

3° CONVERSATORIO VIRTUAL
3° VIRTUAL WEBINAR

CONVERSEMOS SOBRE EL MARCO INTEGRADO DE INFORMACIÓN GEOESPACIAL (UN-IGIF)

CONVERSATIONS ON THE INTEGRATED GEOSPATIAL INFORMATION
FRAMEWORK (UN-IGIF)

27 de noviembre 2024

November 27, 2024

Vía Estratégica N°4: Datos
Strategic Pathway N°4: Data



UN-GGIM:Americas
REGIONAL COMMITTEE OF UNITED NATIONS
ON GLOBAL GEOSPATIAL INFORMATION
MANAGEMENT FOR THE AMERICAS



UN-IGIF
INTEGRATED GEOSPATIAL
INFORMATION FRAMEWORK

PRODUCTION OF GEOGRAPHIC INFORMATION

Mexico Case



TOPICS

- **Information of National Interest**
- **Topographic Information Case**
- **Tools for production**
- **Repository of Geographic and Environmental Information**

INFORMATION OF NATIONAL INTEREST



The National Statistical and Geographic Information System (SNIEG) deals with Information of National Interest (IIN), which will be official and mandatory for the Federation, the federal entities and the municipalities.

INFORMATION OF NATIONAL INTEREST

Only information that meets the following four criteria may be considered Information of National Interest:

- It deals with the following topics, data groups or indicators:



- It is necessary to support the design and evaluation of public policies of national scope.
- Be generated regularly and periodically.
- It is prepared based on a scientifically supported methodology.

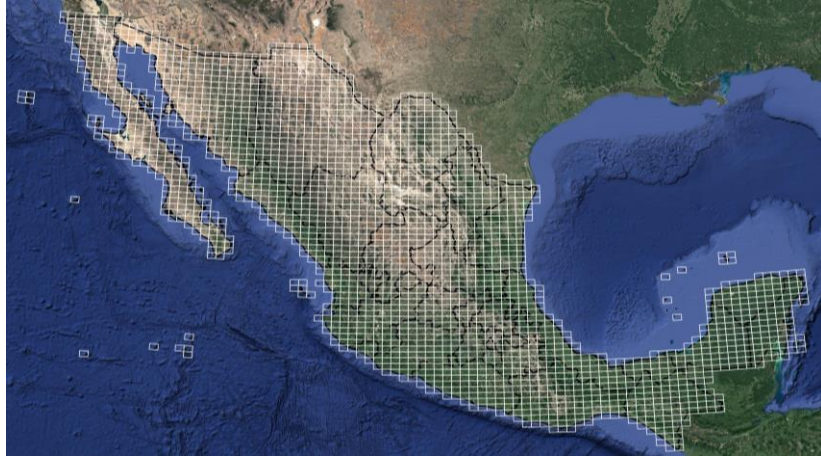
INFORMATION OF NATIONAL INTEREST

Geographic and environmental data sets:

- Atmosphere
- Biodiversity
- Water
- Soil
- Flora
- Fauna
- Coastal, international, federal and municipal limits
- Cadastral, topographic, natural resources and climate data
- Geographic names
- Hazardous waste and solid waste
- Geodetic reference frame
- Continental, insular and underwater elevations data



METHODOLOGICAL CHANGE



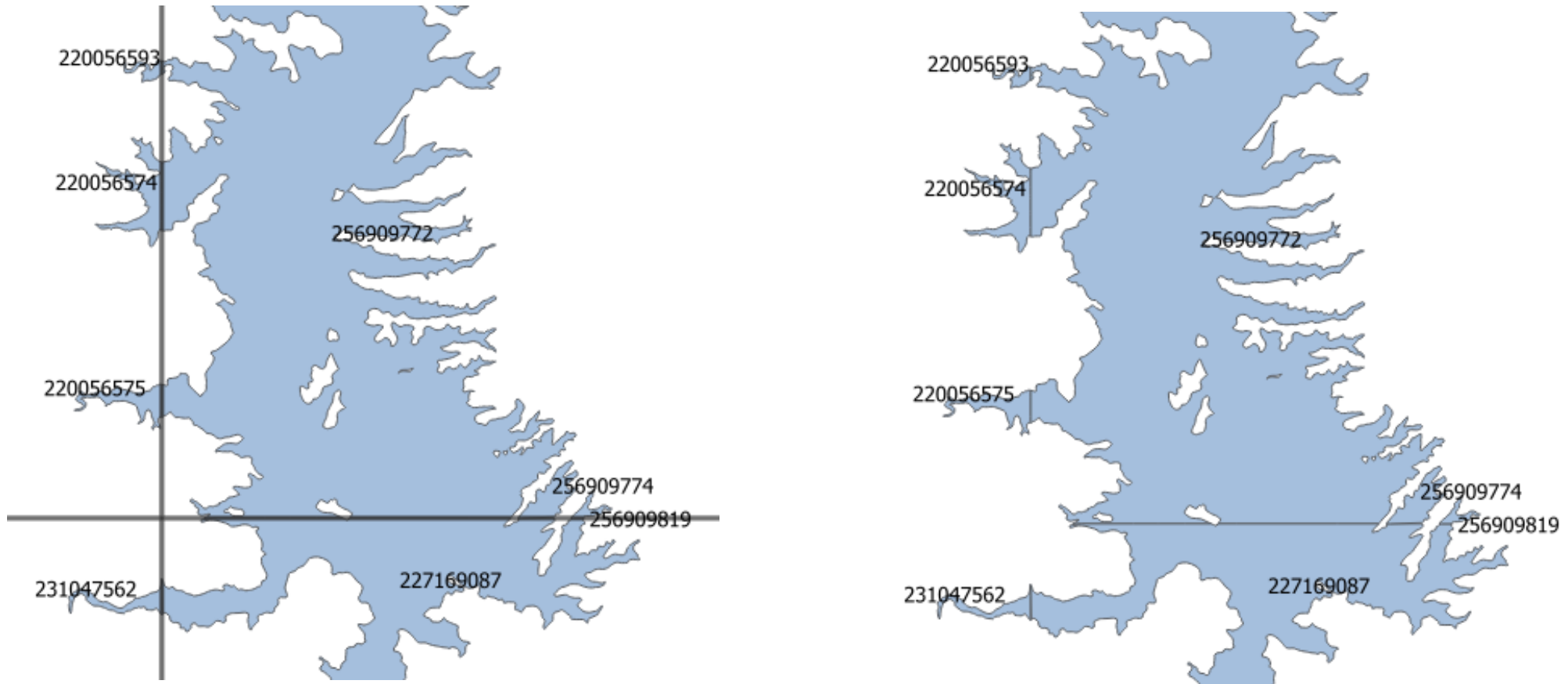
In 2023, the 1:50,000 scale topographic information had a methodological change in its production process.

The two main changes that stand out the most are the following:

- The vector update is now carried out on a national continuum (previously the update was carried out cartographic format by cartographic format)
- Update and release period is now one year (previously update and release cycle was six years)

UPDATE ON A NATIONAL CONTINUOUS

Example of a body of water within the limits of cartographic formats.

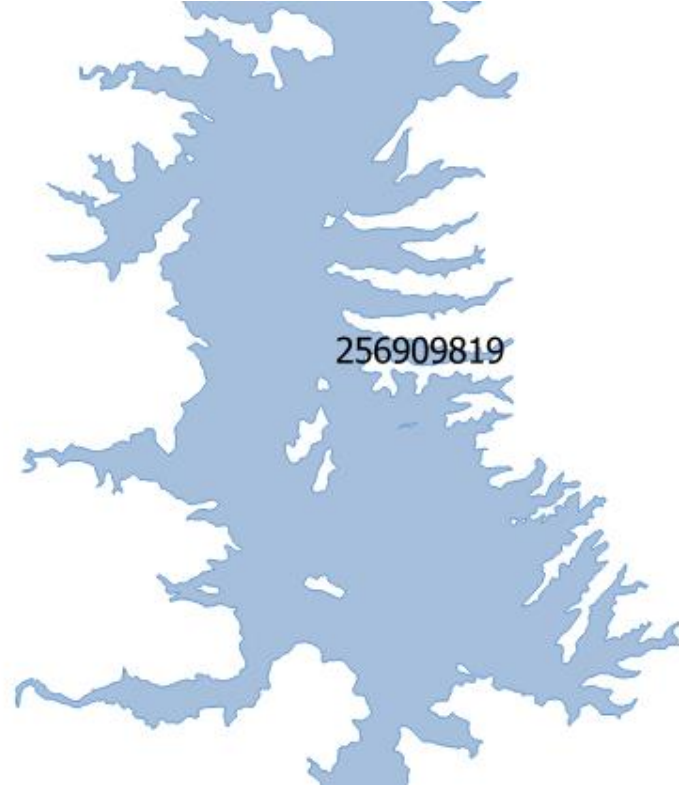


For this case there were eight polygons, each one with a different identifier.

UPDATE ON A NATIONAL CONTINUOUS

Example of a body of water in the national continuum

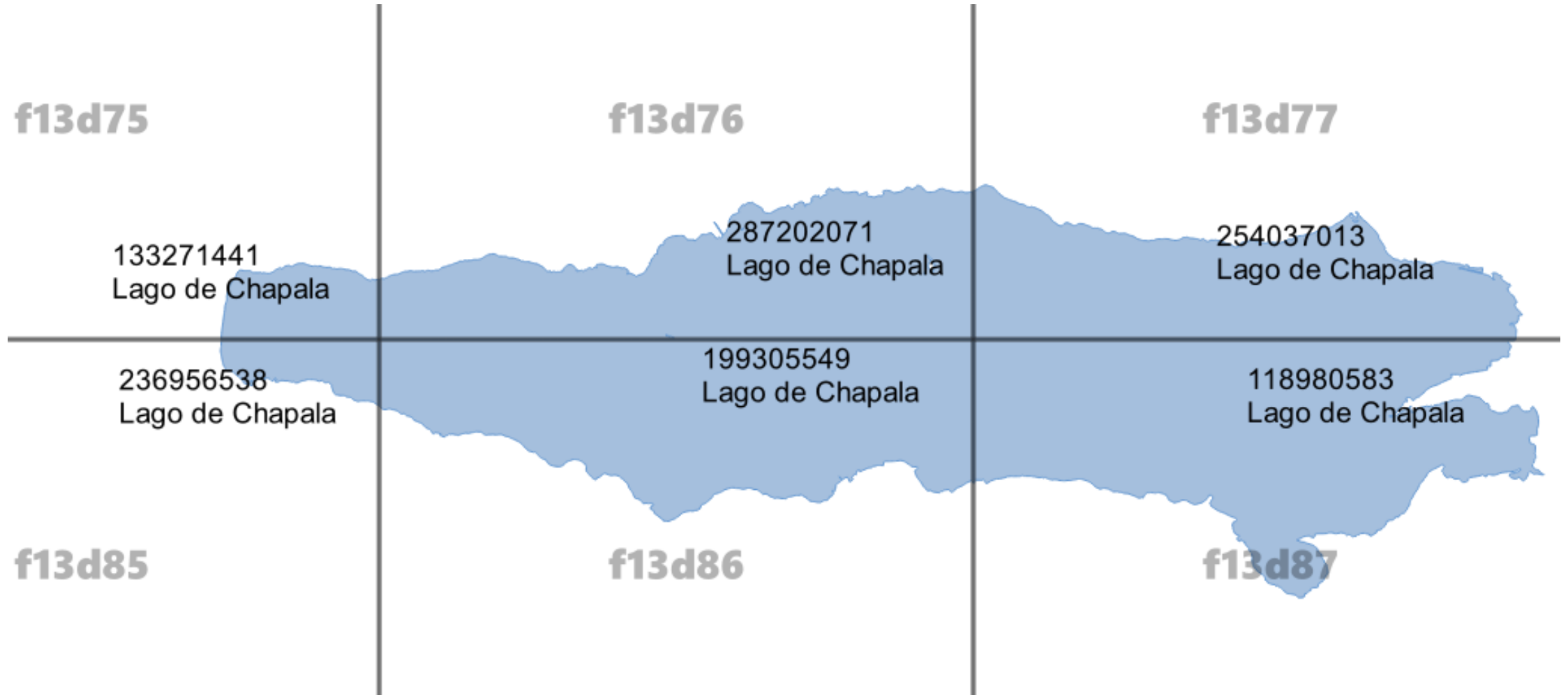
IDENTIFIER
220056574
220056575
231047562
256909772
256909774
227169087
220056593



All the geometries were joined to form a single polygon

CHAPALA LAKE CASE

It was divided into six cartographic formats:



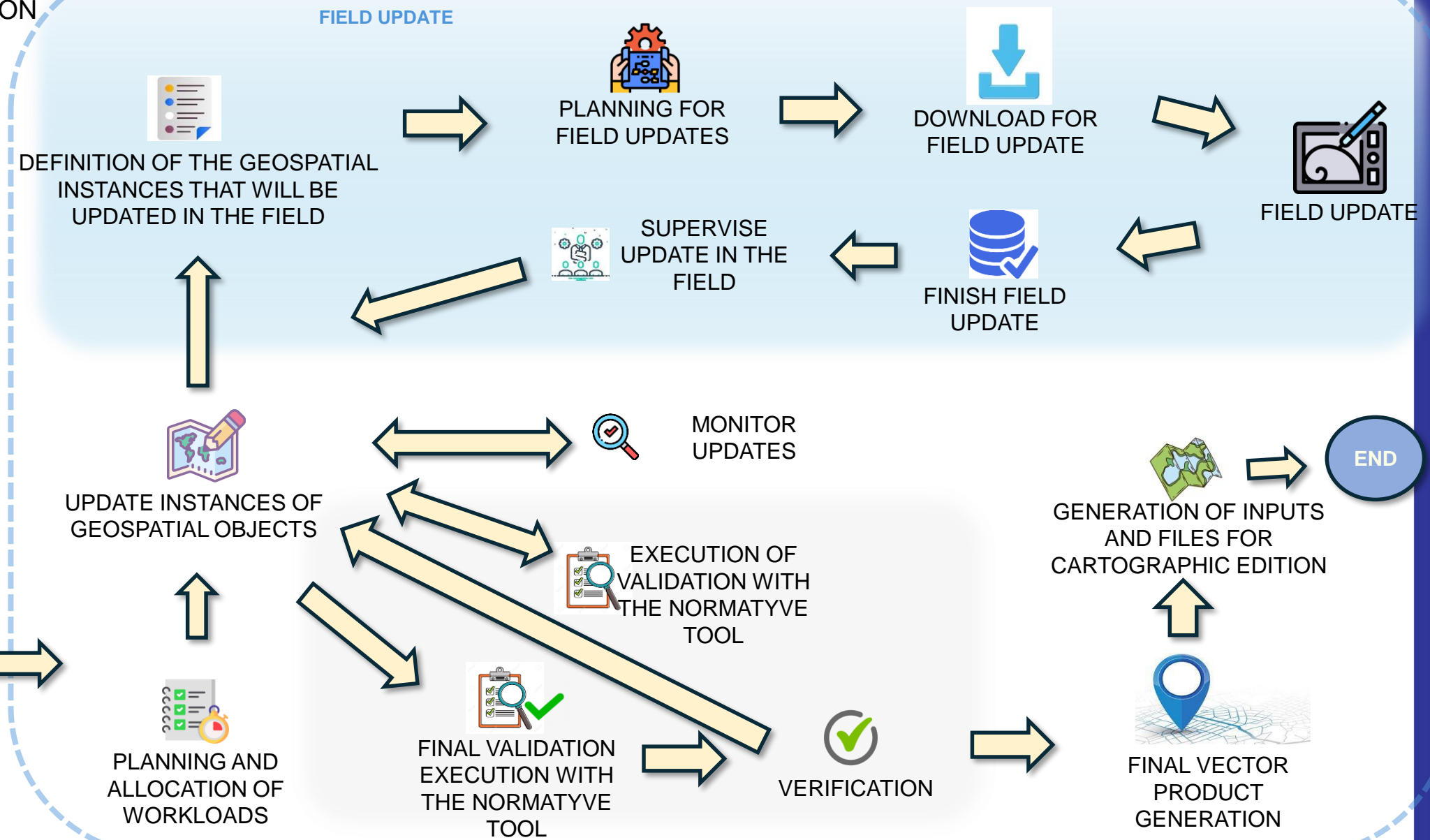
CHAPALA LAKE CASE

When the union is made, a single geometry remains:



ACTIVITIES OF THE PRODUCTION PROCESS OF TOPOGRAPHIC INFORMATION

ACTIVITIES PRIOR TO THE START OF THE PRODUCTION PROCESS



TOOLS FOR PRODUCTION



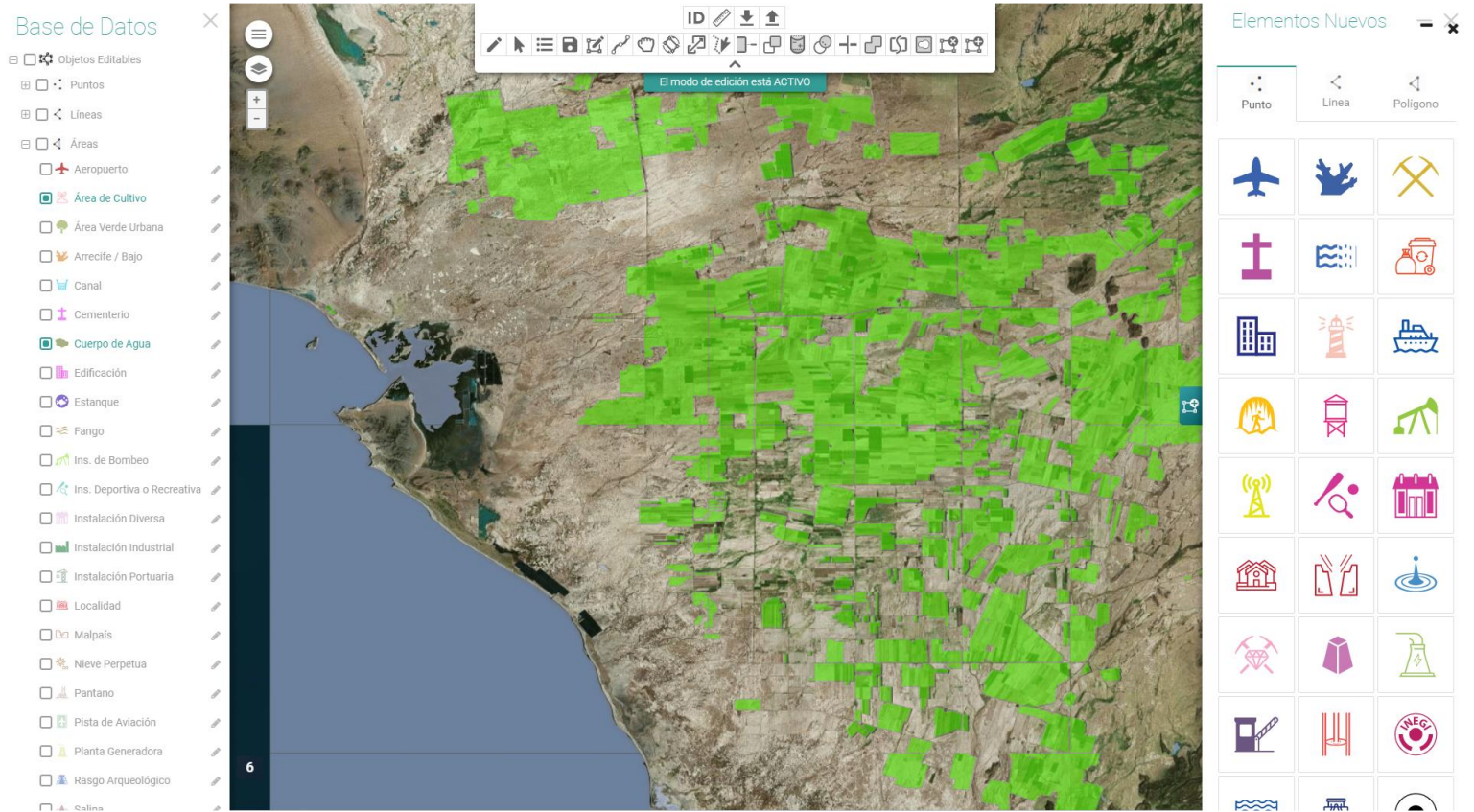
To achieve what was proposed in the new methodology for producing Topographic Information at a scale of 1:50,000, several strategies were defined and the necessary solutions were developed. Some key points are the following:

- Production supported by a centralized geographic database with access from the national level.
- Custom development of vector editing tools for updating topographic features.
- Topological and attribute validation within the same production line.
- Development of a satellite image web service for use in vector editing tools.

TOPOGRAPHIC EXTRACTION AND DIGITALIZATION TOOL



It is an advanced vector editing tool with a web interface that connects to a geographic database containing the national continuum of topographic information.



EXAMPLE OF FUNCTIONALITY



“Complete Polygon” tool.
Using an auxiliary guide line, a polygon is generated that shares exact boundaries with an existing polygon.



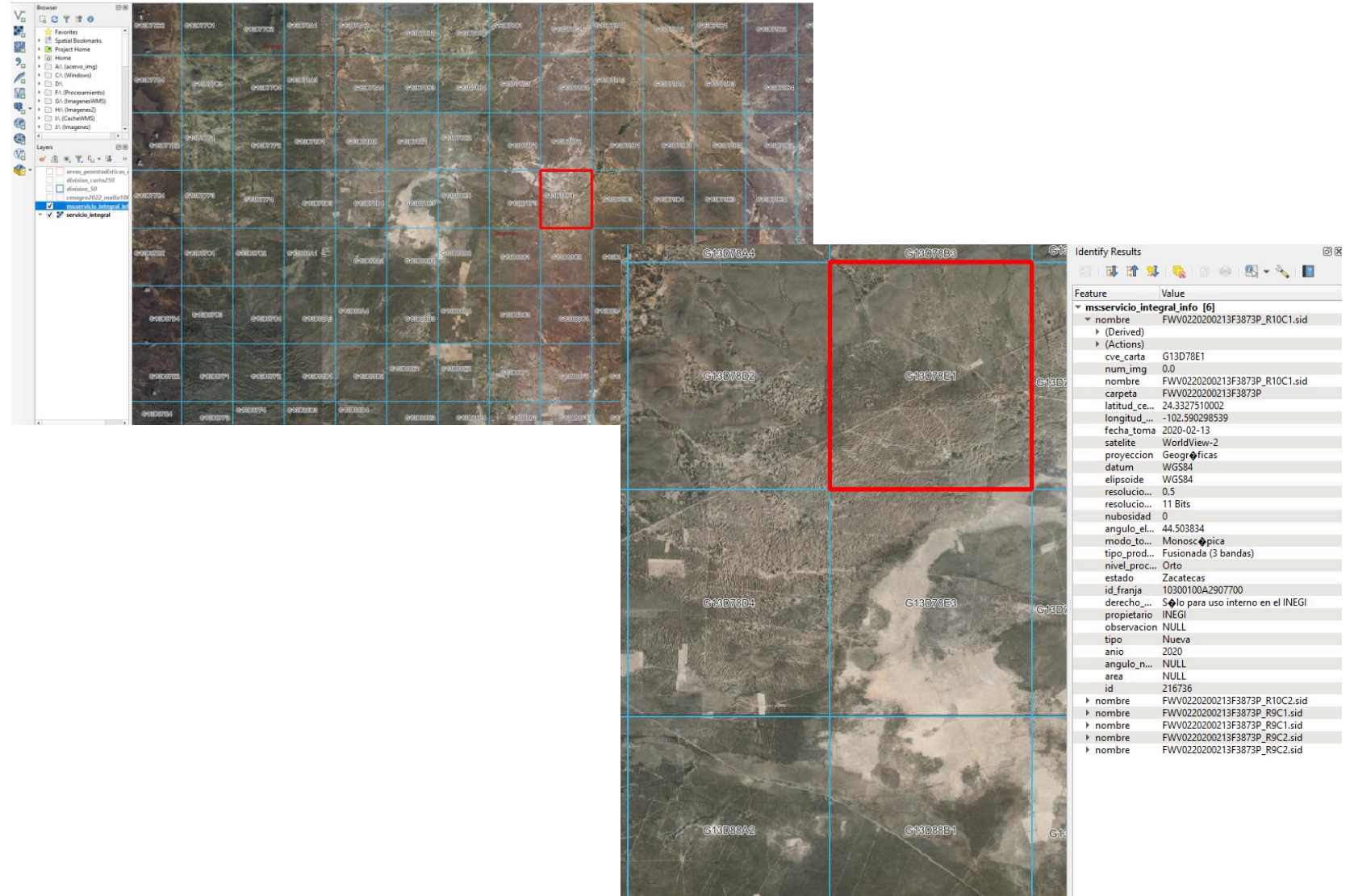
It is just an example of the advanced vector editing functionalities that HEDIT has.

HIGH RESOLUTION IMAGE SERVICE

The service allows access to satellite images from any computer connected to the Institutional network, it is used in the HEDIT.

It consists of a WMS and a WMTS for image display.

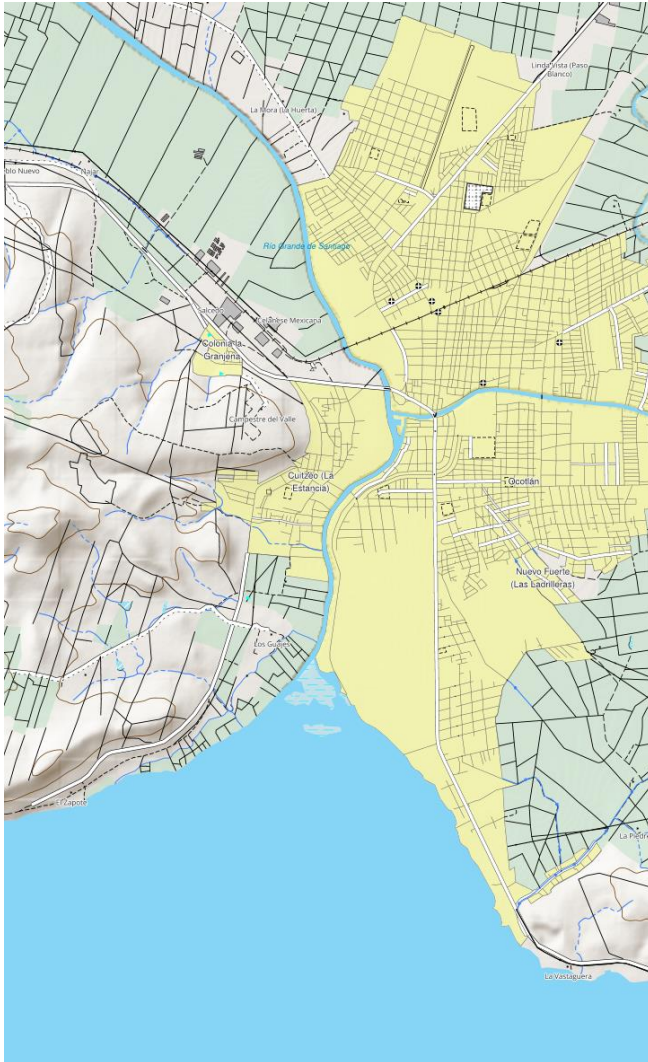
It is accompanied by a WFS to query essential image attributes, such as image taking date and resolution.



The screenshot displays a GIS application interface. On the left, a browser window shows the application's navigation and toolbars. Below it, a layers panel lists various data layers, with 'servicio_integral' selected. The main area shows a satellite image grid with a red box highlighting a specific tile. To the right, an 'Identify Results' window displays metadata for the selected tile.

Feature	Value
nombre	FWV0220200213F3873P_R10C1.sid
(Derived)	
(Actions)	
cve_carta	G13D78E1
num_img	0.0
nombre	FWV0220200213F3873P_R10C1.sid
carpeta	FWV0220200213F3873P
latitud_cen...	24.3327510002
longitud_cen...	-102.590298539
fecha_toma	2020-02-13
satelite	WorldView-2
proyeccion	Geograficas
datum	WGS84
elipsoide	WGS84
resolucio...	0.5
resolucio...	11 Bits
nubosidad	0
angulo_el...	44.503834
modo_to...	Monocromatica
tipo_produ...	Fusionada (3 bandas)
nivel_proc...	Orto
estado	Zacatecas
id_franja	10300100A2907700
derecho...	Solo para uso interno en el INEGI
propietario	INEGI
observacion	NULL
tipo	Nueva
anio	2020
angulo_n...	NULL
area	NULL
id	216736
nombre	FWV0220200213F3873P_R10C2.sid
nombre	FWV0220200213F3873P_R9C1.sid
nombre	FWV0220200213F3873P_R9C1.sid
nombre	FWV0220200213F3873P_R9C2.sid
nombre	FWV0220200213F3873P_R9C2.sid

RESULTS OBTAINED



The 1:50,000 scale National Topographic Information Continuum database contains 17,272,774 instances of cartographic objects.

During the 2024 update operation, 4,920,837 instances were updated.

151 editors from regional and state offices of the Institute participated in the update.

A national set of vector data is being extracted from the database and will be published, for download, on the INEGI website this December.

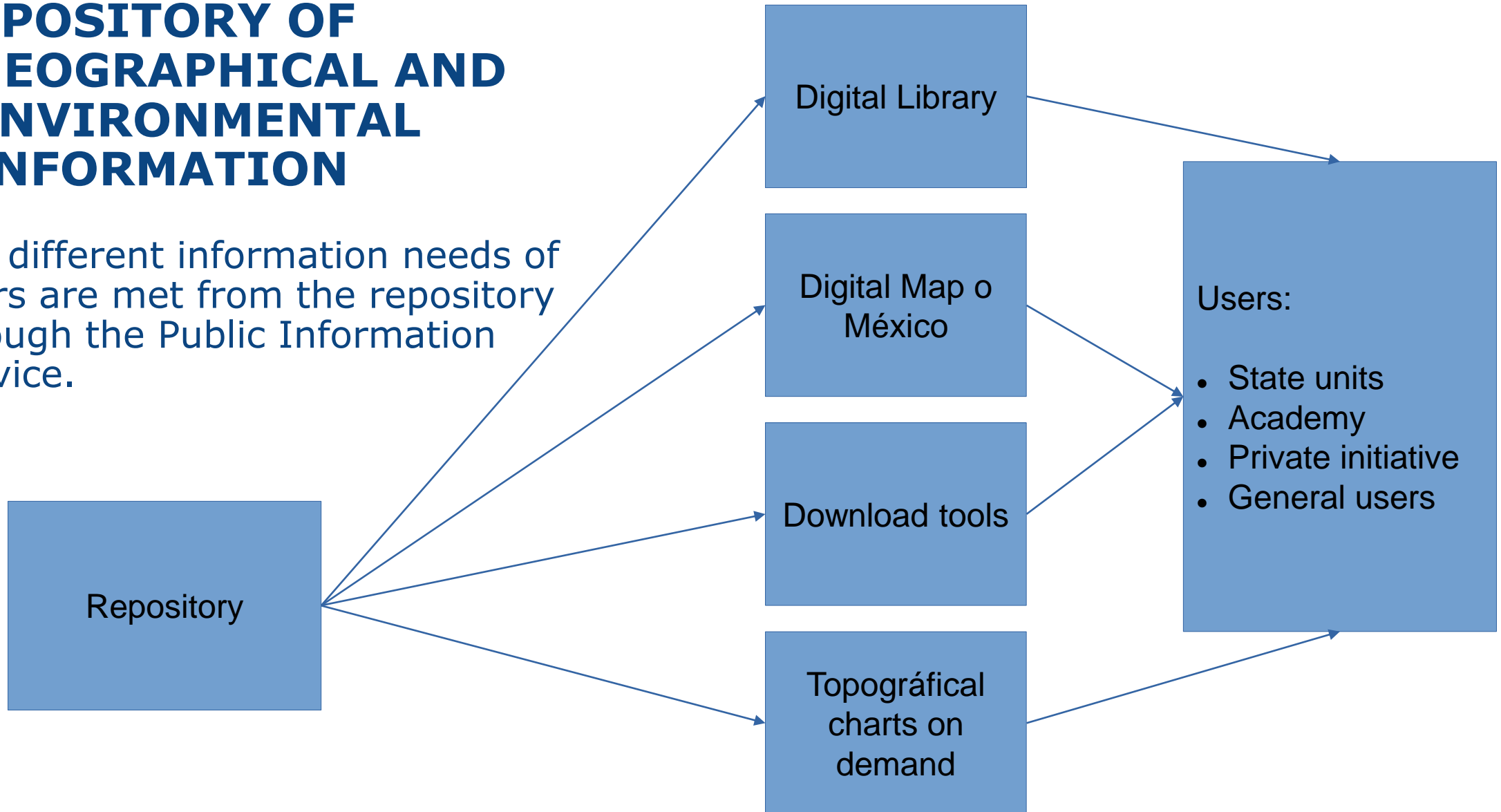
REPOSITORY OF GEOGRAPHICAL AND ENVIRONMENTAL INFORMATION

All geographic and environmental information produced at the Institute is sent for safekeeping and administration to the Geographic and Environmental Information Repository.



REPOSITORY OF GEOGRAPHICAL AND ENVIRONMENTAL INFORMATION

The different information needs of users are met from the repository through the Public Information Service.



FINAL COMMENTS

Accurate, updated and accessible geographic information is essential for good government decision-making.

It is important that production processes are aligned with the objectives of the national system, that they are efficient and effective, that they are controlled and that personnel have the appropriate tools for their work.

There is always room for innovation in the production of geographic information, processes can be improved little by little or radical leaps can be made when it is most convenient and the institution is prepared for it.

Thank you for your time

José Luis Mondragón Garibay

Director of the Geomatic Solutions area

National Institute of Statistics and Geography



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