IPSentinel Terrestrial Enhanced Recognition System (IPSTERS)

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**Objective:**
Apply AI techniques for processing satellite images available on the IPSentinel platform for an optimized generation of added-value maps (e.g.: land-cover land-use maps, level-3 products).

*IPSentinel* - Portuguese infrastructure developed within the DGT and IPMA partnership for storage and distribution of Sentinel (Copernicus) satellite imagery, covering the Portuguese territory and its search and rescue zone.

*Copernicus* - European Earth Observation (EO) Programme that developed and operates the Sentinel satellites.

*Team*: DGT, UNINOVA, NOVA IMS; End-users: APA, IFAP, ICNF e DGADR
1- **Software Products:**

- Scientific advances in the generation of land-cover land-use maps using *active learning* techniques in the context of Big Data for remote sensing.

- Exploring the application of an *intelligent data fusion* algorithm for the classification of multispectral images.

2- **Hardware:**

- Implementation on dedicated *hardware* (GPU and FPGA) for acceleration of the data processing.
WHAT IS THE CONTRIBUTION FOR SOCIETY?

- **Open and free access** to these data on IPSentinel, motivating the Public Administration, and other institutions and companies to include the generated products in their workflows.

- Generation of **four products useful for society**: irrigated areas and water bodies; Map of forestry; forestry changes; Map of water bodies pollution. *These products are essential in the planning and management of the land and water resources.*

- Processing on dedicated hardware platforms as a way to **reduce energy consumption and execution time** when producing the maps.