Geomatics and pandemic

During the recent pandemic period, the world's attention has shifted towards the healthcare sector, with world leaders striving to avoid the collapse of their national healthcare systems; the economy has entered an artificial coma, while utility systems, including energy, water, telecommunications and waste management systems, have been asked to act immediately in response to these unprecedented conditions, placing extreme pressure on public utility systems.

During crisis situations, it was also observed that in a very short period of time, most of the activity of the European economy shifted from industry and offices to homes via teleworking. In this context, the residential construction of a city that can be considered smart in the management and provision of public services, involves the creation of a stable and reliable network of sensors and actuators in homes.

This highlights the significant role that smart buildings can play in cases of force majeure, where quarantine and lockdown conditions are required. Building Information Modeling (BIM) technology and digital twins are pioneering the way smart buildings are operated and will significantly contribute to the work of smart building applications. BIM provides an interactive environment where synergies between different skills, information and data can be combined, with real-time online management based on Digital Twin using BIM with enormous resource saving potential for the built environment.

Although the capabilities of geomatic techniques together with BIM offer many opportunities for the efficient management of energy, water, waste and telecommunications networks, there are challenges to be addressed before these opportunities could be actually realised.

The editorial contributions in this issue of GEOmedia fall in this context. Some were developed during the implementation of a project dedicated to the development of a utilities management platform for the case of quarantine and lockdown, eUMaP, within the EU MSCA RISE H2020 framework, the exchange program of research and innovation personnel of the European Community. eUMaP is actually studying an open platform through which local authorities will be able to plan and manage the demand and supply of services in buildings in the event of quarantine or health emergency or lock down, including energy, water and waste networks and telecommunications. Through a partnership between universities, research institutes and companies involved in these fields of investigation, some appropriate analysis tools have been further studied and developed.

Geomatic techniques are the basis of the findings produced by some of these studies, highlighting the important relationships that should be established in the analysis of any territorial situation.

Enjoy your reading,
Renzo Carlucci