



COMPASS INFORMATICS

Information and Location Insights



An Roinn Talmhaíochta,
Bia agus Mara
Department of Agriculture,
Food and the Marine

Area Monitoring System Journey & Overview

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Technology Makes it Possible, People Make it Happen

Project Remit



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Project Title:

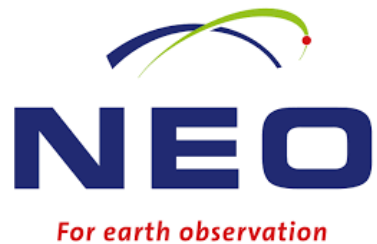
Area Monitoring System Service

Client:

Department of Agriculture, Food and Marine

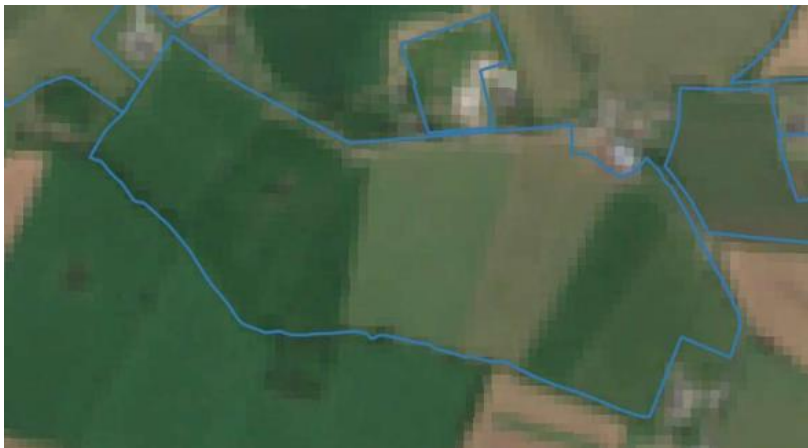
Problem Statement:

CAP requirement to continually monitor agricultural land parcels using Copernicus Sentinel data for DAFM to pay farmers based on farmer declarations and determined activities.



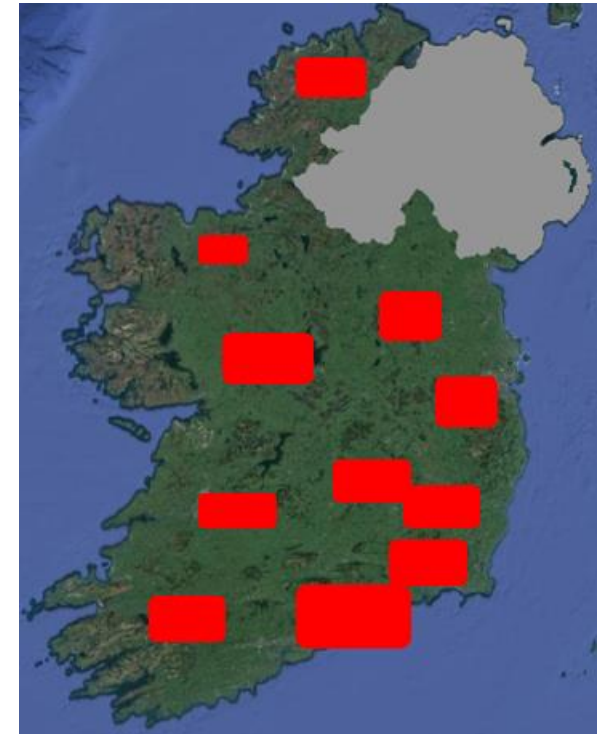
Context - Land Parcel Identification System

- DAFM's Land database which underpins payments to farmers under area-based schemes from which farmers apply and get paid.
- c. 1.1 million LPIS Parcels
- Single or Multiple agricultural units to one LPIS Parcel
- Can change throughout the year
 - Crop claims updated (attribute update)
 - Exclusions removed (geometry update)



Control with Remote Sensing (CwRS)

- To determine compliance of farmers declared crop (at a point in time) and agricultural activity
- Used since 2013 in Ireland
- Commercial VHR/ortho-imagery (recently captured imagery)
- 5% of farms manually checked using VHR (3% or c. 4,500 farms nationally)
- High cost in both staff (including site visits) and imagery
- Initial tasking of VHR imagery required for desired 5%



AMS – Why change?

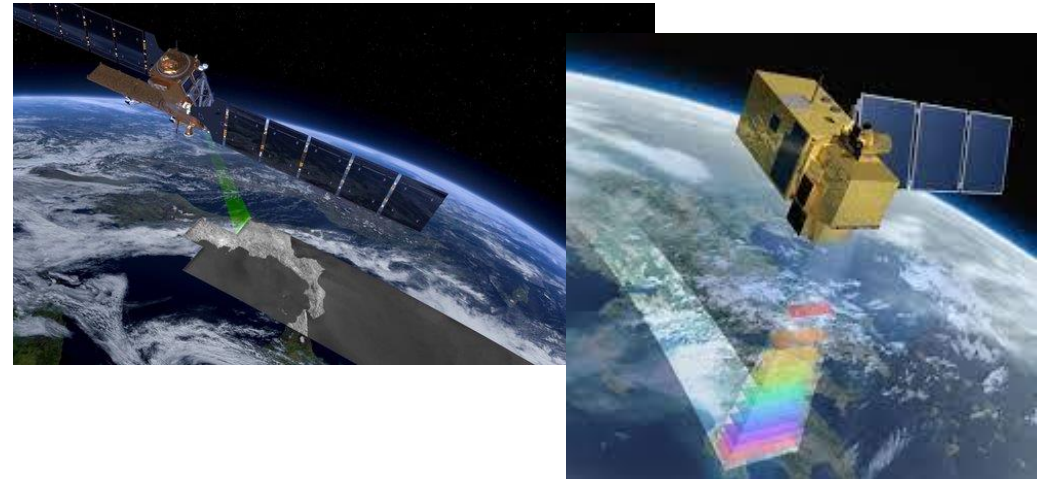


- Compulsory use of AMS under new CAP (transitional period until end of 2024)
- Since January 2023, Paying Agencies required to finance their own imagery for checks (satellite and/or aerial)
- Allows farmers and DAFM to detect and respond to issues more quickly and accurately, leading to improved efficiency and productivity
- Reflects trend towards digitalisation and automation in the agriculture sector
- Move from manual inspections to automated solution
- Use of freely available Satellite data
- More real-time continual monitoring (time-series analysis)
- Enhance local knowledge and expertise

AMS – What is it?

“regular and systematic observation, tracking and assessment of agricultural activities and practices”

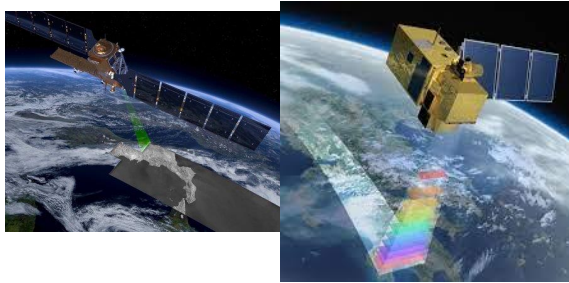
- System for the continual monitoring of agricultural land using Copernicus Satellites (Sentinel-1 and Sentinel-2) to allow for CAP scheme payments to farmers.
- To determine compliance of farmers declared crop (over time) and agricultural activity
- 100% of farmers – c. 137,500 (c. 66% of Irelands land area)
- Feature of Interest (FOI) is used as the monitorable parcel (subdivision of LPIS; c. 2.2 million)



AMS - High Level Process Flow

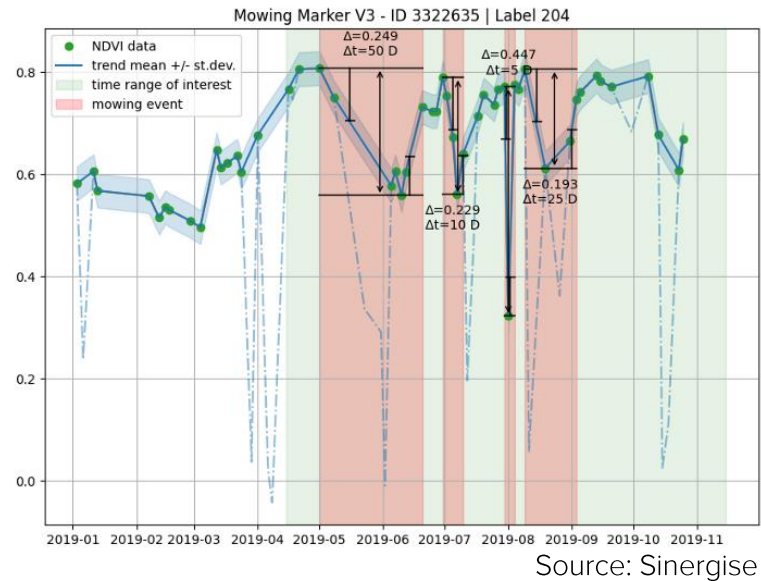
Data Inputs

S1, S2, & FOIs



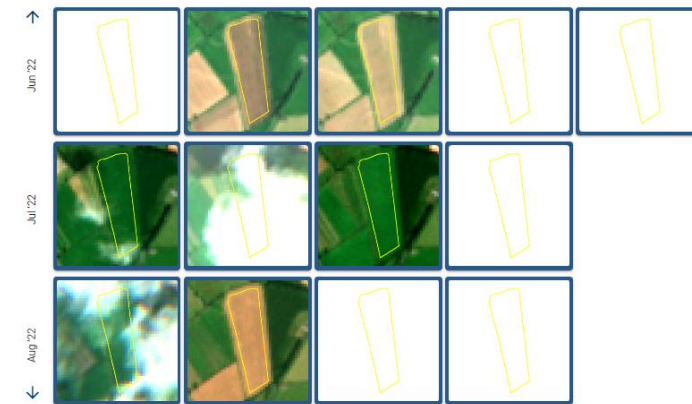
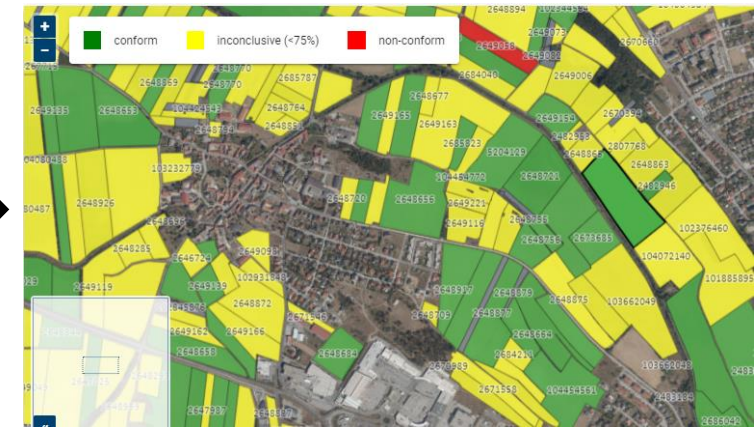
Markers

S1 & S2 ML Algorithms

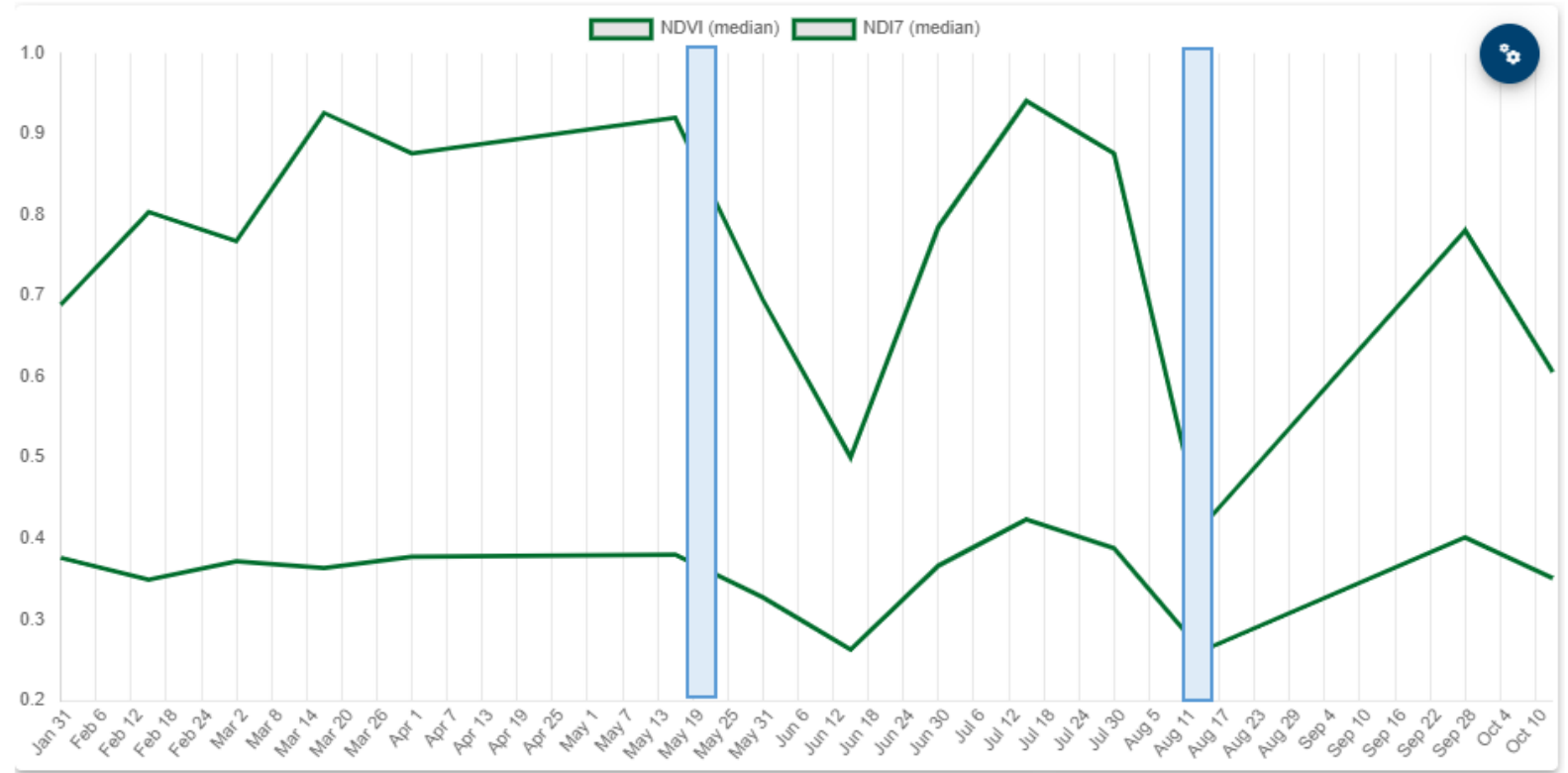


Expert Viewer Application

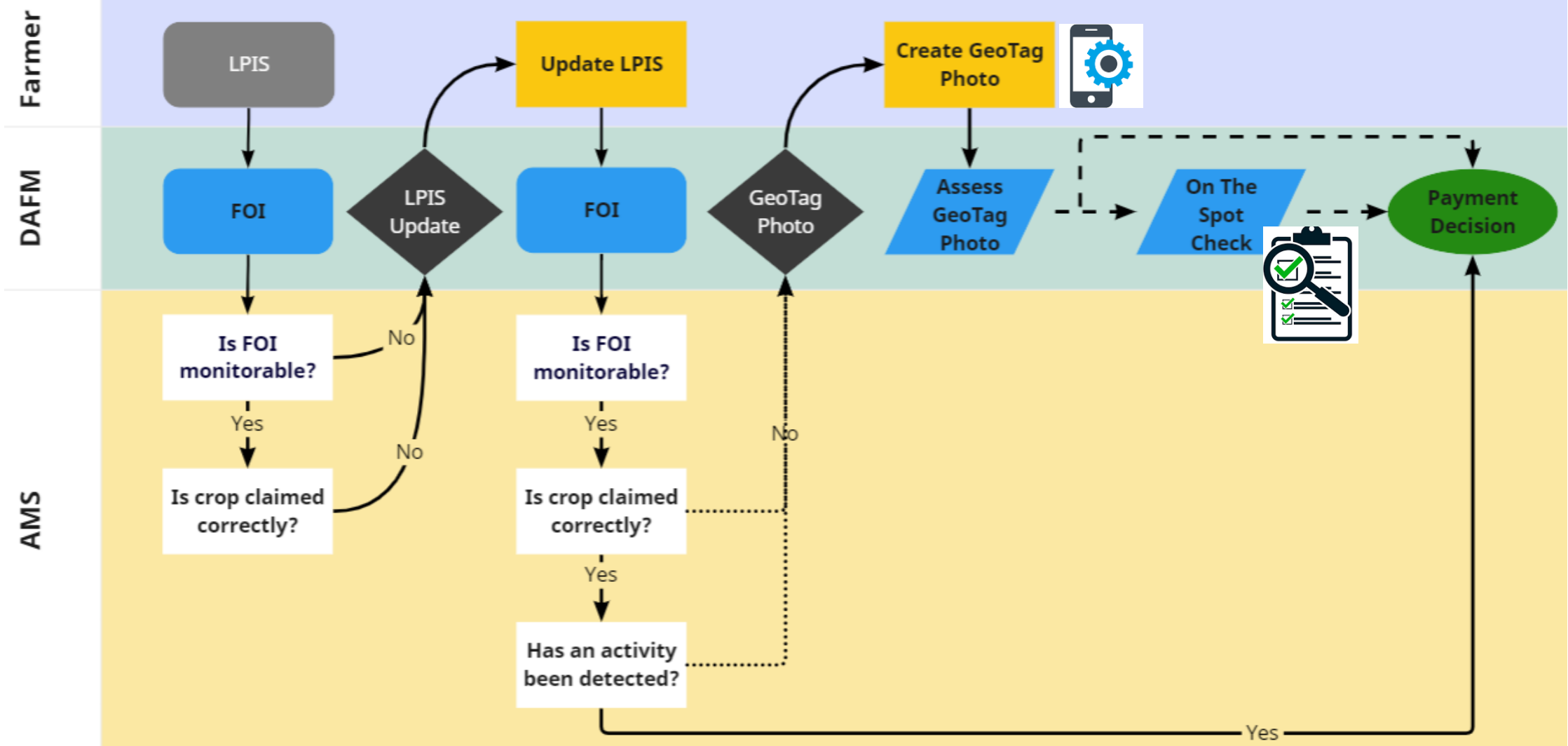
Analysis/Visualisation



Example – Permanent Grassland – Life Cycle



Journey to Payment Decision





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Thank You
Questions?

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