

VLab Documentation



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In recent years, there has been an increasing demand for informed decision-making processes to address complex challenges at local, regional and global levels. For example, as part of the activities of international organizations like the United Nations (UN), or as defined by international agreements, several policy goals to be achieved in a defined timespan have been set. They include the 17 [UN Sustainable Development Goals \(SDGs\)](#), the objectives of the [Sendai Framework](#) on Disasters, the objectives of the [Paris Agreement on Climate Change](#). The achievement of these policy goals can be evaluated in respect of specific policy targets. The assessment of targets, and the definition of possible actions towards their fulfilment require informed decision-making at different levels.

Therefore, policy-makers are asking the scientific community to provide the necessary knowledge to enable an evidence-based decision-making process. To answer these questions, scientists need to manage heterogeneous resources including satellite data, in-situ data, services, analysis and modelling tools, processing algorithms, models/workflows and models results.

The [Virtual Earth Laboratory \(VLab\)](#) addresses the needs of scientists and modelers facilitating the generation of knowledge for evidence-based decision-making. It provides functionalities for:

- Harmonized discovery of and access to heterogeneous resources from multiple systems
- Publication of scientific workflows developed on heterogeneous programming environments
- Run of scientific workflows developed on heterogeneous programming environments
- Publication of workflow results

All the functionalities are available through standard Web services interfaces and Application Programming Interfaces (APIs) for system integration and development of applications.