

Indonesian geographical names information system (SINAR): improving the interoperability and usability of geographical names

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Indonesia:

- 38 provinces and 514 regencies/cities.
- Up to 35 Mi. Geographical names
- geographical names standardization challenges: limited funding and human resources

Facts:

many government institutions already have data related to geographical names

Introduction

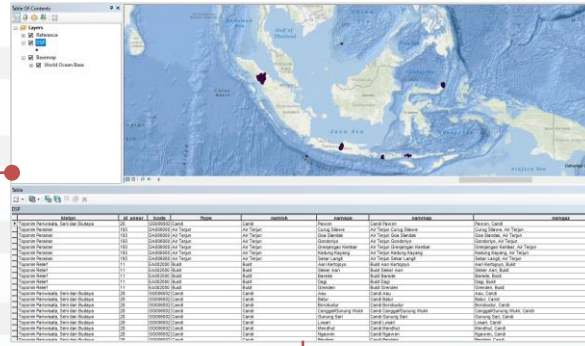
Geographical names standardization:

providing a comprehensive, accurate, and easy to access geographical names database

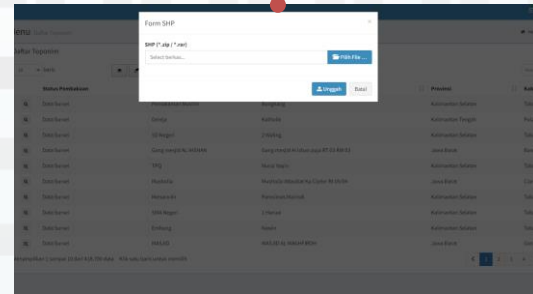
Integrating geographical names data among government institutions can be a viable solution to accelerate the collection of geographical names in Indonesia.

To support the process of **integrating data** among government institutions, BIG has been developing and enhancing its **Geographical Names Information System**, known as **SINAR** (*Sistem Informasi Nama Rupabumi*). The primary objective of the current development is to integrate the SINAR database as a national database of geographical names and implement the "create once, use many times" principle. Therefore, BIG has **integrated geographical names from various ministries** and developed a geographical names **Application Programming Interface (API)**.

Example: Geographical names data integration



Struktur Data dari Kementerian Pariwisata		Struktur Data SINAR	
Field Name	Description	Field Name	Description
KOORDX	Longitude	Bujur	Longitude
KOORDY	Latitude	Lintang	Latitude
NAMA	Generic Element	Nama Generik/Lokal	Generic Element
PROV	Province	Wadmp	Province
KABKOT	Regency/City	Wadmck	Regency/City
KEC	District	Wadmck	District
DESKEL	Village	Wadmck	Village
TYPE	Feature type	Ftype	Feature type

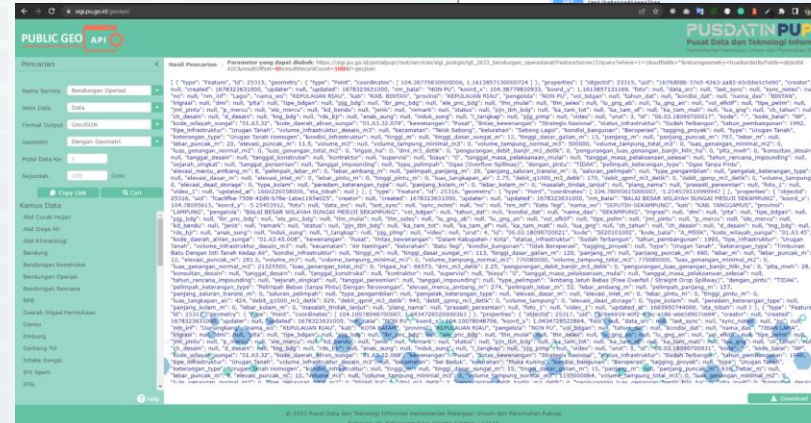
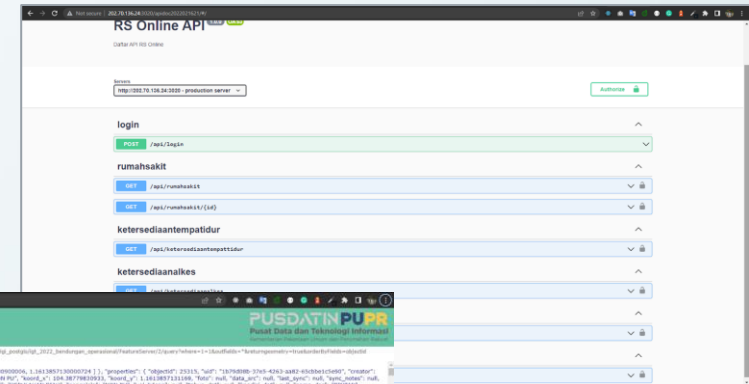


Traditional data integration

- Implement with the Ministry of Tourism and Creative Economy and the Ministry of Religious Affairs
- The process includes data identification, mapping matrix preparation, data conversion, and integration into the SINAR database

Data integration using API

- Implement data exchange using API provided by the Ministry of Public Works and Housing and the Ministry of Health
- The data exchange through API is carried out with a mechanism where BIG is granted access rights to geographical names data from the ministry through the API in the form of downloading relevant geographical names data



Development of the SINAR API

The verified and standardized geographical names are accurate and can be reused by government agencies and the public.

The standardized geographical names can be downloaded in vector file, JavaScript Object Notation (JSON), and tabular formats.

Exchanging data in a file-based format can become complicated when a system needs to access this data. Government agencies need to download it from SINAR, then download it again when there are changes. The file-based data exchange method is less efficient when used by other systems.

To improve the interoperability and usability of geographical names among stakeholders, the Agency initiated the development of the geographical names API in 2021.

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Method	GET
Parameter	<ul style="list-style-type: none"> limit skip sort_by

```
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Base URL	https://sinarapis.big.go.id/sinar/v1
Endpoint	/v1/toponim
Method	GET
Parameter	<ul style="list-style-type: none"> limit skip keyword display_field sort_by filter_provinsi filter_kab_kota filter_kecamatan filter_desa_kelurahan filter_nama filter_id_toponim filter_nama_surveyor filter_status_data filter_status_pembakuan filter_tanggal_survei filter_nama_lokal filter_nama_spesifik filter_saal_bahasa filter_artl_nama download

- The geographical names API was developed in REST API type that will produce data in JSON format.
- Initial development of API provided two endpoints: geographical names and historical data



Further developments

- Metadata provision
- API catalogue provision
- The implementation of user roles
- API improvement based on users' needs
- Resource description framework generation
- Implementation geographical names codification to support linked data

Points for discussion

The Group of Experts is invited to :

Express its views on the report and discuss the future development of technology on the interoperability and usability of geographical names data.