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# METHODS FOR DIGITALIZING INFORMATION FROM ANALOGIC SUPPORT AND CREATING GIS DATABASES

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**Abstract**: *GIS is an acronym derived from Geographic Information System. A geographic information system (GIS) is a computerized system for capturing, storing, verifying, and displaying data related to positions on the Earth's surface. GIS can display several different types of data on a map, such as streets, buildings, and vegetation. This allows people to see, analyze and understand patterns and relationships more easily. There are two types of information used in a GIS: one graphical (and which can be raster or vector) that indicates the spatial distribution of the studied elements and another in the form of a database to store the attributes associated with these elements. Georeferencing is the process by which a scanned image (map) is aligned to a well-defined coordinate system. From a mathematical point of view, the coordinate system of the scanned map will be translated and / or rotated relative to the coordinate system in which the georeferencing process will be performed. Vector representation (digitization) of a map can seem like a very easy task for an uninitiated person. If the data is to be created in a very precisely defined structure and at the same time very correct from a geometric point of view, the problem is complicated. The result instead will be able to represent a very correct data structure that will be able to become a very solid base for all the types of analyzes that are wanted to be realized in the study area. In this paper was made the georeferencing of a map at a scale of 1: 25.000 with the code L-34-78-B-d based on the Transdat program of ANCPI Romania and ArcGIS v. 10.5. The projection system used was the National Stereographic System 1970. After georeferencing the map, a spatial database was created that includes elements such as point, line and polygon.*

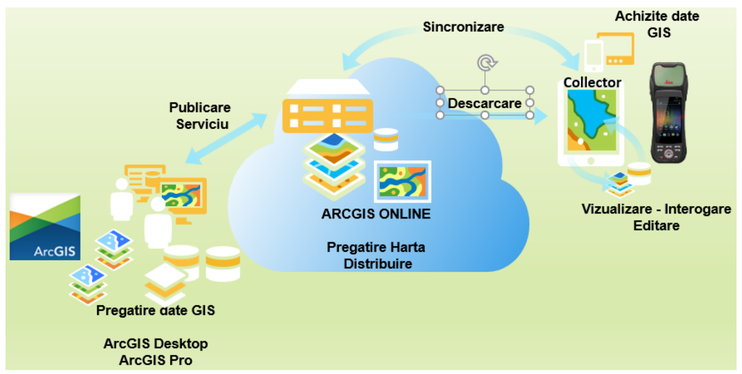
## INTRODUCTION

GIS is an acronym derived from Geographic Information System. A geographic information system (GIS) is a computerized system for capturing, storing, verifying, and displaying data related to positions on the Earth's surface. GIS can display several different types of data on a map, such as streets, buildings, and vegetation. This allows people to see, analyze and understand patterns and relationships more easily.

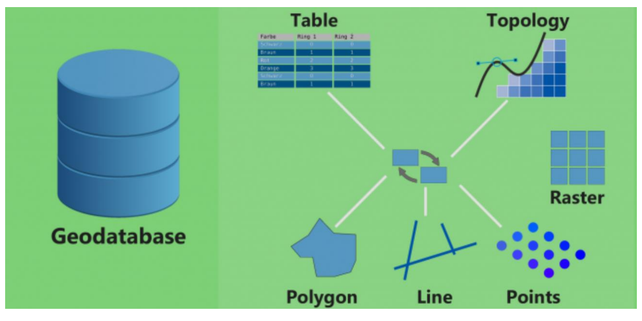
## MATERIAL AND METHOD

ArcGis Software is a geographic information system (GIS) belonging to the Institute for Environmental Systems Research (ESRI), used in the management of maps and geographic information, creation and use of maps, compilation of geographic data, analysis of mapped information, distribution and finding of information, use of maps and geographic information in a variety of applications, management of geographic information in a database.

Georeferencing is the process by which a scanned image (map) is aligned to a well-defined coordinate system. From a mathematical point of view, the coordinate system of the scanned map will be translated and / or rotated relative to the coordinate system in which the georeferencing process will be performed.




Workflow in a GIS

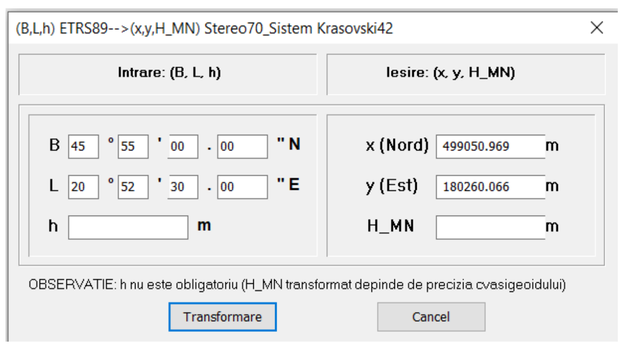



The structure of a Geodatabase

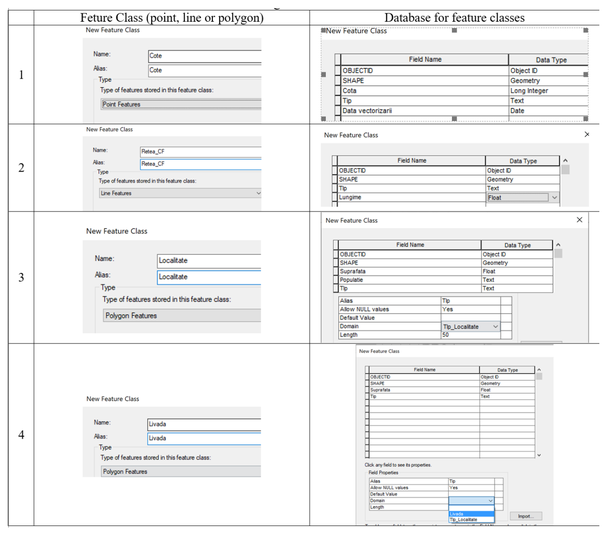
## RESULTS AND DISCUSSIONS

In this paper a map (L-34-78-B-d) at 1:25.000 scale is georeferenced with the ArcGIS Software






### Creating the Geodatabase




## CONCLUSIONS

A GIS is a computer system capable of holding and using data that describes places on the Earth's surface. It is a powerful set of tools for collecting, saving, transforming, and visualizing real-world spatial data. This study aims to present how to georeferenced in ArcGis a 1: 25.000 scale map by one of the known methods. Some advantages would be: Awareness of the usefulness and importance of geographic information systems, Understanding the essential concepts needed to use a GIS program, The advantages of using geographical databases and their capitalization, The maps are made according to the user's specifications.