About 54% of world population nowadays lives in urban areas and this percentage is expected to increase up to 66% by 2050. Therefore, it is crucial to manage this social and cultural change by collecting, integrating and sharing data on urban and space-based EO systems. However, the current process of collecting, storing, analyzing and distributing data is still fragmented, incomplete or redundant [1]. The project URBAN GEOmatics for bulk information generation, data assessment and technology awareness” aims to improve the knowledge of the state-of-the-art and proposes new methodologies for the study of soil consumption and mobility in urban areas. Key aspects of the project concern the application of geospatial methods and integrating them with data from different categories, providing the users with a single working environment (EDI) for the creation of metadata and the publication of the same. GET-IT also includes a proper developed web-based tool based on the use of open-source GET-IT platform [5] within the project are collected and coherently organized, visualized and made available via the Internet, thus allowing augmented reality (e.g. CityGML) and support decision makers.

InSAR EXPERIMENTS

We present the preliminary results of the project. Focus has been placed on the development of the end point node of the SDI whose objective is to generate and then share on the Web deformation time-series, obtained through InSAR measurements and regional databases, VGI and in situ data, as well as manual photointerpretation of high resolution images (see Figure 2); in addition, ancillary data, such as regional topographic databases, VGI and in situ data, as well as manual photointerpretation of high resolution images are needed to improve the identification of artificial areas.

References


Figure 1. Map of the mean surface deformation velocity occurred from 1992 to 2010 over the urban area of the city of Naples, Italy. The map is superimposed on a GIS platform of the investigated area. The area depicted in orange corresponds to the Vomero quarter that has experienced a significant deformation (on the order of 5 mm/year) during the observation 1992-2010 time period.

Figure 2. An example of a new building mapped in an urban area with Sentinel-2 images. The numbers of the used bands for the creation of the RGB images are indicated.

Figure 3. Screenshoot of the discovery service of Urban Geo Big Data

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