**Services based on Agriculture Precision and Digitization Technologies**

Development requirements (testing, scale-up production, investment, etc.):

The Project requires a specific Web platform that enables to promote and market these products. To such end, we have submitted a Technology Advancement Fund financing request. These funds will be invested in a virtual platform that offers the different services available, enabled with e-commerce and high-resolution image storage for customers to query. In order to materialize this investment, the project requires financing (from INTA or external sources).

In order to consolidate and grow in the development and promotion of these services, we need to strengthen the GAP team from Mendoza, with capabilities existing in other units or outside of the Institution to support that working team.

**Working group:** Geomatics and Precision Agriculture Laboratory (GAP, as per the Spanish acronym) of the EEA Mendoza. Principal Investigators: Guillermo Federico Olmedo and Hernán Vila.

**Statement of problem:**

For several years, the agricultural and livestock sectors are undergoing a deep transformation process in their technical and productive practices. The trend is to implements site-specific productive schemes in order to improve field yields and reduce the need for productive inputs, resulting in cost reductions and lower environmental impact.

In spite of the importance of precision agriculture technologies in farm management practices, most farmers lack the knowledge required to apply them and are not aware of their benefits.

High. To date, most of these technologies have been validated for viticulture. Presently, we are working on the intellectual property rights of these developments and the transfer of the products developed to make them available for promotion or marketing.

Part of these developments have been conducted under the framework of a Technological Cooperation Agreement with Aerotec S.A. We are undertaking negotiations with the company to create a new joint venture to deliver the services described above.

**Technology proposal:**

The EEA Mendoza GAP Laboratory has generated a number of developments that were transferred by way of Specialized Technical Services and different Technological Cooperation Agreements. Presently, the proposal is to develop, manufacture and market technological services based on precision agriculture to manage farms (with potential application in other areas). The different products or services will be adjusted and marketed through a geospatial Web-services platform:

- Remote sensing: satellite green index NDVI, SAVI, EVI; intra-lot zoning; leaf area index (LAI) estimation; digital elevation models; surface energy balance

- Climate: meteorological data modelling; modelling of climatic zoning indices

- Phenology: phenological growth stages; complete phenology; phenological predictions

- Lot information: variety, area, irrigation systems; planting records, phytosanitary treatments; etc.; GAP reports generation, climatic contingencies.

- Irrigation: potential evapotranspiration; crop and actual evapotranspiration; water balance per lot

- Pests and diseases: phytosanitary alerts; disease forecasts; fertility, nutritional information

The proposed technology seeks to provide accurate and specific information, in line with the agricultural knowledge that interprets it and enables appropriate decision-making.

**Technology Readiness Levels:**

Precision Technologies

**National Coordination Office for Technological Cooperation and Institutional Relations**