Big spatiotemporal data for a smart and resilient city (Focus on Geospatial data management)

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4th of May 2023, Rotterdam, the Netherlands
Plan

- CNCT INTRODUCTION
- INIG – NSDI (IGIF)
- SMART CITIES
- PROJECT OVERVIEW
EPNA under MOD supervision

- Corporate Council chaired by Mr. MDN
- Scientific Advisory Board
Development of a holistic geoportal accessible to the different arabic states which allows to integrate and visualize their geographic informations basically the topographic ones like the road network and the points of interest.
Approve the specifications related to the achievement of systems of geographical information for the benefit of the state, local collectivities and public enterprises and establishments,

Approve the technical compliance of the geomatics equipment with the national or international standards in accordance with the conditions and procedures set by decree.
Take part in forming a national policy and setting up methods necessary for its implementation,

Take part in forming legislative and regulatory bills related to the organization of the geomatics sector,

Determine the national system of reference in the geomatics field,
How the National Geographic Information Infrastructure (INIG) was inspired by the ‘IGIF’?
INIG – NSDI (IGIF)

2009
National survey (needs, expectations,…)

2010
Private and public sectors Identification and Analysis ;
National Workshop – Geomatics situation in Tunisia :State of the art and perspectives (to design and develop country-level Action plan with the help of stakeholders and end users)

2012
National Workshop → Geomatics national policy (vision; missions and goals) Ad' hoc Commissions – Technical – legal - Economic

2015

2017-2028
National Tunisian SDI (INIG) implementation
INIG – NSDI (IGIF)

13 Themes
1. Geodetic control
2. Orthophotos
3. Road network
4. Energy network
5. Railroad networks
6. Hydrography
7. Constructions
8. Designated areas
9. Vegetation
10. Land shapes
11. Limits
12. Toponymy
13. Zones
14. Addresses
15. Points Of Interest
16. Cadastre

Precision
- 20 cm
- 01 m

Project databases
INIG – NSDI (IGIF)

Business Model KPIs

1000 bachelors

2000 indirect jobs

127 land surveys

1238 Startups

30 stakeholders

Project components and architecture
The government announced in 2019 the launch of the national program Tunisia Smart City.

Tunisia's membership in the Smart Africa alliance.

The national program for sustainable cities which is in its second phase.

The cities of Tunis, Bizerte, and Sfax are in the process of creating a Smart City unit within the city hall."
PROJECT OVERVIEW

1. Traffic management and crash forecasting
2. Wildfire detection and management
3. Air quality monitoring and pollution detection
4. Anarchic building detection
AI Layer

Big Geospatial Knowledge graph

Semantic layer

Ontology

Taxonomy

Big data graph

Meta Data layer

Source

Time

Contributor

Fabrication data

Fabrication data

Coverage

Data layer

RM

VGI

IoTs

Aerial imagery

INIG DBs

Photos

Census

Reports

BIM

Apache Flink

PostGIS

nifi

QGIS

LoRaWAN

kafka

Apache Spark

mongoDB

kibana

W3C

Node-RED

PyTorch

geomesa

CESIUM
Thank you for your attention