



**Harper Adams  
University**

**Jonathan Gill**

**Mechatronics & UAS Researcher**

**Harper Adams University**

**BEng (Hons) Robotics & Automated  
Systems**



2018 Nuffield Scholar

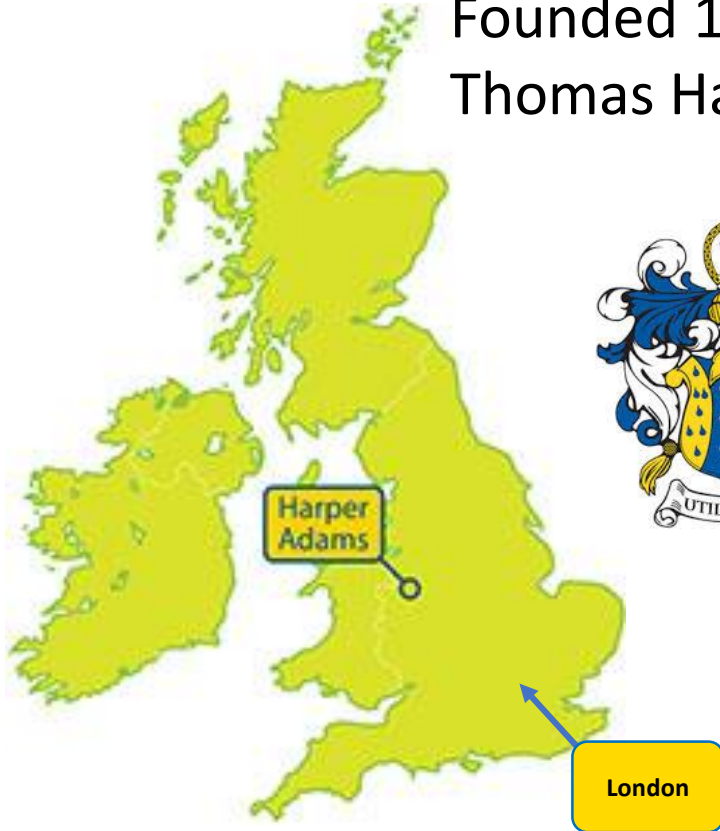


National Centre for  
**Precision Farming**



# Where is Harper Adams University

Founded 1901 by  
Thomas Harper Adams



Precision  
Decisions



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# Harper Adams University Engineering Research



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National Centre for  
**Precision Farming**

# What else can we do with a Drone?



# The Drones used

## HandsFree Hectare



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# The Drones used

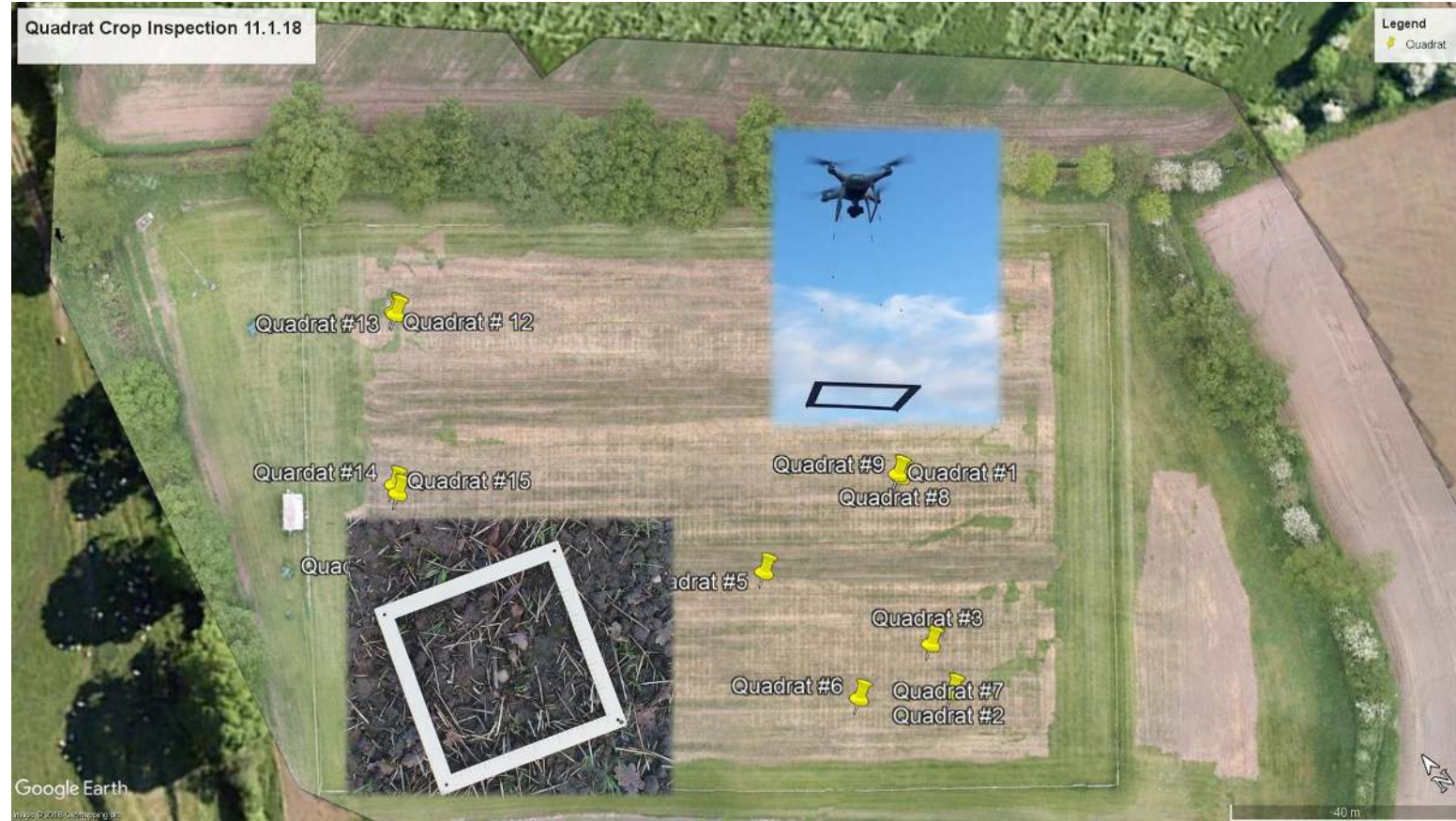


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# The Drones used



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# 5G Rural First



# What we did

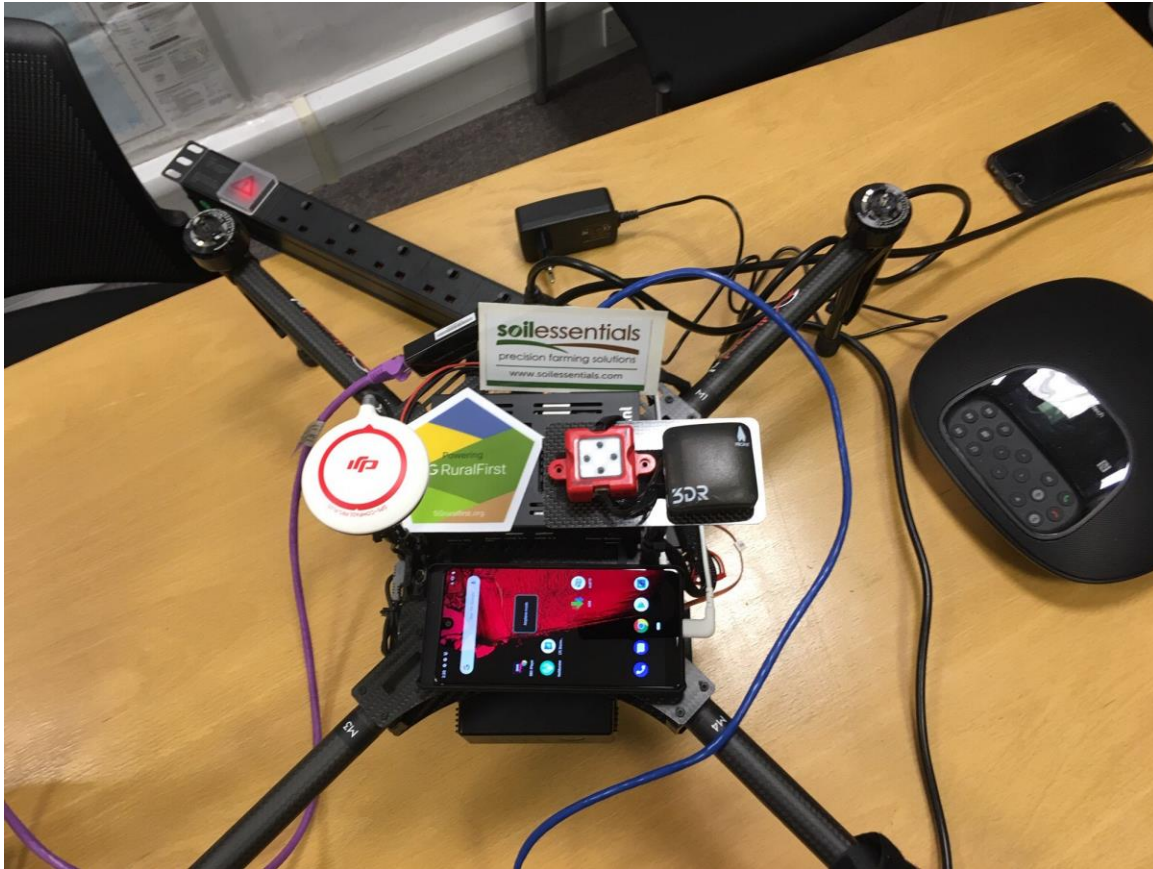


# Rural 5G





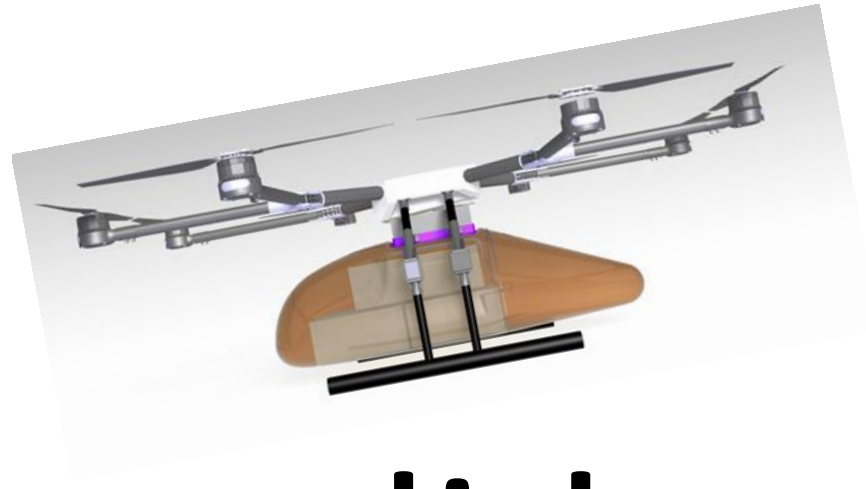
# Rural 5G



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# AirPOD



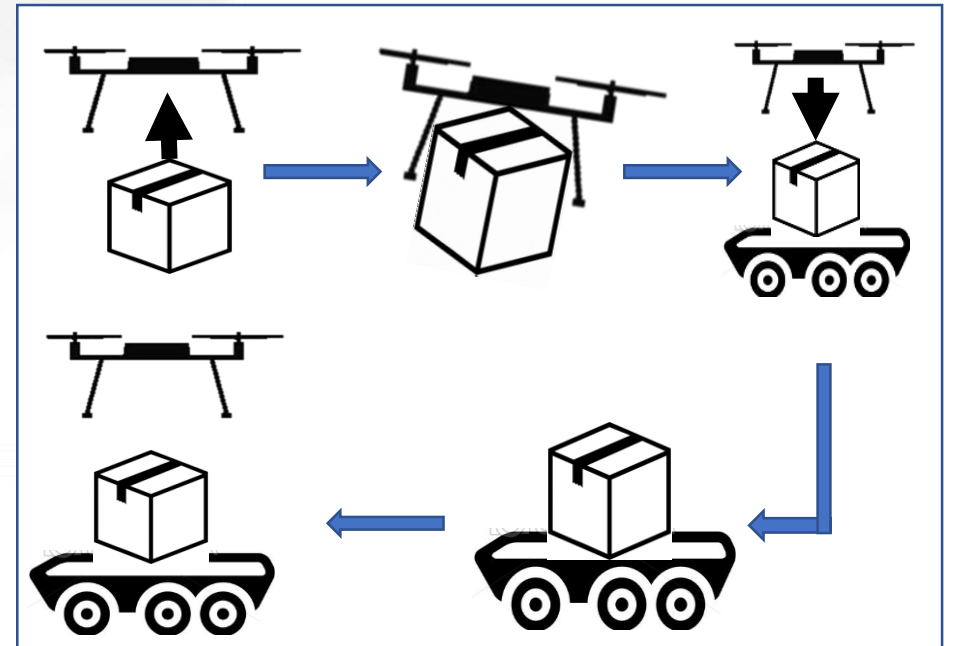
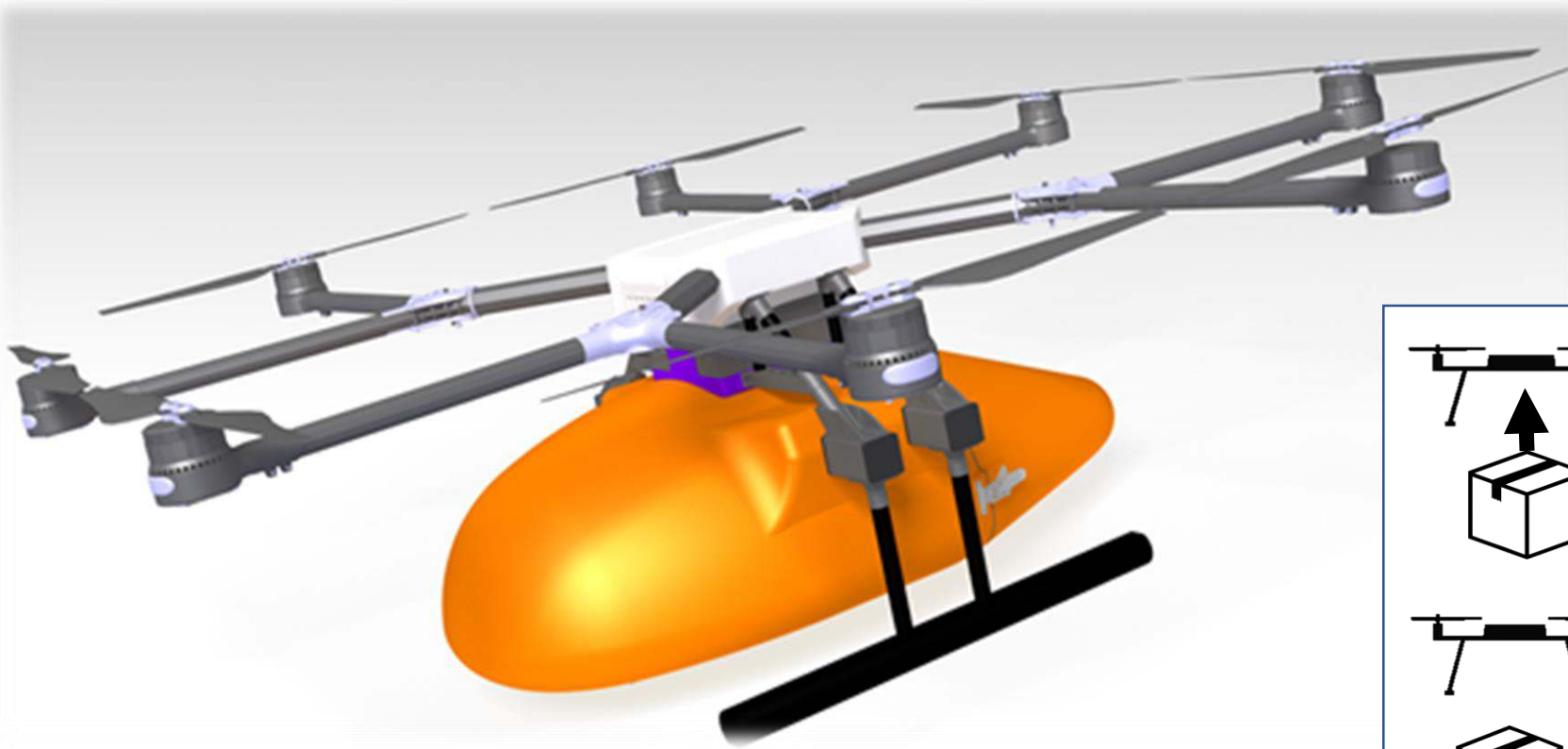
# What we did



# Project Air-Pod

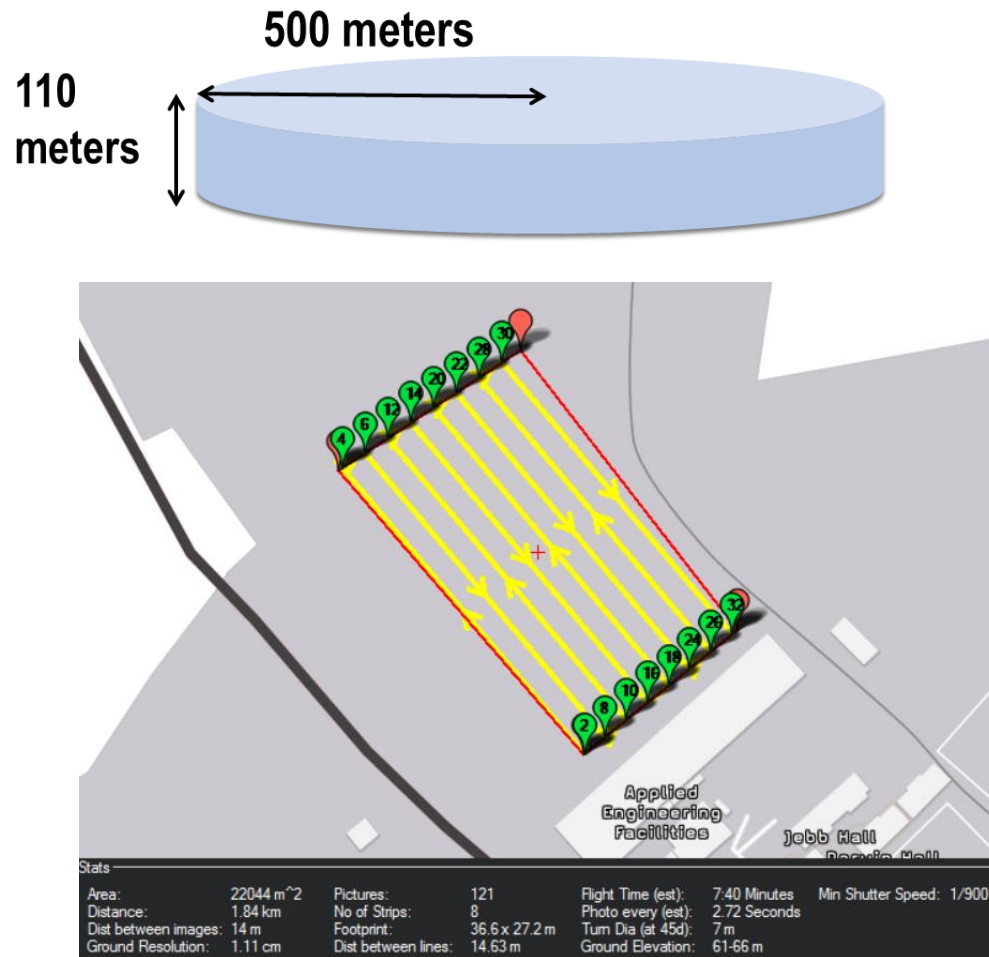
Proving the capability of last mile delivery

The project will aim to produce a scaled down demonstrator to prove a time efficient, environmentally friendly and convenient multi-application platform for goods/passenger transport concept

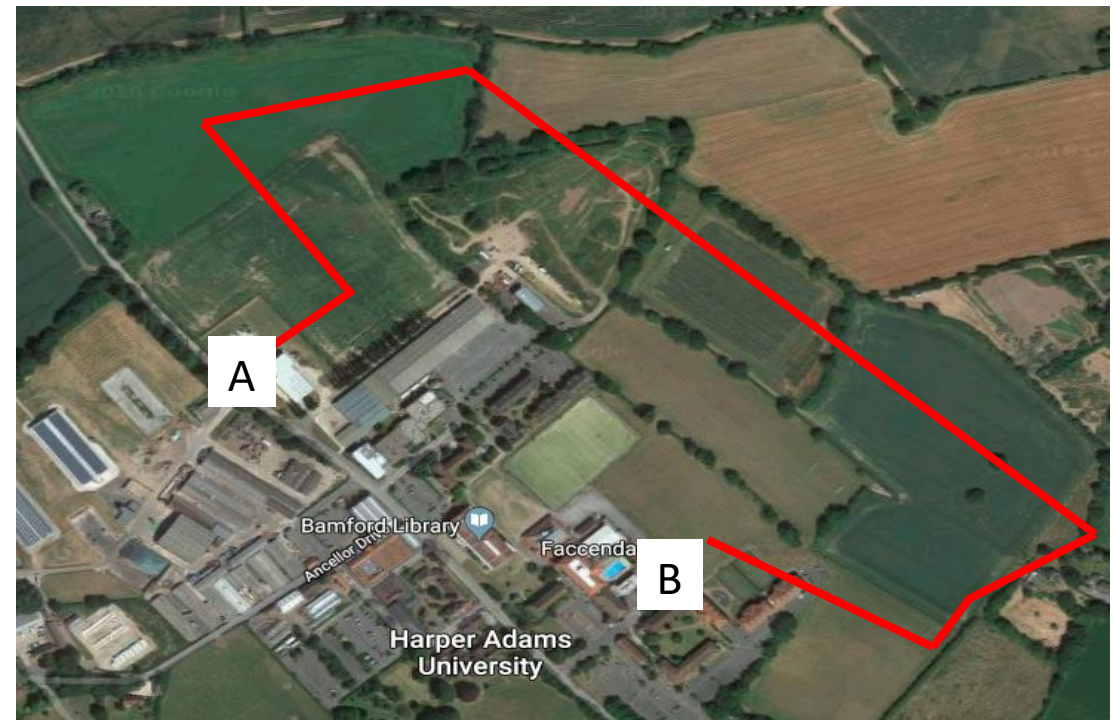


# Flight planning

Current flight plan involves flying the drone inside the current permitted flight zone.



Future testing  
Enhanced permissions required

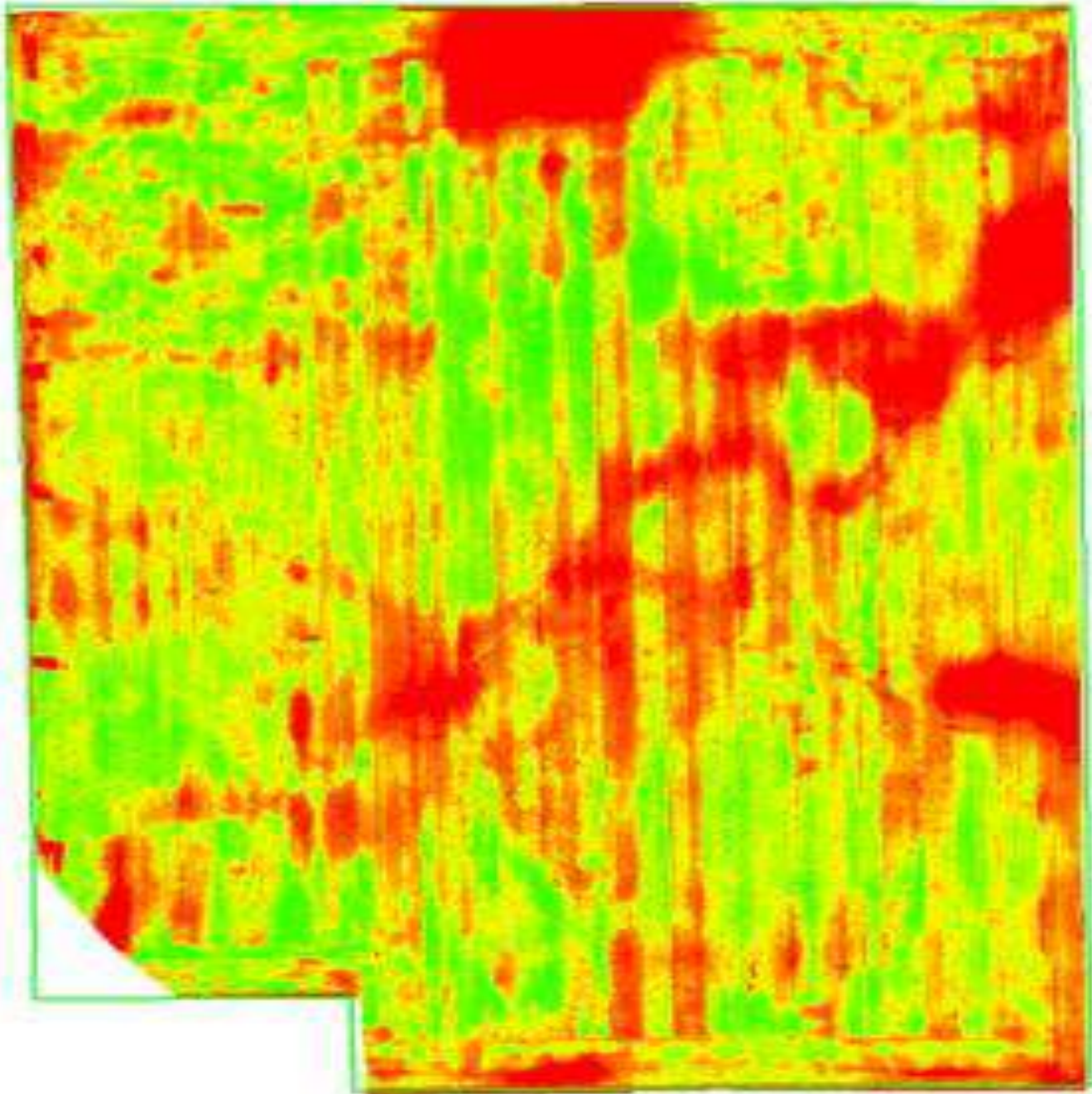


# Drone spraying Consortium



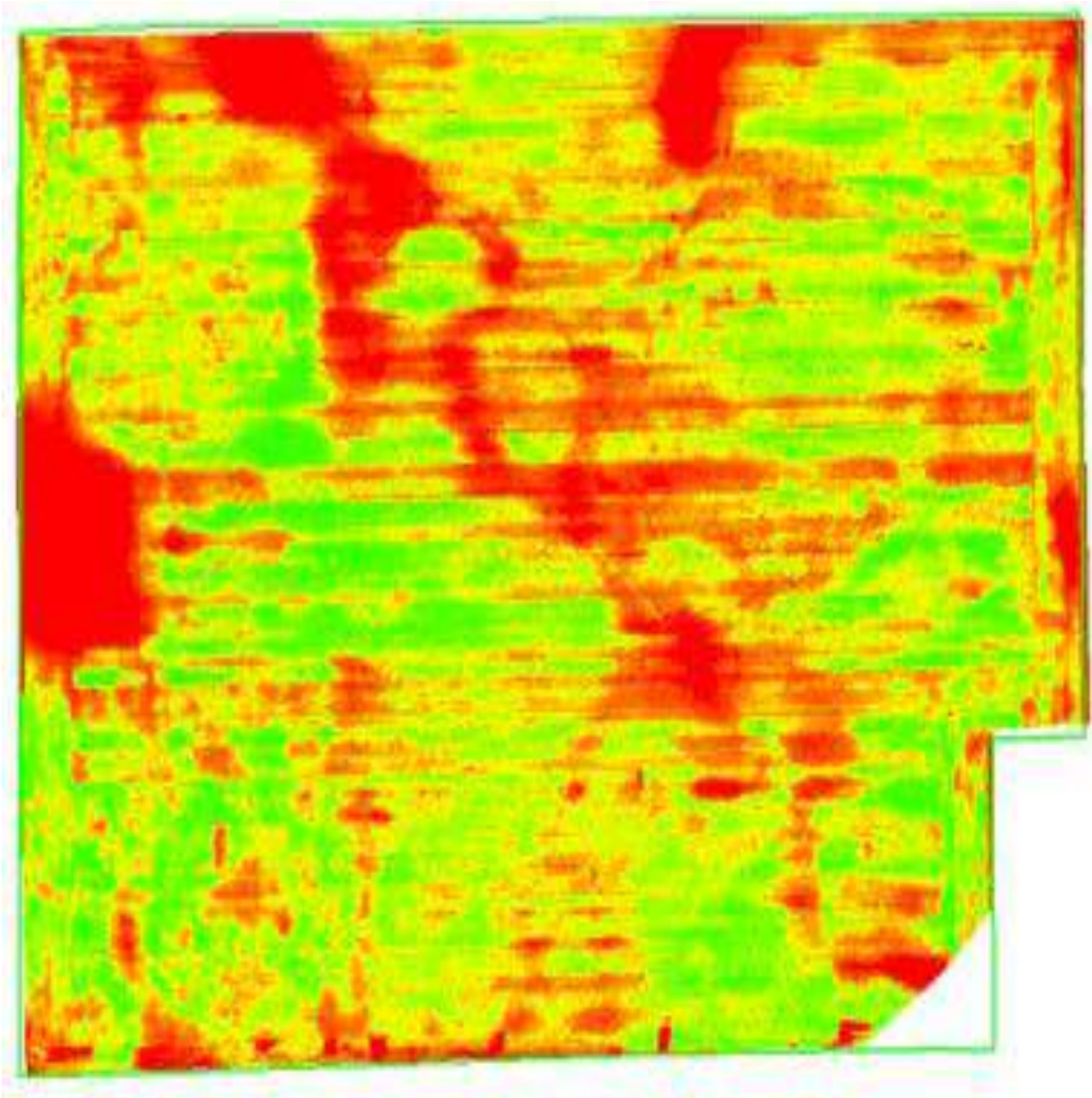
## What we did





Traditional Wheeled  
vehicle based  
spraying has to  
drive on CTF lines  
and drive the  
entire field





Non Traditional  
flying vehicle  
sprayer can ignore  
CTF and only fly  
where required.



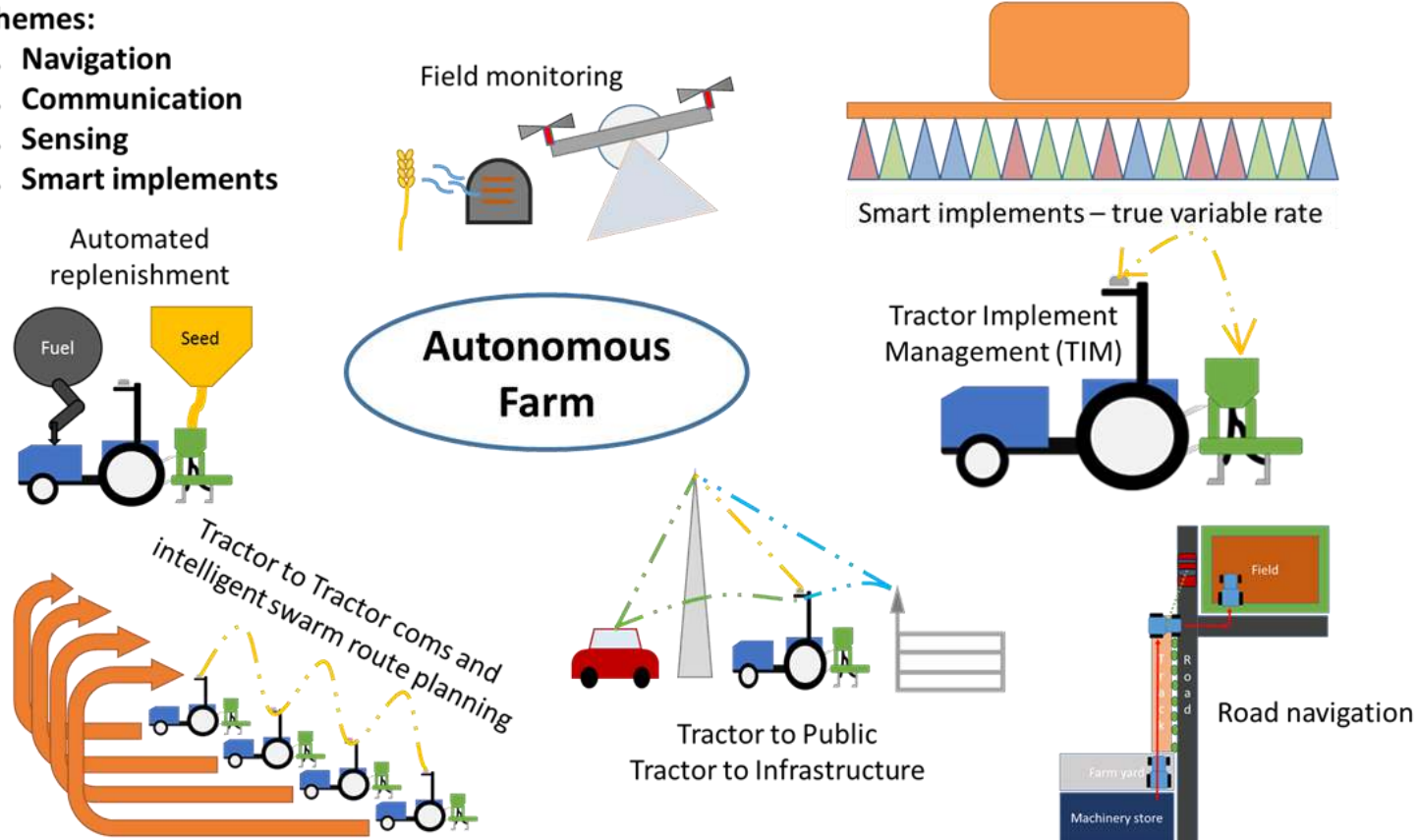
# Future projects – Hands Free Farm

A fully autonomous cereal farm working with multiple crops and fields

“Swarms” of precision machines, autonomous farm yard and remote agronomy

Themes:

1. Navigation
2. Communication
3. Sensing
4. Smart implements



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Questions?