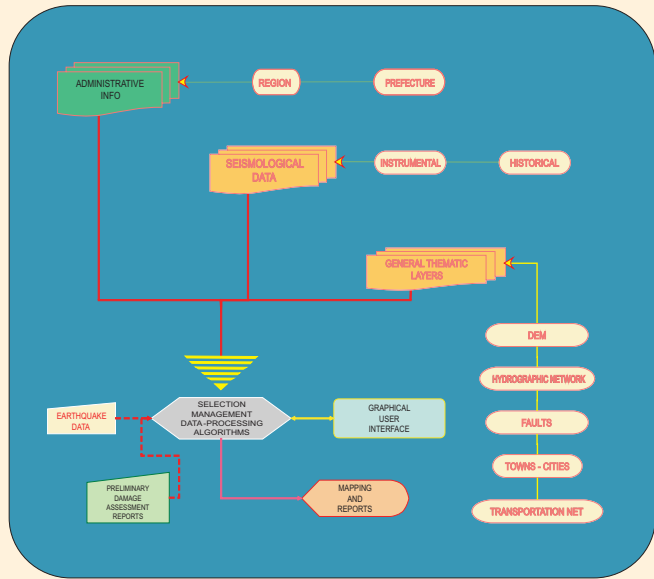


Stage 1: Analysis - Design



Stage 2: Database creation

- General Information Layers**
 - Digital Elevation Model
 - Major faults in the area of Greece
 - Hydrographic Network
 - Road & Railway Infrastructure
- Administrative Information**
 - Region boundaries and contact info
 - Prefecture boundaries and contact info
 - Municipality boundaries and contact info
 - Open-end additional data capabilities to be defined by EPPO
- Seismological Data**
 - Historical Seismicity
 - Instrumental Seismicity

ID	YEAR	MONTH	DAY	HOUR	MIN	SEC	LONG	LAT	DEPTH	MAG	
1	1964	4	24	23	10	23.00	28.36	10	5.4		
2	1964	4	11	16	0	0.0	25.25	39.75	10	6.2	
3	1964	4	21	8	14	40.0	22.25	38.50	10	5.9	
4	1964	4	24	3	49	00.0	21.80	38.00	10	5.9	
5	1964	4	29	4	21	0.0	23.75	39.25	10	6.3	
6	1964	4	28	17	0	3.0	23.75	39.25	10	5.7	
7	1964	4	30	18	11	0.0	23.75	39.25	10	5.4	

Year	Month	Day	Hour	Min	Sec	LONG	LAT	Depth	M	Area	Mac int
500	0	0	0	0	0	38.500	22.400	n	6.8	Sparta*	OK
500	0	0	0	0	0	37.400	34.500	n	5.9	Sparta*	OK
510	0	0	0	0	0	38.300	22.400	n	7.0	Pharos*	OK
480	0	0	0	0	0	38.400	26.200	n	6.2	Chios*	OK
490	0	0	0	0	0	37.400	25.300	n	5.9	Dafni	OK
485	0	0	0	0	0	37.700	23.300	n	5.9	Argolis	OK
480	0	0	0	0	0	37.600	23.300	n	6.3	Salamina	OK

A G.I.S. BASED APPLICATION FOR SEISMIC RISK OPERATIONAL RESPONSE ENVIRONMENT

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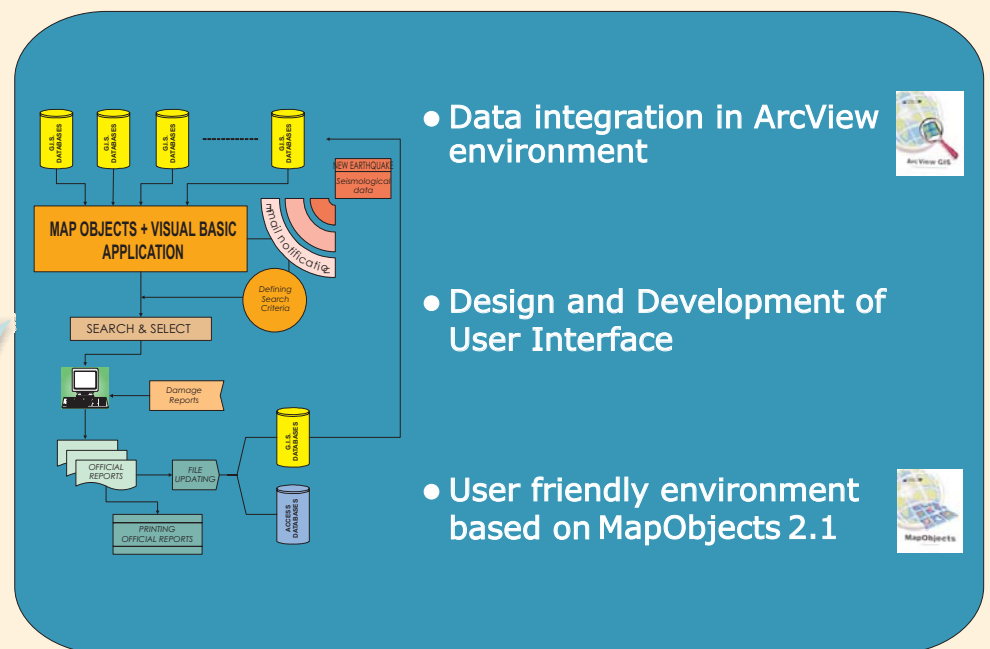
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ABSTRACT

Information flow and management represents one of the main tasks of seismic risk mitigation. The recent experience, following a number of disastrous earthquakes in Greece during the last decade, underlined the necessity of a flexible system in order to support earthquake disaster response organizations. Due to the large volume of spatial data required, a GIS platform represented the most efficient choice for the development of such an application. A number of basic thematic layers, such as topography, administrative, tectonic and seismological data, are available and can be processed by the user through a specially designed menu driven system in order to obtain a variety of reports.

Following the declaration of a damaging earthquake, location data are immediately transmitted by the seismological agencies to the primary earthquake response organization (EPPO) and administrative data are selected and sorted according to preliminary estimated damage zones. Thus, the user is able to access all the relevant contact and communication data in order to obtain and record predefined damage report information. These data can be stored, updated and reviewed within the system or forwarded as reports to the corresponding agencies for further action. At present the system is in operation at the Earthquake Planning and Protection Organization (EPPO) in Greece, while further enhancements are also planned according to user requirements.

Stage 3: Application development



Stage 4: Using the application after a major earthquake

Seismic history around the area of the recent major earthquake, obtained by querying the historical and instrumental seismicity databases that are incorporated in the software. Information about specific events can be also previewed

Forms to support EPPO user communication with the local authorities and recording of the reported damages in predefined fields (casualties, type of building damages, lifeline failures, etc). The form includes the telephone numbers of crucial local authorities such as police department, fire department and civil protection operator. Following communication, the database is updated and an official report is generated.

The main screen of the application following a major seismic event. The earthquake parameters (Origin time, epicenter location, depth and magnitude) are imported digitally by e-mail notification from the Institute of Geodynamics of the National Observatory of Athens.

Official report generated after the communication with the local authorities. Displayed information is also transferred to Microsoft Access Database files in order to facilitate non-GIS based processing by individual administrations during later stages of damage assessment and relief operations.

Reports for various administrative levels such as regions, prefectures and municipalities around the area of the recent major earthquake. Administrative units are categorized in three groups according to expected peak ground acceleration as defined by existing attenuation relationships and received earthquake data. These three zones are color coded in order to facilitate reviewing.