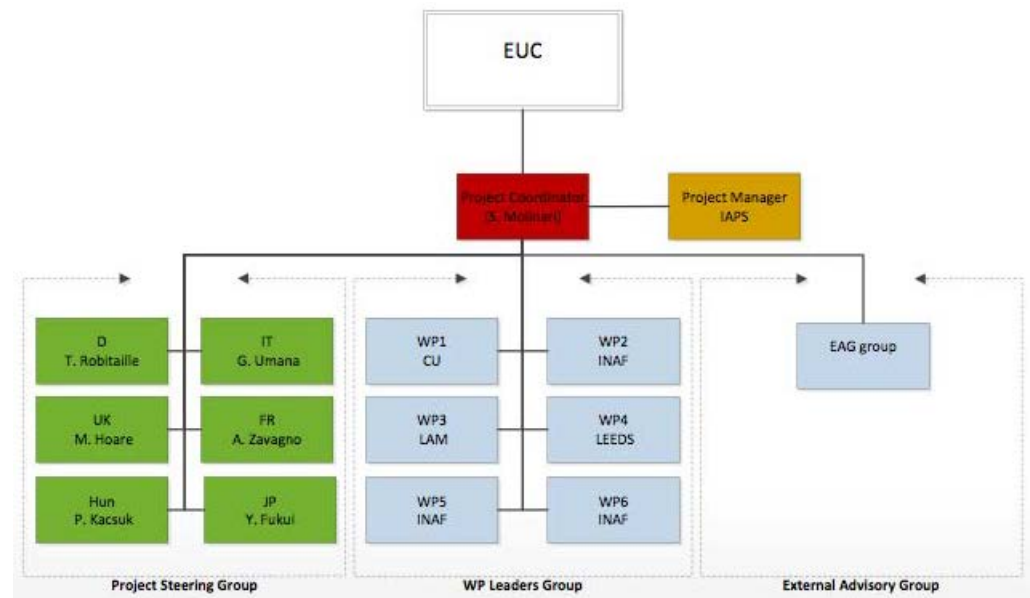
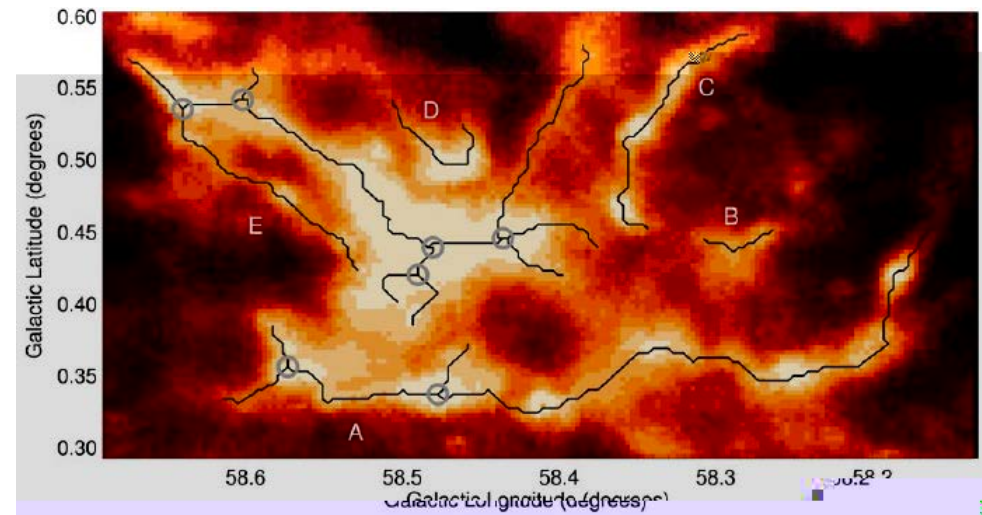


- ▶ exploit the combination of all the new-generation Infrared-to-Radio surveys of the Galactic Plane from space missions and ground-based facilities, using a novel data and science analysis paradigm based on 3D visual analytics and data mining framework, to build and deliver a quantitative 3D model of our VIALACTEA Galaxy as a star formation engine that will be used as a template for external galaxies and study star formation across the cosmic time.



- ▶ *morphological and physical characterization of diffuse emission structures from continuum as well as spectroscopic maps of the Galactic Plane*

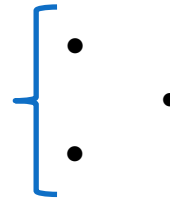




- ▶ *extracting compact structures from Hi-GAL dust thermal continuum maps of the Galactic Plane and characterizing from the physical and evolutionary viewpoint the objects identified as star forming regions. Deliverables will be used to estimate the Star Formation Rate*



- ▶ *estimate the heliocentric distance for all sources and structures and deliver a 3D model of the spiral structure of the Milky Way*





- ▶ *acquire the outputs of the previous WPs and use radio spectroscopic and continuous ancillary data to implement the global Galaxy-scale recipe for star formation by analyzing SFR, SFE and SF thresholds in the context of spiral arms, expanding bubbles from evolved stars of HII regions. Estimate also the effect of the Galactic diffuse Cosmic rays distribution on the evolution of star forming clouds*

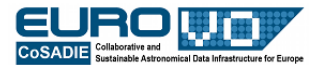




- ▶ *activities needed to ensure that a computing infrastructure and a set of data-mining/machine-learning, visual analytics and 3D visualization tools are in place according to astronomers specifications*









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# survey



