

# HYDROGRAPHIC AND GEODETIC SERVICE OF THE REPUBLIC OF CUBA



## 2nd WORLD GEOSPATIAL INFORMATION CONGRESS OF THE UNITED NATIONS (UNWGIC)

**“GEOGRAPHIC GEO-ENABLEMENT OF THE GLOBAL VILLAGE: NO  
ONE SHOULD BE LEFT BEHIND”**

**“IMPLEMENTATION OF THE INTEGRATED GEOSPATIAL  
INFORMATION FRAMEWORK **IN THE REPUBLIC OF CUBA** ”**



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INFORMATION MANAGEMENT



# Geospatial Information



# Global Sustainable Development



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INFORMATION



# Integrated Geospatial Information Framework IGIF

## Strategic Routes



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# Hydrographic and Geodetic Service of the Republic of Cuba

**Decree Law 179 October/1997 creates  
the Hydrographic and Geodetic  
Service of the Republic of Cuba.**

**NATIONAL OFFICE OF  
HYDROGRAPHY AND GEODESY**

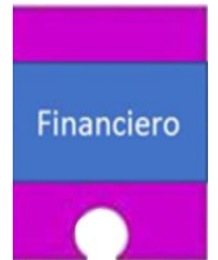


**Is supported by Resolution 59  
October/2015**

**BUSINESS GROUP  
GEOCUBA**



**Is supported by  
Resolution 108  
September /1995**



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UNITED NATIONS  
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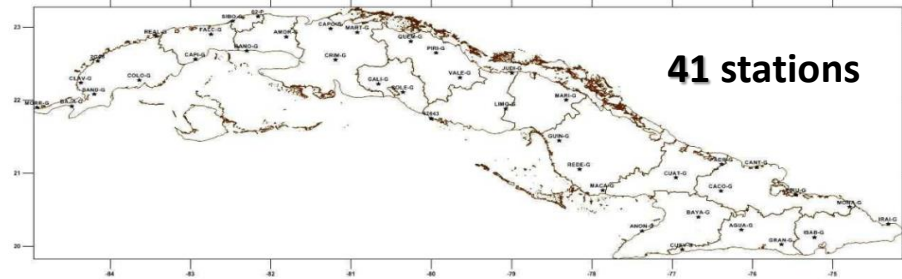
# Modernization of the National Geodetic Network :



## -Permanent GNSS Network (RGP)



## -Fundamental GNSS Network (FGR)



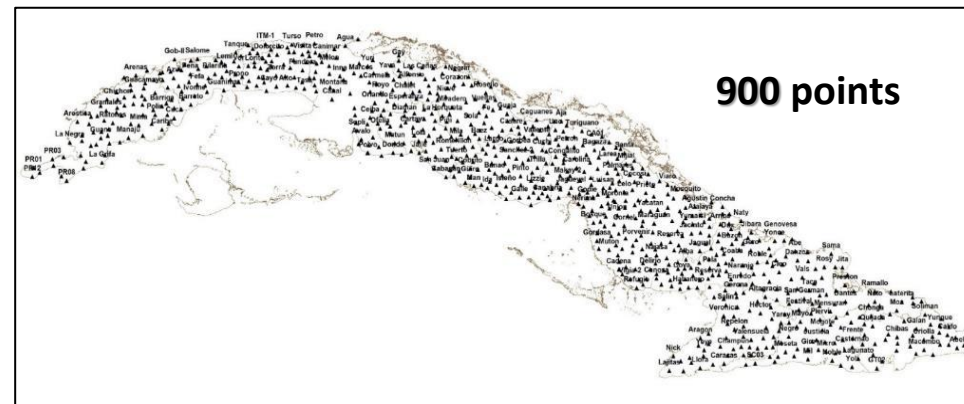
## -Geodesic Network of 2nd order (RGB2)



## -GNSS Validation Polygons (PVG)



## -Geodesic Network of 3rd order (RGB3)

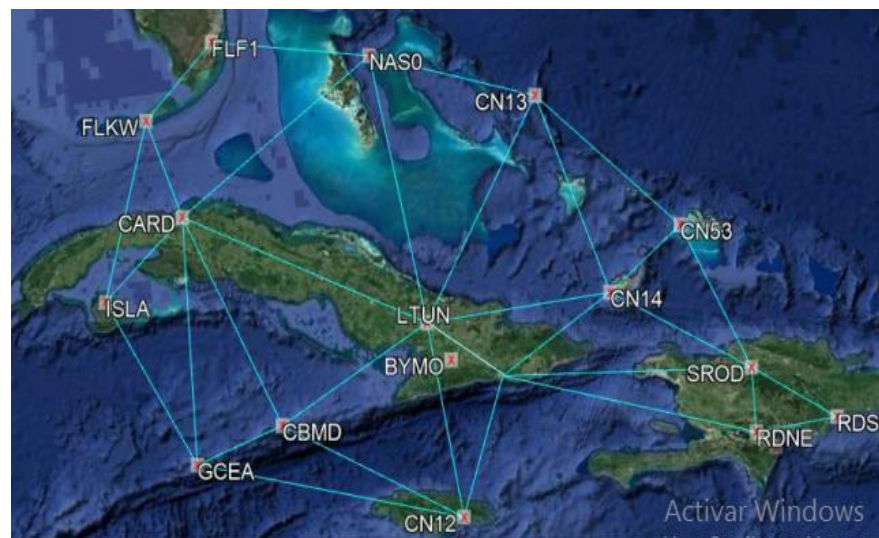
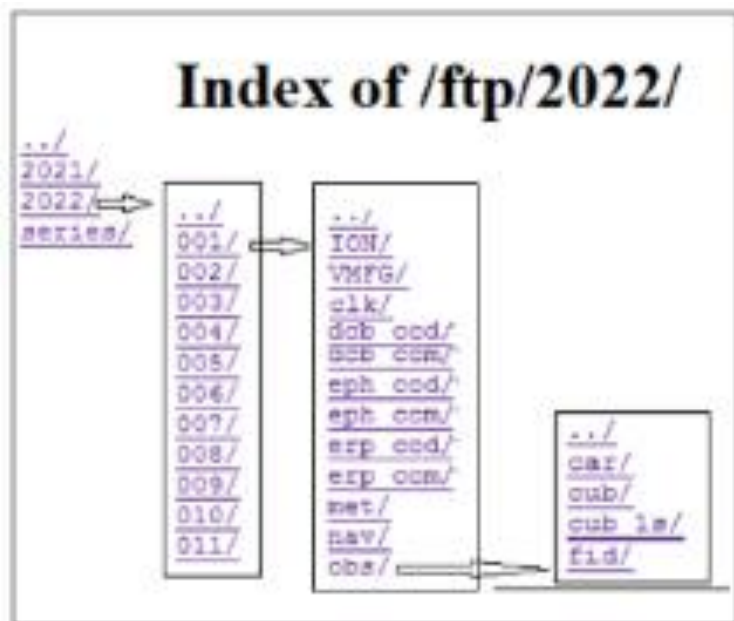


[https://mxsig.geocuba.cu/ftp\\_\(GEOCUBA Geospatial Data Center\)](https://mxsig.geocuba.cu/ftp_(GEOCUBA Geospatial Data Center))



## Index of /ftp/2022/mdb\_1s\_2022/166/

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Red de Estaciones GNSS del Caribe



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# Topographic Mapping as a form of Geospatial Information Management .



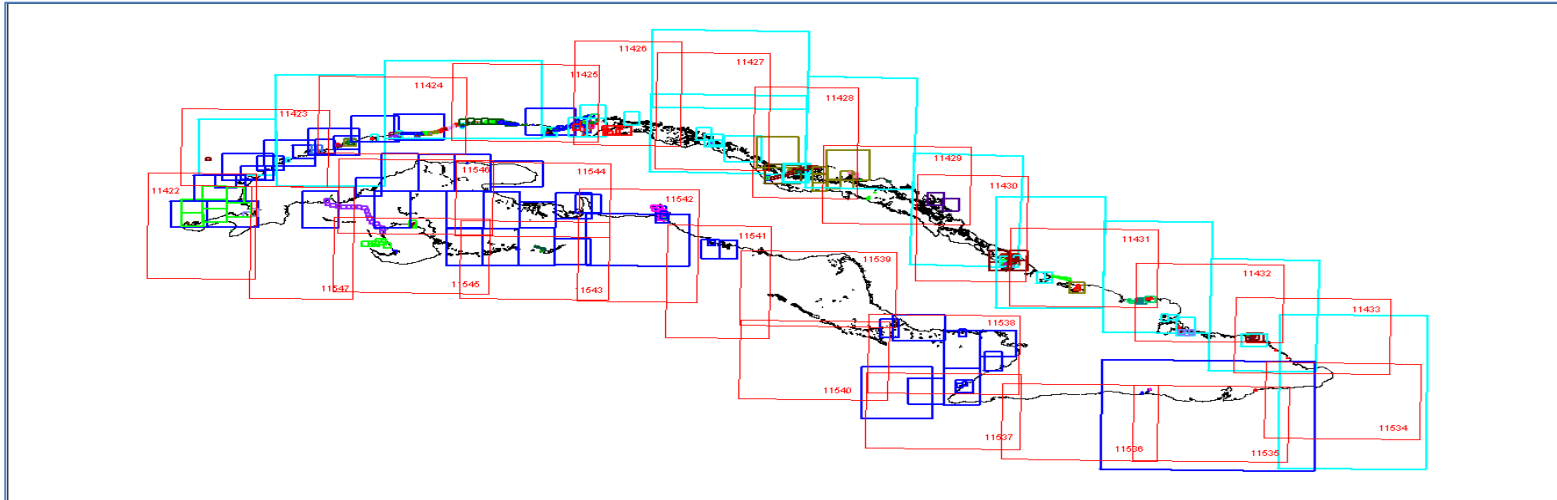
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1:50000	392	392	100		346	87
1:100000	117	117	100		99	85
1:250000	23	23	100	14		
1:500000	16	16	100 (analog format)			
1:1000000	4	4	100 (analog format)			



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# Nautical Charts at different scales



Scales	Number of Nautical Charts
1:1000000	1
1:500000	3
1:400000	3
1:300000	2
1:200000	16
1:150000	26
1:100000	12

Scales	Number of Nautical Charts
1:75000	6
1:50000	52
1:40000	1
1:30000	3
1:25000	25
1:20000	3
1:15000	4

Scales	Number of Nautical Charts
1:10000	31
1:5000	16
1:2500	1
1:2000	3
<b>Total of 209 Nautical Charts</b>	



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# GEOPORTAL

## Spatial Data Infrastructure of the Republic of Cuba

<http://www.iderc.cu>



### APLICACIONES

- Mapa Topográfico Digital**  
Mapa interactivo para acceder a los datos del Mapa Topográfico Digital a diferentes escalas, hoy 1:250K y 1:500K, en formato PDF.
- Catálogo de metadatos**  
Búsqueda de metadatos sobre servicios, mapas, información geográfica.
- Visor Genérico de Cuba**  
Servicio de visualización de mapas.
- Diccionario y nomenclátor**  
Búsqueda y localización de nombres geográficos.
- Calculadora geográfica**  
Transformación de coordenadas.
- Cartas y Publicaciones Náuticas**  
Acceso a los Sitios de Cartas y Publicaciones Náuticas.
- Normas y Regulaciones**  
INFORMACIÓN, US-GM, OIM.



Application for Fleet Control based on PostgreSQL.

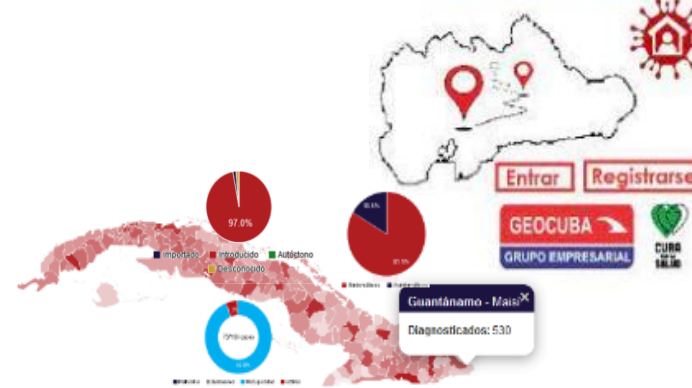


## Geoinformatics Platform for confronting health disasters

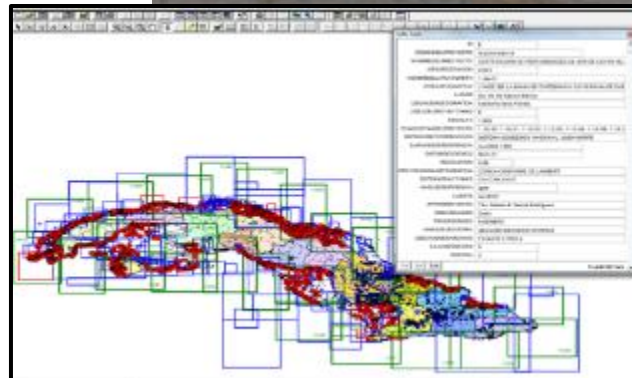
### COVID 19 Analysis

### Higia Andariego

Sistema de Información Geográfica-Web para el control de la COVID19



## Spatial Data Infrastructure (IDEM).



## Infraestructura for the Life Task (IDEVIDA).



### PROYECTOS

- IDEVIDA**  
Infraestructura de Datos Espaciales Especiales para la Zona Verde (EEZ-VIA).
- Estudio Ambiental Integrador**  
Construcción metodológica para la implementación del Plan de Adaptación al Cambio Climático en zonas de alto riesgo.
- Caracterización de los Recursos Naturales**  
Plan de zonificación del Plan de Adaptación al Cambio Climático: Medición de los recursos 2050 y 2100.
- Estudio Integral de los Ecosistemas**  
Control y monitoreo, orientado al conocimiento de su estado y adaptación al cambio climático.



All these results are covered by the **Technical Committee 75**, which is in charge of approving and preparing standards and technical documents by specialty.

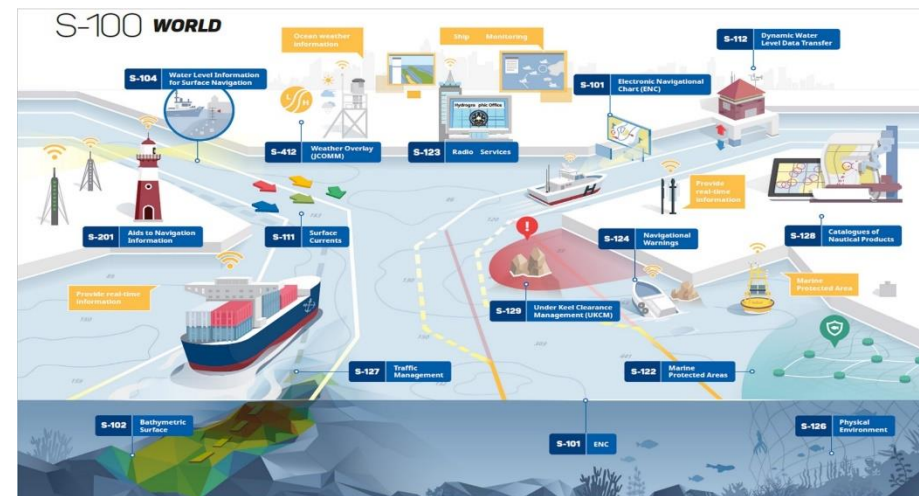
- Cartography Subcommittee
- Subcommittee on Geodesy and Surveying
- Subcommittee on Hydrography and Aids to Navigation

### Comité ISO/TC 211

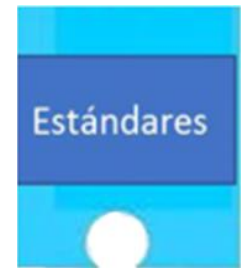
### Información Geográfica / Geomática

- ISO 19113 Geographic Information
- ISO 19114 Geographic Information (Quality Procedures)
- ISO 19115 Metadata
- ISO 19157 Data Quality
- ISO 19158 Quality Assurance in the Provision of Geographic Data

### IHO standards



- **S-57** Electronic Navigational Charts
- **S-100** Universal Hydrographic Data Model
- **S-101** Electronic Navigational Charts
- **S-102** Bathymetric Surfaces
- **S-111** Surface Currents
- **S-112** Tide Level Data Transfer
- **S-4** Cartographic Specifications
- **S-32** Hydrographic Dictionary
- **S-44** Bathymetric Surveys



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- **MINEM** (Ministry of Energy and Mines)



- **IGT** (Institute of Tropical Geography) belonging to the (CITMA) Ministry of Science Technology and Environment



- **INOTU** (National Institute of Territorial and Urban Organization)



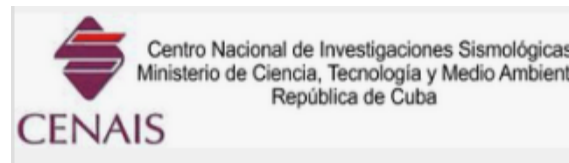
- **IGA** (Institute of Geophysics and Astronomy)

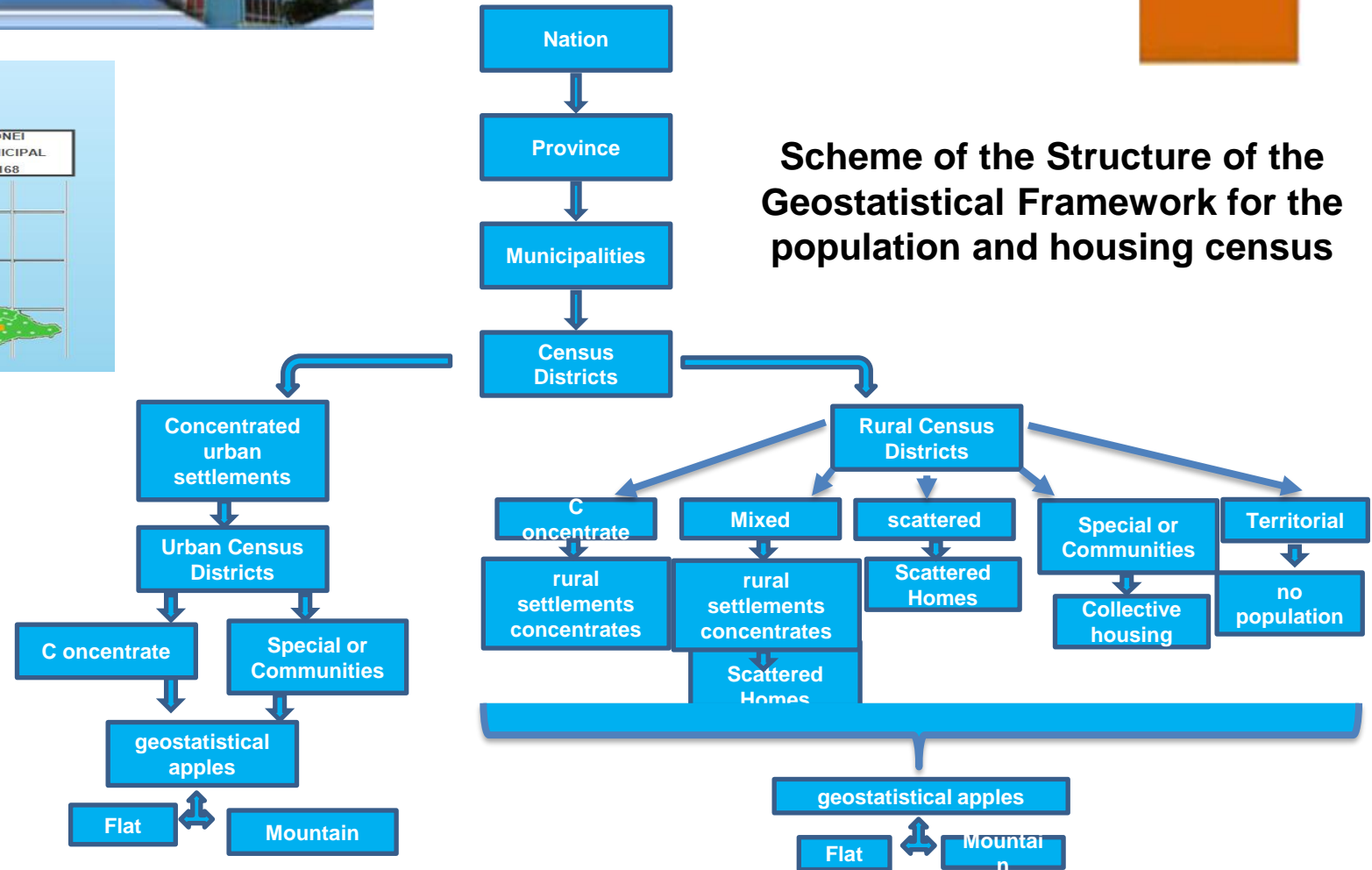
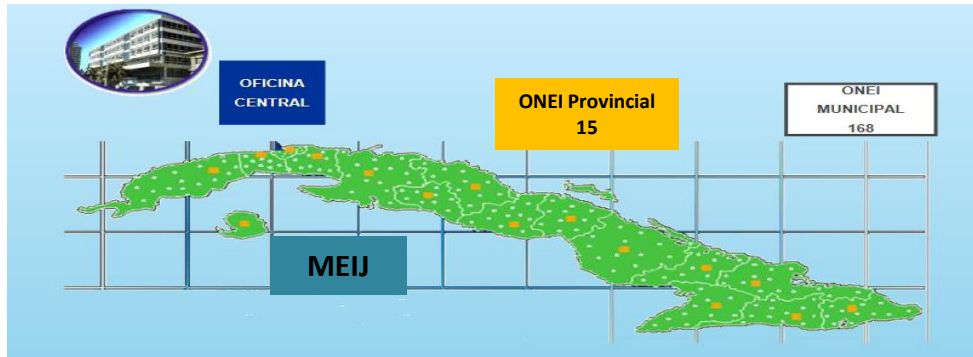


- **EMNDC** (National Civil Defense Staff)



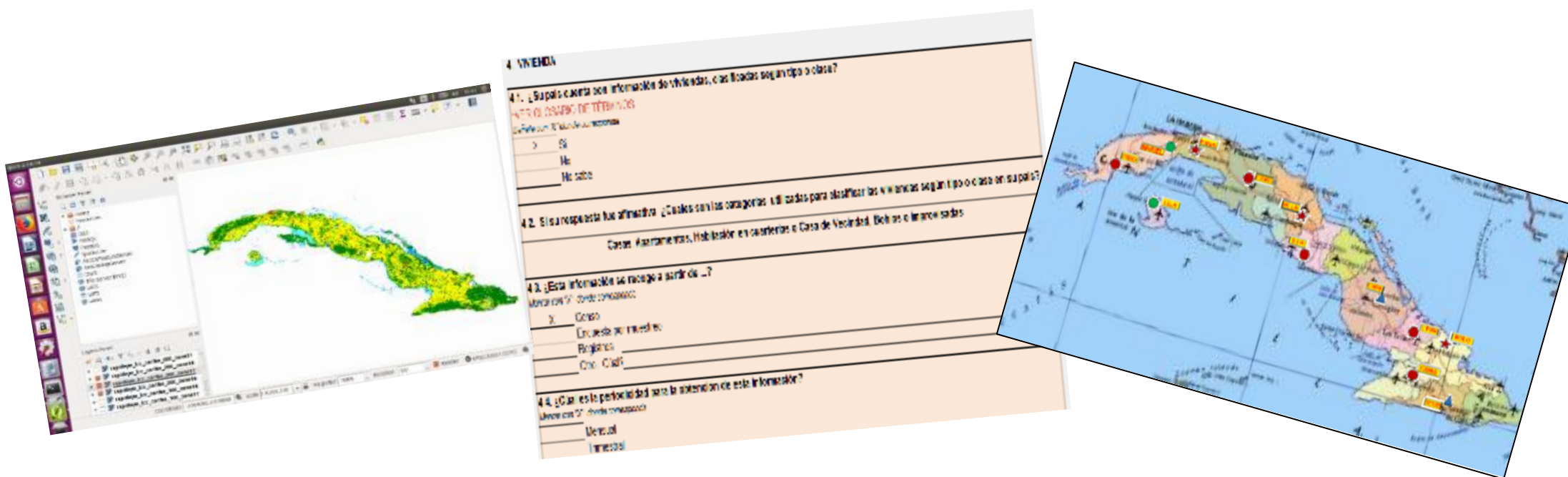
- **CENAI** (National Center for Seismological Research)





# Caribbean Project

- Land Cover Map of the Republic of Cuba
- Network of Permanent Stations
- Geospatial Statistical Map (MEGA)



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- **Technological Institutes Intermediate Level in the specialty of Geodesy and Cartography**
- **Naval Academy "Granma" Higher Level in the specialty of Hydrographer-Geodestic Engineer, Master in Geomatics and Doctorate in Technical Sciences**





**Thanks!**

