Most recently, the term "Big Earth Data" has been introduced (see e.g. Guo 2013). Particularly in China, the notion of 'Digital Earth' has been promoted intensively, e.g. by the Chinese Academy of Sciences and the Society of Digital Earth. Still, it seems that – typical for new terms, maybe paradigms – a terminological inconsistence exists around big Earth data and whether or not this may go far beyond Earth observations (sometimes even reduced to remote sensing); it may reach out to large sensor nets on ground, in the air, in the ocean or a combination of all. Still, some authors mainly refer to 'big Earth data' particularly in the course of massive free data, Landsat, and in particular Sentinel.

A variety of "sensors" and "sensor networks" can be used to systematically assess and monitor dynamic geographic phenomena at different spatial and temporal scales. However, the monitoring is typically done for each phenomenon individually (e.g., for air temperature or mobility). In order to enhance—or at least verify—our understanding of both environmental and social processes for multidisciplinary studies, a more holistic monitoring framework is needed. One way to fully integrate the spatiotemporal dynamics of both environmental and social phenomena is the "adaptive geo-monitoring framework" (Blaschke et al. 2011, Sagl & Blaschke 2014) by adding the spatial dimension and the mutual context-awareness of dynamic geographic phenomena.

This short article aimed to bridge the views of the remote sensing community and the database community. In particular, the authors followed the work of Batini et al. (2009, 2015) and Batini and Scannapieco (2016) while comprising the benefits from the efforts of the remote sensing community, especially of CEOS and IEEE. Likewise, a next logical step will be to inform the computer science community about the efforts of the remote sensing community regarding data quality issues.
In particular, this ISPRS Working Group will discuss whether to extend the DQ dimensions to further processed data, and derived products as well. QA4EO and other quality guidelines (including the validation protocols of Copernicus core services) also address the entire processing chain, and uncertainty propagation through it. This opens new research avenues and needs going much beyond RS and GIS communities and will, for instance, necessitate to map quality from a cartographic point of view, or to ensure OGC compliance of generated vector data sets.

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