



This document provides information on the software used to calculate the indicators for the 2023 INSPIRE Monitoring and Reporting.

The indicators DSi1.1, DSi1.2, DSi1.3, DSi1.4, DSi1.5 were calculated using the [new INSPIRE Geoportal](#); the indicators DSi2, DSi2.1, DSi2.2, DSi2.3, NSi2, NSi2.1, NSi2.2, NSi4, NSi4.1, NSi4.2, NSi4.3, NSi4.4 were calculated using the [new INSPIRE Geoportal](#) as well as the [M&R Tools](#); finally, the indicators MDi1.1, MDi1.2 were calculated using the [INSPIRE Reference Validator](#).

The INSPIRE Geoportal used to calculate the above-mentioned indicators is based on the open source software [GeoNetwork v.4.2.6](#). The following INSPIRE Good Practices were not supported by the Geoportal for the INSPIRE Monitoring and Reporting: (i) [OGC API - Features as an INSPIRE download service](#); (ii) [OGC SensorThings API as an INSPIRE download service](#); (iii) the [data-service linking simplification approach](#). For this reason, and to address GeoNetwork issues in the assessment of the conformity of datasets and services as well as the accessibility of datasets (mainly due to the comparison of INSPIRE dataset identifiers between the services and the dataset metadata records, and limitations processing Atom feeds), a set of auxiliary [M&R Tools](#) were developed.

They were used as follows:

- [a set of SQL queries](#) were used to assess dataset conformity;
- [a set of SQL queries](#) were used to assess service conformity;
- [a set of Python scripts](#) were used to assess dataset accessibility through view and download services, by implementing the simplified data-service linking approach;
- only for EL, LV, NO, PL, RO, SI and SE (which, at least for the majority of datasets, do not implement the simplified data-service linking approach), the Geoportal was used to assess dataset accessibility since it returned better results.

In agreement with the [release plan](#), the version of the INSPIRE Reference Validator used to calculate the abovementioned indicators is v.2023.3, released on 2023-09-18 (see the release notes [here](#)). The INSPIRE Good Practice on the [data-service linking simplification approach](#) was not supported by the Reference Validator for the INSPIRE Monitoring and Reporting. In addition, the INSPIRE Reference Validator included a potential bug, whose result is a sometimes non-stable test result on the [Coupled Resource test on TG Requirement 3.6](#), when testing service metadata. The potential bug has an extremely low chance of occurrence and is described [here](#).