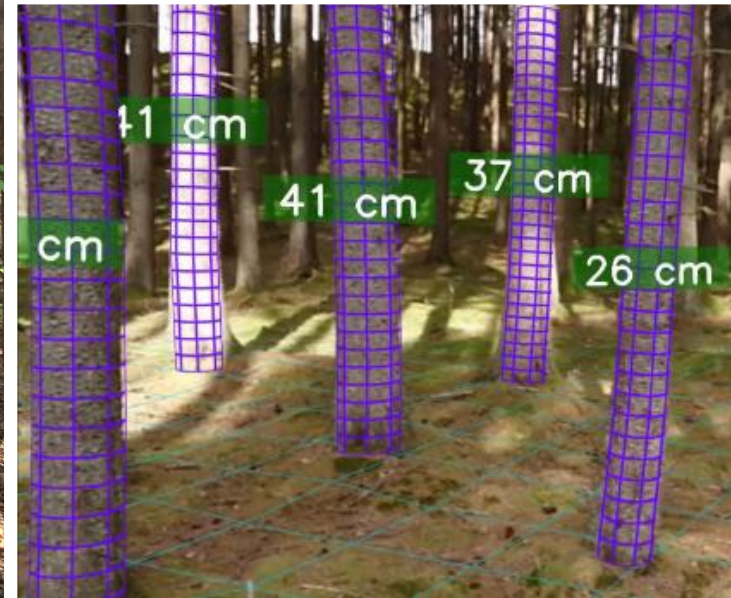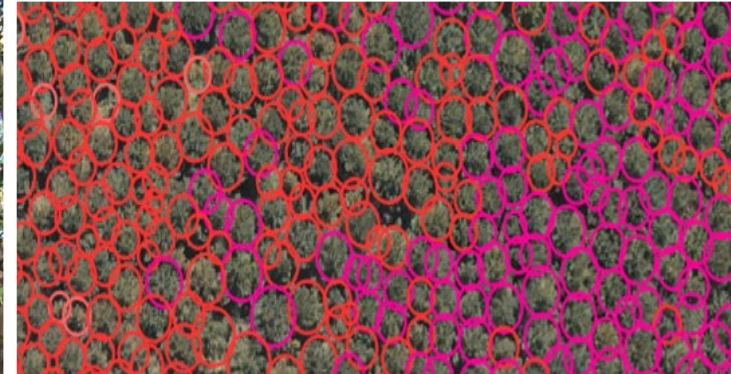Provided as open data by the Forest Agency (Forest attribute map).

(https://www.skogsstyrelsen.se/skogligagrunddata)

Variables
- Stem volume
- Mean tree height
- Mean diameter
- Basal area
- Above-ground biomass

Cell size
- 12.5 m × 12.5 m

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New AI methods in remote sensing

KATAM Forest Engine (training data)

Societal values

- First the current ways of using forest inventory and mapping data is researched.

- Then novel (e.g. AI) ways of forest mapping are developed where several layers and types of forest data are used in tandem.

- The outcome of the WP societal values of forest mapping is the business case of the forest mapping by responding to two research milestones.

- **Milestone 5.1**: Current state analysis of societal value use of the forest maps (M18).

- **Milestone 5.2**: Road maps developed for the future societal value use of the forest maps (M36).

Project focus
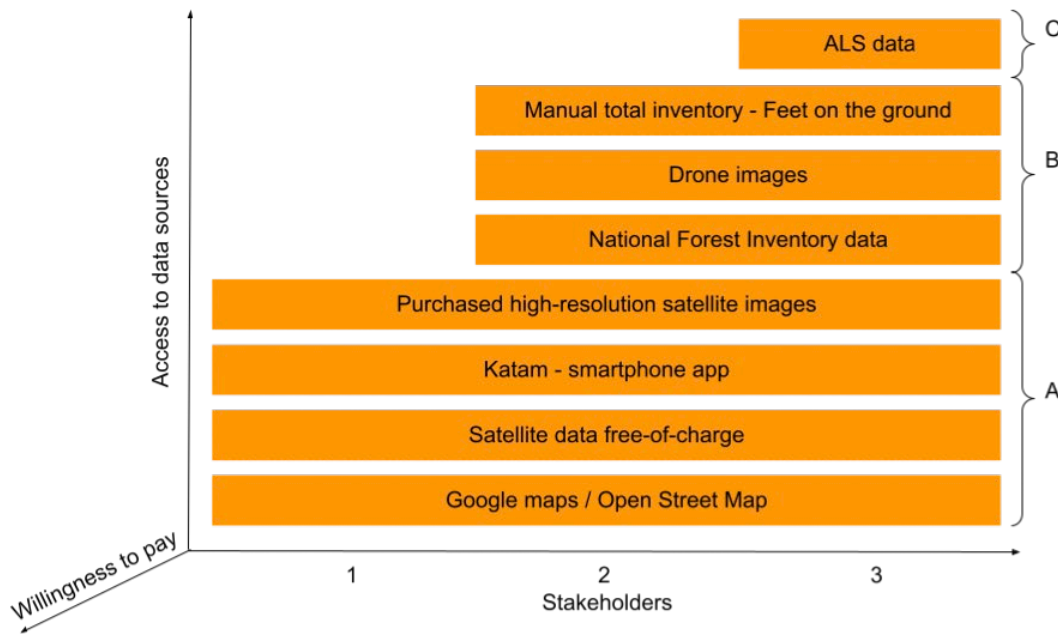
Three stakeholders:
1. E.g., governments, NGOs, certification organizations (A),
2. E.g., private forest owners, timber merchants, start-ups (A+B),
3. E.g., forest companies, timber merchants, start-ups (A+B+C).

Project structure

- WP1 – Project management and coordination
- WP2 – Field data collection and extraction of remote sensing data
- WP3 – Hierarchical decision-making system for efficient forest mapping
- WP4 – Demonstration cases (Sweden, England, Turkey, Uganda, Chile)
- WP5 – Societal values
- WP6 – Dissemination and communication

Acknowledgements

Thank you!

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ForestValue

Website: https://forestvalue.org/
Twitter: https://twitter.com/ForestValue2017
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