



## **The Global Soil Information System (GloSIS) – concept and design**

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The Global Soil Information System (GloSIS) results from a Plan of Action for Pillar 4 set out by the Global Soil Partnership (GSP), and aims to develop a spatial data infrastructure (SDI) that brings together soil information collected by national institutions. This is to be achieved in a decentralized manner, with source institutions retaining their data and controlling access to their data infrastructure. GloSIS is thus envisioned as a federation of soil information systems (SIS), with soil data providers represented as nodes that are able to communicate in a commonly recognisable way. This federated approach will empower countries (and other data providers) to develop their soil information systems as reference centres for national soil information.

To implement GloSIS several ‘building blocks’ are devised: the Domain Model, Data Exchange, GloSIS Node, Support Node and Discovery Hub. The Domain Model defines how data are structured and related. Data exchange is a realisation of the GloSIS domain model allowing parties to send/receive data. Version 3 of the OGC Web Feature Service standard will be initially used for data exchange. GloSIS and Support Nodes are the implementation methods and technologies necessary to set up a GloSIS-compliant soil information system. The discovery hub is a web-based gateway to the GloSIS nodes, enabling access the federation and offering data discovery functionality by providing users with ways to search by geo-spatial location, meta-data or data fields.

The GSP will support the participation of countries and other data providers in GloSIS through a ‘CountrySIS’ programme. Guidelines for this programme, as well as an implementation manual, will be developed for this purpose. The federative architecture of GloSIS will allow data providers to join as a node in the federation according to three participation levels:

- Ad-hoc implementation: data providers that already possesses a soil SDI implement the GloSIS data exchange protocol in its data services.
- Reference implementation: data providers build their SIS based on the GloSIS reference implementation which is an off-the-shelf, deployable bundle based on open-source software that performs the functions of a GloSIS node. The reference implementation is thus foreseen as a ready-to-run block.
- Support implementation: data providers unable to set up and maintain a SIS can store and publish their data through the GloSIS support node that is hosted by the GSP.