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ACTUAL STAGE OF HIDROGRAPHIC AND GEODESIC ACTIVITIES OF THE CUBAN REPUBLIC

SUMMARY



- The present work has purpose of showing in general way the development and actual stage of government activities of Geodesic and Hydrographic Cuba and how they have passed any since XIX century up to this date.
- This work show in a structural way the obtained results in these specialities in Cuba, and different works that have been developed and that are developed at the present time and perspective for the next future.

SUMMARY



- As a politic we have always taken into account to procure a technological development according to the progress that we are obtaining in the following activities: Geodesic, Topography, Cathastres, Cartography, Hydrographic, Geographic Information System, Geographical names, Photogrametry and Teledetection.

INTRODUCTION



- The Hydrographic and Geodesic patrimony has been created in the fields of Geodesy, Cathastre, Topography, Maritime Studies and the assistance to the navigation with a hard utilization of aerial Survey, Photogrametry, Teledetection and Computer Techniques. This patrimony has continued its development with the main objective of satisfying the informative demands on different national professionals, supporting the process of making decisions in the context of the economical and social development, and also talking the necessary measures in order to protect the environment.

Develop (Geodesy)



- The National Geodesic Network (NGN) is well developed because it guarantees the topographic mapification up to 1:10 000 scale and the cities mapification to a 1:2000 scale. In this period the geodesic activity has been centered in the ransom to the created network and the development of the GPS campaign in the country. With the adoption by the OACI of the World Geodesic System WGS-84 as a reference for GPS determinations with high precision. The net has 20 stations distributed uniformly in all the national territory.



Develop (National Cathastre)



- The National cathastre finished and it keeps up to date realized in rural zones 98% of the National territory of all the land municipalities at a scale of 1: 10 000 and 1:25 000 fundamentally having an economical conception statistic and agricultural in the essential.
- The development of the rural cathastre's informatic system on a superior programar basis has made possible to obtain the necessary abridgments for the land's balance and other statistic economical and agricultural interests.



Develop (Industrial Topography)

- Special attention to the industrial topography has been dedicated in the last years, developing group of technologies with great importance for the national economy. Among them we have: the technology for controlling the deformations in the sugarhouse machinery; the calibration of vertical cylindrical tanks with high capacity; deformation control in engineering works; survey of underground technical networks and areas; works related to the terrestrial Photogrametry as a support to the works for the restoration of cultural patrimony.

Develop (Thematic Chartographic)



- As result of the united work done by specialists from different organisms and institutions during several years, a numerous group of World, continental, national thematic maps, and atlas was created. Among them prominent ones are: National Atlas from Cuba, Historical Biographic of **José Martí Pérez**, **Simón Bolivar** and **Ernesto Ché Guevara de la Serna**, and educational maps.

Develop (Thematic Chartographic)

- In 2000 years the geographical, economical and cultural synthesis of Cuba was finished and began to create the General Geographical Map of Cuba in digital format at scale 1:300 000. In this period of time the edition of maps for tourism has continued, these works show and explain the characteristics of several interesting locations.

Develop (Geographical names)

- Since the creation of the National Commission of Geographical Names (GNNC) the work developed in 1980 has permitted to count upon the revised and arrowed lists that show: the principal litoral names, the main accidents of the litorimia, great units and subunits of the relief, the name of the countries, seas and oceans of the world. Moreover the periodical publication of the informative bulletins began.

Develop (Geographical names)



- An important group of works has been carried out during 2000 year. They had increased the quality of works in order to put the country uniformed. Among these works can be mentioned the following: Geographical Cuban Dictionary and conclusions of the Cuban Toponymic catalogue and the beginning of the works for the edition of Toponymic digital maps of Cuba, Central America, The Caribbean and the whole world.

Develop (Geographical names)

- During these years it has been working to create a system, which enable the automatization, processing and the resulting from the work uniformation and the resulting of a Geographical Information System (GIS) which has as an initial content the information colleted in the Cuban Geographical Dictionary that should be immediately undertaken.

Develop (Hydrographic and Nautical Cartography)

- There is a collection of more than **140** Cuban charts, which includes the interior waters, territorial seas and an exclusive economic zone in paper and raster formats. In this period the following works related to important projects began:

Develop (Hydrographic and Nautical Cartography)

- The conclusion of the 80 % of Hydrographical surveying for the edition of 25 new nautical charts.
- The realization of the hydrographic surveying for new editions of the **Havana, Santiago de Cuba, Matanzas, Cienfuegos, Cabañas** and **Nipe bay** charts.

CONCLUSIONS

The hydrographic and Geodesic patrimony produced in this years satisfy the country necessities, notwithstanding the obstinate blockade policy applied by the USA Government with respect to access to technologies and equipments necessary for develop the mentioned specialities.

