URBAN AND REGIONAL DEVELOPMENT

MUR DM 118 - New geodata for innovative urban management

Funded By	MINISTERO DELL'UNIVERSITA' E DELLA RICERCA [P.iva/CF:97429780584] Politecnico di TORINO [P.iva/CF:00518460019]

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Context of the research activity	This research aims to integrate new geodata, such as high-resolution satellite imagery and geospatial data, into urban management practices. By leveraging this data, decision-makers can gain insights into land use, infrastructure, and environmental factors. This integration enables evidence-based planning, optimized resource allocation, improved emergency response, and enhanced citizen engagement, ultimately leading to more efficient and sustainable urban management. Progetto finanziato nell'ambito del PNRR – DM 118/2023, CUP E14D23001910006

	New geodata, such as high-resolution satellite imagery, aerial surveys, and geospatial data collected from various sources, can significantly enhance city management by providing valuable insights and enabling more informed decision-making. The current research grant aims to integrate collected data to define a digital platform enabling different possible application such as:: - Urban Planning and Development. Geodata can support urban planning efforts by providing accurate and up-to-date information about land use, population density, infrastructure networks, and environmental factors. Planners can use this data to optimize land allocation, identify suitable locations for new developments, and assess the impact of proposed projects on the city's spatial layout. - Infrastructure Management. Geodata can assist in the management of critical infrastructure, such as transportation networks, water and sewage systems, and energy grids. By analyzing geospatial data, city authorities can identify infrastructure vulnerabilities, predict maintenance needs, and optimize resource allocation for repairs and upgrades. - Emergency Response and Disaster Management. Geodata plays a crucial role in emergency response and disaster management. Real-time satellite

Objectives	imagery and geospatial data can help monitor natural disasters, such as hurricanes, floods, and wildfires. This information enables authorities to assess the extent of damage, plan evacuation routes, and allocate resources efficiently for emergency response. - Environmental Monitoring. Geodata allows for effective monitoring of environmental factors, including air quality, vegetation health, and water resources. By analyzing geospatial data, city managers can identify pollution sources, track changes in land cover, and assess the effectiveness of environmental conservation efforts. - Transportation and Traffic Management. Geodata can improve transportation systems and traffic management by providing real-time data on traffic patterns, congestion hotspots, and public transportation utilization. This information enables authorities to optimize traffic signal timings, plan efficient public transport routes, and implement intelligent transportation systems to enhance mobility within the city. - Citizen Engagement and Participation. Geodata can empower citizens by providing access to spatial information about their neighborhoods and cities. Through interactive mapping platforms and mobile applications, residents can access geospatial data on local amenities, public services, community projects, and safety information. This fosters citizen engagement, encourages participation in decision-making processes, and promotes collaborative urban management. By means of the implemented digital platform, the final iam of the research is then to build up a dashboard enabling customized operations able to process integrated data in order to extract added value information to be used by decision makers and practitioners in analyzing urban areas.

Skills and competencies for the development of the activity	Basics of geomatics, mapping, GIS, Earth observation, urban planning, data sciences, blended into an innovative spirit