



## METHODS OF DETERMINING THE COORDINATE DIMENSIONS OF AN OBJECT ON MAPS, CARTOGRAPHY AND GEOGRAPHIC LOCATIONS

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### ABSTRACT

*In this article, we will focus primarily on maps. cartographic innovation in a social and technical context we can observe changes in history and increasingly advanced technologies. Geographic time-spaces exhibit a number of properties, including spatial inversion 2 makes any representational effort a complex task. To improve reading 3. To demonstrate and use the achievements of three-dimensional computer graphics, the purpose 4 is to propose a new method of time-space relief cartography introduced by the study. The novelty of the geographic location model is the use of cones to represent it. In using 6 surfaces instead of graphic faces and curves instead of broken segments we can calculate the coordinates to the same value based on the latitude. This historical analysis encouraged us suggest a new definition for the map that reflects our intent concise and flexible, yet inclusive and sustainable the definition of our discipline for years to come. Then we apply cartography itself, analyzing the stability of the past and current disciplinary definitions proposed by his supervisor improved professional dimensioning, in the geographic location coordinates section we continue to analyze the structure and GoogleMap's performance in the recent past and beyond understand the professional development of cartography disciplined And finally newsworthy, how we view Object geography, that is, the geographical origin of the leading members dimensions are determined by organizations and specialists. Geographic measurement influenced the formation of the discipline of cartography.*

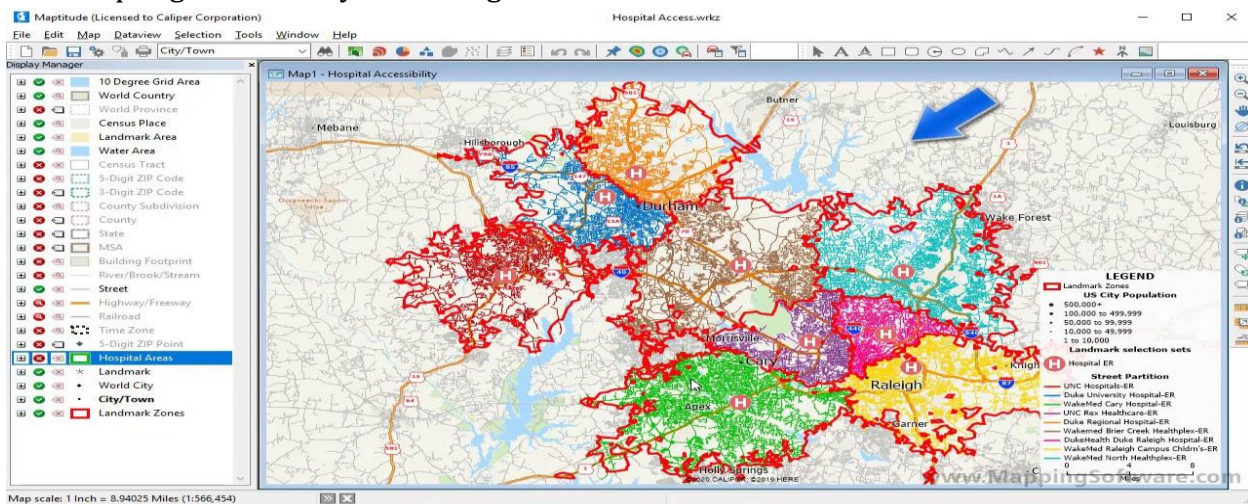
### Introduction

For a long time, maps came into action immediately after talking about location. Maps allow it is possible to compare tangible physical phenomena, including different types of



rainfall, rather than intangible human phenomena such as population distribution. They allow us to see geographic processes that develop over time we can see changes such as the growth of the city, the border area of the area. Map displays provide insight into how environmental events will occur. scale dimensions such as settlement structure and landscape relief can also be seen to vary with varying degrees of resolution. Maps are possible today it is also used to study real-time human movement patterns, such as those captured with and hidden on users' mobile phones. We map to effectively study geographic patterns and processes and effectively understand mapped information displays should be well designed and visually appealing. In other words, maps The topic should be interesting, interesting, immediately understandable and relevant should be useful for society. Its implementation is one of the goals of cartography and mapping, respectively. We can make it easier. For example, I live in Uzbekistan. I don't know all the regions of Uzbekistan, but the GoogleMap app on my phone can easily find out which region I'm in. The most convenient thing is that I can send the coordinates of my location to someone. That person will find me easily. Another convenience is that when I enter my destination, the app points me to the nearest road. There are many contexts in which the terms "map" and "mapping" are used For example, mathematics, logic, cartography, robotics and computer technology. These terms are fundamental to cartography, as this science dealing with art, the science and technology of making and using maps. The definition of a current system map is as follows: "a symbolized image a geographical fact representing selected features or characteristics resulting from it its creative efforts in fulfilling the author's choices and intended for use in the space relationships are of primary importance". However, definitions can often be found similar to: "map: a graphic representation, drawn to scale and usually a flat surface, features, such as geographical, geological or geopolitical - of the area The appearance of the earth or other celestial body". In cartographic theory, the term "map" is often used interchangeably or synonymously bullet; so it is more general than a function. A map is usually the result of a mapping. A special case of mapping is cartographic modeling, in which there are objects and events space (usually geographical) is assigned in such a way as to enable its powers the analysis of spatial relations between them and the processes of size attachment are carried out. Nevertheless, it should be noted The concept of cartographic modeling has so far been considered in a narrow sense, often in front A context, vocabulary, and conceptual framework for the classification of so-called map algebras we can learn how to combine map data to create new maps. The scope of the methodology and tasks facing modern cartography depends on the following definition of the map and its purpose. If the map is defined as a graphic image only reality, then methodology development focuses on visualization. In this case, emphasis is placed on developing a clear graphic presentation. Such an interpretation a the map requires visual analysis by the user. However, if we conclude that the goal a map provides information about sound or text or even just geographic space if we consider a map as a structure for providing information, then it is cartographic methodology begins to develop in a new direction in accordance with the latest technologies trends and usage will increase. This is of course a simplified example. Continuous development of cartographic products, development of geoinformatics, changes in the recording of information about space (digital form using spatial databases) and communication methods change the essence of

cartographic activity. Can a claim be made? despite the development, the essence of modeling remains unchanged. What are the fastest growing geoinformation/IT tools that automate the cartographic modeling process? Cartography, design, construction and editing of maps one of the main parts is the original copy of the card (original) and explains how to edit it. To be able to read the maps and distinguish the difference from the plan and ellipsoid (sphere) surface on a flat surface (card). In order to imagine future changes, it is necessary to have information about cartographic projections. The bubble surface of the Earth is on a flat surface, i.e. on a mathematical map. The method of depicting by road is called cartographic projection. In cartography, the Earth's surface, i.e. the elliptic surface, is a cone cylinder. It is depicted after being placed and spread on a flat surface. The result is open spaces (as a result of deformation) is formed. Filling these open spaces for rendering, they are "stretched", so the scale of the depicted surfaces is not the same everywhere. On the surface of the ellipsoid according to the theory of cartographic projections very small circle becomes an ellipse when depicted on a plane, and it is ellipse is called a mistake. Error as a result of the surface of the earth shapes geometrically will change.

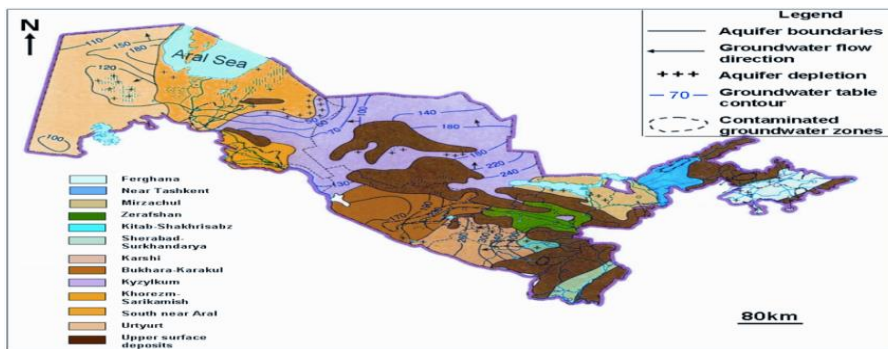


Picture 1. Maptitude 2020. A view of the dimensions obtained in Maptitude 2020. Colors are used as symbols. Geographic location. we can see the length and width of the boundary area.

### Cartographic representations of geographic time-place

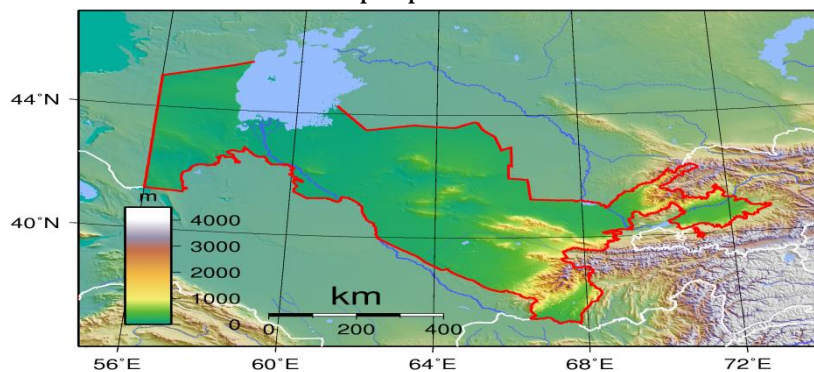
Over time, improvements in transportation have greatly influenced our depiction of geographic space. More common sense, the first feature of geographic space-time, states that the world is shrinking. Nevertheless, the idea of uniform contraction has been challenged by geographers. A major critic of the single reduction principle is the idea that the entire interval and the surrounding geographic space would benefit from improved transportation conditions within a given area or between two locations. These perceptions do not take into account the widespread fact that geographical time-space is not homogeneous. In general, the problem of cartographic representation of time-space can be seen as the conversion of kilometer-space into time-space. In a cartographic image, then we replace the usual and traditional kilometer scale with a time scale. The different methods of producing cartographic time-space can be divided into two categories. Most methods found in the literature shift the location of the map locations to reflect the time-space distances. Representing the majority -

definitions of this type were introduced based on the phrase proposed by Forer during the period of plastic spaces in the history of geography. A geography freed from cartographic conventions. From this very active period, new applications appear regularly. Attached are cartographic images movement belongs to the type of anamorphic cartography. A heterogeneous reduction of space is assumed in plastic space maps. But these maps mean everything the space between closely spaced locations benefits from time-space contraction. The fact that these maps do not take into account the phenomenon Spatial inversion (see picture 2), a key feature of geographic time-space, is a major critic, drawn against this type of representation.



**Picture 2. Hydrogeological map of Uzbekistan.**

Google Maps portal; Database with locations of roads, addresses and road signs used by the car navigation application; Satellite image of the Earth's surface; picture of a city taken from a tall building; Scheme of metro line; Architecture and construction building design; A picture showing historical changes in the country's borders school textbook; Drawing ski trails on the information board in the mountains; Paper road atlas; A GPS-based application that supports the movement of a hiker in the mountains; Dynamic visualization of weather data showing expected precipitation; Voice a guide who advises the tourist on the route and describes the monuments and sights on the way; Car navigation software; Globe showing countries of the world. Respondents had to answer "Yes", "No", "Don't know" or "It depends". the first eight questions. For the ninth question, a list of products is given and the respondents You had to choose one of four answers: "Can be considered a map", "Uses a map", "Can't be considered a map", or "I don't know", the products listed in this question all are selected in a way that is not related to the maps; in some cases, these were products very far from cartography. This approach limited the set of available proposals for each answer that users answer.



**Picture 3. Topographic map of Uzbekistan Results and Discussion**



Most respondents strongly believed that LBS applications use maps or maps. The difference in rating of "Car Navigation App" and "Google Maps Portal". (website) very interesting. In the first case, 40% of research participants have this opinion such a product can be considered a map, in the second case, it was 70%. Although Google Maps is used as a navigation system and web version, it is actually quite good a similar product, especially in terms of describing space and information content (the main difference is in the way it is used). Answers to the question "Database". It was also important that the location of the roads and their coordinates differed sharply from each other: in this case, almost two-thirds respondents associated this product with the concept of a map. During this event, academic and non-academic cartographers and do-it-yourself mappers, data scientists and information visualizers, digital media journalists and graphic designers, we discuss current conversion and how future technology developments in data collection and distribution, design methods media and communication channels that appear in the media can be affected the future of cartography. The vast amount of data currently collected requires accurate data programming, database management, data processing and data science skills analysis to effectively and efficiently deal with the diversity of available data sources (attractive factors). Knowledge of automated data processing techniques frees up time not only because of the complexity and increasingly dynamic nature of large data sets, but also because of the need to solve advanced cartographic design problems. handle, but also the responsive and dynamic nature of the display environment (push factors). Inspired by graphic artists and designers, we should always be reminded of this clarity should be the most important feature of all our cartographic products, regardless of data challenges. The maps of the future will be more diverse in terms of data, personalized and therefore more user-oriented than before. It should not be forgotten that working with the card creates a clear picture of events, remembers them, analysis, comparison, logical thinking of interdependence teaches ways to learn and draw conclusions based on this. Map in increasing the activity of students in the educational process at school, in independent study of science and increasing interest in it, connecting geography with life, students' patriotism it serves as the main tool in educating the spirit.

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