INTERNATIONAL TRAINING ON TOPONYMY

MODULES

DAY 3

19 - 23 JUNE 2023

BALI, INDONESIA

United Nations
Group of Experts on
Geographical Names

BADAN INFORMASI
GEOSPASIAL

SINAR

Sistem Informasi Nama Rupabumi

Geographical Name Information System

Harry Ferdiansyah
Badan Informasi Geospasial
Geospatial Information Agency of Indonesia

WHAT is SINAR?

Sistem Informasi Nama Rupabumi

Geographical Name Information System

Developed by BIG

One-stop tool for Geographical Name Standardization

- Data Collection
- Data Verification
- Gazetteer Publication

2023 : top 99 of Gov't application (out of 1.407)

WHY?

⇒history

HOW?

⇒solution

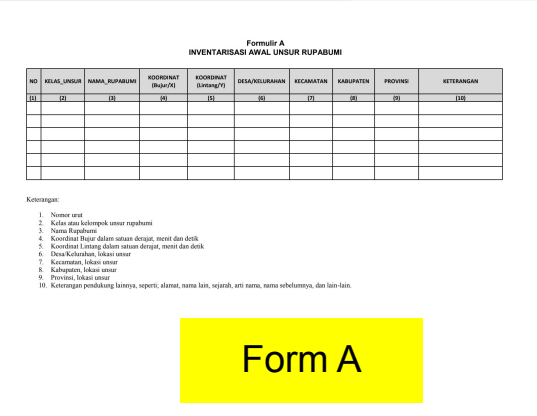
WHY?
history and intents

Geographical Name Data Collection : a history

- a geographical names data collection was mainly a sub-activity of map-making.

- Performed along with (geometry) data verification and map-accuracy assessment.

Conventional Geographical Name Data Collection



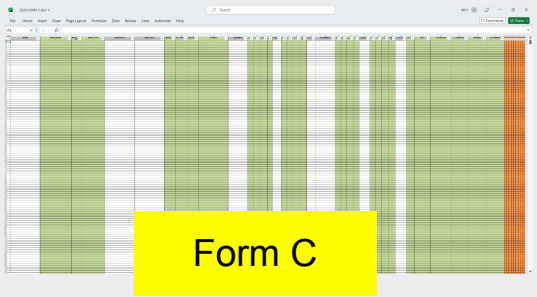
Formulir A
INVENTARISASI AWAL UNSUR RUPABUMI

NO	KELAS_UNSUR	NAMA_RUPABUMI	KOORDINAT (Bujur/X)	KOORDINAT (Lintang/Y)	DESA/KELURAHAN	KECAMATAN	KABUPATEN	PROVINSI	KETERANGAN
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)

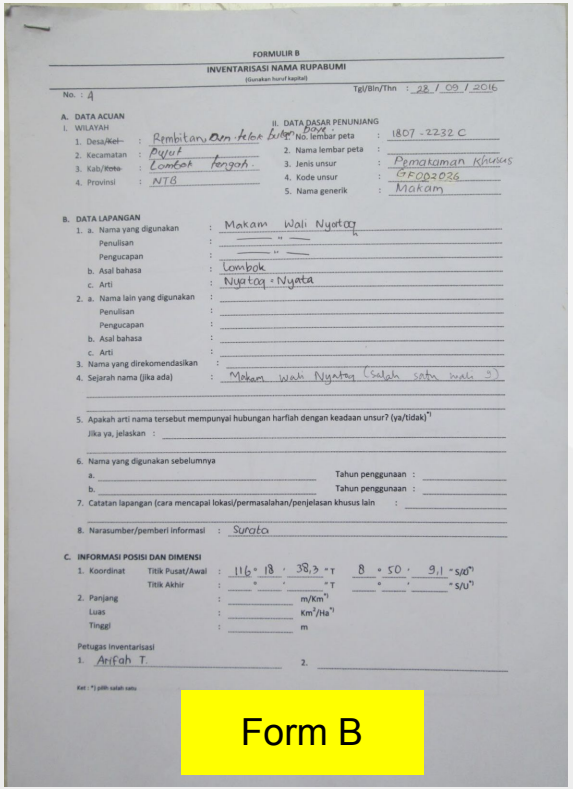
Keterangan:

1. Nomor urut
2. Kelas atau kelompok unsur rupabumi
3. Nama Rupabumi
4. Koordinat Bujur dalam satuan derajat, menit dan detik
5. Koordinat Lintang dalam satuan derajat, menit dan detik
6. Desa/Kelurahan, lokasi unsur
7. Kecamatan, lokasi unsur
8. Kabupaten, lokasi unsur
9. Provinsi, lokasi unsur
10. Keterangan pendukung lainnya, seperti; alamat, nama lain, sejarah, arti nama, nama sebelumnya, dan lain-lain.

Form A



Form C



FORMULIR B
INVENTARISASI NAMA RUPABUMI
(Gunakan huruf kapital)

No. : 4 Tgl/Bln/Thn : 28 / 09 / 2016

A. DATA ACUAN
I. WILAYAH
1. Desa/~~Kel~~ : Rembitan, Sembalun
2. Kecamatan : Bayan
3. Kab/~~Kota~~ : Lombok Tengah
4. Provinsi : NTB

II. DATA DASAR PENUNJANG
1. No. lembar peta : 1807 - 2232 C
2. Nama lembar peta :
3. Jenis unsur : Pemakaman Khusus
4. Kode unsur : GF002026
5. Nama generik : Makam

B. DATA LAPANGAN
1. a. Nama yang digunakan : Makam Wali Nyatoq
Penulisan : " "
Pengucapan : " "
b. Asal bahasa : Lombok
c. Arti : Nyatoq = Nyata
2. a. Nama lain yang digunakan :
Penulisan :
Pengucapan :
b. Asal bahasa :
c. Arti :
3. Nama yang direkomendasikan :
4. Sejarah nama (jika ada) : Makam Wali Nyatoq (Salah satu Wali 9)

5. Apakah arti nama tersebut mempunyai hubungan harfiah dengan keadaan unsur? (ya/tidak)*1
Jika ya, jelaskan :

6. Nama yang digunakan sebelumnya
a. Tahun penggunaan :
b. Tahun penggunaan :
7. Catatan lapangan (cara mencapai lokasi/permasalahan/penjelasan khusus lain :
8. Narasumber/pemberi informasi : Surata

C. INFORMASI POSISI DAN DIMENSI
1. Koordinat Titik Pusat/Awal : 116 ° 18 ' 38,3 " T 8 ° 50 ' 9,1 " S/U*1
Titik Akhir : ° ' " T ° ' " S/U*1
2. Panjang : m/Km*1
Luas : Km²/Ha*1
Tinggi : m

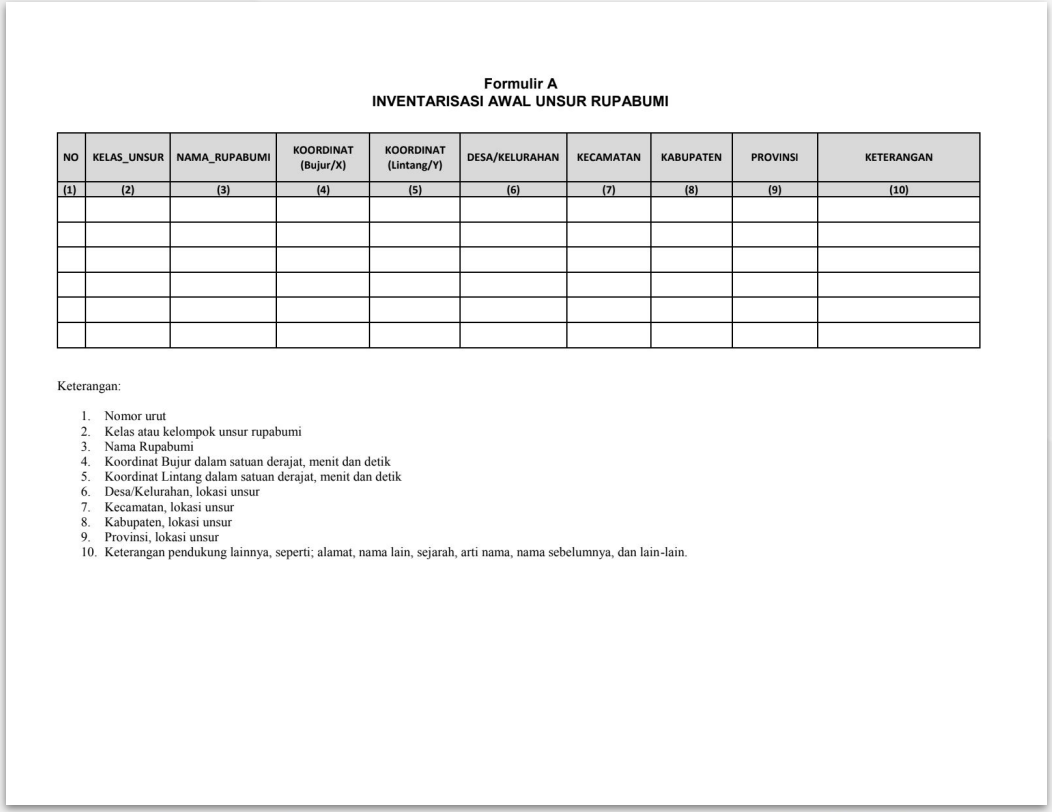
Petugas Inventarisasi
1. Arifah T. 2.

Ket : *) pilih salah satu

Form B

- Printed forms are the basic method for geographical name data collection.
- There are several forms to fill by a surveyor.
- Additional tools also required to provide certain items.

Forms for GN Data Collection : Form A



Formulir A
INVENTARISASI AWAL UNSUR RUPABUMI

NO	KELAS_UNSUR	NAMA_RUPABUMI	KOORDINAT (Bujur/X)	KOORDINAT (Lintang/Y)	DESA/KELURAHAN	KECAMATAN	KABUPATEN	PROVINSI	KETERANGAN
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)

Keterangan:

1. Nomor urut
2. Kelas atau kelompok unsur rupabumi
3. Nama Rupabumi
4. Koordinat Bujur dalam satuan derajat, menit dan detik
5. Koordinat Lintang dalam satuan derajat, menit dan detik
6. Desa/Kelurahan, lokasi unsur
7. Kecamatan, lokasi unsur
8. Kabupaten, lokasi unsur
9. Provinsi, lokasi unsur
10. Keterangan pendukung lainnya, seperti; alamat, nama lain, sejarah, arti nama, nama sebelumnya, dan lain-lain.

- "Form A" is a simple list of objects/places that have a name.
- There are ten items/columns to fill
  - number/seq.
  - feature class
  - geographical name
  - coordinate (X & Y) [2]
  - administrative level [4]
  - remarks

UNGEGN | United Nations Group of Experts on Geographical Names

Form B

"Form B" is a detailed information of objects/places that listed in the **Form A**

Administrative Level Information:
Province, Regency, District, Village

- Number (ref. to Form A)
- Date

Field Data:

- Name
  - Writing
  - Spelling
  - Language
  - Meaning
- Alt. name (entry similar to "Name")
- Recommended name
- History
- Name meaning explanation
- Former name
- Remarks
- Informant(s)

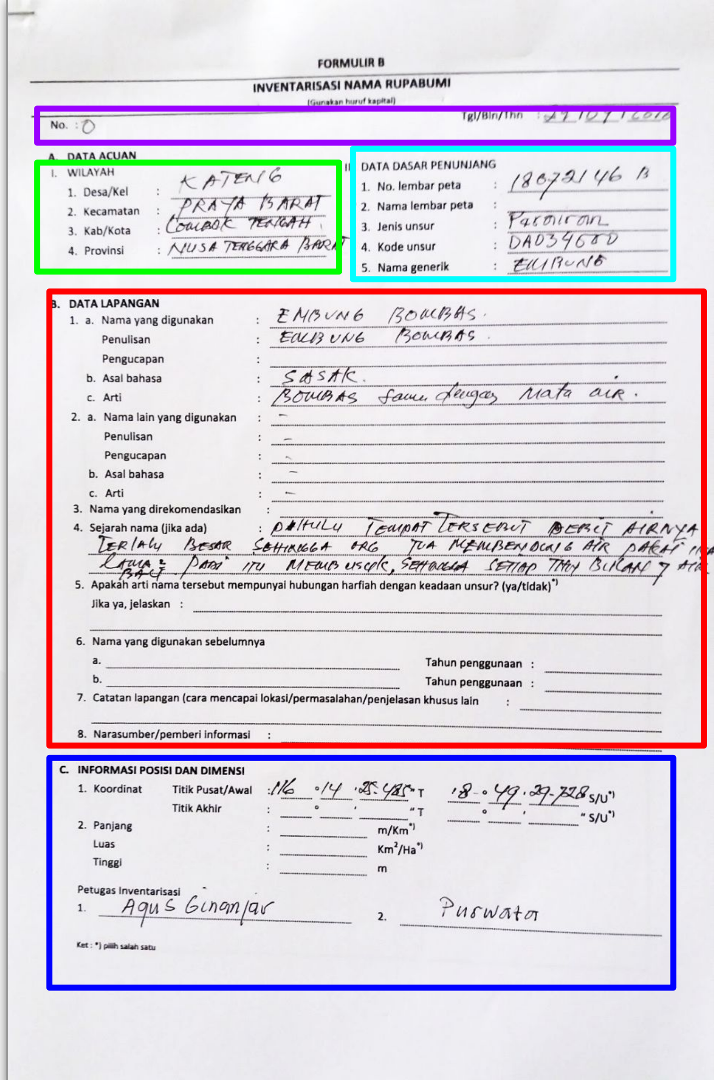
Supporting Data:

- Map number
- Map name
- Feature classification
- Feature code
- Generic Name

Position & Dimension:

- Lat/lon
- Length, area, height

Surveyor(s) name


FORMULIR B

INVENTARISASI NAMA RUPABUMI

(Gunakan huruf kapital)

No. : 0 Tgl/Bln/Thn : 21/10/2010

A. DATA ACUAN

I. WILAYAH
1. Desa/Kel : KATENG
2. Kecamatan : PRAYA BARAT
3. Kab/Kota : LOMBOK TENGAH
4. Provinsi : NUSA TENGGARA BARAT

II. DATA DASAR PENUNJANG
1. No. lembar peta : 1807-2146 B
2. Nama lembar peta :
3. Jenis unsur : Perairan
4. Kode unsur : DA034600
5. Nama generik : EMBUNG

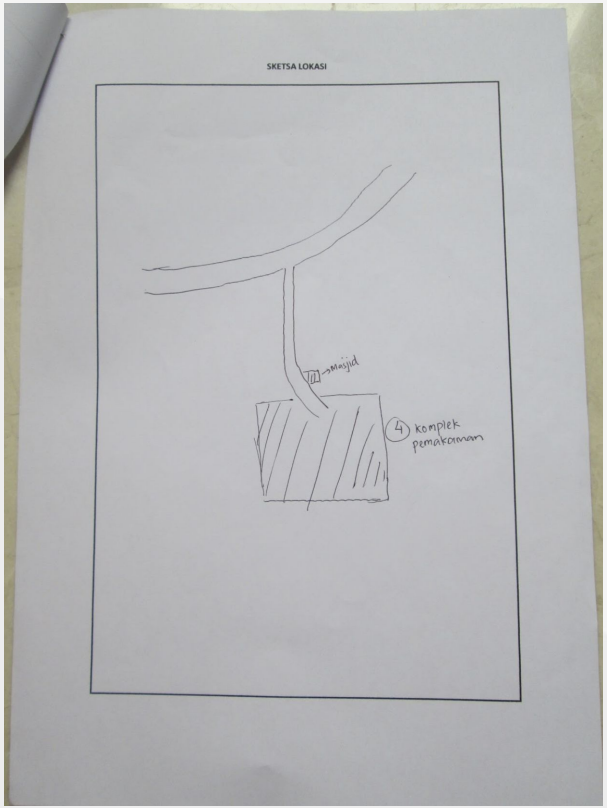
B. DATA LAPANGAN
1. a. Nama yang digunakan : EMBUNG BOMBAS.
   Penulisan : EMBUNG BOMBAS.
   Pengucapan :
   b. Asal bahasa : SASAK.
   c. Arti : BOMBAS sama dengan mata air.
2. a. Nama lain yang digunakan : –
   Penulisan : –
   Pengucapan : –
   b. Asal bahasa : –
   c. Arti : –
3. Nama yang direkomendasikan :
4. Sejarah nama (jika ada) : DAHULU TEMPAT TERSEBUT DEBIT AIRNYA TERLALU BESAR SEHINGGA ORG TUA MEMBENDUNG AIR PAKAI [illegible] PADI ITU MEMBUSUK, SEHINGGA SETIAP THN BULAN 7 AIR [illegible]
5. Apakah arti nama tersebut mempunyai hubungan harfiah dengan keadaan unsur? (ya/tidak)*)
   Jika ya, jelaskan :
6. Nama yang digunakan sebelumnya
   a. Tahun penggunaan :
   b. Tahun penggunaan :
7. Catatan lapangan (cara mencapai lokasi/permasalahan/penjelasan khusus lain :
8. Narasumber/pemberi informasi :

C. INFORMASI POSISI DAN DIMENSI
1. Koordinat Titik Pusat/Awal : 116° 14' 25.485" T 8° 49' 29.728" S/U*)
   Titik Akhir : ° ' " T ° ' " S/U*)
2. Panjang : m/Km*)
   Luas : Km²/Ha*)
   Tinggi : m

Petugas Inventarisasi
1. Agus Ginanjar 2. Purwato

Ket : *) pilih salah satu

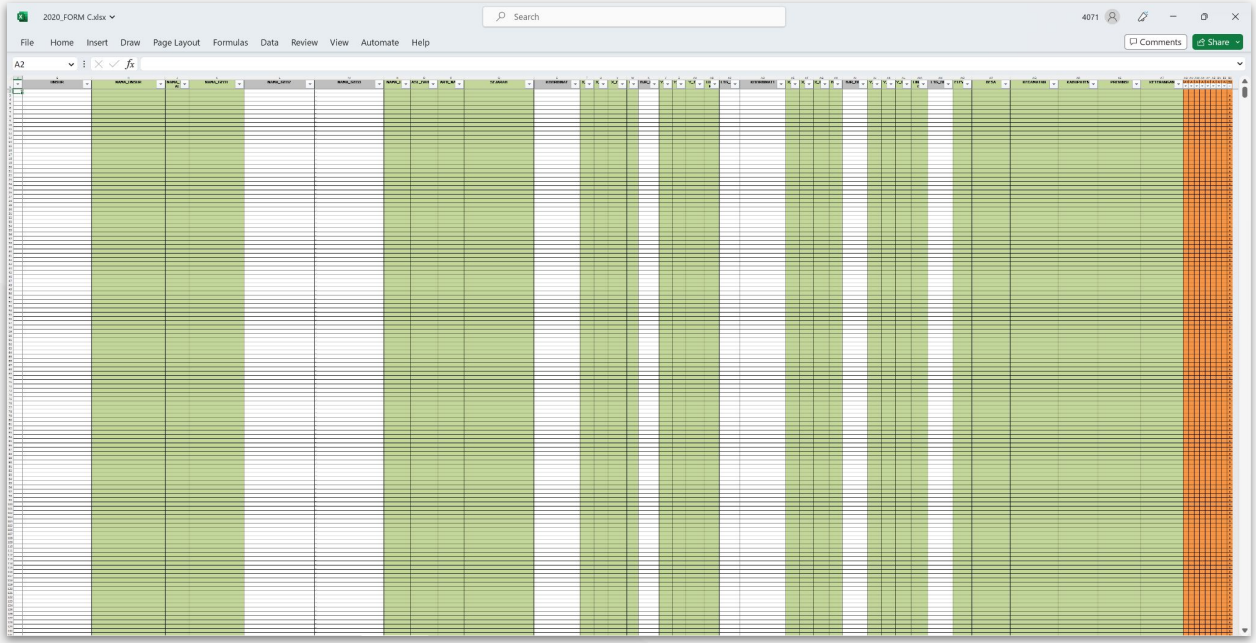
Form B



to provide additional information and support in the manuscript map, a sketch of the object is recommended in Form B.

Form C

- Form C is a media to transfer collected geographical name into a digital data.
- It is basically a spreadsheet that contains 39 columns to fill.
- Surveyor (re-)input/type the data from the field (Form A + Form B) to Form C.
- Form C become a basis for another format (CSV, SQL, XML, JSON, SHP)



39 columns, #??? Rows

column format:
number, text, date

UNGEGN | United Nations Group of Experts on Geographical Names

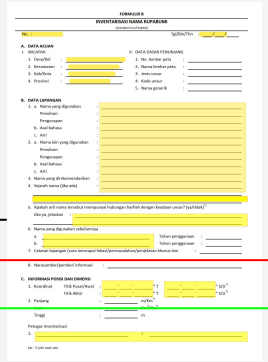
BADAN INFORMASI GEOSPASIAL

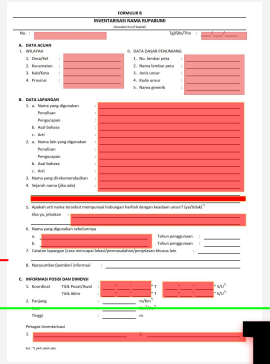
Form C = Form A(Form B)

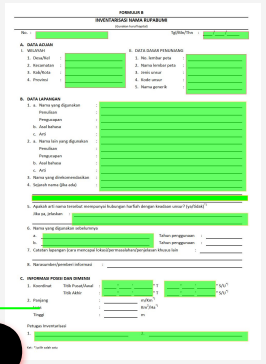
Formulir A
INVENTARISASI AWAL UNSUR RUPABUMI

NO	KELAS_UNSUR	NAMA_RUPABUMI	KOORDINAT (Bujur/X)	KOORDINAT (Lintang/Y)	DESA/KELURAHAN	KECAMATAN	KABUPATEN	PROVINSI	KETERANGAN
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)

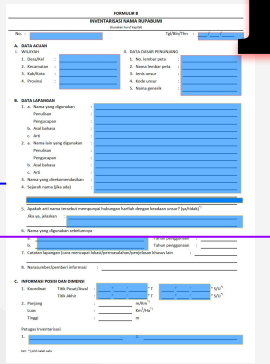
A

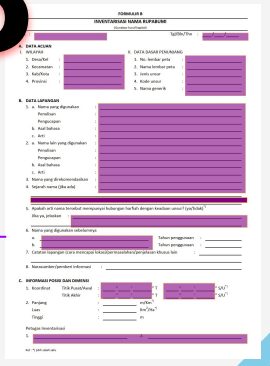




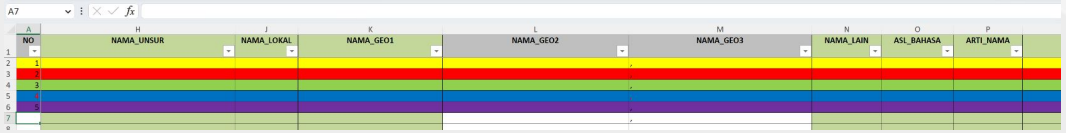


B

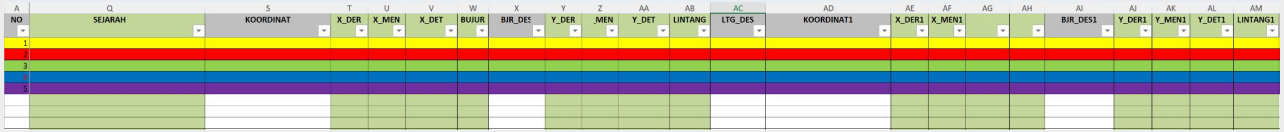




C



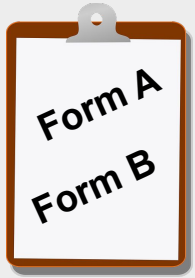
NO	NAMA_UNSUR	NAMA_LOKAL	NAMA_GEO1	NAMA_GEO2	NAMA_GEO3	NAMA_LAIN	ASL_BAHASA	ARTI_NAMA
1								
2								
3								
4								
5								

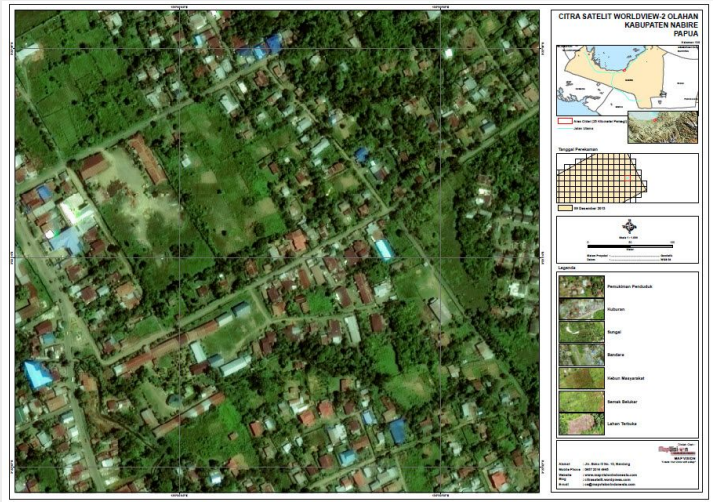


NO	SEJARAH	KOORDINAT	X_DER	X_MEN	X_DET	BUJUR	BJR_DES	Y_DER	MEN	Y_DET	LINTANG	LTG_DES	KOORDINAT1	X_DER1	X_MEN1	BJR_DES1	Y_DER1	Y_MEN1	Y_DET1	LINTANG1
1																				
2																				
3																				
4																				
5																				

NO	KOORDINAT1	X_DER1	X_MEN1	X_DET1	BUJUR1	BJR_DES1	Y_DER1	Y_MEN1	Y_DET1	LINTANG1	LTG_DES1	ELEVASI	DESA	KECAMATAN	KA IUPATEN	PROVINSI	KETERANGAN
1																	
2																	
3																	
4																	
5																	

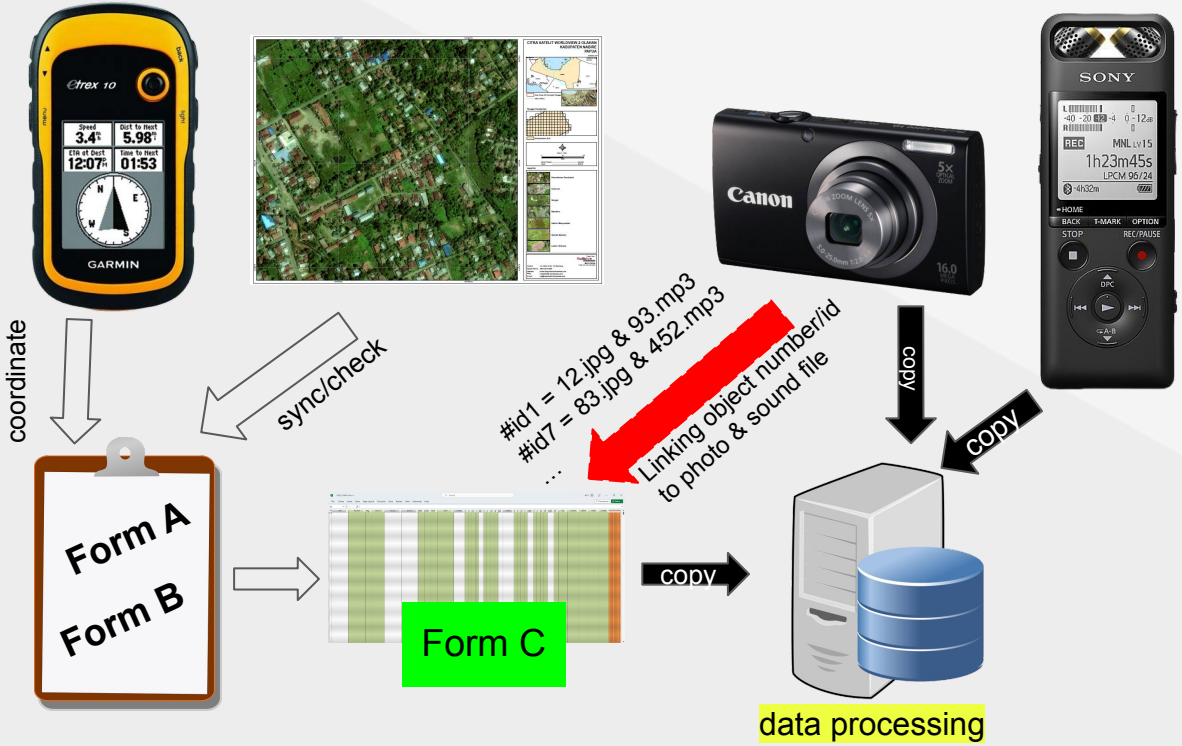
Preparation on Form(s) Filling (in the Field)





- Simple (observe-write-save).
- Require multiple tools.
- Physically prone.

Processing the Forms (in the Office)



- Cluttered
  - Linking raw data
  - Different format (sound, GPX, picture, forms)
- Data format conversion (DB, Carto, etc.).
- Data compatibility.
- Human error.

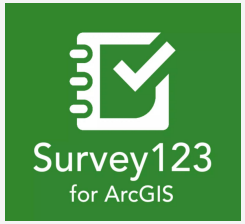
Dare to try?

https://toponim.id/2023/forms-english

Data Collection: Exploring Possibilities

Available alternatives

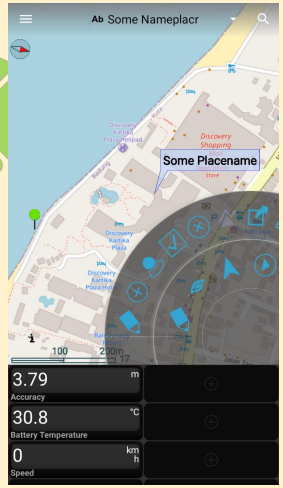
- Commercial data collection tool
  - Survey 123
  - Avenza
  - …
- Open source / freeware / shareware
  - ODK
  - GPS Essential
  - …
- Develop from the scratch



2012 to 2014

Data Acquisition

GPS Essential
Data Acquisition



Quantum GIS
Data Processing

TOPKIT

- Toponym/Geographical Name kit for data acquisition embedded in hardware (RTK-GNSS device?)
- Run partly in smartphone (early version of android)

© Trimble

Publication

namarupabumi.org

2015 to 2016

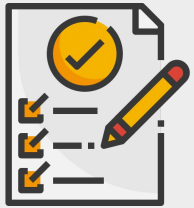
Re-thinking the tool(s) for Standardization

TOPKIT

- Dependent to a specific hardware
- Inconvenient
- Tech. environment not ready

Open-source “problems”

- Cannot (fully) control the development
- Too many “unused” tools
- Multiple tools ⇒ too much to learn



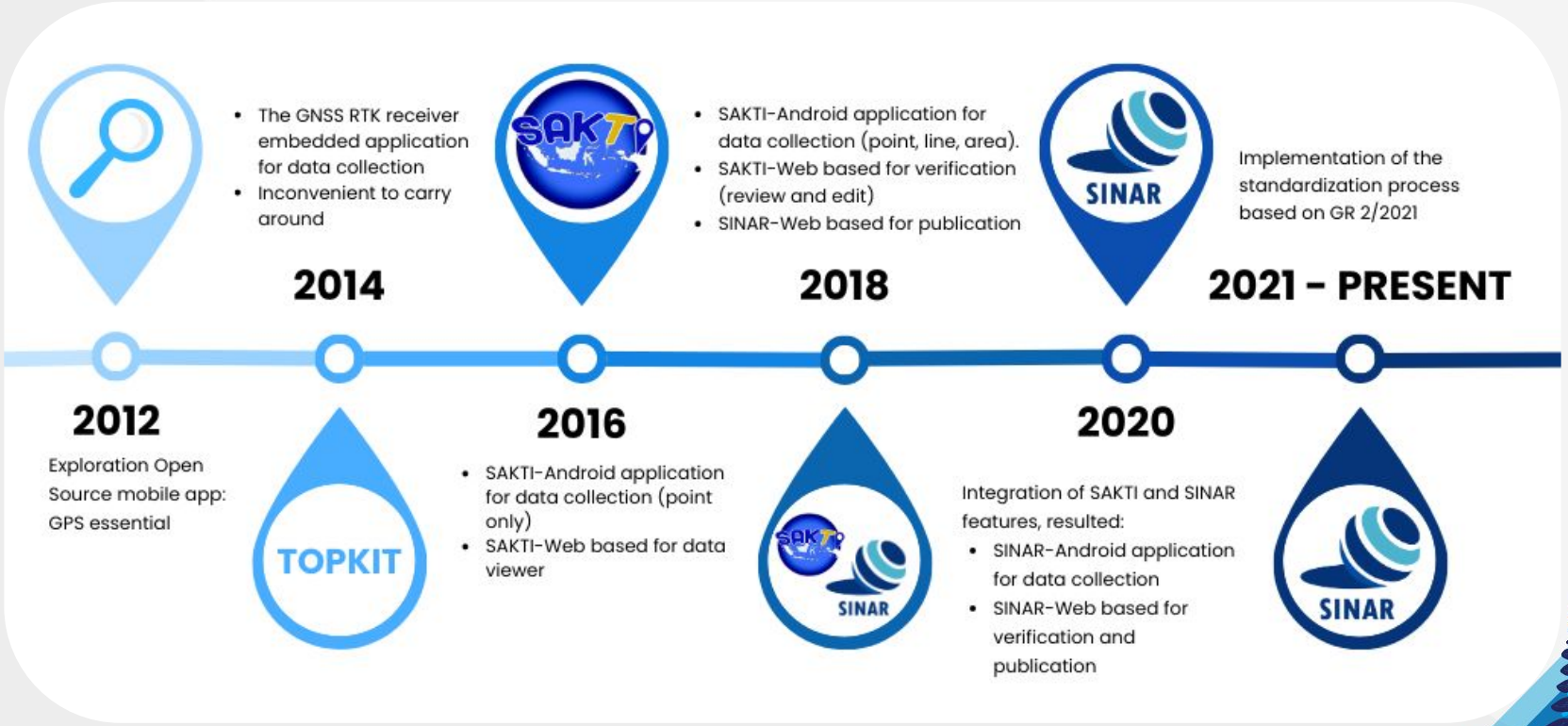
Requirements for standardization

- Collect the data
- Verify the collected information
- Publish the standardized names

HOW?

solution & vision

Geographical Information System In Indonesia



UNGEGN | United Nations Group of Experts on Geographical Names

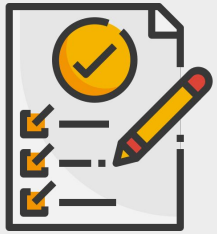
BADAN INFORMASI GEOSPASIAL

2016

The Development of SAKTI

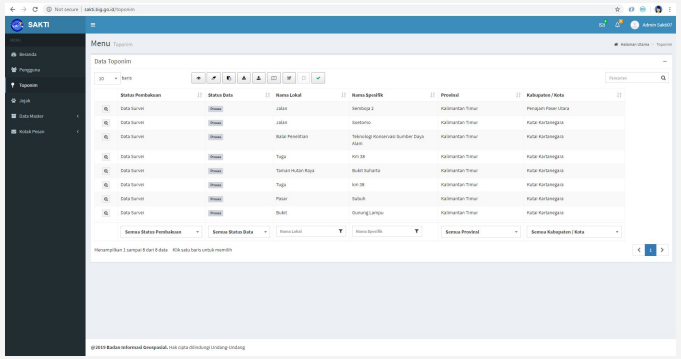
***S**istem **A**kuisisi **T**oponim **I**ndonesia*

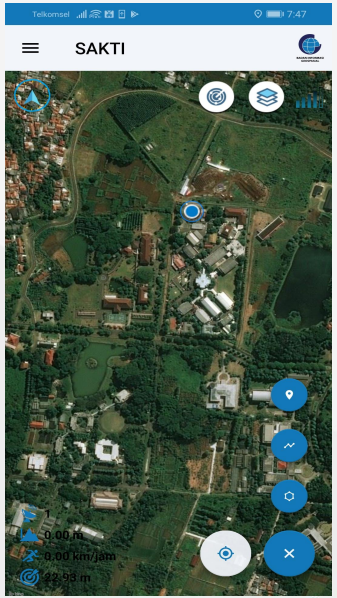
Toponymy Acquisition System

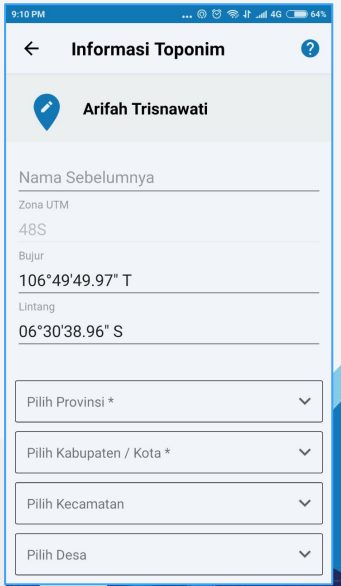


Requirements for standardization

- Collect the data ✅
- Verify the collected information ❓
- Publish the standardized names ❌







SAKTI facts

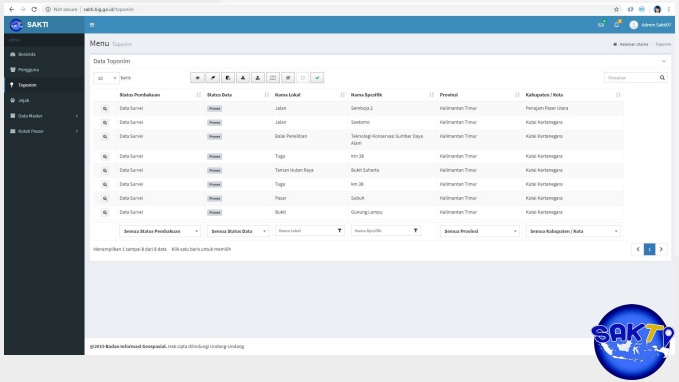
- Utilize the smartphone sensors
  ⇒ GNSS, sound recorder, photo/video
- Android-based ⇒ majority mobile OS
- Desktop view: web-based

2017: What's next?

Collect

View

verify(?)

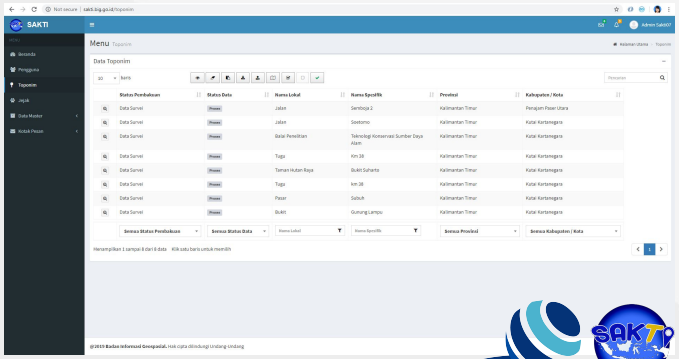


Publish?

2018: SINAR conception

Collect

View
Verify



Publish

Still…
two apps!!

2018-2020: SAKTI-SINAR Integration

View

Verify

Collect

Publish

seamless application

free, easy to use

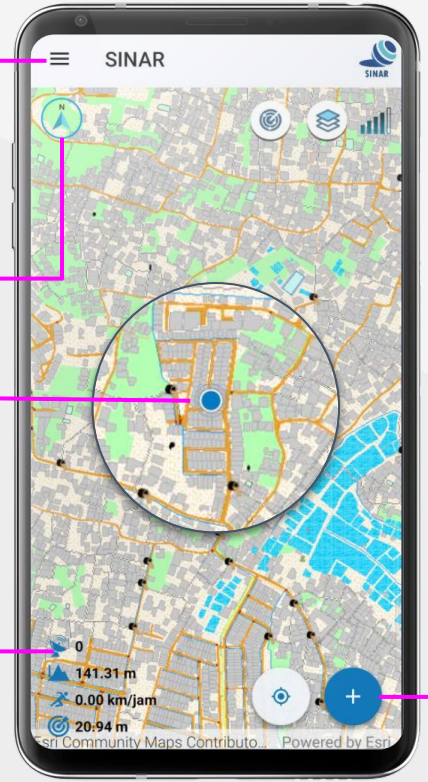
2021 : Enactment of Regulation on Geographical Name Standardization

- SINAR appointed as the main application for geographical data standardization.
- The standardization must be inclusive: recognizing personal/group/community contribution
  - Crowdsourcing
  - Participatory Mapping

Inclusion: Everyone can contribute!

User/Role	Eligibility	Remarks
Collect	Everyone: Individuals, Experts, NGO, Academics and Government (Ministries & Local gov't).	User need to register using e-mail or google credential to enable data collection.
View		
Verify	Government (Ministries & Local government)..	Authorized officers from government institution (optional: experts).
Publish	BIG	Format: Printed and digital Gazetteer.

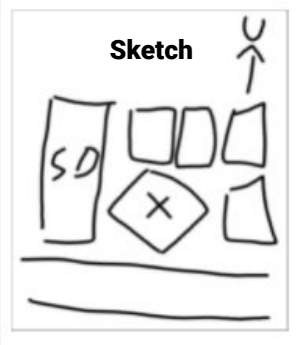
SINAR Mobile for Data Collection



GPS Signal Indicator

Neighbouring Geographical Name

Basemap Options



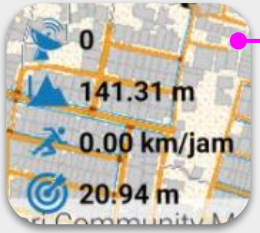
Indicators :

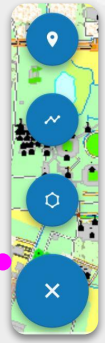
Visible Satellites

Elevation

Velocity

Accuracy





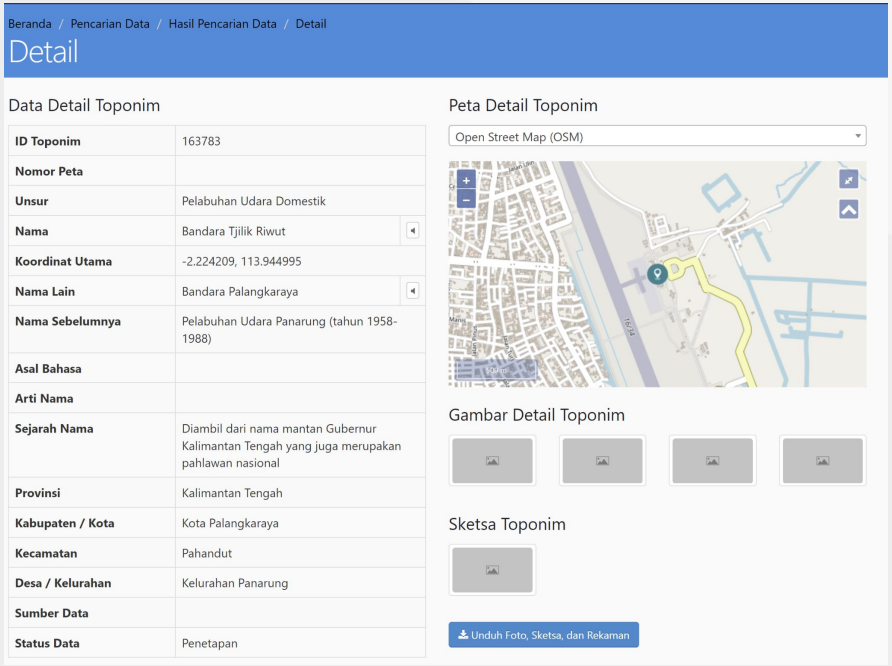
Object's Geometry
(Point, Line, Area)

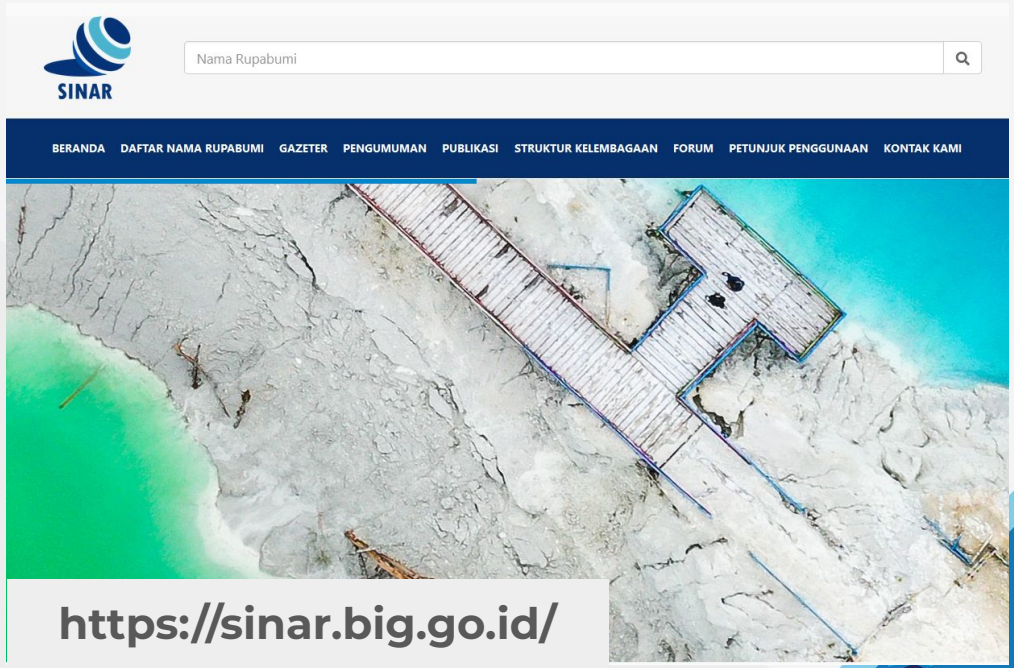
Sound Recorder

UNGEGN | United Nations Group of Experts on Geographical Names

BADAN INFORMASI GEOSPASIAL

Web-app SINAR for Data Verification and Publication



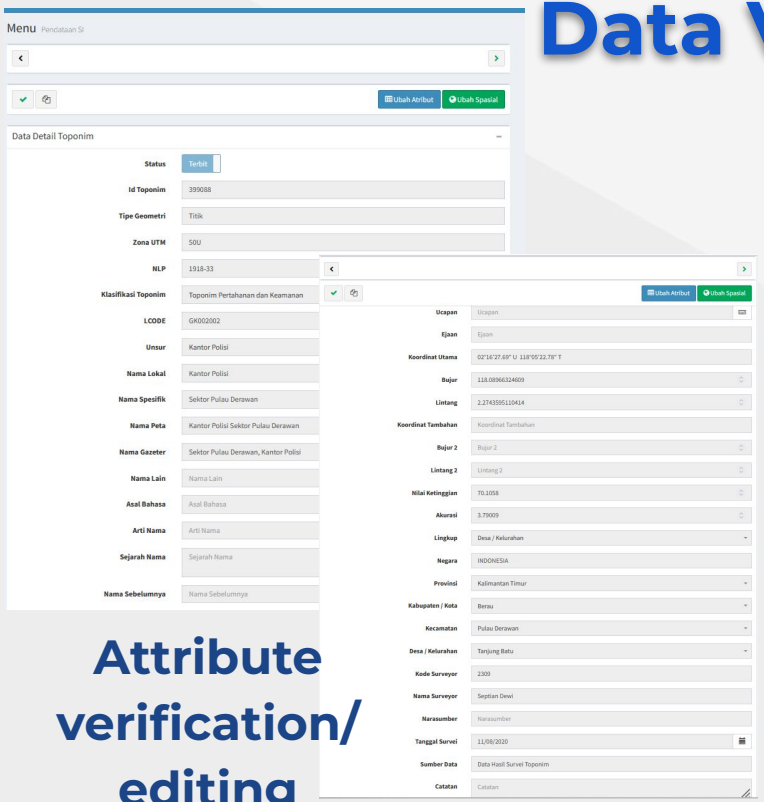


view & search

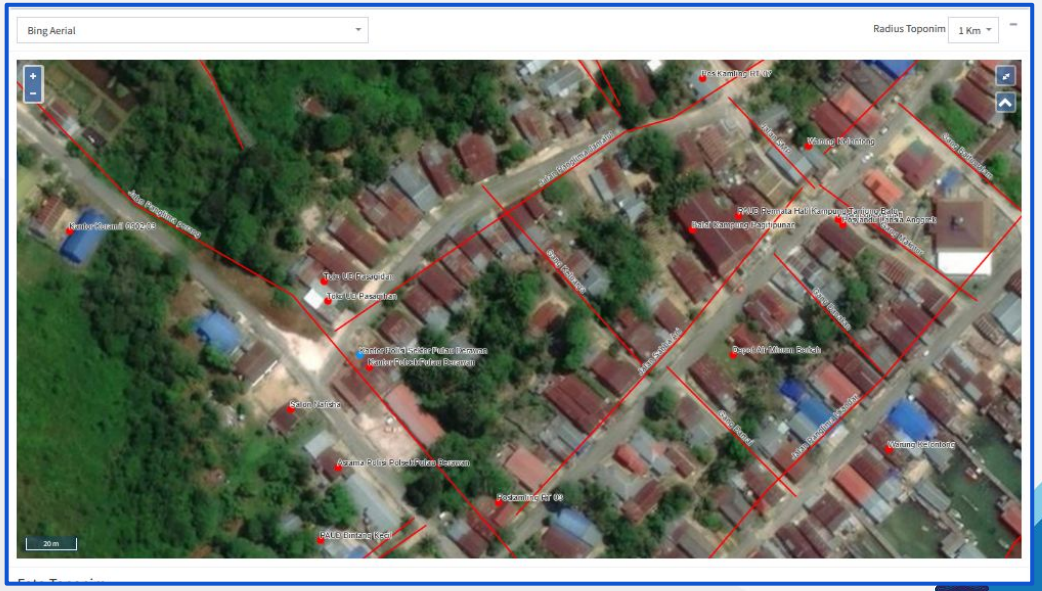
UNGEGN | United Nations Group of Experts on Geographical Names

BADAN INFORMASI GEOSPASIAL

Web-app SINAR for Data Verification and Publication

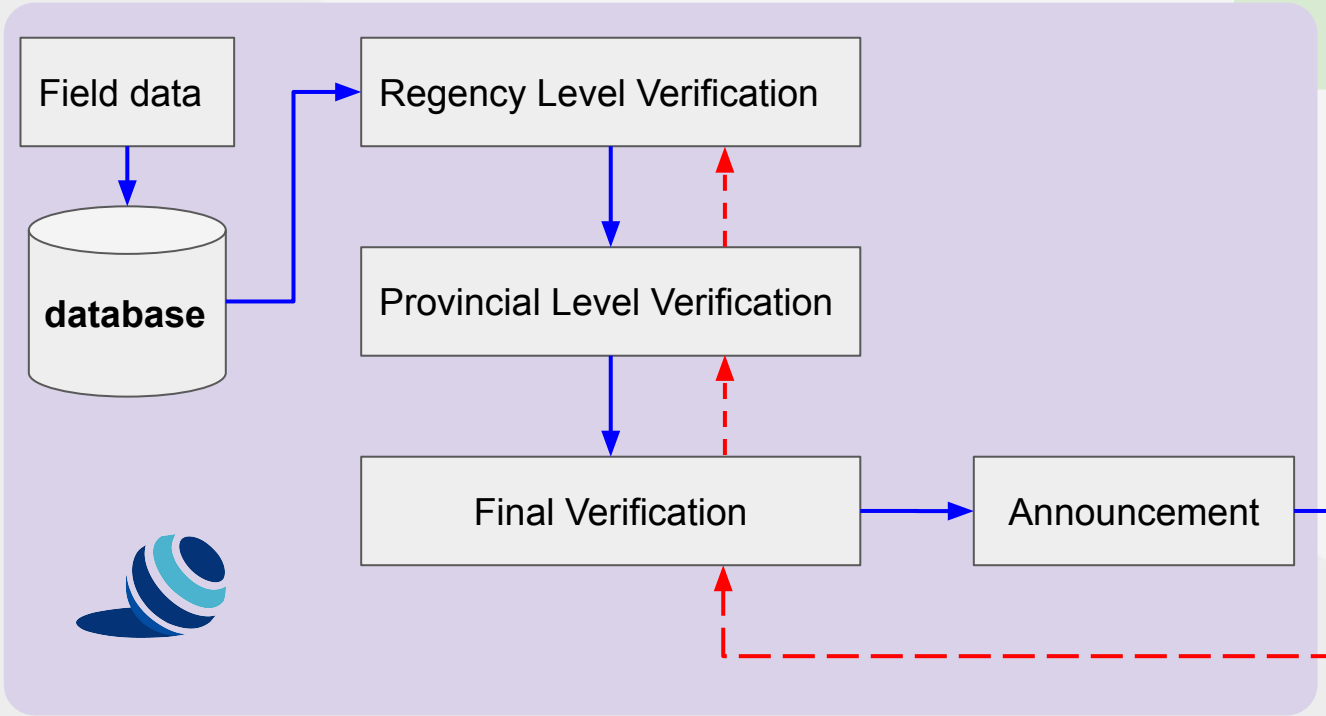


Attribute verification/ editing



Spatial Editing/verification

Data Verification + Publication

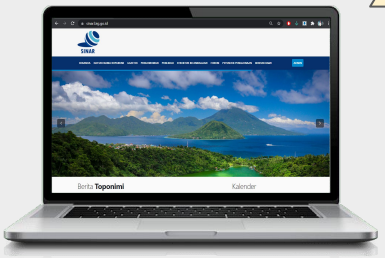


UNGEGN | United Nations Group of Experts on Geographical Names

BADAN INFORMASI GEOSPASIAL

SINAR: Publication

Android SINAR
Data Collection



Web SINAR
View-Verify-Publish
sinar.big.go.id

Beranda / Pencarian Data / Hasil Pencarian Data / Detail

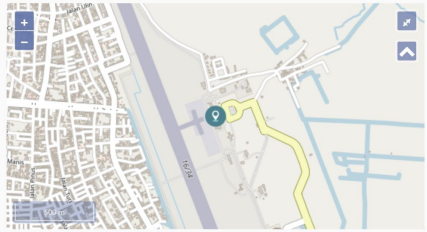
Detail

Data Detail Toponim

ID Toponim	163783
Nomor Peta	
Unsur	Pelabuhan Udara Domestik
Nama	Bandara Tjilik Riwut
Koordinat Utama	-2.224209, 113.944995
Nama Lain	Bandara Palangkaraya
Nama Sebelumnya	Pelabuhan Udara Panarung (tahun 1958-1988)
Asal Bahasa	
Arti Nama	
Sejarah Nama	Diambil dari nama mantan Gubernur Kalimantan Tengah yang juga merupakan pahlawan nasional
Provinsi	Kalimantan Tengah
Kabupaten / Kota	Kota Palangkaraya
Kecamatan	Pahandut
Desa / Kelurahan	Kelurahan Panarung
Sumber Data	
Status Data	Penetapan

Peta Detail Toponim

Open Street Map (OSM)



Gambar Detail Toponim

Sketsa Toponim

Unduh Foto, Sketsa, dan Rekaman

Digital Gazetteer

Printed Gazetteer

International Training on Toponymy

Bali, 19 - 23 June 2023

Publication: Data Sharing

Currently SINAR publish it's **API** (*Application Programming Interface*) to initiate data sharing towards "linked geographical data"

Early users:

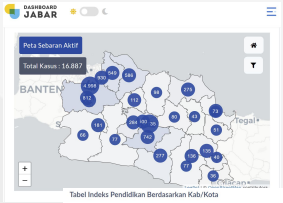
- West Java Province
- Ministry of Public Work*
- Ministry of Education*

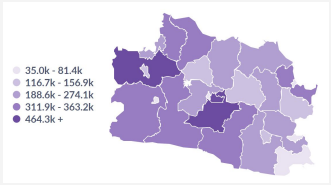
API cuts unnecessary obstacles (bureaucracy, data transfer, time) in utilizing geographical name

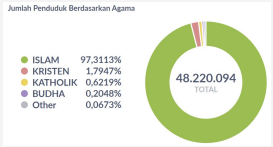
UNGEGN | United Nations Group of Experts on Geographical Names

BADAN INFORMASI GEOSPASIAL

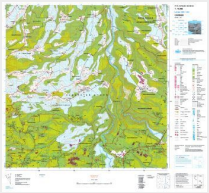
Thematic
Holistic







Integrated
Spatial



BADAN INFORMASI GEOSPASIAL

Geographical names services

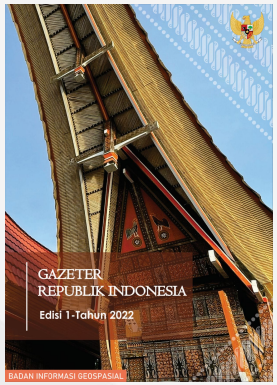
data services

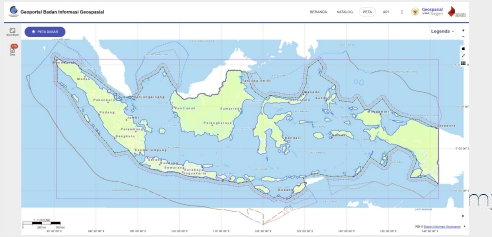
Geographical names services

map services

SINAR {api}

Standardized Geographical Names





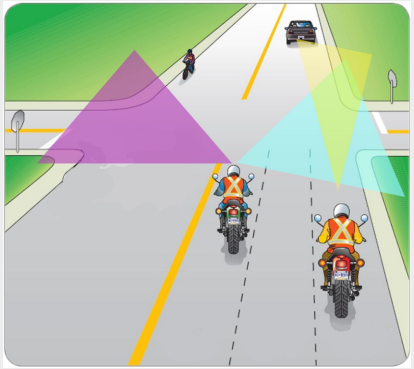
my

Bali, 19 - 23 June 2023

Vision: Future of SINAR

SiNARgegas

SiNAR gerak gesit akuisisi



Side looking

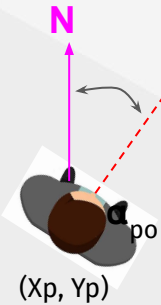
Forward looking

SiNARgegas idea:
Utilize 360◦ camera to perform data acquisition

SiNAR@lit

SiNAR akuisisi lincah teliti

SiNAR@lit idea:
- Simplify SINAR
- Easy to use, Light
- Shoot-Tag-Share Concept
- Utilizing Device's Gyro



Summary

- **Legal supports help** ⇒ regulation & policy
- **Adapt to changes** ⇒ technology & standard

  GML (Geography Markup Language) VS **geoJSON** (Javascript Object Notation)
- **Invest in human resources** ⇒ SINAR vs Hail riding apps
- **Aim high (not too high), start low** ⇒ TOPKIT case
- **Try everything** ⇒ Learn-Adopt-Modify/customize
- **Listen to your users**
  - User experience
  - User need/request

kurrusumanga'
Matur Nuwun
Teurimong Gaseh beh
Suksema
makase
sakalangkong
Amanai
Hatur Nuhun
Terima Kasih
MAULIATE
شُكْراً