Contact Information

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PRESS RELEASE

FOR IMMEDIATE RELEASE

[Place], [Date]

CHAMELEON – A Holistic Approach to Sustainable, Digital EU Agriculture, Forestry, Livestock and Rural Development based on Reconfigurable Aerial Enablers and Edge Artificial Intelligence-on-Demand System.

CHAMELEON is a Horizon Europe project that brings together a consortium of 12 partners established in 9 different EU countries, involved in the supply chains from drone technology developers to users. CHAMELEON will introduce a new business model and ecosystem-oriented AI development and Big Data platform, allowing the innovation of agriculture, forestry and livestock services, and enabling new forms of communication and transactions between actors within the agriculture, forestry and livestock's business process. In this way, CHAMELEON will address the needs of most complex agricultural, forest, livestock ecosystems and rural environments, through a drone hardware (Drone Innovation Platform) and software system (CHAMELEON Service store and CHAMELEON APIs) that is on-demand and multi-purpose.

Climate change is having a major impact on food security. More than 815 million people are chronically hungry and 64% of the chronically hungry are in Asia. The world needs to increase food production by almost 50% by 2050 to feed a population of nine billion, yet resources such as land and water are becoming more and more scarcer. Farming communities and others involved in agriculture have to adapt agriculture to climate change and other challenges. On the other hand, the continuous shrinking and fragmentation of ecosystems, the decline of biodiversity and ecosystem services lay the path towards a series of negative impacts for humanity. Forested areas that are legally designated and managed for long-term nature conservation are the primary victims of human encroachment through systematic deforestation, mainly by means of destructive uncontrolled wildfires accompanied by illegal construction

activities. Illegal hunting and logging, soil, and water pollution set the grounds for disrupting the ecosystem balance thus leading to a direct or indirect damage to the homoeostasis and income of rural communities. In this context, ICT-driven tools and technologies needed to enhance decision-making through accurate, reliable, and timely information have an important role to play. Agriculture, Forestry, and Livestock ecosystems must look towards emerging technologies for solutions to overcome some of the challenges they face.

The **CHAMELEON project**, funded by the Horizon Europe Program, aims to address a number of major challenges using near-real-time decision-making packages related to agriculture, livestock and forestry, empowered with artificial intelligence, exploiting information derived from heterogeneous monitoring equipment that can be configured for each use case. The CHAMELEON solution involves the design and use of adjustable and configurable drone, that will be able to choose from several available services or applications through the CHAMELEON App store. The drones will benefit from a universal support, including AI algorithms execution on-board. The latter will facilitate the provision of real time results without the need for network connection, even in remote rural locations. The applications will provide solutions to important challenges such as selective spraying of medicines for vegetation; quantification of carbon sequestration and biomass estimation in vineyards, olive trees and almond crops; irrigation and water stress monitoring and management; plant health assessment toolkit; and livestock health monitoring.

The CHAMELEON solution will be validated under relevant operating conditions in 3 pilot sites in 3 European countries: Spain, Greece, and Austria. These pilots will demonstrate the impact and potential of CHAMELEON approach towards digitalizing and boosting European Agro-business.

The official **Kick-Off Meeting** of the CHAMELEON project took place in Athens, Greece, on July 12th and 13th, 2022, with the participation of more than 30 experts that will work closely for the next 3 years to deliver an impactful and fully adaptable solution for sustainable, digital EU agriculture, forestry, livestock, and rural development.
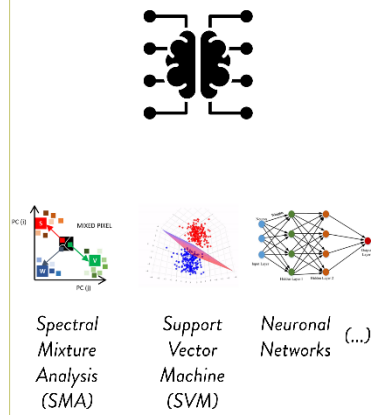
1. Multisource remote sensing

Satellite

Fixed-wing UAV

Drone
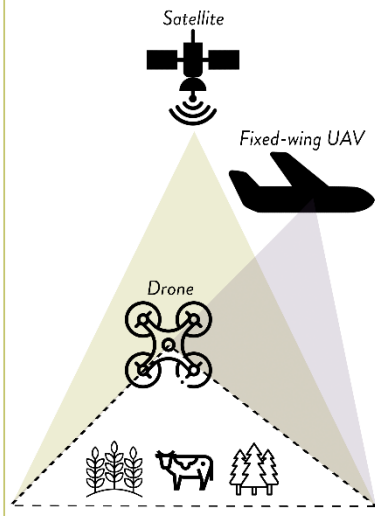
2. Machine learning models

Spectral Mixture Analysis (SMA)

Support Vector Machine (SVM)

Neuronal Networks

(...)

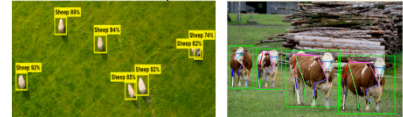**3. Decision Support Systems and Real-time alarms**

Agriculture:

CO2 sequestration and irrigation management
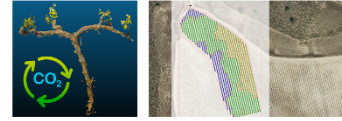
Livestock:

Behavioural analysis and lameness detection

Forestry:

Plant health assessment
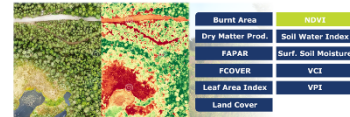
Burnt Area	NDVI
Dry Matter Prod.	Soil Water Index
FAPAR	Surf. Soil Moisture
FCOVER	VCI
Leaf Area Index	VPI
Land Cover	

PROJECT SUMMARY

CHAMELEON is a Horizon Europe Project that aims to optimise production and identify potential problems in agriculture, livestock, forestry and rural areas. To achieve this, the CHAMELEON Project will use a novel reconfigurable drone, able to modify its configuration and sizing upon demand, which can be deployed in homogeneous or heterogeneous groups to support complex scenarios, as well as a set of existing heterogeneous, modular, interoperable, networked unmanned vehicles systems. The CHAMELEON Consortium consists of 12 partner organisations distributed in 9 European Countries, with a high participation of innovative SMEs (6 in total), 3 universities and 3 end users. CHAMELEON advances will be validated in three pilot use cases in Spain, Greece and Austria. In addition, CHAMELEON will organise two open calls for SMEs to generate AI supported solutions with financial, technical and business mentorship from the project partners.

GENERAL INFORMATION

Duration: 36 months | *Starting date:* 1st July 2022

Total cost: €5.9 million

Coordinator: Acceligence Ltd.

Website: https://chameleon-heu.eu |

Twitter: @Chameleon_HEU | *LinkedIn:* @chameleonheu

CHAMELEON Consortium: Acceligence Ltd (CY)| Universidad de Salamanca (ES)| Adrestia Research and Development Private Company (EL)| AIDEAS OU (EE)| Diputación de Ávila (ES)| Security & Defense chez Delair (FR)| Unparallel Innovation Lda (PT)| Mediterranean Agronomic Institute of Chania (EL)| Lithuanian Research Centre for Agriculture and Forestry (LT)| Universidad de Castilla-La Mancha (ES)| Johanniter Osterreich Ausbildung und Forschung gem GmbH (AT)| Squaredev (BE).

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