



WEST AFRICAN POWER POOL
SYSTEME D'ECHANGES D'ENERGIE ELECTRIQUE OUEST AFRICAIN

Development of WAPP GIS Database

EU-Technical Assistance



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Implementation

Format and structure

- Tables and files
- Map layers and symbology
- Map templates

Data

- Substations and single line diagrams
- Lines and circuits
- Transformers and reactive compensation
- Telecommunication
- Metering
- Power plants and generators

Software

- Software package customization
- Software manual
- Legal issues

Procedures

- Distribution of database information
- Use of database
- Data update
- Exchange of information
- Manual

Training

- Preparation of presentation
- Training of WAPP experts
- Training of utilities experts

Assistance to GIS management

- Updates reporting
- Map preparation
- Web site development
- Web site management



Data

- The GIS database presently includes the geo-localized data of about 600 substations, 800 transmission lines (totaling 50,000 km and including about 200 double circuit lines) and 200 power plants, either existing, in project or under study.
- HV transmission system only: from 330kV to 60kV
- Technical data to be included/updated on basis of the data collection performed recently for the synchronization study
- Additional Data will be provided through established focal points in member utilities



Format and structure

- Tables and files
- Map layers and symbology
- Map templates



Format and structure

- Tables and files

- Transmission lines: design voltage, operating voltage, cable type and section, circuits (design/installed), length, commissioning date, transmission capacity, series compensation, shunt compensation telecommunication facilities (optic fibre, PLC),....
- Substations: voltage levels, substation type, transformers characteristics, reactive compensation, short-circuit capacity
- Power plants: characteristics of each generation unit, including installed and available capacity, fuel type, electrical characteristics including transformers



Format and structure

- Tables and files
- Map layers and symbology

Legend

Lines Voltages

- 330 kV
- 225 kV
- 161 kV
- 150 kV
- 132 kV
- 110 kV
- 90 kV
- 69 - 60 kV

Lines Types

- Existing - 1 circuit
- Existing - 2 circuits
- Existing - 2 circuits, 1 installed
- Future - 1 circuit
- Future - 2 circuits
- Future - 2 circuits, 1 installed
- HV cable

Control Areas

- Côte d'Ivoire
- Ghana
- Guinée
- Nigeria
- Senegal

Power Plants

- Hydro
- Hydro project
- Hydro site
- Thermal
- Thermal - future
- Solar
- Solar - future
- Wind

Substations

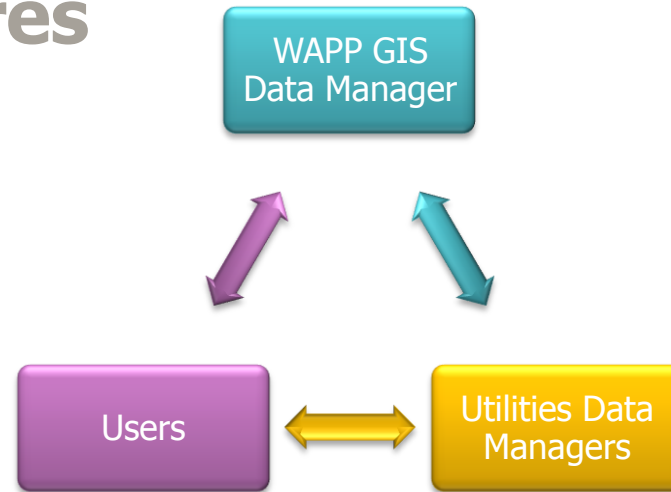
- Future



Software

- Software package customization
 - Updated QGIS software
 - Configuration instructions;
 - Project files
 - GIS database
 - Additional layers (background layers, aerial views, ..)
- Software manual

Procedures



- Organization
- Exchanges of information
- Distribution of database information
- Data update
- Use of database



Training

- Training material package
- Training of WAPP experts
- Training of utilities experts



Assistance to GIS management

- Updates and reporting
- Maps preparation
- Preparation and implementation of new developments
- Web site