

# NATIONAL INSTITUTE OF METEOROLOGY

الجمهورية التونسية - وزارة النقل  
REPUBLIQUE TUNISIENNE - Ministère du Transport  
REPUBLIC OF TUNISIA - Ministry of Transport



المرصد الوطني للرصد الجوي  
Institut National de la Météorologie





● ● ● | PLAN

- About NIM
- Mission
- Services
- Budget
- Organization & Structure
- Staff
- Challenges
- Strategic Plan for Development
- ALADIN activities



# ABOUT INM

- The National Meteorological Institute of Tunisia (**NIM**), funded on 1974, is a general directorate under the supervision of Transportation Ministry.
- NIM is a Public Non Administrative Establishment (EPNA) since 16<sup>th</sup> of february 2009.
- Certified (ISO 9001-2008) since 2010.





# HISTORIC OF METEOROLOGY IN TUNISIA

- **1873** : First meteorological observation.
- **1885** : Establishment of the first meteorological unit at Tunis-Manoubia for rainfall and climate observation.
- **1923** : Establishment of synoptic observations network by FMO (French Meteorological Office) with one major station located at El Aouina aerodrome (Tunis).
- **1926** : First seismic observation made by the meteorological unit.
- **1945** : FMO (French Meteorological office) creates a climatologic station.
- **1955** : Tunis-Manoubia unit becomes an office for the inventory of water resources and rainfall data. It's now in charge of meteorological and climatologic activities.
- **1958** : El Aouina office becomes the National Service of Meteorology Under the responsibility of the Department of Aeronautical and Marine Services.
- **1973** : The National Service of Meteorology becomes Department of Meteorology.
- **1974** : The Department of Meteorology becomes the National Meteorological Institute (NMI).
- ➔ **2009: Major change in legal status of NIM: NIM** becomes a Public non Non - Administrative Establishment (EPNA) (law 10th of 2009).



# Law N°10 of 2009

## Article 1:

*“The national institute of meteorology is a public establishment of non administrative nature, endowed with a legal entity and a financial autonomy and it is submitted to the supervision of the Ministry charged of transport.”*

## Preparatory works :

- Discussion and adoption by the Chamber of Deputies during its session held on 3 February 2009.
- Discussion and adoption by the Chamber of Advisors during its session held on 12 February 2009.

➔ **The new legal framework allows INM to strengthen its national and international partnerships.**

Law n° 2009-10 dated 16 February 2009, relating to the national institute of meteorology (1).  
In the name of the People,  
The Chamber of Deputies and the Chamber of Advisors having adopted,  
The President of the Republic enacts the following law:

Article one - The national institute of meteorology is a public establishment of non administrative nature, endowed with a legal entity and a financial autonomy and it is submitted to the supervision of the Ministry charged of transport.

The national institute of meteorology is submitted in its relation with third parties to the commercial legislation.

Art. 2 - The missions of the national institute of meteorology are defined notably as follows:

- The satisfaction of the general needs concerning meteorology, geophysics and climatology regarding the different sectors of economy of the country and mainly the meteorological assistance to the aerial and maritime navigation and to the agriculture and tourism,
  - The conception of programs and politics aiming at developing sectors of meteorology, geophysics and climatology by profiting from the technological and scientific progresses,
  - The contribution to the setting of factors of the development sustainability through the participation in programs consecrated to the fields of protection of the environment, the preservation of the nature and the promotion of the life quality,
  - The contribution to the protection of the persons and the properties against the risks caused by natural and industrial disasters and to the attenuation of their negative effects in coordinating with the different interested institutions,
  - The technical coordination in the field of its competence of all the activities presenting meteorological and geophysical aspects,
  - The management and the maintenance of the meteorological and geophysical data base.
- Art. 3 - The national institute of meteorology collects the royalties related to the services that it provides. These royalties shall be fixed by decree.
- Art. 4 - The administrative and financial organization as well as the operating methods of the national institute of meteorology shall be fixed by decree.
- Art. 5 - In case of dissolution of the national institute of meteorology, its patrimony will be returned to the State which will implement its commitments.
- Art. 6 - Shall be repealed, all the prior provisions contrary to the law herein and notably paragraph 2 of article 67 and law n° 74-101 dated 25 December 1974, relating to the finance law for the year 1975.

The law herein shall be published in the Official Gazette of the Republic of Tunisia and implemented as law of the State.

Tunis, 16 February 2009.

Zine El Abidine Ben Ali

(1) Preparatory works :

Discussion and adoption by the Chamber of Deputies during its session held on 3 February 2009.

Discussion and adoption by the Chamber of Advisors during its session held on 12 February 2009.



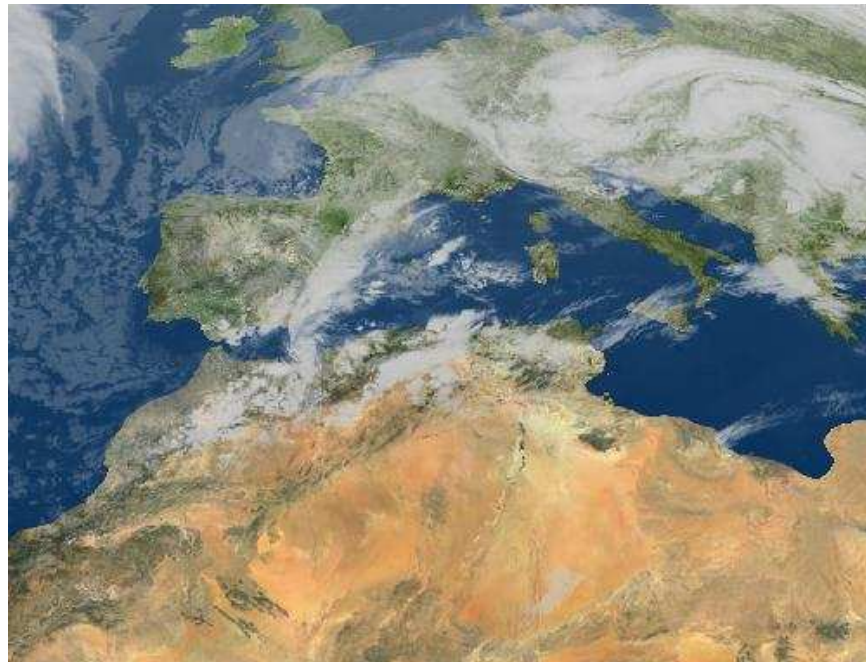
# MISSION

- **Meteorological observation.**
- **Seismic recording and location.**
- **Astronomic observation and calculation of ephemeris.**
- **Weather prediction.**
- **Providing meteorological, astronomy and geophysical data to the various national economic sectors.**
- **Technical coordination of all activities related to meteorological and geophysical aspects.**
- **Technical and economic studies relevant to its field of activities.**
- **Theoretical and applied research for the development of meteorological and geophysical sciences.**
- **Preparation and implementation of international agreements related to its skill and technical cooperation with international centers and specialized organizations.**



# SERVICES

## Weather Reports



	Normal Day	Extreme Phenomena
<b>Radio</b>	28	> 35
<b>TV</b>	5	~7
<b>Teletext</b>	12	12
<b>Web Site</b>	3	> 3
<b>Vocal Server</b>	3	> 3



# SERVICES

## Climate services

- ❑ **Ministry of Agriculture and Water Resources:** Exchange of rainfall observations relating to floods.
- ❑ **The National Office of Olive Oil:** a newsletter of pentad climatic conditions to olive oil producers
- ❑ **Ministry of Public Health:** A regular newsletter & alert in case of extreme weather conditions







# SERVICES

## Climate services

**The National Agency for Energy Management:** Providing Information for better use and management of energy resources.

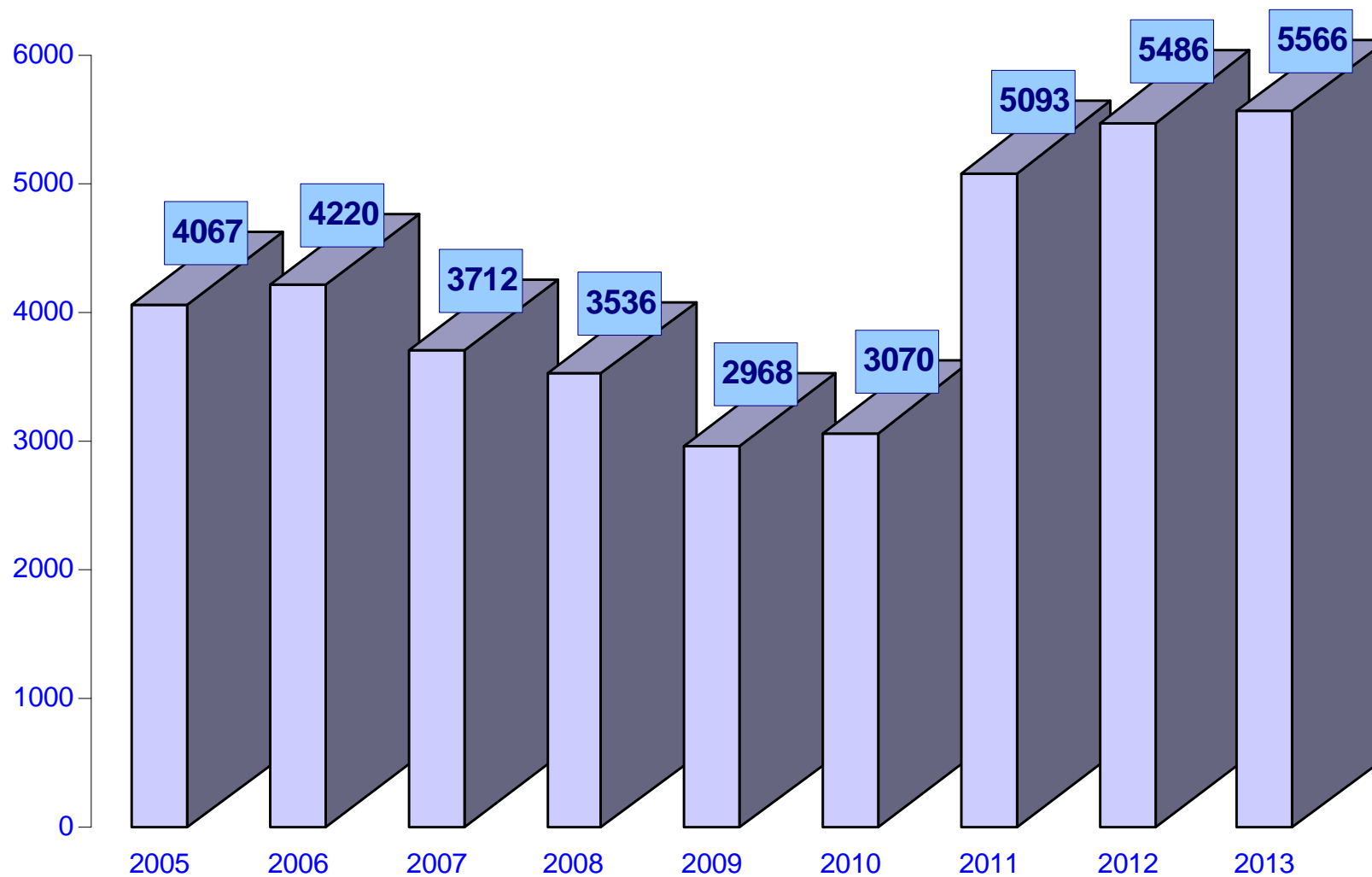
**Marine activities:** Transport, oil exploration, fishing, aquaculture, etc.

**Scientific Research:** Institutions, Universities and environment research laboratories, water resources management, agriculture, etc.



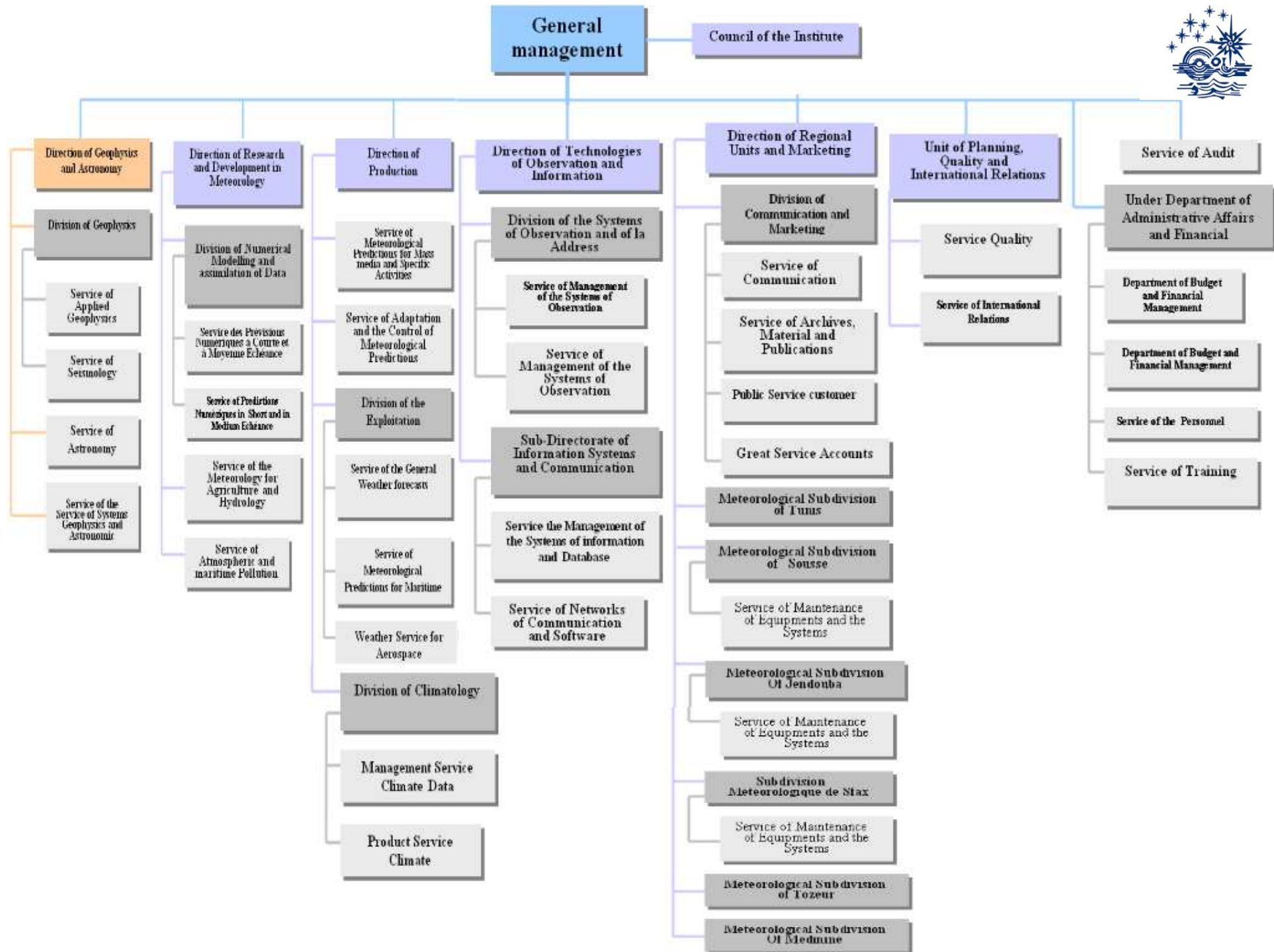


# BUDGET (M\$)





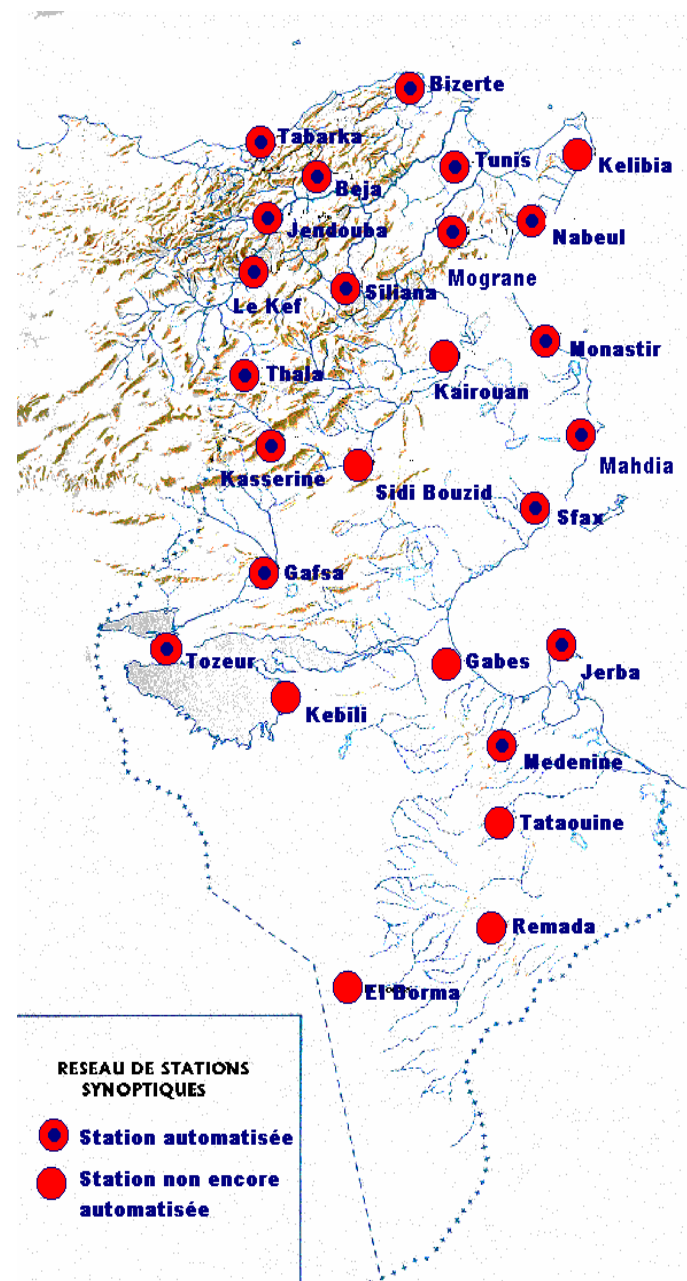
# ADMINISTRATIVE ORGANIZATION





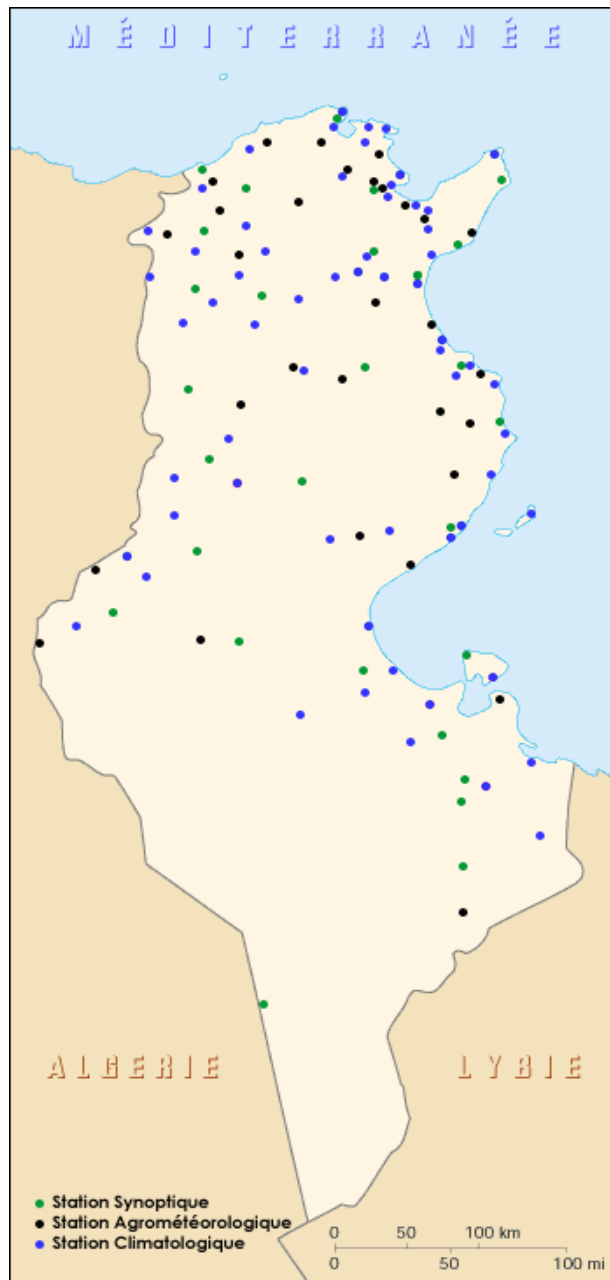
# REGIONAL STRUCTURES

- ❑ 6 regional subdivisions (Tunis, Jendouba, Sousse, Sfax, Tozeur, and Medenine).
- ❑ **Observation network :**
  - **Synoptic network :** 27 stations.
  - **Agro-meteorological network :** 31 stations.
  - **Climatologic network :** 58 stations.
  - **Rainfall network :** 208 stations.
  - **Radar network :** 1 Radar.
  - **Seismologic network :** 15 stations.
  - **Marine station network :** 7 stations.





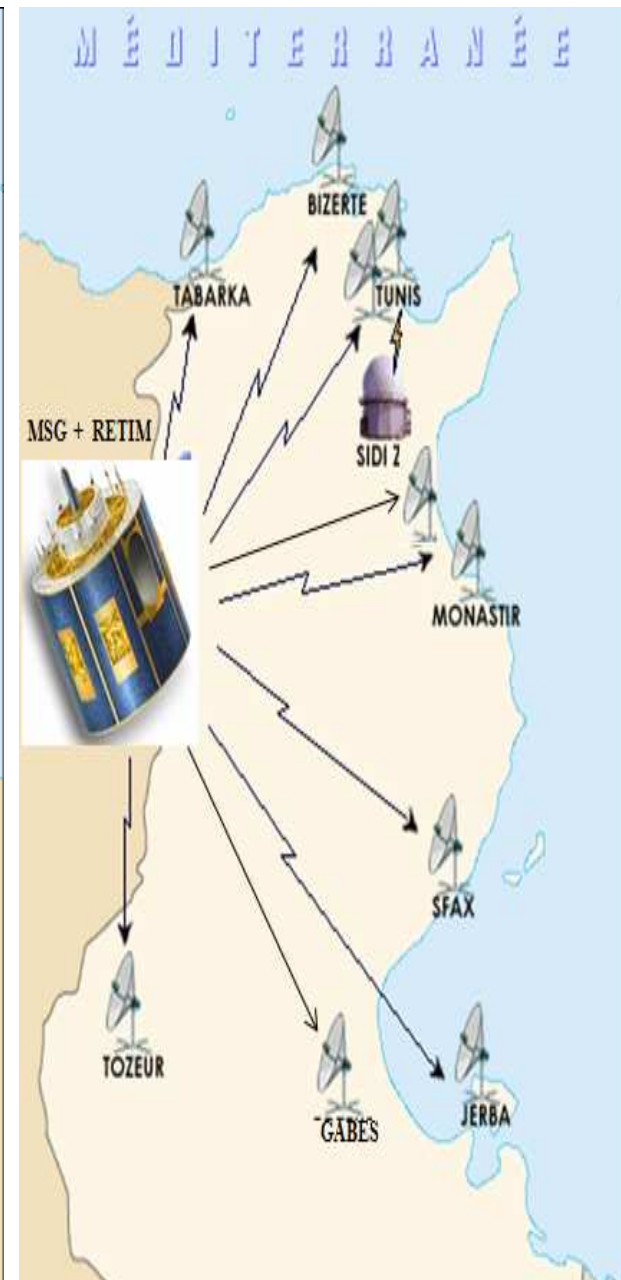
## Surface observations



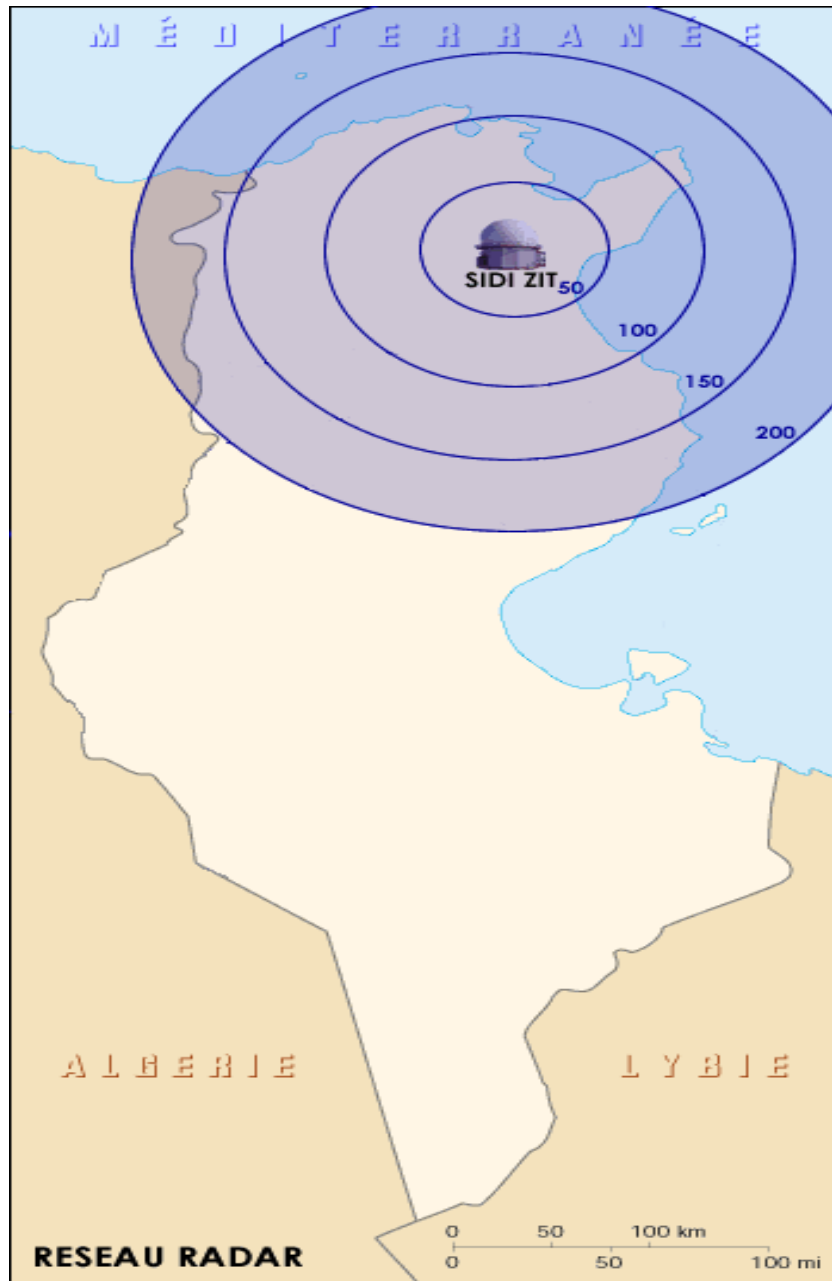
## Altitude Observations



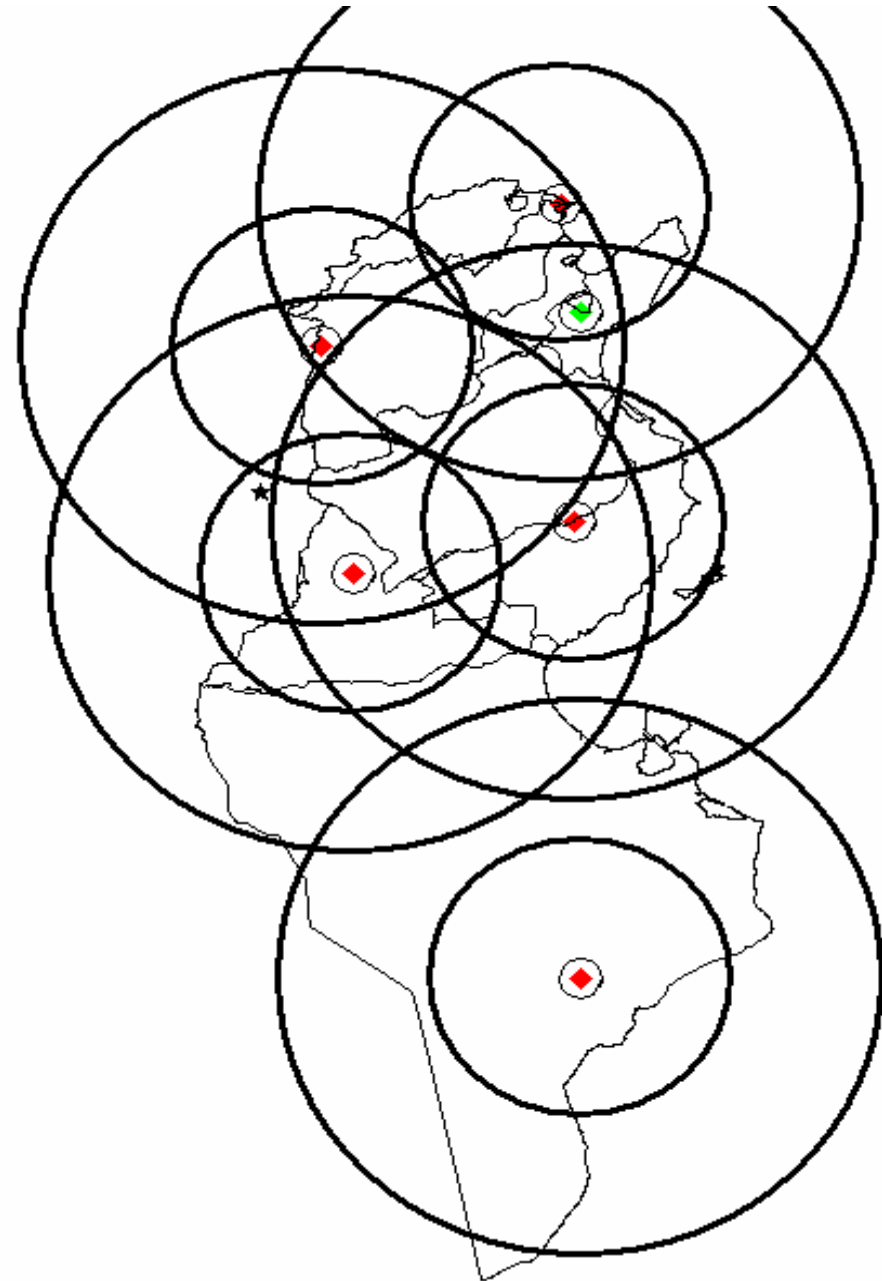
## Satellite observations



## Radar Observation

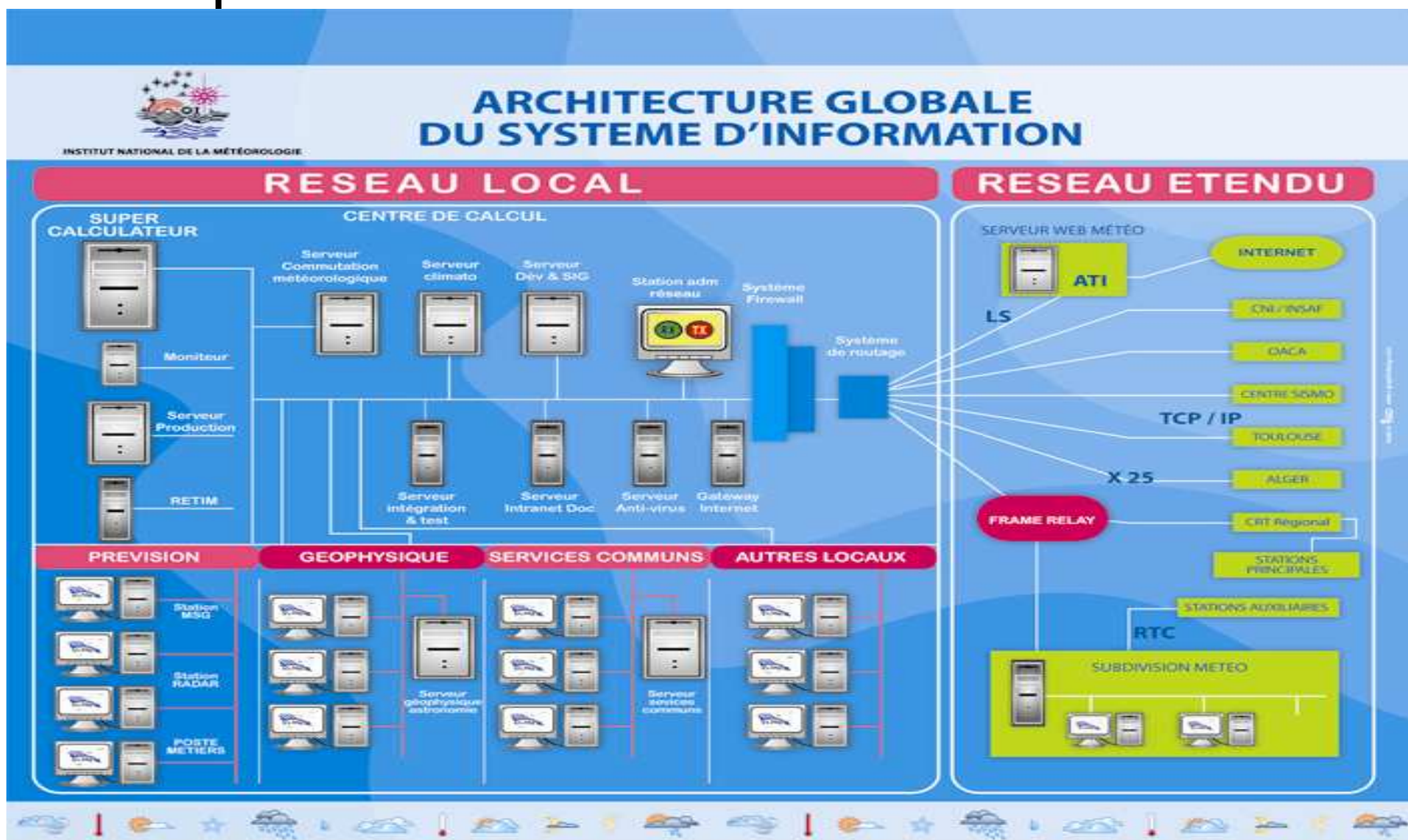


## Expected Radar Observation Network

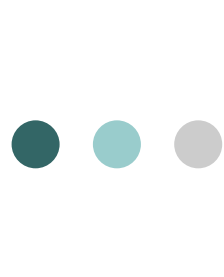




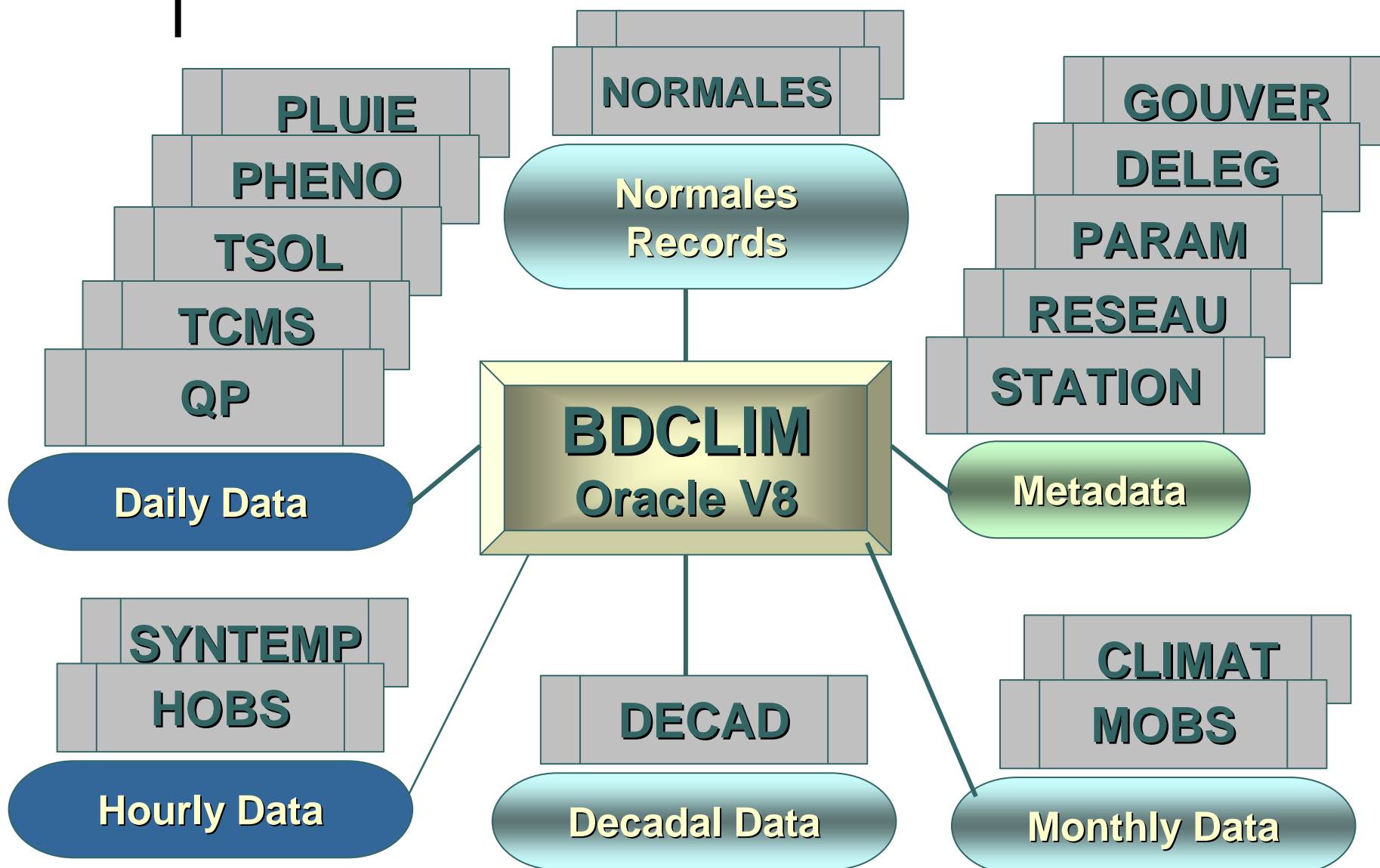
# SYSTEM OF COMMUNICATION







# DATA BASE





# WEB SITE



**L'INM**

- Présentation
- Mission
- Historique
- Organisation centrale
- Structures régionales
- Contact

**Activités**

- Présentation
- Observation
- Prévisions météorologiques
- Climatologie
- Géophysique & Astronomie

**Banque de données Climatologique**

- Présentation
- Description des données

**Recherche & Développement**

- Présentation - ALADIN : Prévisions à court terme
- Prévisions mensuelles et saisonnières - EMAGPOT

**Publications de l'INM**

- Atlas - Atlas climatique - Carte séismotectonique - Agroclimatique de la région du Cap Bon - Analyse rétrospective des épisodes pluvieux - Intégrés de pluie

**Ressources Documentaires**

- Articles de presse - Evénements - Savoir plus sur la météorologie - Lien INM

### Données Publiques

- Prévisions Générales
- Observations par satellite
- Prévisions par satellite
- Villes étrangères
- Image météosat
- Pluviométrie
- Données climatiques
- Activités lunaires
- Prévisions astronomiques

### Services Spécialisés

- Présentation Marine & Pêche**  
Produits Météorologiques  
Exprimez votre besoin
- Agriculture**  
Produits Météorologiques  
Exprimez votre besoin
- Tourisme**  
Produits Météorologiques  
Exprimez votre besoin
- Energie**  
Produits Météorologiques  
Exprimez votre besoin

**Services pour la Marine et Pêche**

### Service Usager

- Présentation - Conditions générales de vente - Demander Ou-Lire - La météorologie par FAX - La météorologie par le téléphone - Tarifs des prestations météorologiques - Formulaire de bon de commande - Contact

**SERVEUR VOCAL**  
**88 40 00 00**  
(11.200 Dirhams Tunisiens)

### METEO DU JOUR

à

### INDICATEURS ET PRODUITS CLIMATIQUES

Indicateurs et Produits Climatiques

[Consulter](#)

### EVENEMENTS

30/11/2010 - Spécial Moharem 1432 (En Arabe)

[Consulter](#)

### METEO PAR SMS

Les prévisions météorologiques par SMS au **87012**

### ESPACE MEMBRE

Compte

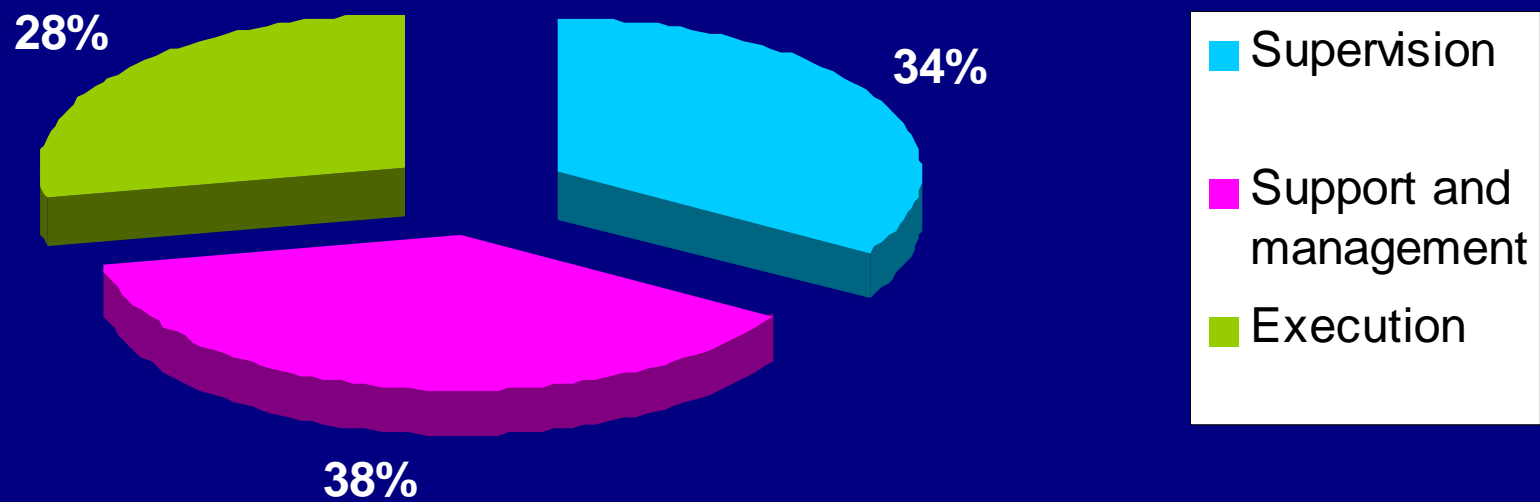
Mot de passe

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[Consultez nos Services Spécialisés](#)



# STAFF





# STAFF

<b>SUPERVISORS</b>	<b>131</b>
General Engineer	7
Chief Engineer	6
Chief Head of Laboratory	1
Principal Engineer	56
Central Analyst	1
Chief Technician	5
administrator	8
Works Engineer	1
Keeper of documents and libraries	1
Analyst	3
Journalist	1
Principal Technician	38
Lieutenant	3

<b>SUPPORT &amp; MANAGEMENT</b>	<b>129</b>
Programmer	4
Attached Manager	7
Technician	52
administrative secretary	4
Assistant Technician	7
IT Laboratory Technician	6
Principal Agent	27
Agent	22

<b>EXECUTION</b>	<b>95</b>
Scribe	4
Receptionist	1
Principal Sergeant	22
Worker (category 1-3)	21
Worker (category 4-7)	38
Worker (category 8-10)	9

<b>TOTAL</b>	<b>355</b>
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# CHALLENGES

## Observation:

- ☐ **Strength:** - A wide area and relatively operational weather observation network
- ☐ **Weaknesses:** - Limited number of staff  
- Equipment needs renovation

## Communication with the regions:

- ☐ **Strength:** - Equipment RELATIVELY efficient at the central level.
- ☐ **Weaknesses:** - Operations are sometimes delayed  
- Lack of equipment at the regional level



# CHALLENGES

## Data Management:

- ❑ **Strength:** - Database providing the necessary needs in terms of data
- ❑ **Weaknesses:** - Procedures to be updated  
- Very low data use

## Collaboration with partners

- ❑ **Strength:** - Enormous potential of information and products still not yet used
- ❑ **Weaknesses:**
  - Need of Strategy and a business plan
  - Very limited knowledge regarding :
    - 1 – NMI's resources and products
    - 2 – Partner's needs



- ● ● | **INM DEVELOPMENT PROGRAM:  
4 STRATEGIC AXES**

- **Strengthen the technical capacity**  
in order to produce a well reliable meteorological & climatological information.
- **Improve the administrative and financial management**  
in order to reach better level of services that can follow technical developments.



● ● ● | **INM DEVELOPMENT  
PROGRAM:  
4 STRATEGIC AXES**

- **Strengthen the capacity at Regional level**  
**To meet regional needs in terms of weather and climatological services**
- **Improve communication with partners**





# Twinning project with EU

## General Information

- 1. Beneficiary Country :

Tunisia

- 2. Contracting authority:

The Delegation of the European Union in  
Tunisia

- 3. Relations EU / Tunisia

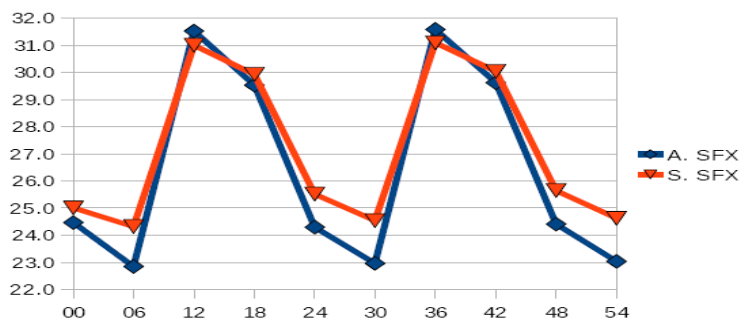
Tunisia was the first country south of the Mediterranean that have signed in 1995 an Association Agreement with the EU



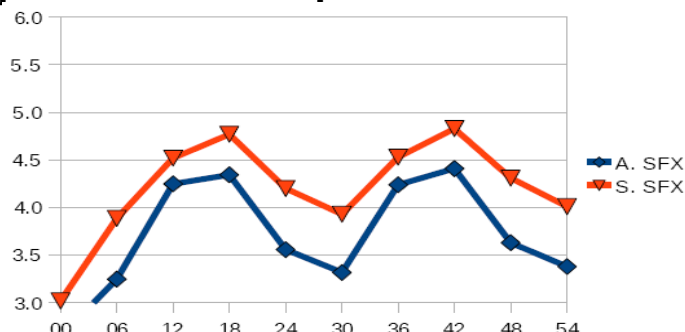
# ALADIN Tunisia with SURFEX

- Experimentation of a new ALADIN-Tunisia domain including SURFEX.
- 7.5km of resolution. 205x259 grid points, 70 vertical levels. Cycle 37t1
- Scores are provided by the operational control procedure.

## Main results:



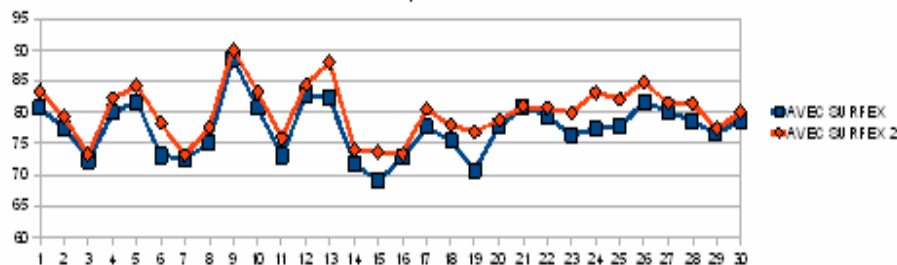
*T2m means with SURFEX (blue), June 2012*



*Wind means with SURFEX (blue), June 2012*

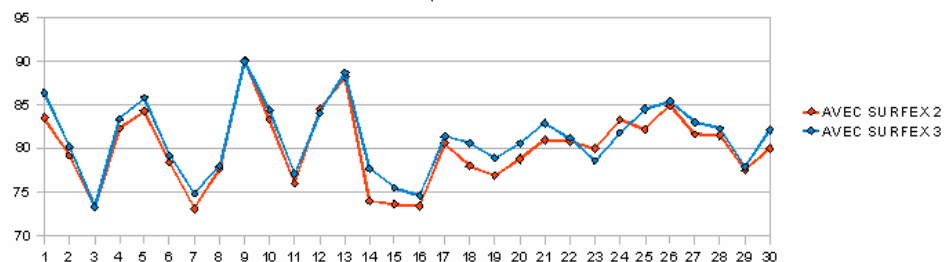
**T2m: Daytime warming and night-time cooling**

**Wind: Weakening of wind speed.**



*T2m scores, June 2012*

**Better T2m scores with ECOCLIMAP II EUROPE (red) then with ECOCLIMAP I (blue)**



*T2m scores, June 2012*

**Little improvement of T2m scores with TEB on (Blue) then without TEB (red)**

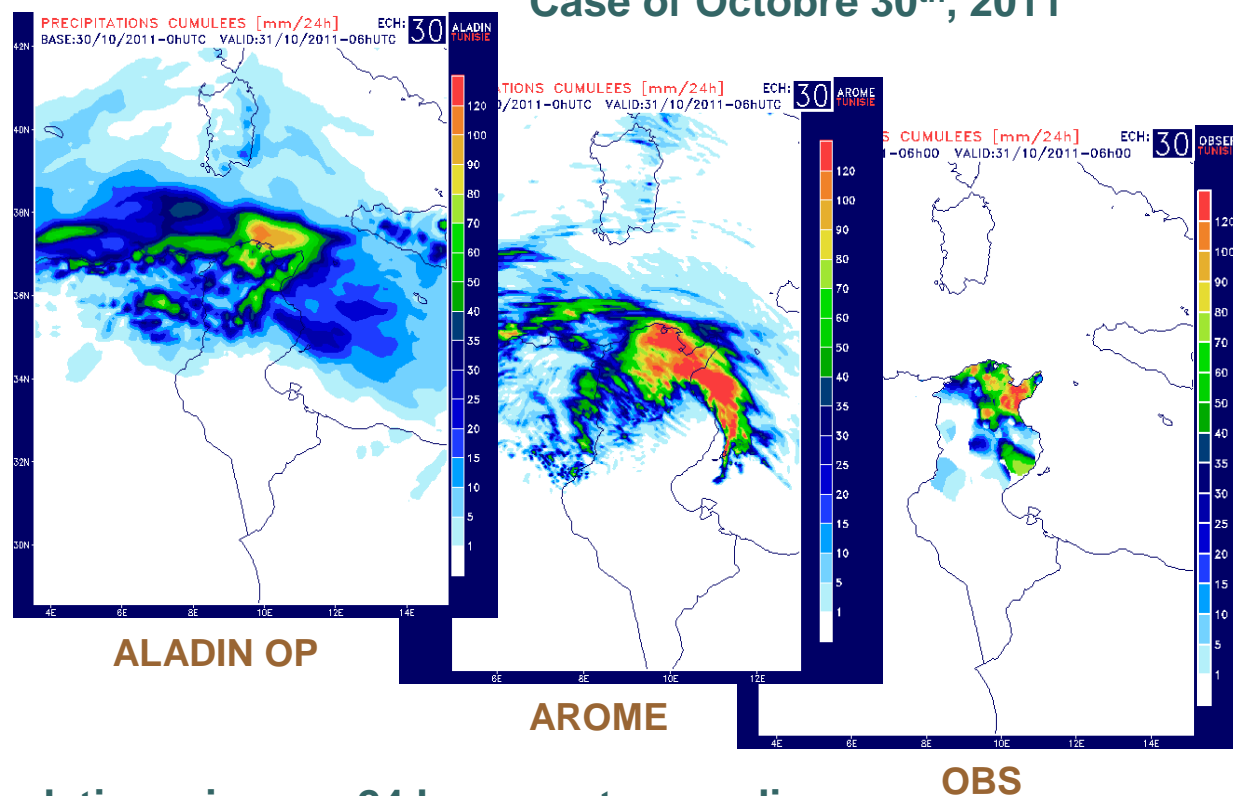


# AROME prototype of Tunisia

## Characteristics:

- Cycle 37t1
- 2.5 km of resolution
- 400x550 grid points
- 60 vertical levels
- Time step of 60sec

Case of Octobre 30<sup>th</sup>, 2011



- ALADIN provides a cumulative rain over 24 hours not exceeding 60 mm in the north and center of Tunisia.
- AROME triggers a core of rain centered on the north-east of Tunisia, with an intense rainfall exceeding 120mm. Which is closer to the observations.

Thank you  
for your attention!

