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An innovative Drinking Water Data Space in times of water scarcity and extreme events: the WQeMS platform

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In the era of global challenges and big Earth data computation it's becoming increasingly important to have proper interoperable solutions for describing, cataloguing, finding, accessing, and distributing highly valuable datasets. The usability and reproducibility of data under FAIR and GEO Data Sharing and Data Management Principles, with accurate description of datasets in terms of semantics and uncertainty, can make data more valuable. EC is pushing Data Spaces as a tool to manage data and generate and provide knowledge ready to use for managers and decision makers.

The contribution presents a standard-based Data Space for automatically monitoring Water Quality specifically designed for European Lakes, based on remote sensing derived datasets, in-situ monitoring stations and web services. A web map browser gives access to water quality time series products (turbidity, Chl-a, floods, hydroperiod, etc) based on EO in Cloud Optimized GeoTIFF and in-situ observation stations connected using OGC STAplus standard. The map browser integrates the overall set of capabilities: data and metadata visualization, data analytics, quality indicators linked to the QualityML dictionary; semantic tagging of the Essential Water Variables; and OGC Geospatial User Feedback (GUF). The system is accessible through the OpenID-connect authentication standard which extends the OAuth 2.0 authorization protocol that allows different rights for different users to guarantee the preservation of data.

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