

GIS as a tool for TOURISM



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Introduction

What is GIS?

GIS is a computer based powerful set of tools for collecting, storing, retrieving, mapping, analyzing, transforming and displaying spatial and non spatial data from geographic world for a particular set of purposes that varies for each discipline.

What is Tourism?

"Tourism is a composite of activities, facilities, services and industries that deliver a travel experience, that is, transportation, accommodation, eating and drinking establishments, entertainment, recreation, historical and cultural experiences, destination attractions, shopping and other services available to travelers away from home."



Tourism is one of the industries with the strongest effect on the economy, because it helps in developing other sectors.

Why Use GIS in Tourism

- Both GIS and tourism share a common characteristic, that is, both cross the boundaries of disciplines and application areas.
- GIS has been applied in many fields including geography, forestry, urban development and planning, and environmental studies.
- Similarly, tourism has been a subject of interest to geographers, economists, business, environmental planners, anthropologists, and archeologists.

According to Van Arragon and Wessels (1994), there has always been a direct relationship between tourism and cartography. Maps of travel routes and general information about the areas to visit are used in selecting the destination and in planning travel and stay.

Capabilities of GIS in Tourism

Functional capabilities of a GIS	GIS Basic Question	Tourism Applications
1. Data entry, storage and manipulation	Location : What is at?	Tourism Resource Inventories
2. Map production	Condition : where is it?	Identify most suitable location for development
3. Database integration	Trend : What has changed?	Measure tourism impacts
4. Data queries and searches	Routing : Which is the best route	Visitor management/flows
5. Spatial analysis	Pattern : what is the pattern?	Analyze relationships associated with resource use
6. Spatial modeling	Modeling : What if...?	Assess potential impacts of tourism development

Tourism Maps

GIS applications can provide three different types of informations:

- *Tourism resource maps* – Analyse the resource set to identify how much is available and where it is. To determine the capability of an area for the creation of new tourism products or services, identifying locations suitable to tourists or tourism.
- *Tourism use maps* – To analyse the resource set to evaluate land use options and identify zones of conflict or complementarity's, such as access points, water, wildlife habitats etc.
- *Tourism capability maps* – To analyse the resource set to monitor tourist resources at risk due to management, planning decisions and other sectors

GIS in Tourism Planning: Requirements of Tourism from GIS

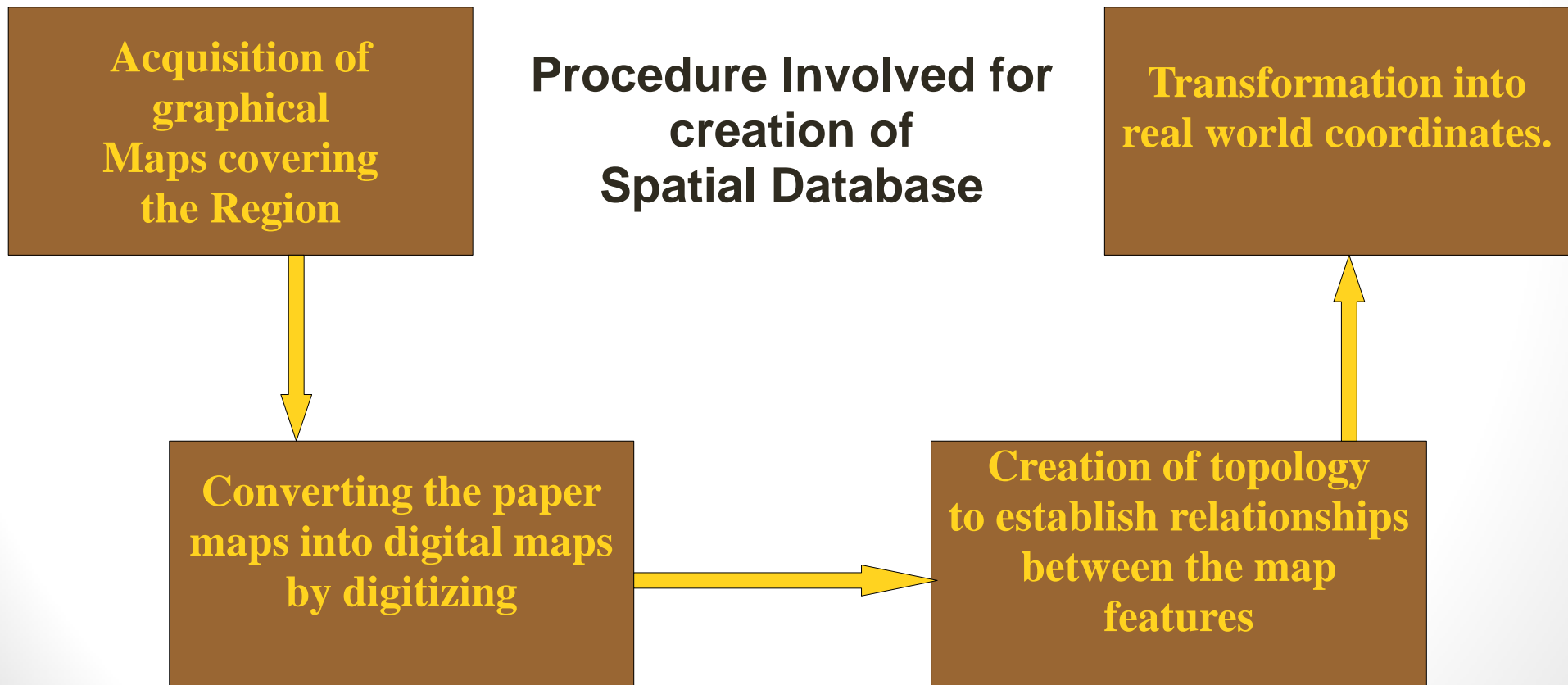
In the tourism industry, GIS is used to provide:

- A digital map base for printed maps
- Digital files for Internet mapping
- Digital files for mobile mapping
- Attractions map
- Website with interactive mapping

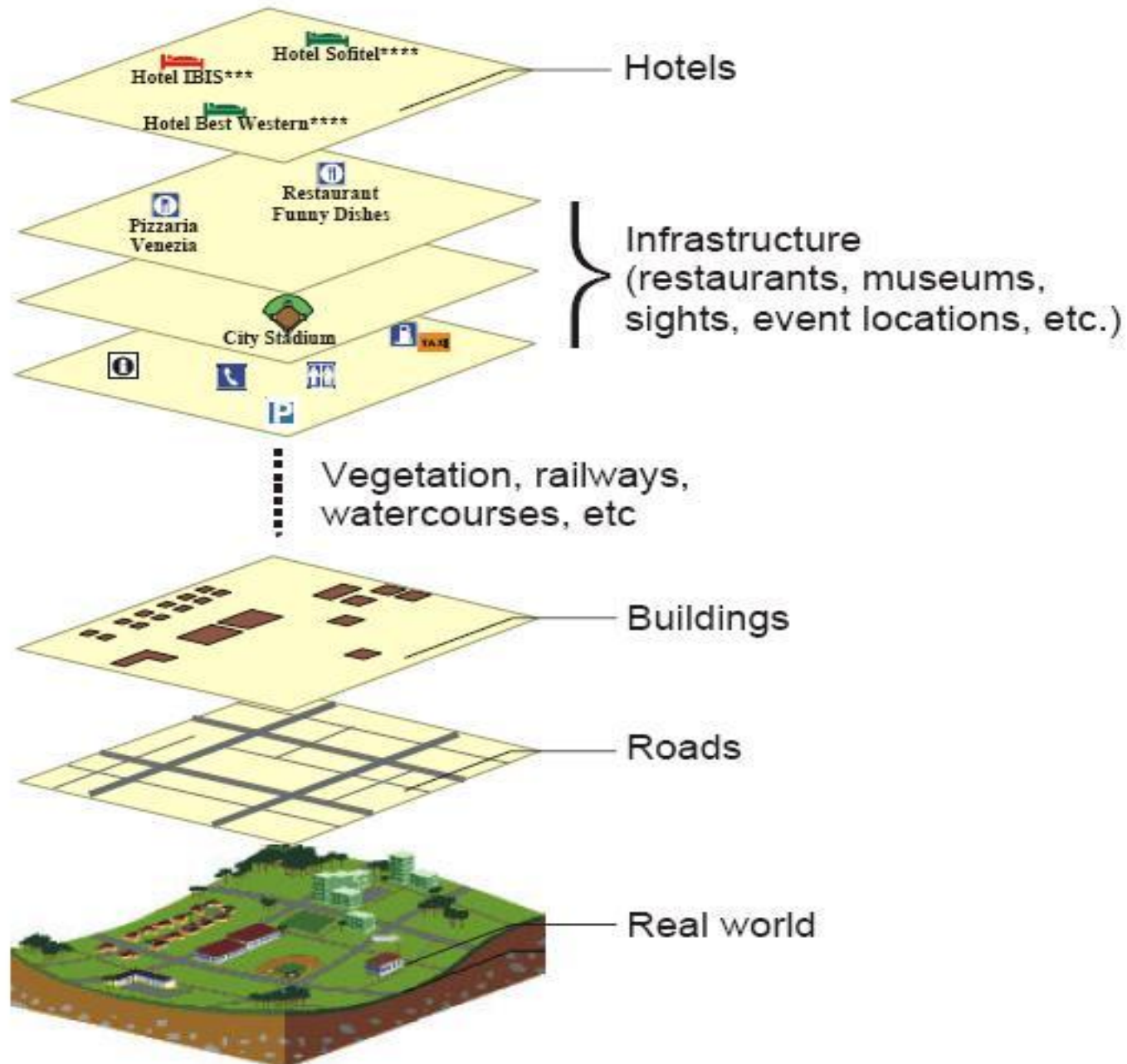


Creation of Spatial Database

Tourism planning requires more spatial data collecting and processing, as all locations and their interrelations should be defined and analyzed within a spatial context.



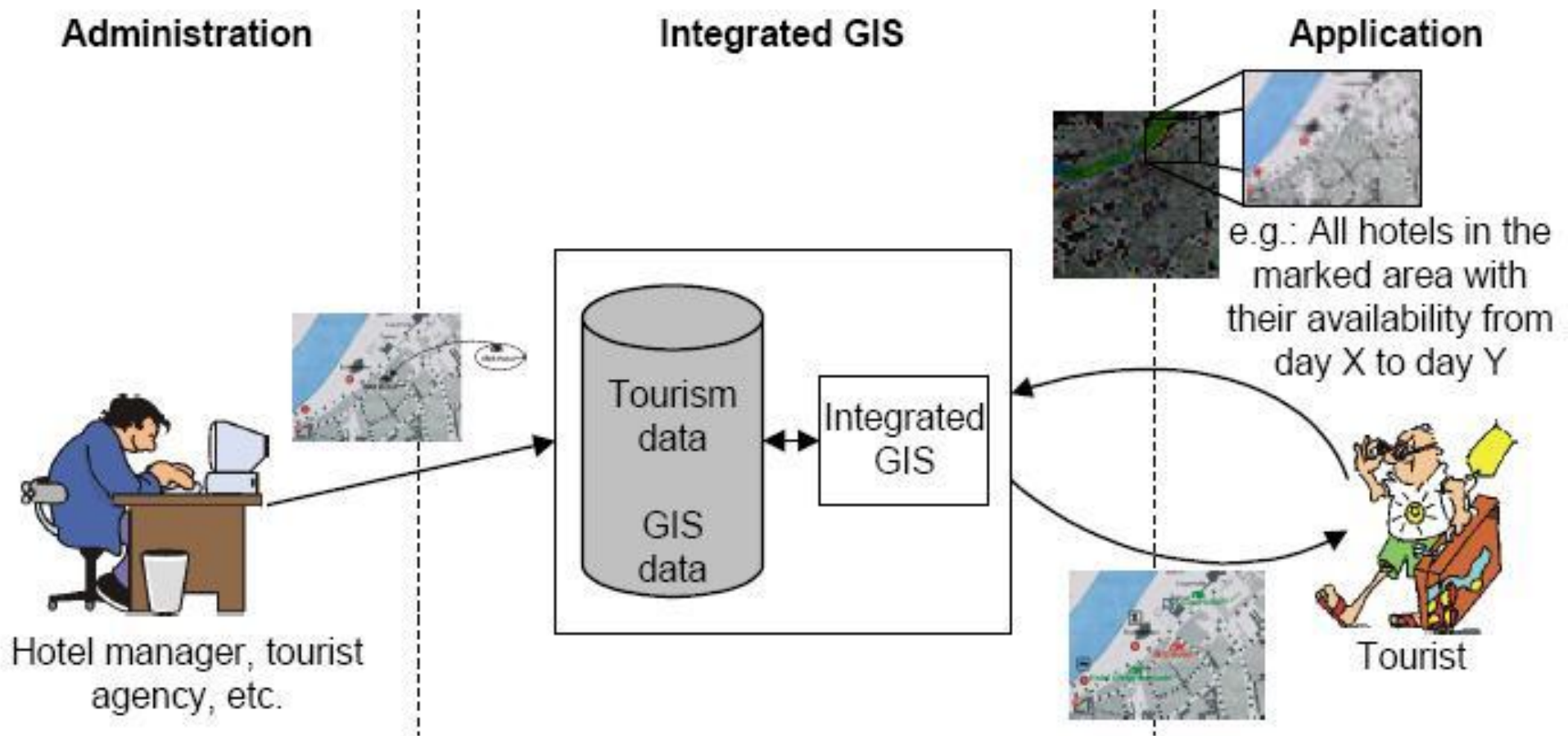
Extended Layer Model



Application Scenario

- A thematic mapper can be used to integrate tourist information and GIS data to build tourist maps.
- SVG can offer the possibility to turn layers on or off to create the representation which fits to the requirements of the user.
- All the layers can be combined without restrictions to achieve the goal of the user.

Application Scenario...



Integrated GIS System

Potential Benefits of Tourism GIS

- Intelligent Mapping
- Analytical Capabilities
- Modeling and Prediction
- Revenue Generation

Methodological issues

- GIS use in recreation and tourism has been slow due to uncoordinated and ad hoc data collection procedures
- Data derived from planning or policy making studies typically are collected at different times, by different researchers, for different purposes using different units of analyses and samples.
- Updating and maintaining data is most effective if incorporated into regular organizational procedures of the public agencies, which hold relevant boundary and attribute information.

Case Study:

Tourist Destinations ZLATIBOR AND ZLATAR

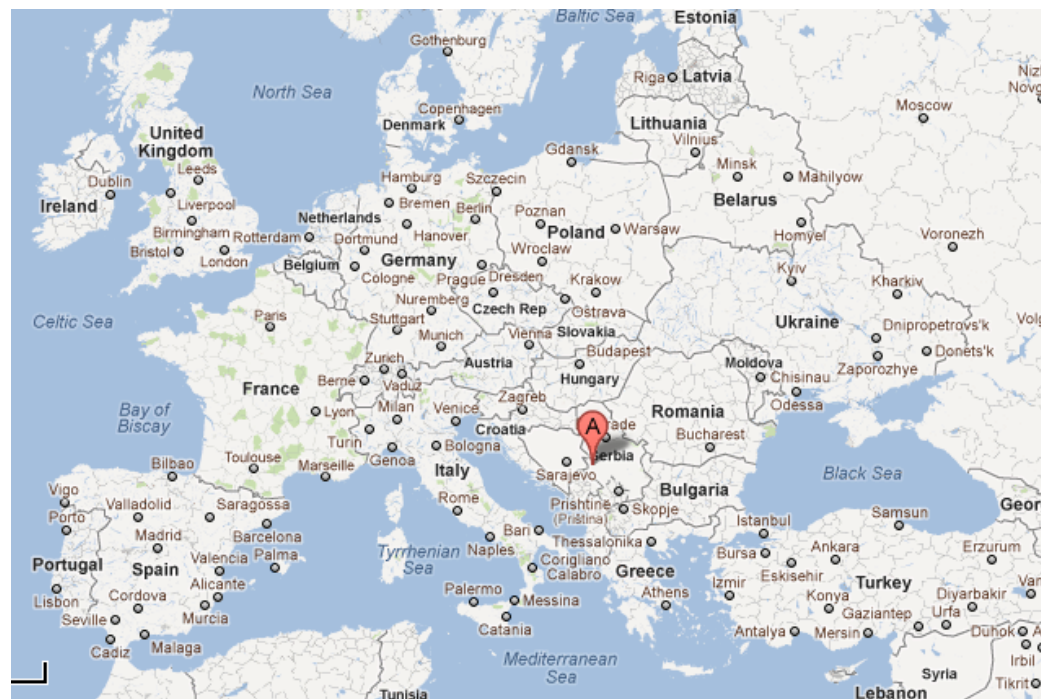
This study was carried out in tourist destination Zlatibor (Čajetina) and Zlatar (Nova Varos), which have a lot of tourist resources, facilities, products and offers. Some of the hotels in destination Zlatibor and Zlatar and most important tourist places were considered and transferred to the system.

Softwares Used:

Arc GIS 9.1

Arc MAP

Arc Catalog



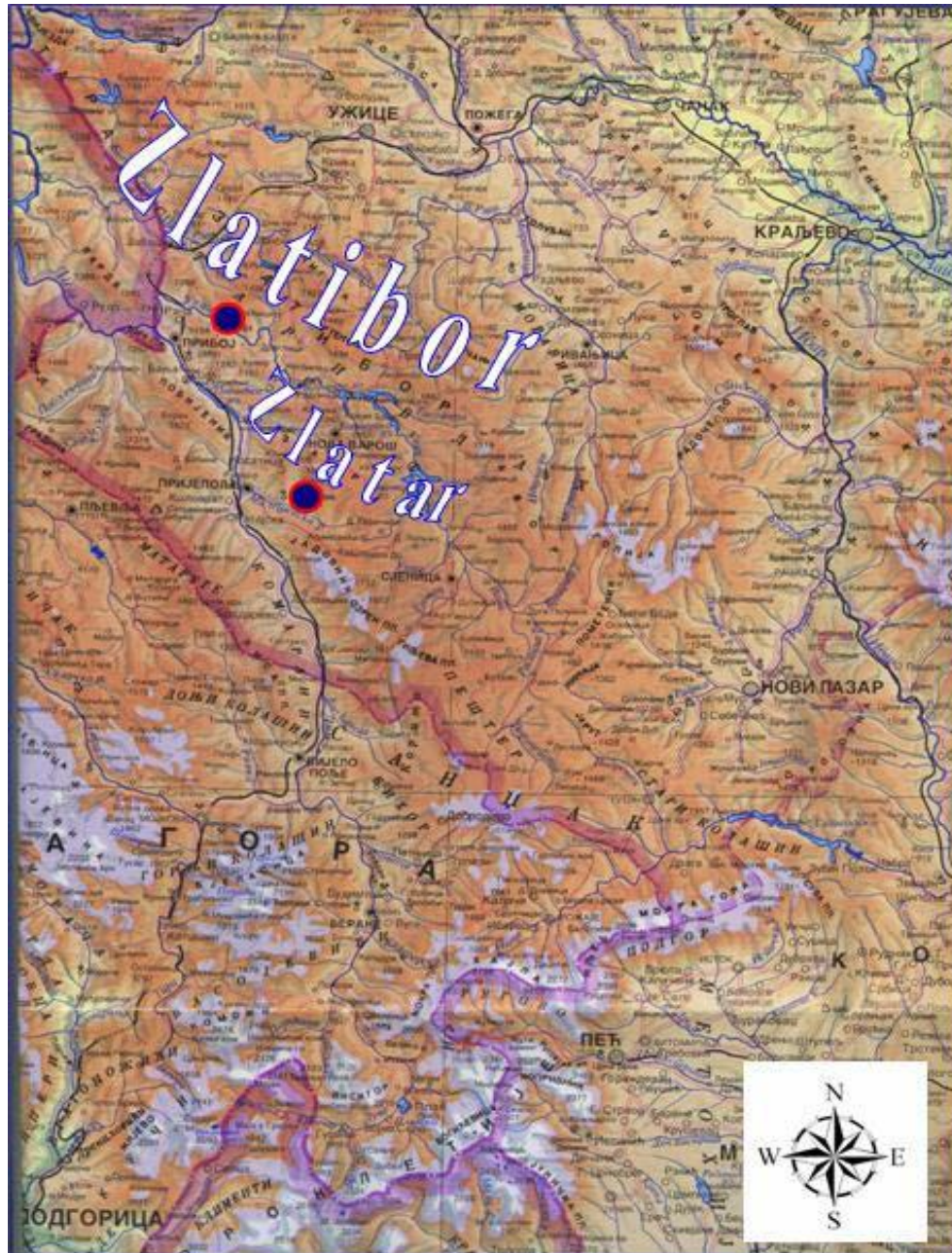
Steps Involved for arrangements

Steps followed for establishing arrangement and density of tourist objects:

- Determination of tourist destination (raster map)
- Creation of attribute data (table)
- Determination of important and necessary places for tourism.
- Creation of thematic maps
- Overlapping the layers of thematic maps

Case Study...

1st Step : Zlatibor's RASTER MAP

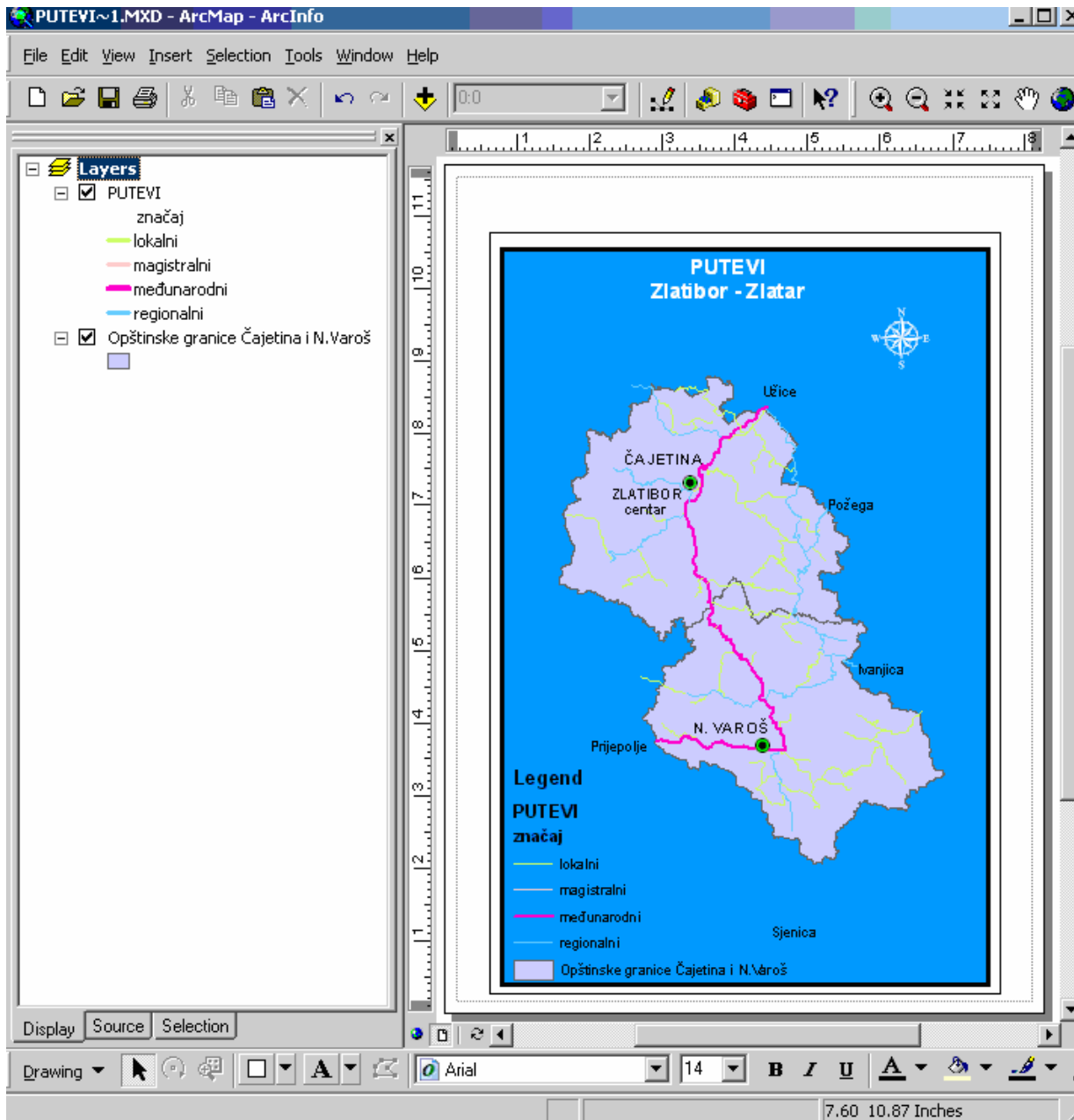


2nd Step: Creation of ATTRIBUTE DATA

Table 4: Layers and attributes

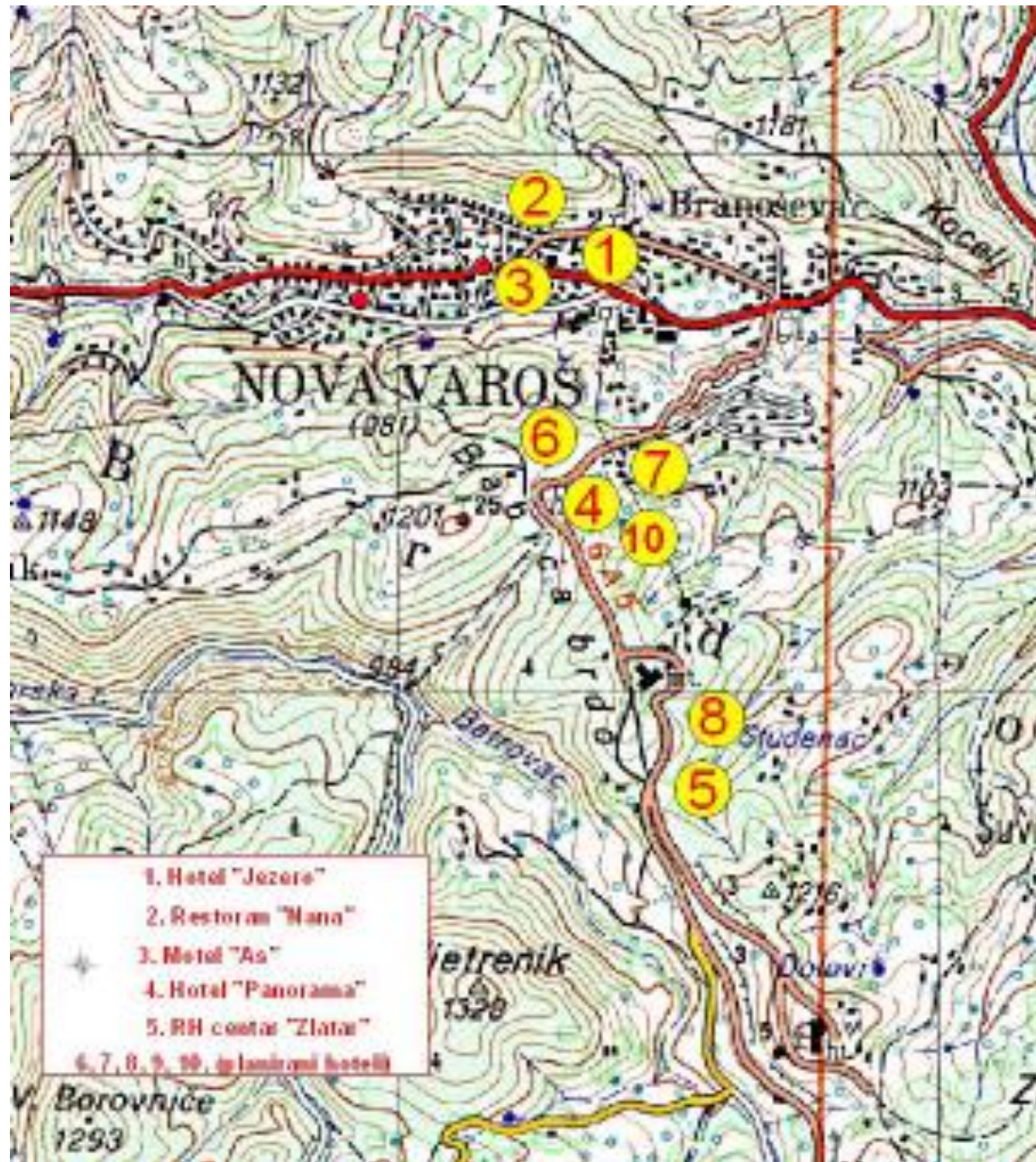
Name of Layer	Attributes
Location (Destination)	Name (Zlatibor, Zlatar)
Road	ID, Type
River	ID, Name
Lake	ID, Name
Railway	ID, Name
Boundary of District (Čajetina, Nova Varoš)	ID, Name, Area
Nature park	ID, Area
Settlement	ID, Name
Hotel	ID, Name, Category, Number of Rooms, Property
Resting house	ID, Name
Restaurant	ID, Name, Property

3rd Step: Determination of tourism places



Destination boundaries and roads

Case Study...



The hotels and restaurants (Vector map)

4th Step : Thematic Maps Creation

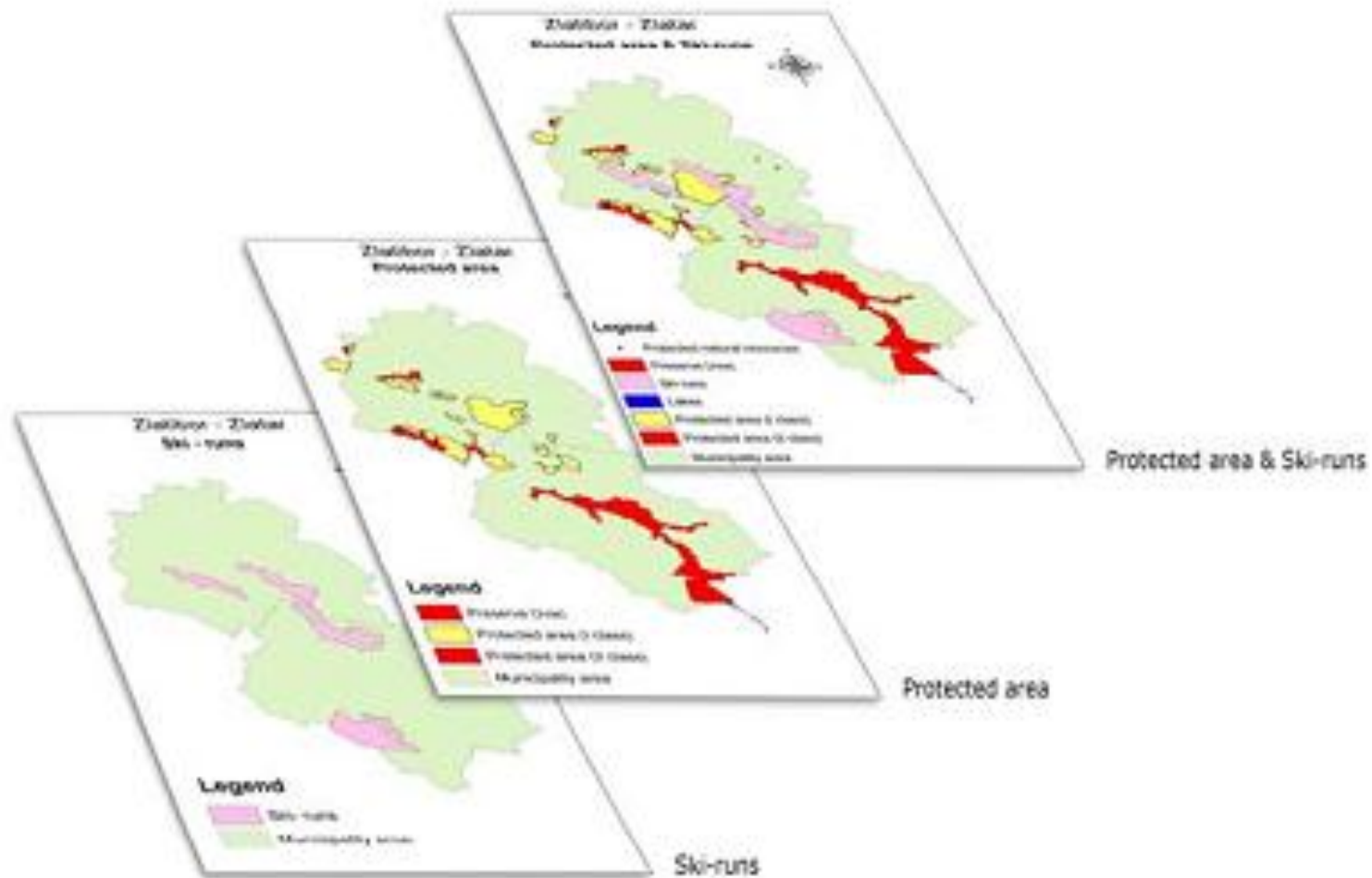


Tourist subdestinations



Tourist attractive areas

5th Step : Overlapping the thematic map layers



Determination of the location for ski-runs

Conclusion

- Successful implementation of GIS promotes importance of information over technology.
- GIS has been successfully used in tourism for collecting, analyzing, modeling and visual presentation of tourist data. GIS is also used for bring the dereferenced data(spatial and non spatial) of geographic location into digital maps.
- The integration of tourism data and GIS data is still a big challenge for the tourism industry today.

References

1. *The application of GIS and its components in tourism* by Verka JOVANOVIC, Angelina NJEGUS, Sept-2008.
2. *GIS application in Tourism Planning “A Tool For Sustainable Development Involving Local Communities”* by Spyros Avdimiotis , Dr. Evangelos Christou
3. *GIS Design And Application For Tourism* by T. Turk, M. U. Gumusay

THANK YOU