

# THE ALADIN COLLABORATION

[WWW.CNRM.METEO.FR/ALADIN](http://WWW.CNRM.METEO.FR/ALADIN)

ALADIN is a successful collaboration on numerical weather prediction involving 16 National Meteorological Services in Europe and Northern Africa. It started after an initiative taken by Météo France in 1990 and has been growing to a large-size international collaboration of about 90 full time equivalents. Since its start, the program has brought its members to the forefront of the developments in high-resolution short-range Numerical Weather Prediction.



## OBJECTIVES

### → Code development

The main activity is the conceptualization, definition, development, operation, and the maintenance of a shared, state-of-the-art, high-resolution Numerical Weather Prediction system called **the ALADIN System**<sup>1</sup>. This system is used to configure the Numerical Weather Prediction applications in the participating member states. The code is shared with the global ARPEGE model of Météo France and the Integrated Forecast System (IFS) of the European Centre for Medium Range Weather Forecasts (ECMWF). The applications of the ALADIN System can run on limited geographical areas at about ten times higher resolutions than the ones of the global applications, allowing to compute weather forecast maps in high detail.

### → From science to operations

Significant scientific achievements are published in leading international journals. The ALADIN program coordinates scientific research and implements the scientific results into the new versions of the ALADIN System. These versions are regularly exported and installed on the High-Performance Computers in the Institutes of the ALADIN members.

They are implemented in the operational applications. The members then run the numerical weather prediction model on limited areas covering their national territories. Feedback from the weather forecasters of the Institutes is used to steer future Research and Development (R&D).

### → Expertise building

ALADIN provides a specialized background for training and recruitment of experts. This background is tightly linked to the national applications and is, as such, unique compared to purely academic research. This allows the members to create small to medium size teams to carry out R&D at a state-of-the-art international level.

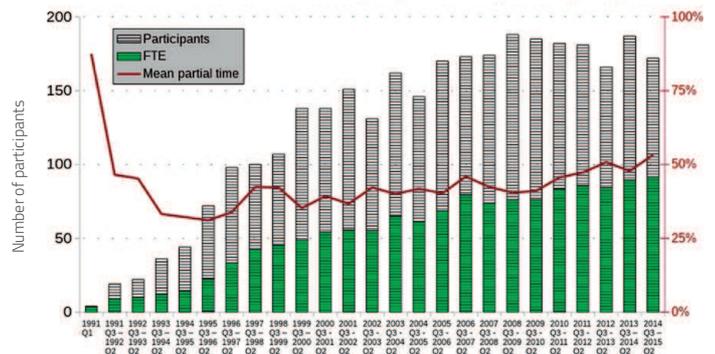
### → Pooling of Resources

The activities of the consortium are supported by collective commitments of human resources to the operational and maintenance efforts, and to the management activities. The program has been used as a background to draw extra resources from external funding, both at national and international levels.



OPERATIONAL CONFIGURATIONS IN ALADIN CONSORTIUM

TOTAL PARTICIPATION IN THE ALADIN PROJECT  
Evolution in the yearly Full Time Equivalent (green)



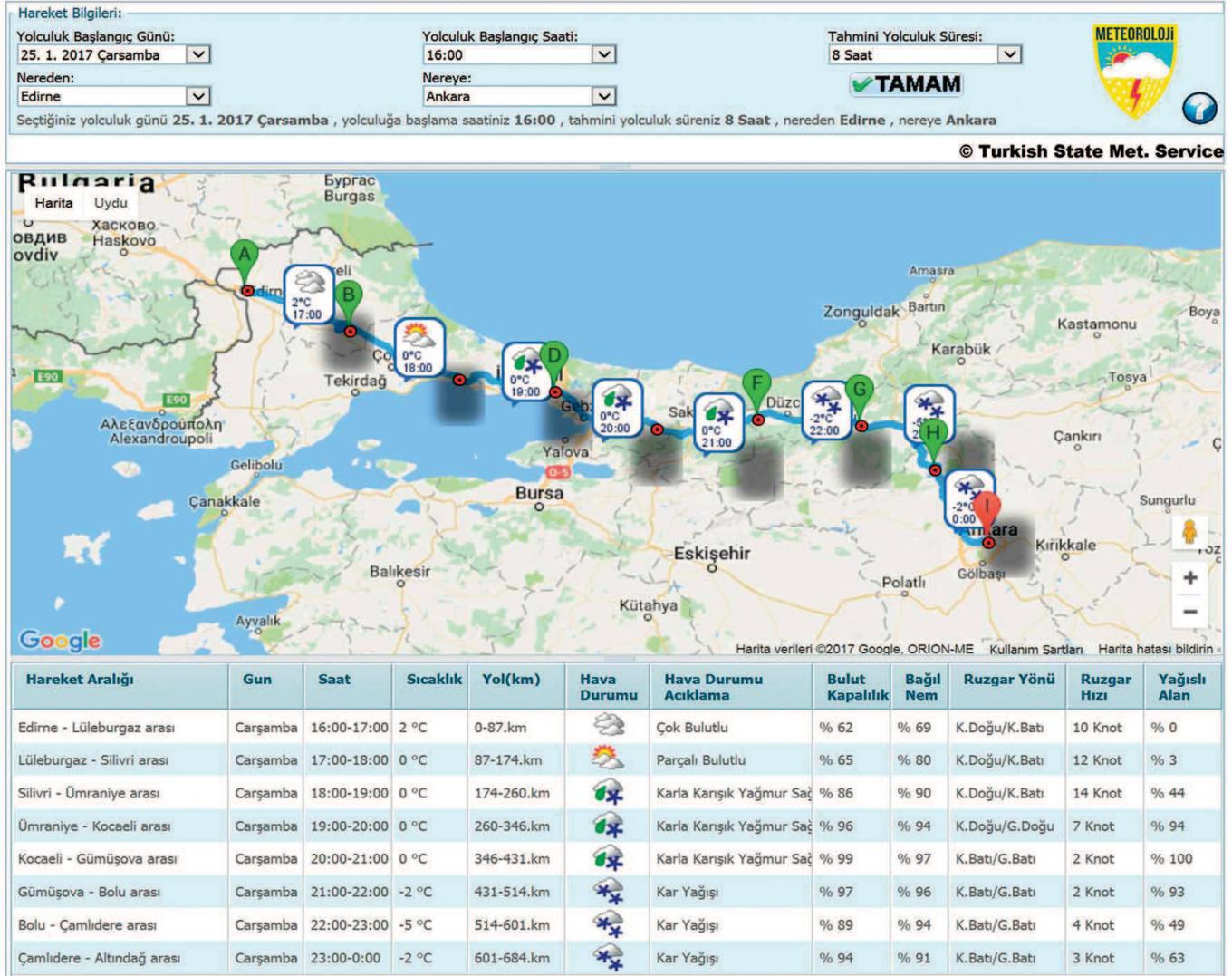
1. The acronym is derived from the French expression Aire Limitée Adaptation dynamique Développement InterNational.

## THE HIGHWAY FORECAST SYSTEM

The Highway Forecast System (HFS) is developed for planning highway travels, having a safe journey and transports throughout the cities. User can generate the weather forecast and conditions such as temperature, humidity, wind speed and directions, precipitation area by defining the travel points (cities), departure date, time and durations.

Numerical Weather Predictions are the main component of HFS. It is constructed by processing and interpreting of ALARO model outputs updated 4 times in a day.

### HFS TRIP ROUTE FROM EDİRNE TO ANKARA



Besides weather forecast, for instance in the precipitation column how much area of the road will be affected by the precipitation takes place as percentage. The type of the precipitation was determined by giving precedence to the ones which may affect the travels. When it is predicted that there are more than one precipitation type, the type of the precipitation on the road is indicated considering the most harmful precipitation primarily freezing rain or snow.