GEODESY IN THE CADASTRE AND REGISTER REGULARIZATION PROGRAM

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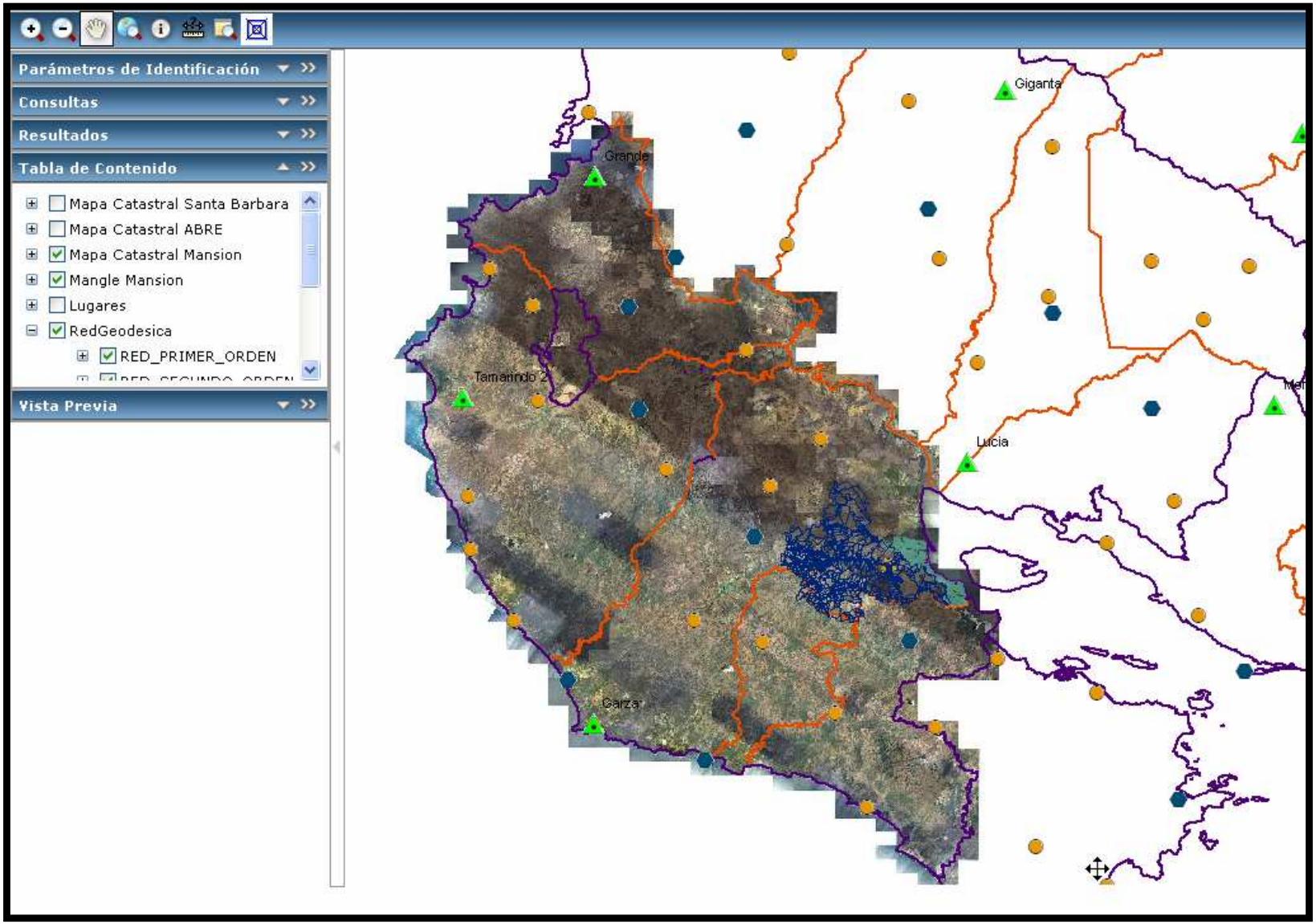
Cadastre and Register Regularization Program (CRRP)

- Legal base: law 8154 of 2001.
- Objective: To improve the legal security of land ownership rights
- How: formation of national cadastre and union of cadastral and register information

- The CRRP is conformed by three "Components"
- Component 1: Formation of cadastre and union of cadastral and registrar information
- Implementation of two SDI: the National System of Territorial Information (SNIT) and System of Land Registration Information (SIRI)

- Component II: Regularization of property rights relating to property in state lands
  - National Parks
  - Forest Reserves
  - Indigenous territories
  - Borders with Nicaragua and Panama
  - Others
- Component III: Training the local governments in the use of cadastral information

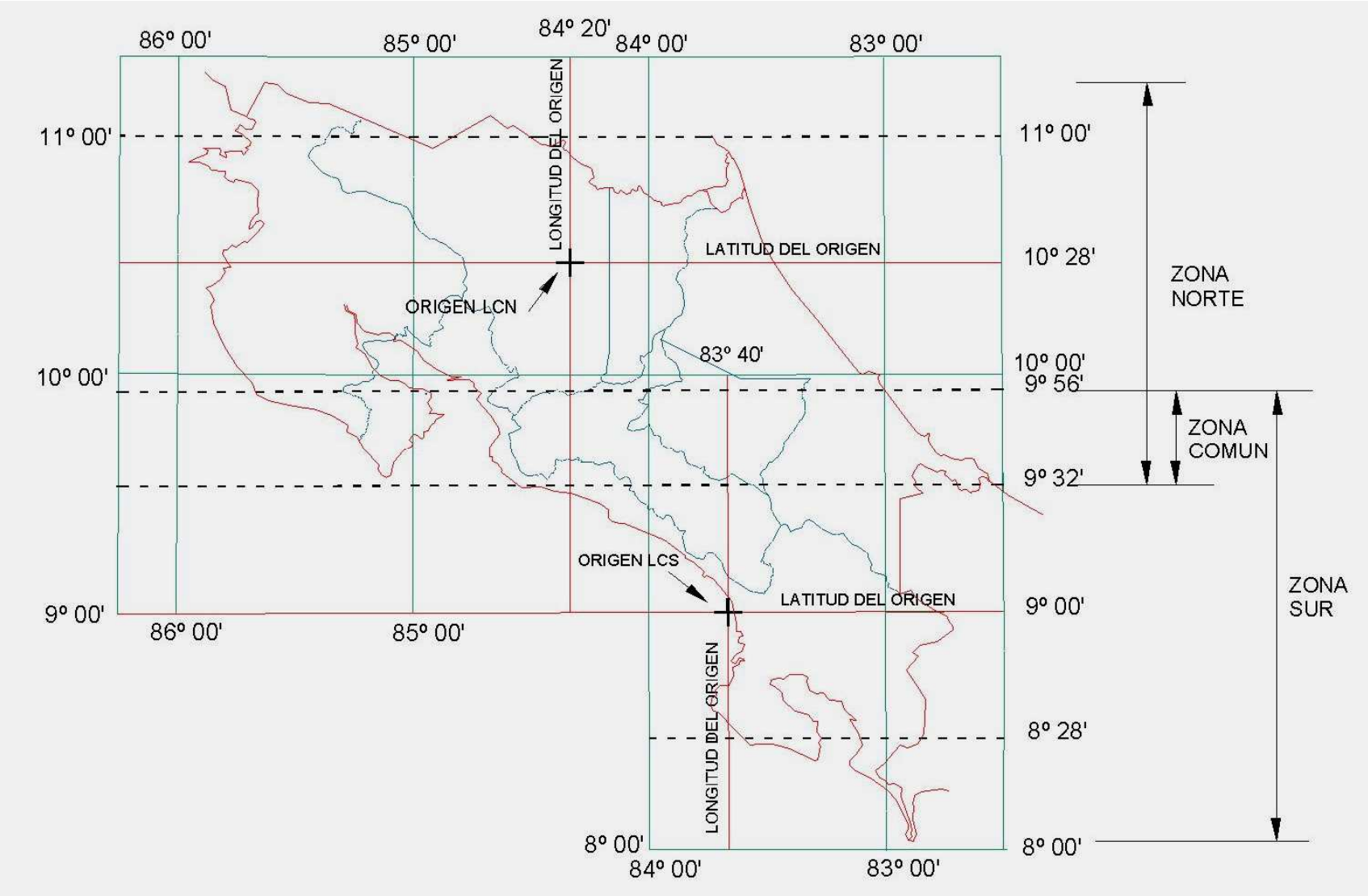
SNIT


Parámetros de Identificación
Consultas
Resultados
Tabla de Contenido
Mapa Catastral Santa Barbara
Mapa Catastral ABRE
Mapa Catastral Mansion
Mangle Mansion
Lugares
RedGeodesica
RED_PRIMER_ORDEN
Vista Previa
Giganta
Grande
Tamarindo 2
Lucia
Garza

"Old" conventional reference system of Costa Rica

- Datum: Ocotepeque, Honduras
- Ellipsoid: Clark 1866
- Projection: Conical of Lambert
- Basic Cartography scale 1:50000

Two projections in Costa Rica



¿In what reference system and cartographic projection we will work?

Definition of the new reference system

- Answer: is necessary define a new reference system for Costa Rica, consistent with the moderns concepts of geodesy, accessible with GPS.
- This system, named CR05, is linked to International Terrestrial Reference Frame, epoch 2000 (ITRF00) and the epoch of their definition is to= 2005,83

Definition of the new reference system

- This system is accessible through passive geodetic network (in the short term, we will install 8 active stations)

Definition of the new reference system

- The process to define the reference system was coordinated by CRRP and we have the support of the National Geographic Institute and the National Cadastre
- A National Consultant was responsible to give technical advice, to design and calculate the geodetic network and define the cartographic projection

Link to ITRF00

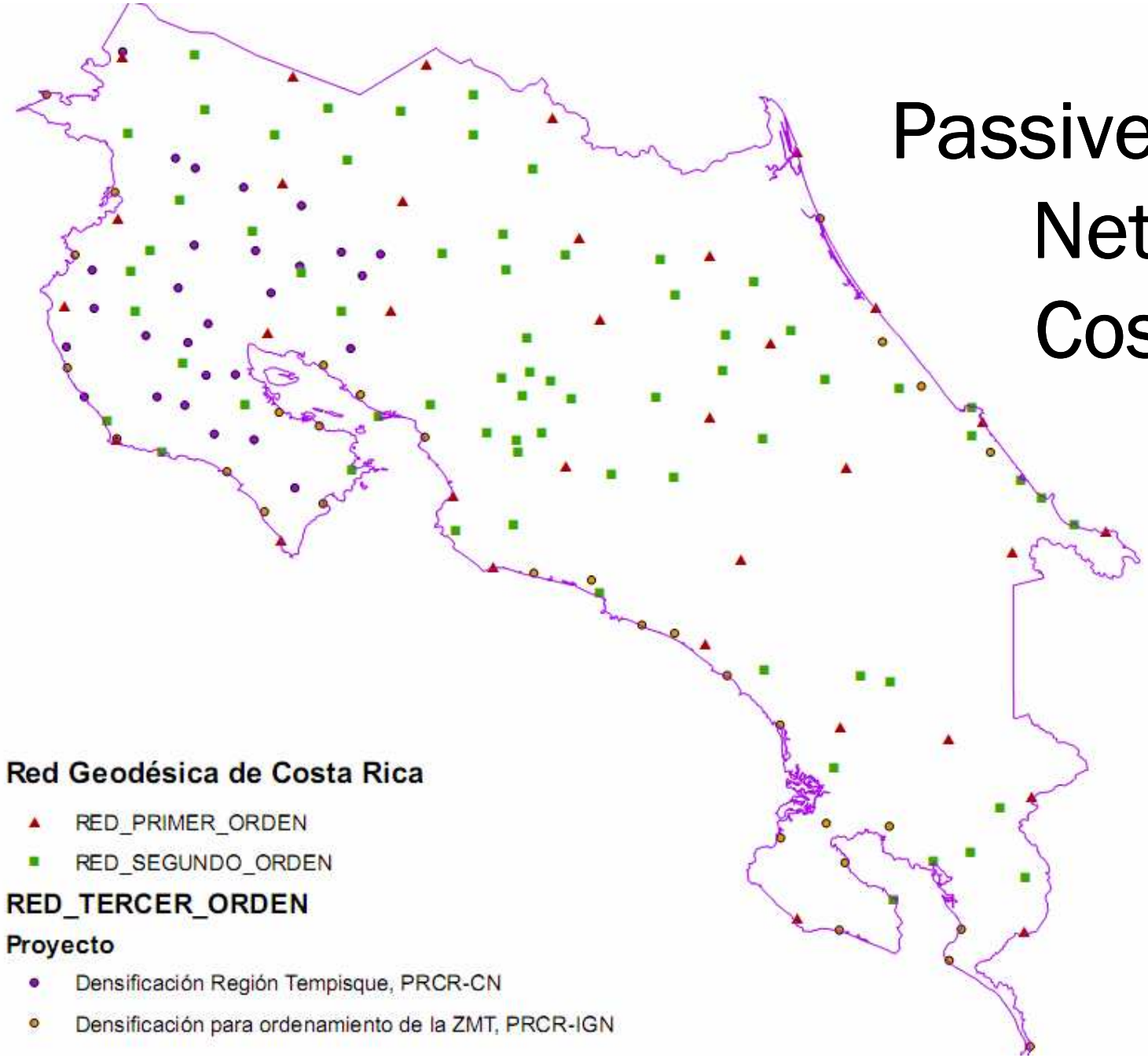
MANA = Nicaragua

GCGT = Islas Caimán

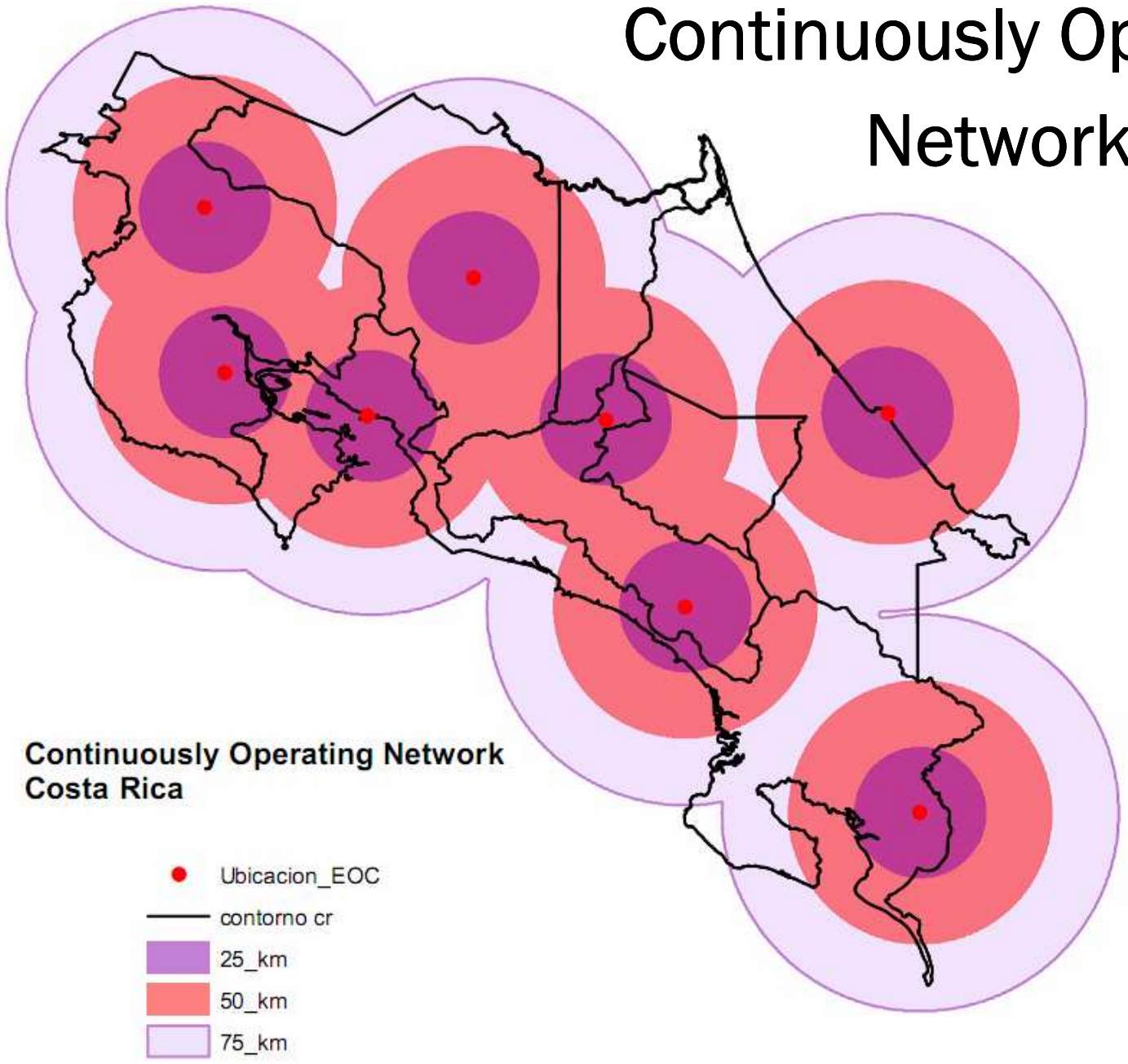
ZSU1 = Puerto Rico

CRO1 = Islas Vírgenes

Passive Geodetic Network of Costa Rica



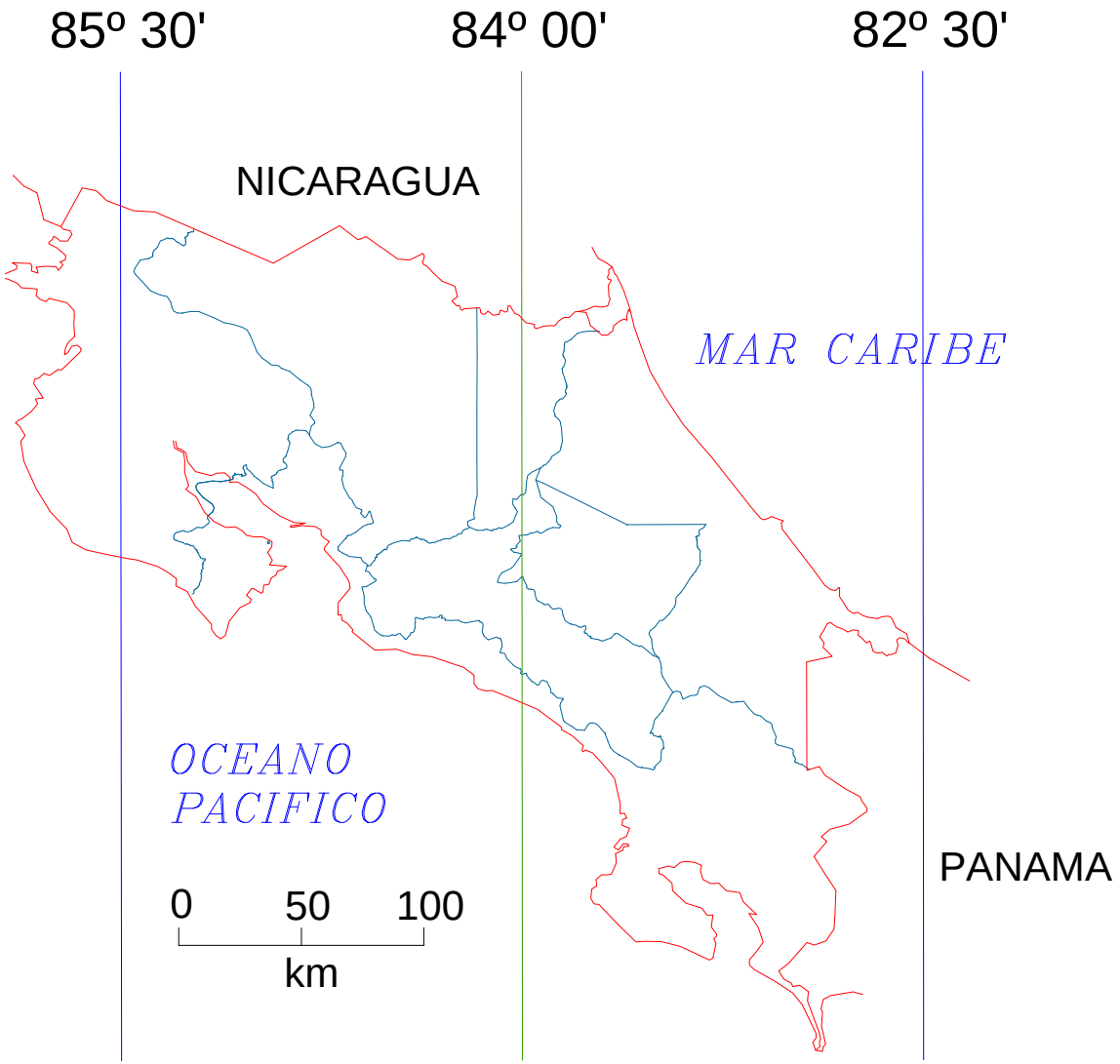
Continuously Operating Network



Cartographic Projection

- This replaced the Lambert projection, defined in the second half of century 20 (Costa Rica was two projection: Costa Rica North and Costa Rica South, both Lambert Projection)
- The new cartographic projection, is named CRTM05. This is a Gauss-Krüguer projection, adapted to Costa Rica
- The central meridian is 84° W and the scale factor is 0,9999 in the central meridian

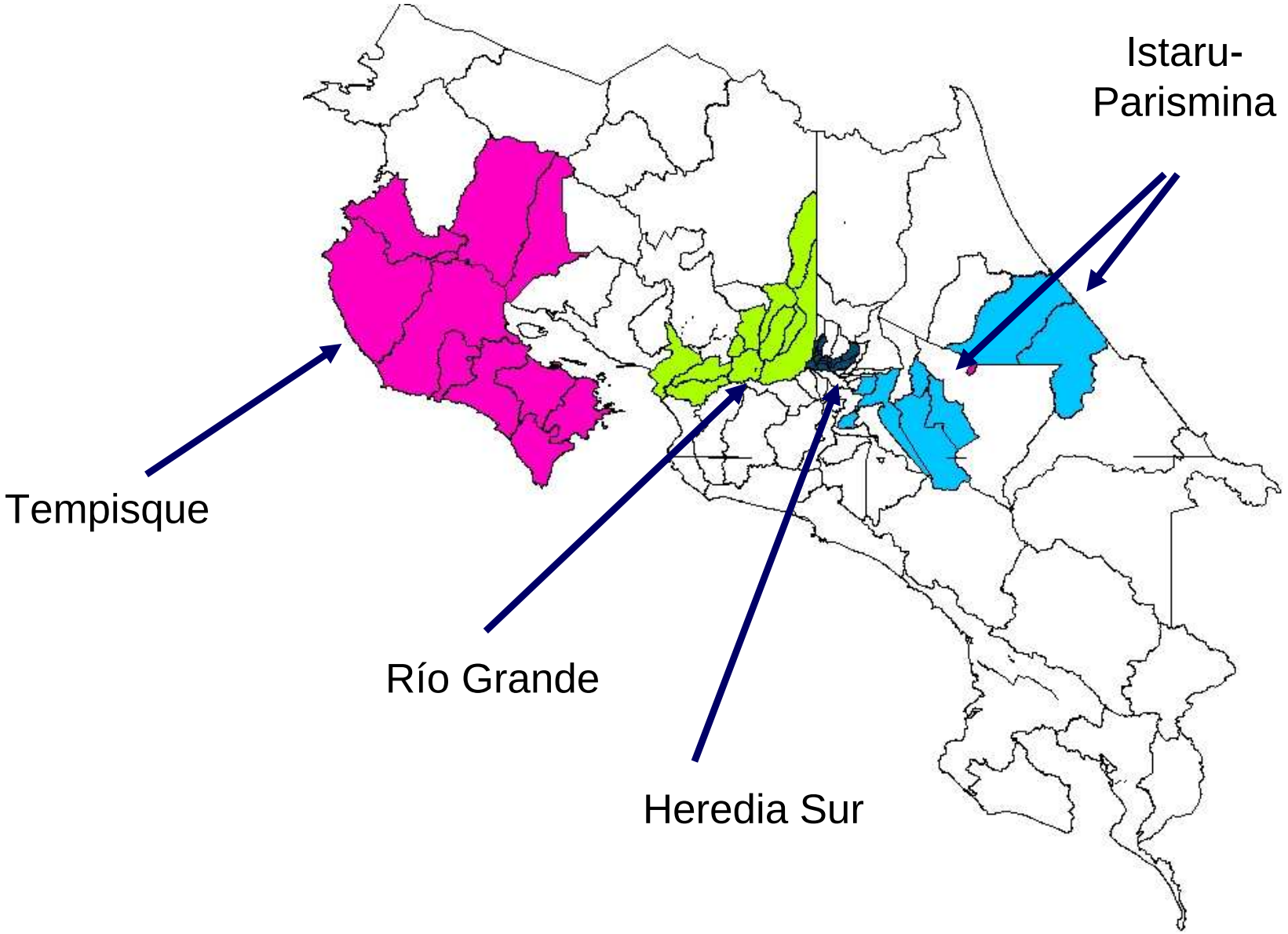
Projection CRTM05



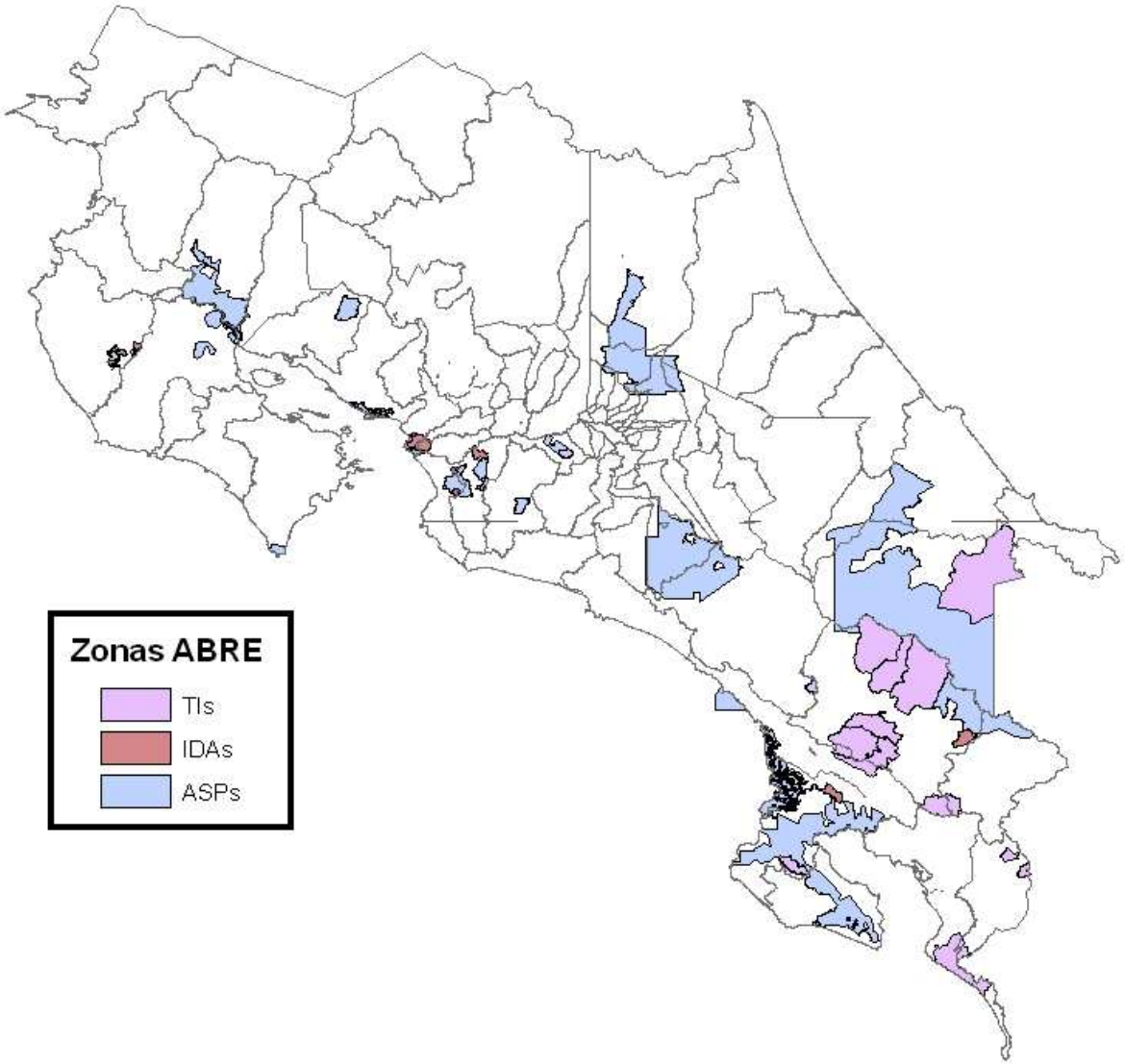
Applications

- CR05 is the official reference system since 2007. All the geodesic, topographic, cadastral and photogrammetryc works, taking place in Costa Rica, must use this reference system
- SDI´s (SNIT, SIRI)
- Mapping
- Measurement of natural recourses
- Commercial applications

Cadastral areas, phase 1



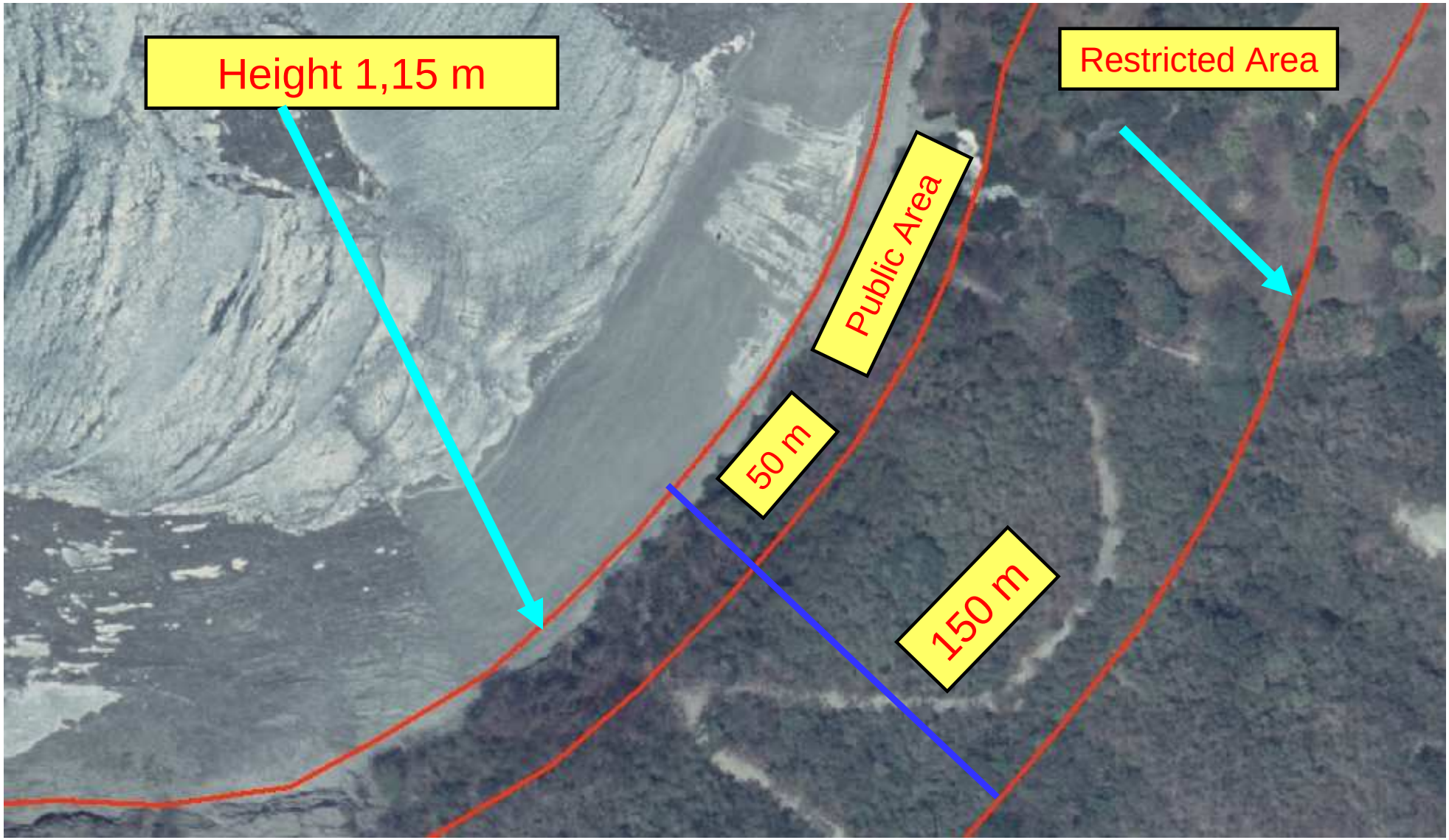
Cadastral Areas, State Properties



Applications

- A very important work the that we are doing is ordering the coastal areas of Costa Rica
- According with our legal system, the first 50 m from level curve 1,15 m are a public areas, property of the state
- The local governments can give in concession the restricted area

Coast Ordering



Next geodetic projects in short term

- Install the Continuously Operating Network (December 2009-january 2010)
- Review of the vertical reference system (in process)
- Recuperation and analysis of gravimetric data (in process)
  - Cooperate with SIRGAS

- The CRRP considered important give to know their works and products, like form to impulse the integration of territorial information, allowing increase the knowing and rational use of the recourses
- And for that, is necessary an actual geodetic reference system (CR05), easily accessible and only for the whole country

Conclusions

- The “old” reference system, linked to datum Ocotepeque was replaced by a new reference system, named CR05, linked to ITRF00
- The Lambert projection was replaced by Gauss-Kruguer projection named CRTM05
- In the short term, 8 active stations will be installed
- We want contribute with the objectives of SIRGAS, sharing the results of the projects.

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Thank You for your attention