



Technical University of Madrid (UPM)

Group for Automation in Signals and Communications

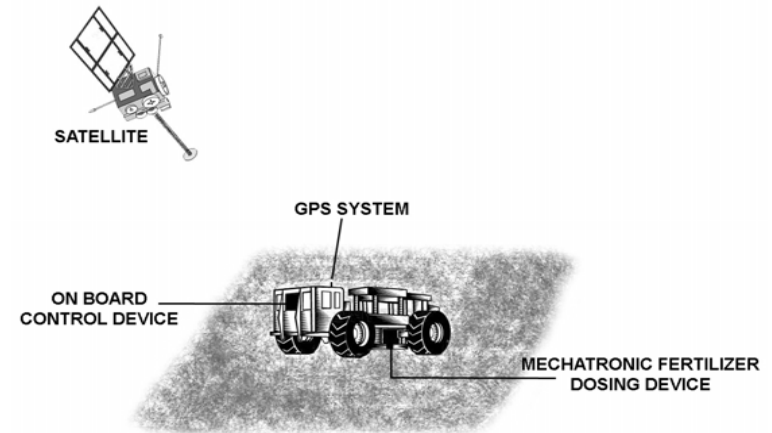


- The Group for Automation in Signals and Communications (GASC) consists of 1 Professor, 5 Associate Professors, 10 Assistant Professors and 15 PhD students.
- **Current research areas:**
 - Signal Processing & Communications Theory (including internet end e-commerce)
 - Soft Computing techniques (Artificial Neural Networks, Fuzzy Logic, Genetic Algorithms, Adaptive Nonlinear Systems, Swarm Intelligence, etc.) for Intelligent classification tasks applied to signals (images, voice, electromagnetic signals, etc.)
 - Optimization of the decision costs associated to automatic classification
 - MCD Methods applied to Soil Science, Rural Planning, Environmental Impact Studies and Infrastructure Projects.
 - Fractals/Multifractals and wavelets transform applied to image analysis, data processing and soil properties
- GASC is the coordinator of the European Latino-American Cooperation for Intelligent Automation and Control Network (**ELACIAC Network**) officially recognized by the European Commission and is integrated in **IPROMS European NoE** and **3 other National NoEs** about Blind Signal Separation (BSS), Soft Computing in Bioengineering and Speech Recognition. The group has been involved in **more than 40 Research projects** financed by National Government, European Commission or Private Institutions and Firms.

Sustainable Agriculture Using Intelligent Fertilizing System (SAFFRON)

- **Concept of the project:**

To create a system which will precisely doze fertilizers into each part of the field according to needs of the specific type of the soil, specific type of plant, specific weather and environment conditions.



- **Objectives:**

- To create a system which is able to precisely determine the fertility level of the soil through decoding of satellite images.
- To develop a system to produce recommendation number of fertilizers based on data fusion of soil fertility level, weather, minimum environmental risk, maximum crop yield, etc.
- To produce a Mechatronic-based fertilizing machine which will be able to precisely doze fertilizers just in number needed by each part of the field.

Sustainable Agriculture Using Intelligent Fertilizing System (SAFFRON)

- **Relevance to the Call:**

FP7 Large Collaborative Projects for Sustainable Production and Management of Biological Resources From Land, Forest and Aquatic Environments (*FP7-KBBE*).

- **Proposed budget:** 4-5 M€

- **Duration:** 36 Months.

- **Consortium:** 15 partners.

Sustainable Agriculture Using Intelligent Fertilizing System (SAFFRON)

- **Additional expertise needed:**

- Mechatronics
- Satellite imagery
- Pattern recognition
- Optimization
- Geostatistics
- Spectral analysis
- Prototype design

- **Contact:**

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