



PRACTICE ABSTRACT

Digital technology

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## XAG DRONES – XPLANET<sup>®</sup> AGRICULTURAL UAS

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The XAG Company was founded in 2007, to research, develop and implement agricultural technology. It is today one of the world's leading manufacturers of unmanned aerial system. It has established partnerships with many influential international enterprises to provide farmers with the best local solutions, ranging from plant protection and crop monitoring to farm management.

Combining smart agriculture solutions, integrating drones, artificial intelligence and cloud, XAG creates and provides solutions that are tailored to every user's personal needs: 1) XMission works for 3D mapping, 2) XStation provides digital field maps and 3D models, 3) XAI cloud and edge recognises boundaries, obstacles, plant location, disease, and 4) XPlanet provides agricultural drones for the optimum smart agriculture solution.

XPlanet agricultural UAS is the latest drone designed and marketed by XAG. It is crafted in an independent way, to carry out the operations previously programmed by the farmer.

Based on data captured from RGB/MultiSpectrum Camera and the recognition result from XAG AI engine, the mobile application Prescription Map will be automatically generated to guide XAG XPlanet for spraying or spreading. XAG has introduced its technology into rural areas, where it has already empowered 6.37 million farmers with smart agriculture solutions.

### Application scenario

Agricultural Unmanned Aerial System (UAS) for chemical treatments (precision techniques)

### Digital technologies

Satellite, 3D mapping, 4D imaging radar, mobile applications, unmanned aerial system, artificial intelligence (AI), cloud, camera

### Socio-economic impact

- Economic: Costs saving for more profitability, increase yield
- Environmental: impact reduction on resources, small ecological footprint
- Social: food safety, public health and farmers' quality of life

**More info:** <https://www.xa.com/en>



## Purpose of the tool

The XAG XPlanet Agricultural UAS is a high-performance aerial system designed to provide farmers with an optimal smart agriculture solution. Thanks to cartography and a 4D imaging radar, this tool optimises seeding, crop spraying and granular spreading. In this respect, cost and time are saving for farmers, while more sustainability and safety is also generated.



Source: [XAG](#)

The basic principle is to provide the right quantity of material in the right place. Crafted into an ultimate balance between precision, efficiency, cost and safety, compared to a manual approach of agriculture, a large ground-based machinery or a manned aircraft, the XPlanet Agricultural UAS offers higher precision, all-terrain autonomous operations, a better efficiency and more flexible operations.

## Description of the tool



Source: XAG

The XAG XPlanet drone provides three different operation modes adaptable to multiple terrain types (e.g. plain, mountain, hill, terrace or plateau): standard mode, spot mode and customised mode. Farmers, through 3D high-definition maps, can capture a full picture of a landscape from every angle, to select the ideal mode that suits their needs. The drone can sense the slope of land to optimise the flight path and ensure safe, smooth operation, even on complex landforms.

All settings and operations can be controlled from a smartphone through a unique mobile application. Indeed, based on data captured from the camera and the recognition result from XAG artificial intelligence engine, the prescription map will be automatically generated to guide the drone for seeding, spraying or spreading. Targeted parcels, spraying parameters and appropriate operational flight path are also set through the XAG Agri App. Support over-the-air (cloud) is provided to store data collected and one operator can control up to five drones simultaneously.

## Areas of socio-economic impacts

<b>Social</b>	Preserve food security and public health, better working conditions for farmers.
<b>Economic</b>	Costs saving by reduction of inputs and nutrient consumption (chemicals, pesticides, fertilizers, etc.). More profitability, potentially higher yield and income.
<b>Environmental</b>	Reduced effect on water quality due to chemical reduction. The main challenge is to leave the smallest ecological footprint.