Virtual Fire (VF) is a research project under development by the University of the Aegean, supported by University of Athens and MS Hellas/MIC in Greece; funded by Microsoft Research.

VF is a fully stand-alone, web-based early warning and decision support system for integrated forest fire management, based on geo-informatics and IT modeling.

The main concept of the project is that firefighting forces need a tool to access geographical and relational data easily, validly, promptly and immediately during a fire event, without the knowledge of handling complicated GIS applications and the installation of special desktop software.

End-users will be able to access 3-day weather forecasting maps, daily fire risk maps, real-time fire behavior maps, vehicle and resource positions, satellite images etc., all through a simple Internet connection of their Palmtop or GPS with the VF platform.

Services Offered to Forest Fire & Civil Protection Agencies:

1. Remote automatic weather stations and a weather forecasting system (http://forecast.uoa.gr) provide all the necessary fire meteorology info for fire prevention, early warning, and control.

2. Geographical representation of the fire risk potential and identification of high-risk areas at different local regions are provided on-demand, based on meteorological, socio-economic, and biophysical parameters.

3. Maps that represent the spread and intensity of a forest fire at different times and spaces; thus, authorities will have the ability to design an operational plan to encompass the forest fire, choosing the best way to put out the fire with the proper means at the proper time.

4. On-line and real-time location of Fire Service vehicles and other resources by using GPS and communications that will transmit the coordinates of each item to the system, portraying them on an electronic map/video wall; thus, achieving better coordination in emergency response and resource dispatching.

5. In-situ detection cameras along with prompt satellite images could be of added value as integrated extensions to our VF platform.

6. State-of-the-art know-how and advanced computing schemes; e.g. spatial modeling, GIS and remote sensing, specialized software and algorithms, and HPC.

Virtual Fire is based on ESRI ArcGIS commercial software: maps and functions are created within this software in close integration with MS SQL Server 2008; outcomes are published to the web via the ArcGIS Server; MS Visual Studio 2008 combines them all with MS Silverlight 3 by using components of ArcGIS API for MS Silverlight / WPF.

MS Bing Maps (ex Virtual Earth) is the primary mapping information platform, and all data and maps are displayed as over-imposed layers (overlays) on top of it.

The integration of the above plus the addition of other information from external sites comprise the VF software architecture.