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## PROJECTE DE DOCTORAT INDUSTRIAL EXPEDIENT 2015 DI 038

### DADES DE L'EMPRESA I DE L'ENTORN ACADÈMIC

#### Títol del projecte

CLUES: CLimate services design for Urban environments based on in situ and Earth observation Systems

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### BREU DESCRIPCIÓ DEL PROJECTE DE RECERCA

The new and challenging scenario towards operational earth observation thanks to the radar-optical such as the european program Copernicus space as well as new airborne sensors demands a right balance between updating, accuracy and accessibility. Making highly accessible products and services has become a crucial issue in terms of usability and cross-fertilization among different disciplines and skills to improve them.

In this regard, a new innovative scenario in terms of designing services on a user centred approach is paramount. CLUES wants to implement a platform of services on urban climate based on earth observation designed to promote the generation and dissemination of geoinformation. This tool will facilitate the creation and sharing of user-customized geoinformation creating new information and knowledge in an interactive process between professionals and end users

Operational and useful earth observation applications implies customizing the required products and services and integrating the end user in the process in order to translate user needs into operational and technological requirements as well as to facilitate the accessibility and usability of the delivered product or service. Moreover, is precisely in the urban ecosystem where the new climatic trends are going to have more impact in the short and medium term. So, new approaches available for decision makers are paramount to take appropriate,



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innovative and sustainable mitigation and adaptive measures by using operational earth observation products and utilities. The main objectives of this project is:

- Upgrade with better spectral-spatial-temporal resolution the definition of local Climate Zones on urban environments
- Service temporal information in terms of vulnerability-impact and resilience on a temporal basis, especially emphasized on COPERNICUS segment (SENTINELS satellites) and hyperspectral airborne sensors
- Refine the earth observation data with meteorological models in terms of land cover/use changes and local impact on critical meteorological events (temperature and precipitation)
- Design with a user centred approach the new and innovative services to evaluate how resilient the urban environment is as well as cross this information with socioeconomic information (justice maps)
- Improve the risk assessment and early warning of hydrometeorological risks in coastal urban environment (in collaboration with civil protection and firemen services)