

The Common Geo-Registry

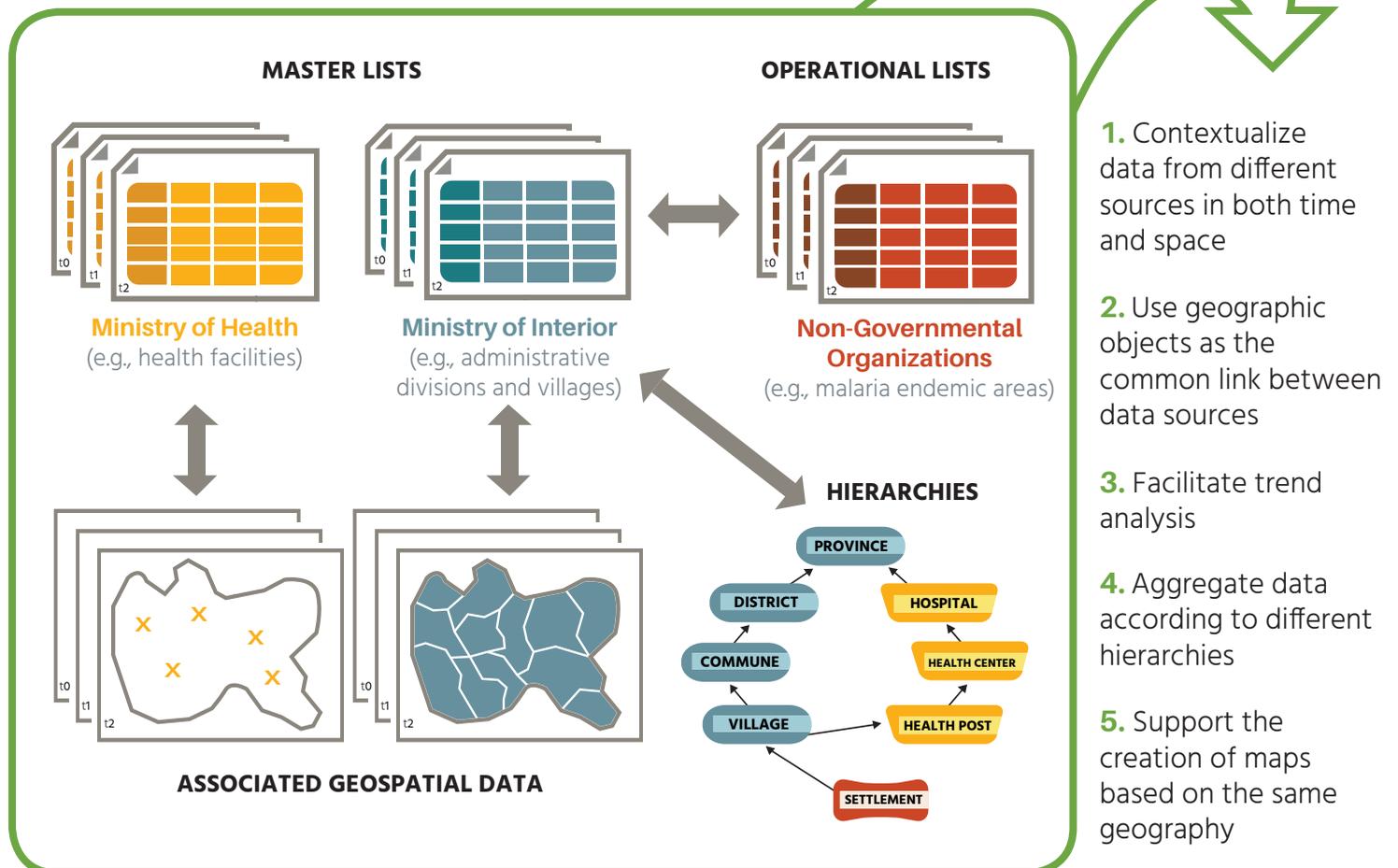
A single source of truth for managing geographic data over time across multiple information systems

Need: Everything happens somewhere at a given time. Up-to-date and historical geospatial data are necessary to identify areas and populations most at risk for natural disasters and other public health emergencies; to ensure universal coverage of health, education, and other services; and to enable allocation of resources to the right places at the right time in a systematic and data-driven way.

Problem: Information systems used to make decisions often have different pictures of the geographies (i.e. people, places, and infrastructures) they respectively cover. Within a single area, different programs collect and store different geographic data in siloed systems at different times, leading to discrepancies and duplication of effort. This also results in decisions based on incomplete and out-of-date geographic data (e.g., spatial distribution of population and resources), ineffective resource allocation, and in the worst cases, affected populations being missed completely during times of crisis.

Solution: The Common Geo-Registry (CGR) is an IT solution that provides a single source of truth for managing geographic data over time across multiple information systems and data sources. It is used to publish, access, and manage changes over time to master lists, associated hierarchies, and geospatial data for geographic objects such as administrative divisions, villages, infrastructure and other relevant physical features.

THE COMMON GEO-REGISTRY (CGR)



The CGR supports sustainable development

Use cases

The CGR allows the simultaneous hosting, management, regular update, and sharing of master lists, associated hierarchies, and geospatial data for the geographic objects core to sustainable development including public health¹, education, agriculture, and other public and private services. This allows users of the CGR to:

1. Contextualize data from different sources in both time and space
2. Use geographic objects as the common link between data sources
3. Facilitate trend analysis
4. Aggregate data according to different hierarchies
5. Support the creation of maps based on the same geography

Scalability

The CGR uses a knowledge graph to create and manage any type of relationship between geographic objects relevant to multiple sectors and there is no limitation to the number of information systems that can access and submit updates. The CGR is freely available on GitHub² and is built entirely out of open source software components³.

Sustainability

The initial development of the CGR has been driven by core contributions from TerraFrame, a geospatial data integration and analytics solution provider. Long-term maintenance and ongoing improvement of the core technology will be fueled by both public- and private-sector implementations of the CGR, allowing the technology to be partially maintained and enhanced through commercial use, while also taking advantage of open-source developments. Implementers of the CGR are encouraged to engage with the open-source community, collaborate, and make code contributions.

For more information about the CGR please contact: cgr@terraframe.com



Support for the development of the CGR is provided by the Bill and Melinda Gates Foundation via the Digital Solutions for Malaria Elimination (DSME) Project and the DSME Community. The DSME project uses geo-enabled information systems to improve the efficiency and effectiveness of malaria surveillance, program planning, and intervention. The DSME Community is a global community of technology organizations, implementers, and subject matter experts who use, or support digital tools in country-led efforts to eliminate malaria. For more information about the DSME Project and Community, please visit: <https://dsme.community/>

Development partners:



¹"Health Information System (HIS) geo-enabling: Guidance on the establishment of a common geo-registry for the simultaneous hosting, maintenance, update and sharing of master lists core to public health," <http://bit.ly/2My58s6>.

² GitHub repository for CGR source code, <https://github.com/terraframe/geoprism-registry>.

³ The CGR is built on top of TerraFrame's GeoPrism platform that has a geospatial data metamodel for defining hierarchies, which are implemented using a knowledge graph. Other open source components used include Postgres/PostGIS, Mapbox, and GeoServer.