**Contribute of digital information modelling to Territorial Governance and Airport Safety interaction management**

**Trifilò Domenico1\*, Ragusa Eliana2, Di Graziano Alessandro2, Arcidiacono Claudia1**

1 Università degli Studi di Catania, Dipartimento di Agricoltura, Alimentazione e Ambiente, Via S. Sofia n.100, 95123 Catania

2 Università degli Studi di Catania, Dipartimento di Ingegneria Civile e Architettura, Viale A. Doria n.6, 95125 Catania

\* [domenico.trifilo@unict.it](mailto:claudia.arcidiacono@unict.it), tel: +39 0957147576, fax: +39 0957147605

**Keywords.** GIS, BIM, obstacles and hazards, assessment procedures, land-use planning.

**Abstract**

As part of the relationship between the airport infrastructure and the surrounding area, at both urban and rural level, the orography of the land and the vegetation as well as the artifacts inside or outside the aerodrome’s boundary can constitute important limiting and risk factors to aviation.

The method used to assess the impact of any existing or potential obstacle or hazard to navigation on airport airside or in the surroundings, involves definition of Obstacle Limitation Surfaces, in relation to the type of runway and use.

In Italy, with the aim to ensure aviation safety, areas in the airport surroundings are identified and the related restrictions are specifically established in each of them. These areas and the relative limitations are then graphically represented and published in specific constraints maps (Obstacle Free Zones) produced by Enac (Italian authority for civil aviation), which constitute an essential tool for the governance of the territory in relation to aviation safety.

Local authorities, in the exercise of their competences with regard to the planning and governance of the territory, adapt their planning tools to the requirements of the constraint maps.

This study proposes an investigation on the relationships between territorial governance and airport safety, in the light of sector regulations, highlighting the contribution deriving from the use of digital information modelling. The management of obstacles and hazards through their representation in GIS systems using specific models considerably increases the understanding of their impact on the territory itself. Furthermore, models acquire even more applicative value by integrating the data using BIM tools. In fact, the definition of a management information model of obstacles and hazards to aviation based on the integration of GIS and BIM modelling represents an effective decision-making tool for an aware, efficient, resilient and sustainable territorial management in the airport surroundings. The results of this study are enriched with flow charts and diagrams describing the assessment procedures of obstacles and hazards to aviation in relation to the governance of the territory.