HYDROSCOPE

- Data Network
- Local and Distributed Database
- System architecture and functionality
HYDROSCOPE: Data Network

- 12 nodes in Athens and Thessaloniki
- One node per participating agency
- Local Area Network (LAN) at each node
- Wide Area Network (WAN): interconnects all nodes
WAN design

- Main goals:
  - Total interconnection
  - High speed
  - Reliability
  - Autonomy
  - Extendability & Flexibility
  - Automated operation & Simplified Administration
  - Low initial & operational cost

- Alternatives:
  - Public Data Network (HELLASPAC)
  - Academic Network (ARIADnet)
  - Private Network (Leased Lines)
  - Combined solution
HYDROSCOPE: Database

- Distributed database
  - Autonomy
  - Reliability
  - Decentralisation & computing power distribution
  - Lower cost
  - Location transparency

- Security subsystem
  - User groups
  - Database object groups
  - Differentiation of local & remote access

- Accounting subsystem
  - Precise recording of type & quantity of retrieved data and of connection time
Information classification

- Static Data
- Events
- Stations (primary, secondary)
- Instruments (Real, Derived)
- Timeseries

-_static_information
- Metadata - Administrative Information
- Static Data
- Timeseries Data

<...> Classification
Applications operation
Special techniques

- Administrative information replication
- Integer values storage
- List storage
- Linear storage
- Retrieval limits