



REPUBLIC OF ESTONIA
**AGRICULTURAL REGISTERS
AND INFORMATION BOARD**

Overview of the grassland monitoring

Airiin Hango

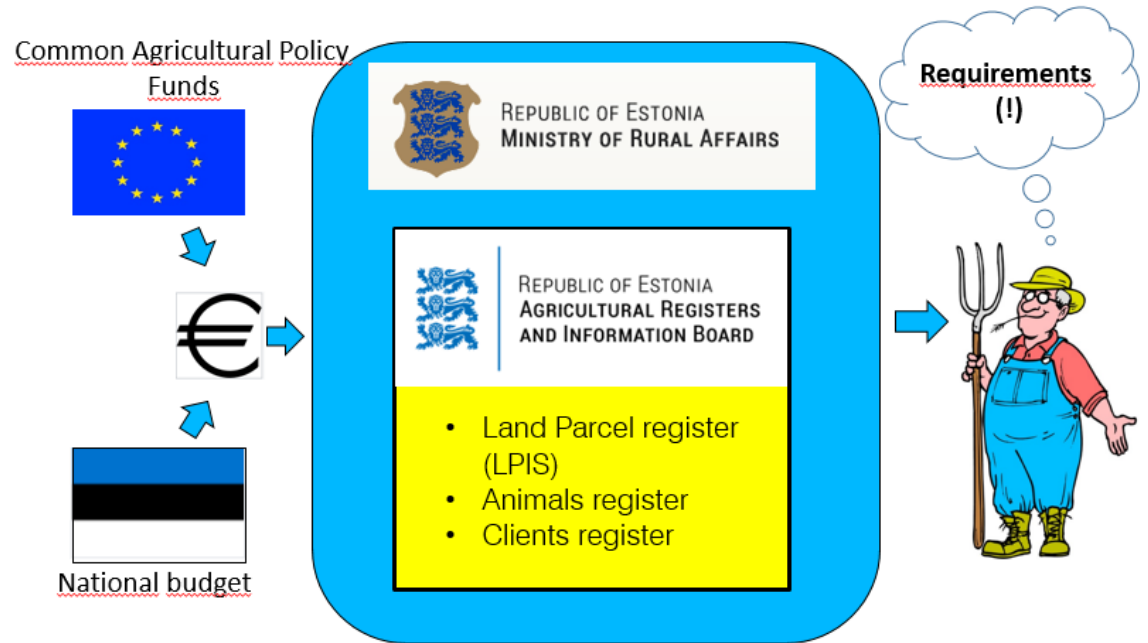
Head specialist of remote sensing

ARIB

09.02.2022

Agricultural Registers and Information Board (ARIB)

- Main duties:
 - Maintenance of agricultural registers
 - Administration of agricultural, fishery and rural development support schemes
 - Implementation of EU agricultural market regulation measures
- State authority in the area of the Ministry of Rural Affairs.
- Established in the summer of 2000 in Tartu.



Project: 'Automated satellite based mowing detection'



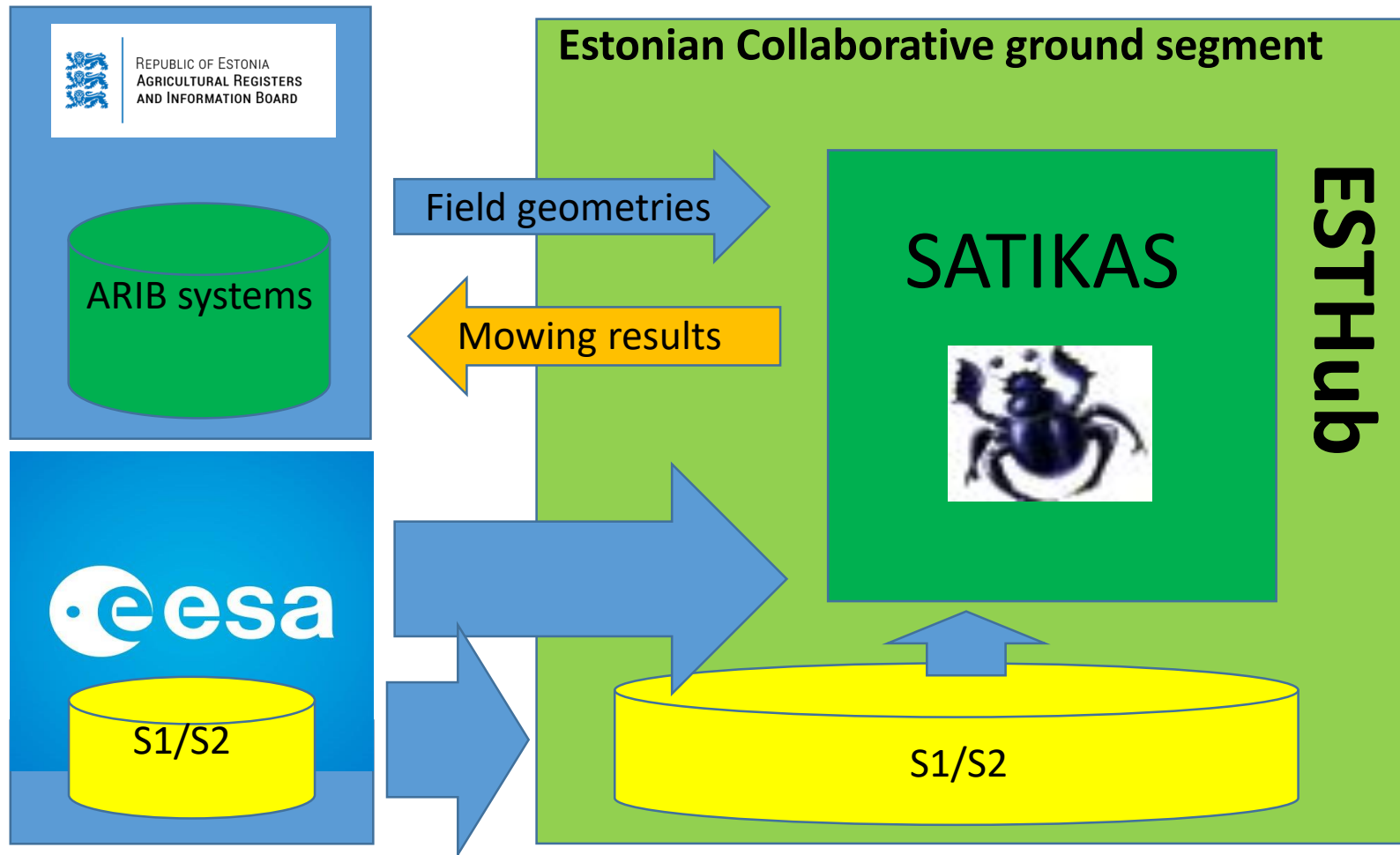
European Union
European Regional
Development Fund



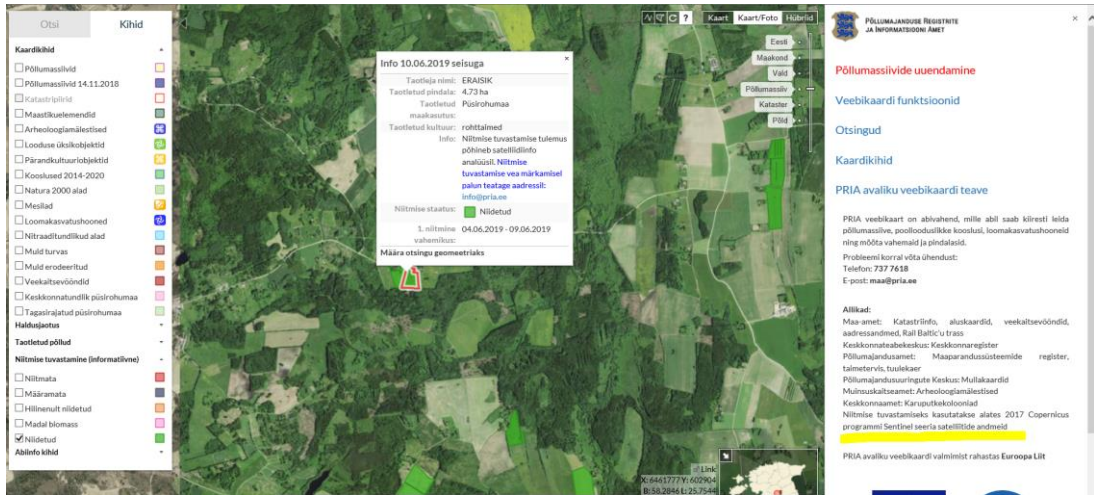
Investing
in your future

- Sentinel 1 and 2 are free to use in EU
- **Goal:** an integrated system that uses Sentinel 1 and 2 images (timeseries) to make country level mowing controls and reports the mowing detection results (mowing dates) to the farmers and paying agency officials.
- **Scope:**
 - Additional functionality to existing systems (IACS, e-ARIB, GIS)
 - A new system SATIKAS
- Development period: 06.2016 - 01.2018
- Fully operational starting from 2018.

Sentinel data distribution - ESTHub



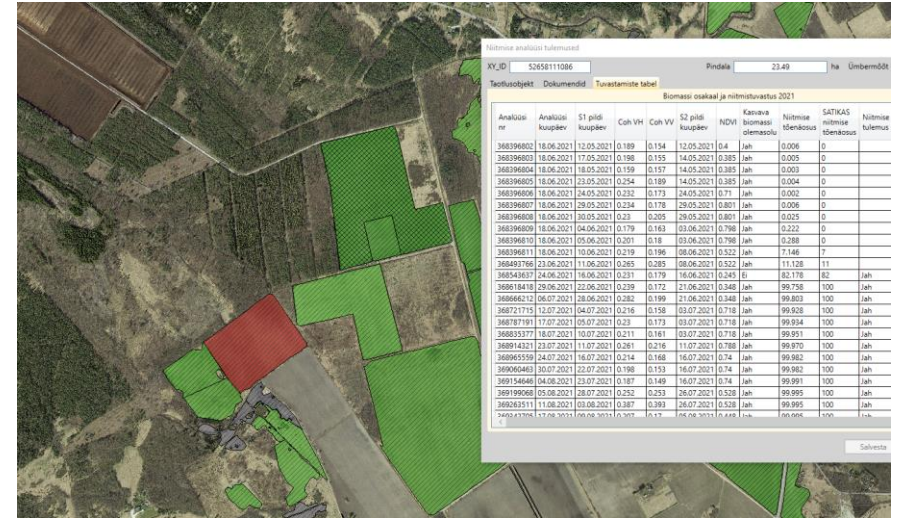
PUBLIC WEBMAP OF ARIB



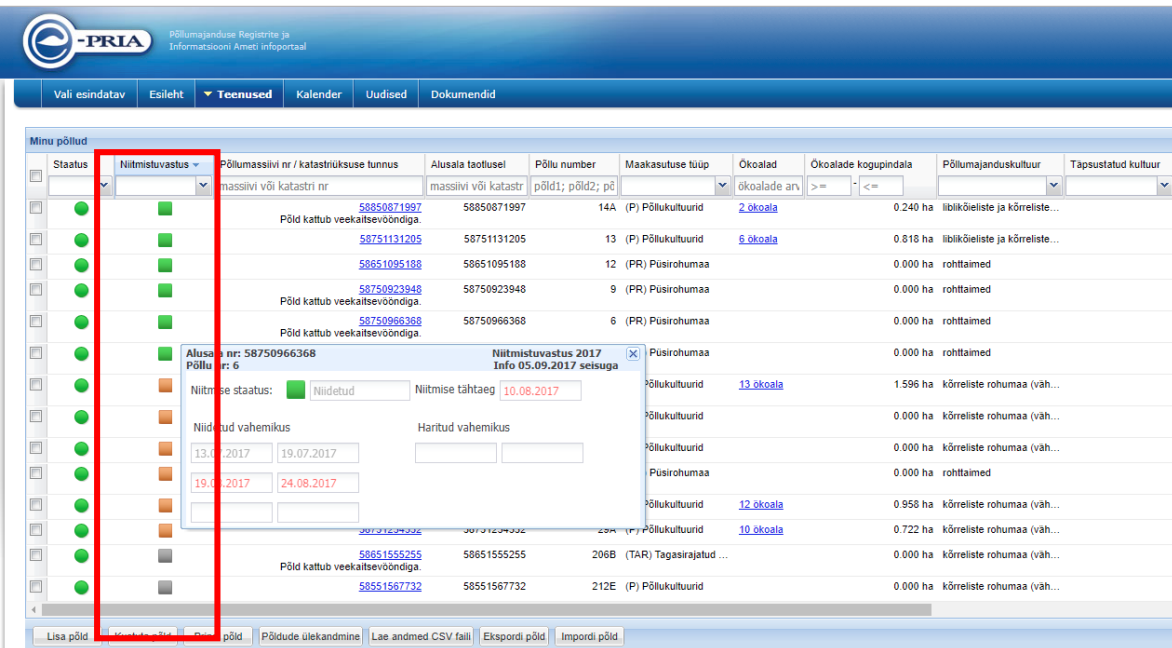
FOR PUBLIC



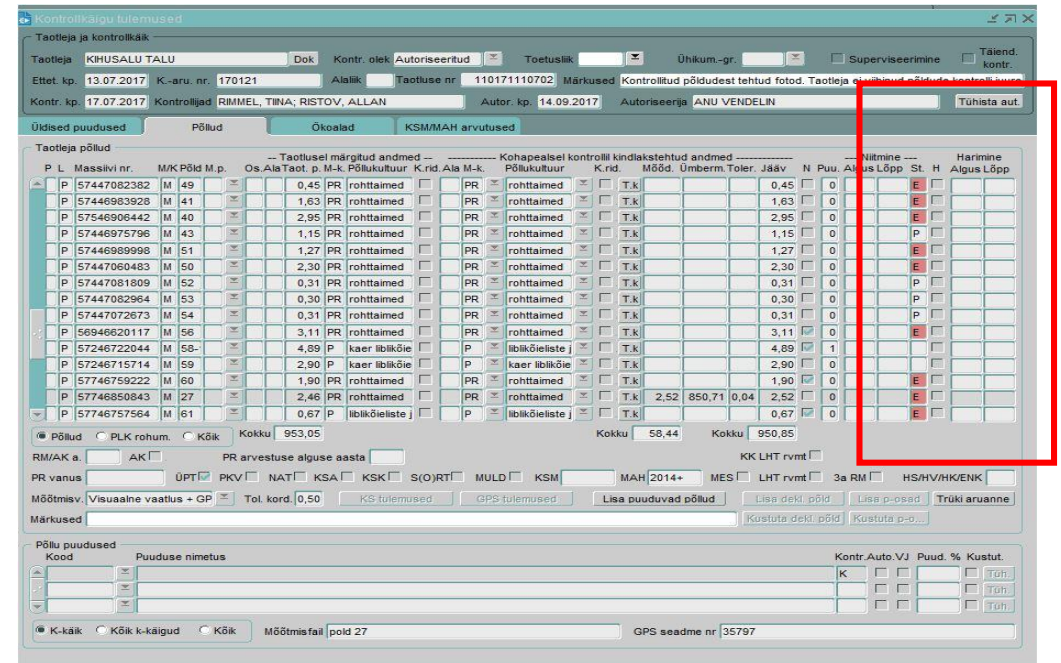
IN HOUSE
FOR THE PROCEDURE, IN LPIS



RESULTS IN FARMERS PORTAL (e-ARIB)



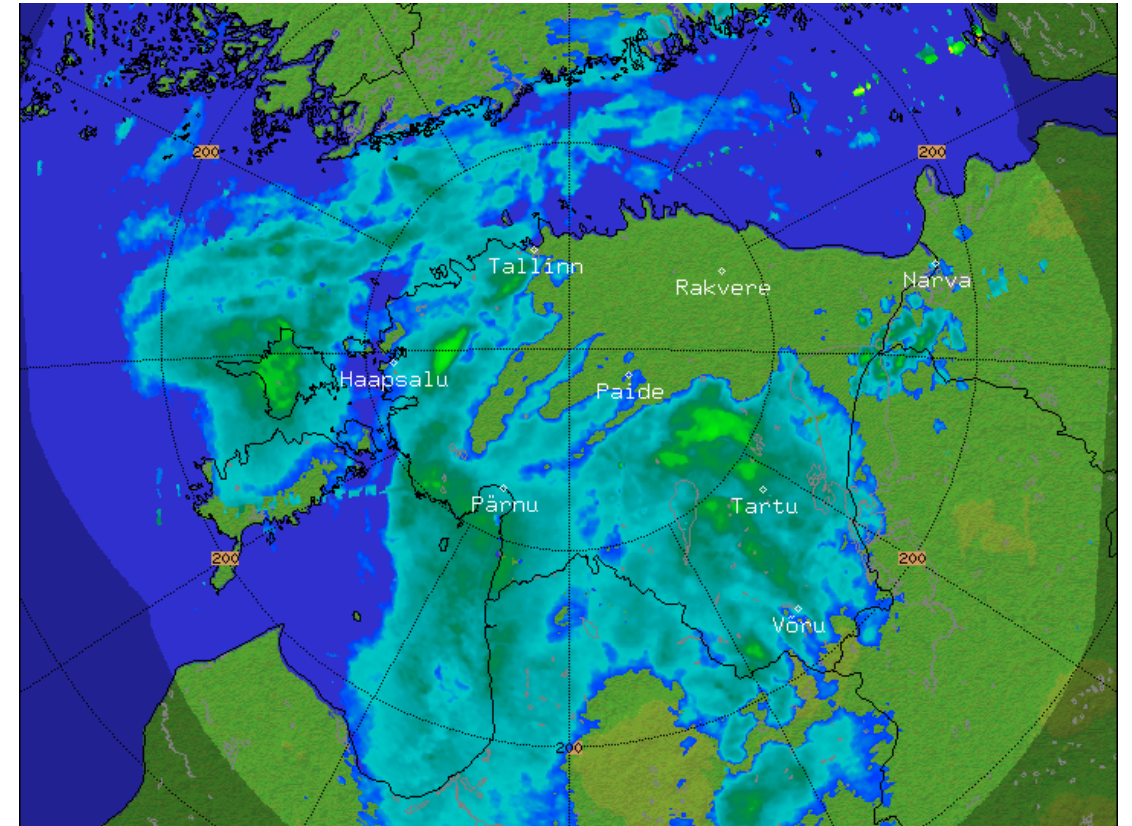
RESULTS IN IACS



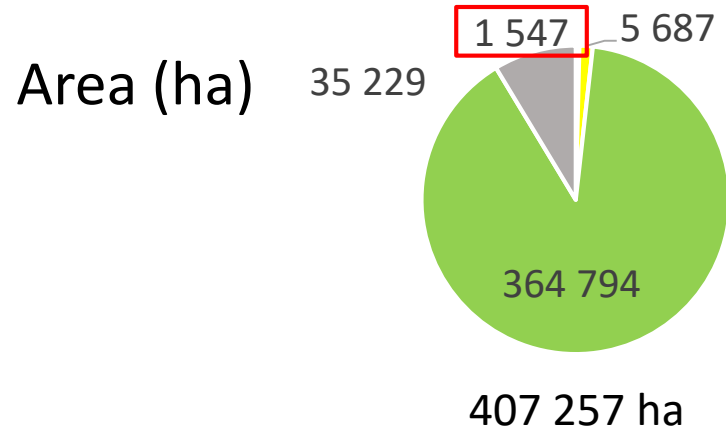
Learned lessons

- Weather data was tried to use during development but the data's impact was found to be small and the component was a burden to the system without little benefit.
- Extreme weather conditions give wrong results.
- Problems with cloud mask
- Parcels with a small area do not get a definitive result because Sentinel pixel size
- Problems with keeping data up to date:

<https://scihub.copernicus.eu/news/News00985>



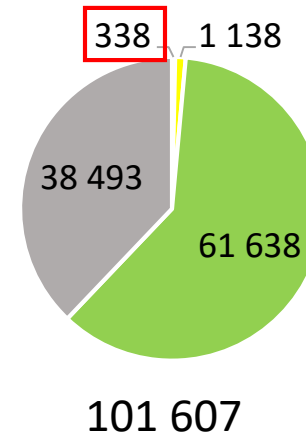
Results 2021



Green - mowed
Red - not mowed
Yellow - uncertain result
Grey - no results

Declared area total:
970 000 ha

Number of
parcels



Declared parcels total:
176 000

Future

- Crop detection – still needs development and testing
- Better detection of grazing – there are problems that are hard to solve
- New area monitoring system – 2023
- New sensors with smaller pixel size?
- Geotagged photos?





REPUBLIC OF ESTONIA
**AGRICULTURAL REGISTERS
AND INFORMATION BOARD**

Thank you!