The influence of the Bible geographic objects peculiarities on the concept of the spatio-temporal geoinformation system

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Abstract. The article describes the influence of the Bible geographic object peculiarities on the spatio-temporal geoinformation system of the Bible events. In the proposed concept of this system the special attention was concentrated to the Bible geographic objects and interrelations between the names of these objects and their location in the geospace. In the Bible, both in the Old and New Testament, there are hundreds of geographical names, but the selection of these names from the Bible text is not so easy. The same names are applied for the persons and geographic objects. The next problem which arises is the classification of the geographical object, because in several cases the same name is used for the towns, mountains, hills, valleys etc. Also very serious problem is related to the time-changes of the names. The interrelation between the object name and its location is also complicated. The geographic object of this same name is located in various places which should be properly correlated with the Bible text.

Above mentioned peculiarities of Bible geographic objects influenced the concept of the proposed system which consists of three databases: reference, geographic object, and subject/thematic. The crucial component of this system is proper architecture of the geographic object database. In the paper very detailed description of this database is presented.

The interrelation between the databases allows to the Bible readers to connect the Bible text with the geography of the terrain on which the Bible events occurred and additionally to have access to the other geographical and historical information related to the geographic objects.

1. Introduction

The proposed concept of the spatiotemporal geo-information system of the Bible events is a specific kind of the historical GIS. In the concept of such a system both the Bible events and historical events should be incorporated (Moscicka, 2008; Brzezinska et al., 2007). The system should also be time-oriented. The preliminary analysis of the Bible text indicated that the Bible names of geographical objects and their relations with the localities of these objects are very complicated. These relations have various forms which should be taken under consideration in the proposed system.

The concept of the proposed system is based on the interrelation of the three databases: reference database, geographic object database and subject or thematic database (Linsenbarth, 2010). The key role in this system plays the concept of the geographic database hence, in this article the problems which are related to this base are discussed and presented. The first part of the paper is concentrated on the analysis of the particular cases of various relations both between the Bible object geographical names and relations of these names with object locations.

In the Bible, very often the names of the geographic objects are the same as the names of persons

hence the first step of this analysis was concentrated on the separation of the geographic names from the person or tribe names. Another problem arises when the geographic object, in the various part of the Bible, has different names. The analysis in this part of article is concentrated on the relation between geographic object names and proper connection with their localities. Within the long time of the Bible history several geographic objects, in the particular time of the history were renamed and these time changes have to be presented in the concept of the system (Linsenbarth and Moscicka, 2007).

The second part of the paper is devoted to the architecture of the proposed system which consists of the databases: reference database, geographic object database and subject or thematic database. The special attention was paid to the concept of the geographic object database and on the influence of the Bible geographic objects peculiarities.

2. Analysis of the particular cases of the Bible geographic objects

2.1. Names of the geographic objects in the Bible

In the Bible, both in the Old and New Testament, there are many geographic names connected with the description of the Bible events. The analysis of these geographical names indicated that there are serious problems with proper selection of these names and classification of the objects which have the same name (Linsenbarth and Wrochna, 2007).

There are some difficulties in separation of the geographical names and personal names because in many cases the same name is used for a person or geographic object. For example such name as Ephraim which occurs in Bible 122 times has double meaning: personal and geographic.

What concerns the personal name it is rather very simply to select those names from the text, but it is necessary to perform distinction between the name of particular person and the name of particular tribe, like a tribe of Ephraim (Num. 1,33; Joshua 16,4). The selection of the geographical names is not so simple and easy. Let us verify the same example of "Ephraim" applied for the geographical objects. The name Ephraim in several

cases is applied to the territory (Isaiah 7,2), to the town or settlement (John 11,54), to the mountain (Joshua 17,15; 19,50), to the hills (1 Sam. 1,1), to the forest (2 Sam. 18,6; Joshua 20,7) and to the gate (2 Kings 14,13). But for example the name Ephraim applied in the Second Book of Samuel (2 Sam. 13,23) can be applied both for the town and for the territory.

Another example can be the name "Dan". The name Dan is mostly used for the person and for the tribe (Gen. 30,6; 49,16), but in several cases it is used as a name of territory or town (Judges 20,1). The name Dan can also be used as an example of various translations of the Bible text (2 Sam 24,6). In the translation from the Latin language it is written that the Dan tribe people arrived to Dan and were travelling in the vicinity of Sidon. Later on they arrived to Tyr. In the translation from Hebrew it is written that they arrived to Dan and after then, travelled across to Sidon. Such description indicates the differences in translation, which have influence on the proper location of geographic object. On the contemporary maps Dan is located at the foot of Mount Hermon (Linsenbarth, 2008a).

In the Bible, sometimes the geographical object appears with various names. For example very famous Dead Sea has various names in the Bible (Linsenbarth and Drachal, 2009). The name "Salt Sea" is applied in several Bible books: Genesis 14,3; Numbers 34,3.12; Deuteronomy 3,17; Joshua 3,16; 15,2.5; 18,19. The name "Sea of Araba" (Araba Sea) is indicated in: Deuteronomy 13,17; 4,49 and Joshua 3,16. The name "East Sea" is used in: Ezekiel 47,18 and Zechariah 14,8 (Linsenbarth, 2008d).

Another example can be the name "Lake Gennesaret" which has various names in the Old and New Testament. The oldest name was "Kineret Lake" which is mentioned in books of Old Testament (Num. 34,11; Joshua 12,3; 13,27). The name "Lake Gennesaret" is used by Luke (Luke 5,1). Mathew applied the name Galilee Lake (Mt. 4,18; 15,29). Mark also used the name "Galilee Lake" (Mr. 1,16, 7,31). John also used the name "Galilee Lake" (John 6,1) but additionally explains that this lake has another name "Tiberias Lake". In another chapter John used only the name "Tiberias Lake" (John 21,1).

Mount Hermon, which is the highest mountain in the Anti-Lebanon mountain range, has various names. In the Book of Deuteronomy it is written that this mount is called by the Sidon people as Siron (Deut. 3,9) but by the Amorites as Senir (Deut. 3,9). In the other books of the Old Testament both names Sidon and Siron are used simultaneously (Deut. 4,48; 1 Chron. 5,23) (Linsenbarth, 2008a).

The valley or plain of Megiddo (2 Chron. 35,22; Za. 12,11) – this name is not used on the present maps (Linsenbarth, 2007). Probably it was the most middle part of the Jizreel Valley. It is necessary to underline that the name Megiddo is also applied both for the settlement and for the region.

The Jizreel Valley (Judges 6,33; Hosea 1,5) has several names in the Bible. In the book of Joshua the Hebrew the name Ha-Emek is applied (Joshua 17,16), what can be translated as valley, lowland or plain. In the book of Judges, the name Jizreel Valley is applied (Judges 6,33). In the book Judith (Jud. 1,8; 4,6; 7,3) the name Large Plain of Esdraelon is used. During the Greek period the name was changed into Plain of Esdraelon. Contemporary the name Ha- Emeq is applied, what means valley (Linsenbarth, 2009).

In several cases the geographical objects are without their own names. In the case of the Mediterranean Sea sometimes only the name "Sea" or "Great Sea" is used. The name "Large Sea" is used by Ezekiel (Ezek. 47,15.19.20). In the book of Deuteronomy the name "West Sea" is applied (Deut. 11,24). The Jordan River is very often called as "River". Euphrates River, in the various part of Bible has different names. In Genesis (Gen. 23,31) and in Deuteronomy (Deut. 11,24) it is called "River", without own name, but in the same books the name "Great River Euphrates" (Gen. 15,18 and Deut. 1,7) is also applied.

2.2. Relations of the geographical Bible names with object locations

In many cases the same geographic name of the Bible object has various locations in the geospace. In such a case it is necessary to undertake the detailed analysis of the Bible text, to decide which particular text can be related to the given location of the object. Let us present few examples.

The name "Aphek" appears in several books of the Old Testament. In the book of Joshua (1, 4), Aphek is described as a territory which belongs to the Sidon inhabitants. It can be the present day Afka which is located 25 km to the east of Byblos in Lebanon. In the book of Joshua (Joshua 19,30) Aphek is listed within the names of settlements which were within the territory of Aser. According to such description it is possible that tell Ketrdana, which is located between Haifa and Acco, is corresponding with the Bible Aphek. In the Book of Samuel (1 Sam. 4, 1 and 1 Sam. 29, 1) in the description of the battle between Philistines and Israelites, the camp of Israelites in Aphek was close to the Philistines camp in Eben-Ezer. In accordance to the Bible Encyclopedia it is a present Ras-el-Ajn, which is located 15 km to the east from the Mediterranean Sea. Another Aphek, which is presented in the Book of Kings (1 Kings 20, 26-30) in the description of the battle between the King of Aram and Achab, can be located on the slopes of Gaulana Mountains (Linsenbarth, 2008b).

The name Mizpah (Mispeh)) has several locations. Generally Mizpah always occurs with the definite article prefixed. Two times Mizpah occurs with the article prefixed: town of Judah (Josh. 15,38) and town of Beniamin (Josh. 18,26). Also two times Mizpeh occurs in the construct state: namely in Judges as Mizpeh in Gilead (Judges 11,29) and Mizpeh of Moab (1 Sam 22,3). In the Book of Genesis (Genesis 31,44-52) it is a place related to the alliance between Jacob and Laban on Mount Gilead. The artificial stone which was erected as a witness was named Galed and Mizpah. Probably it is present day Kh.Jel'ad located on the north of river Jabbok. Mizpah of Beniamin (Josh. 28,26), which can be identified with the hill called Tel-an-Nazbeh, was located on the boundary of Judea and Israel where there was a famous sanctuary of Israel (Judges 20,1). Mizpah on several occasions was a seat of assemblies at which the Israelites discussed their affairs (Judges 11,11) and during the war of Israel with Beniamin (Judges 20,1). At the time of Maccabees Mizpah was a shrine for the worship (1 Macc. 3,46). The archeological excavations performed in the period 1926–1935 confirmed identification of Tel-an-Nazbeh with the Bible Mizpah. Another

Mizpah is mentioned without definite article prefixed (Hosea 5, 1).

There are two other Bible geographic names Mispah (Mispeh). One Mispeh in Judea is indicated on the list of 16 towns on Sephelah, which were assigned to Juda (Josh. 15,38). The location of this Mispah until now is unknown. Mispeh in Moab, which was the city of king of Moab (1 Sam. 22,3-4), was a place to where King David escaped with his family. This Mispeh is only once mentioned in the Bible, but the location of this place is unknown.

The name Mizpah is also assigned to the land of Mizpah which was a territory at the foot of Hermon (Josh. 11,3.8). In the book of Joshua (Josh 11, 8), the valley of Mizpah is mentioned in the description of the battle between Joshua and Jabin, king of Hazor. Referring to Joshua 11,17, the valley of Mizpah can be identified within the valley of Lebanon.

The Bible geographic name Gilgal appears in the Bible 41 times. One Gilgal is related to the first camp of Israelites established after passing Jordan River (Josh. 4,19). Probably it is contemporary Chiberet-el-Mafdżir located in the vicinity of old Jericho or Chibet el-Nitla ca 5 km to the south-east from Jericho.

In another place of the Book of Joshua (Josh. 12, 33), the Gilgal in the vicinity of Dor, appears on the list of the conquered towns of kings of Canaan. Probably it is village Dzildzulia located 11 km to the north from Ras el-Ain. In the Book of Kings (2 Kings 2,1-4; 4,38) the Gilgal of Elisha is mentioned. Most probably it is the village Chiberet Aljata located ca 15 km to the north from Bethel.

The objects with the name Gibeah, have many locations, and the determination of their locations is very difficult. One reason is that the name is written in various forms such as Geba, Gibeah, Gibeah of Saul or Beniamin's Gibeah. Saul's Gibeah (1 Sam 10,26; 11,4; 15,34; 22,6) can be rightly identified with Tulail al-Ful. In several passages in the Bible one or the other names occur, what complicates the right identification of this object. The analysis and discussion of the name Gibeah and various locations of this place can be the subject of separate paper.

Another situation appears when this same Bible object has different locations according to the particular archeological or cartographical sources. There are cases when the same name is used for separate parts of the city which were constructed in different historical periods. For example in Jericho, the remnants of settlements or forts, which were built in the various periods, are located very near each other, and have the same name (Linsenbarth, 2008c). Another case appears when the same name of geographic object was used in different historical periods for the different geographic objects. For example the name Araba in the Bible period was used for the valley between Lake Gennesaret and Dead Sea. Present day the name Araba is used for the valley between the Dead Sea and Gulf of Aqaba (Linsenbarth, 2007).

2.3. Temporal changes of geographic names

The separate problem is related to the changes of names, of the same geographic object in the various historical periods. In the Bible there are numerous geographic objects which changed their names in the various historical periods. Let us present some examples. In the Old Testament, Dan was the northernmost town in the Bible Palestine; hence the saying "from Dan to Beer-Sheba". Previously it was Phoenician trading post of Lachish. When Lachish was taken by Danites, they changed the name into Dan. The Greeks worshiped Pan, hence they called this city Paneas, which was later on changed into Banias. Philip the son of King Herod, built a city here and named it Caesarea after Augustus or Caesarea Philippi. Agrippa II changed the name to Neronias in honor of Nero. In the Crusades time the name of the city was Belinas. Presently the name Dan is used (Linsenbarth, 2008a).

Another example is Beit Shean the town occupied by Thutmose III. The oldest name of this town was Beisan. During the Hellenistic period it was known as Scythopolis. Under the Arabs, Beit Shean took back to its old name Beisan (Linsenbarth, 2008b). The capital of Jordan Amman is another example of name changes. The old name was Rabba cited by Joshua in the Old Testament. During the Hellenistic period the name of the town was changed into Philadelphia.

There are several other examples of the temporal changes of the names. The city name

Samaria is appearing in various periods as Shomron, Sebastiyeh or Sebaste. The temporal changes occurred also with the city Acco. In Judges the name Acco was used (Jud.1,31). In the period of Maccabees the name Ptolemais was applied (1 Macc. 5,15). During the Roman period the name was changed into Colonia Claudii Cesaris. When Acco was a capital of Latin Kingdom the name was changed into Sant-Jean d'Acre (Linsenbarth, 2009).

3. Concept of system architecture

In previous section of the paper the attention was focused on the very complicated relation of Bible names and objects. It is important to remember that the precise knowledge of biblical geography is a cornerstone of the reconstruction and understanding of events in the Bible. The occurrences described in the Bible are connected to the geographic localities which have undergone changes in the course of millennia. These changes may have occurred in the location of geographic entities (e.g. the destruction of a city and its rebuilding at a different location) as well as its name (e.g. a city was renamed in the course of history). The geographic objects in the Bible and events related to these locations are typical examples of phenomena occurring both in time and space.

The above characteristics of geographical objects appearing in the Bible had a direct impact on the concept of a geographical information system about the events of the Bible (Moscicka and Brzezinska, 2008a). Changeability of these objects was the base to develop a step-by-step methodology and to implement a time-oriented information system which is based on events described in the Bible and information extracted from the maps of the Old and New Testaments.

A spatiotemporal information system with a focus on biblical events consists of three distinct databases. The proposed system consists of the three core databases: reference, geographic and subject.

3.1. The reference database

The database of the reference maps constitutes the core component of the system. Due to huge territory of the Bible events, which stretches in the East-West direction from the ancient Mesopotamia and Babylon do Italy, and in the North-South direction from Turkey to Egypt, the three levels of reference maps were created. For the full territory the scale 1:20 000 000 was selected, for the territory of the Bible Palestine the scale 1:200 000 was chosen and for the countries in the vicinity the Bible Palestine the scale 1:1 000 000 was taken.

As a basic material for the preparation of reference maps various materials were collected and applied. The most up-to-dated topographical maps in various scales as well as geomorphologic maps, geologic maps, archeological maps and climatic maps were used. Furthermore, the satellite images covering the Bible territory as well as the digital terrain models (DTM) with the various precision were applied for elaboration of reference maps. To the chosen geographic objects their names were added. Such reference maps present the actual state of the terrain. Of course, in the long Bible history several geographical objects were changed. As the most stable element of the terrain topography the relief can be taken, but in some cases it was also changed by the human activity or as the result of the natural events. Of course in the long geological history, counted in the millions of years, there were some changes in the terrain relief, mainly due to the Earth tectonic plates' movements and geological faults appearing in this region. The above mentioned changes have to be depicted on the maps referring to the particular periods of the Bible history (Linsenbarth and Drachal, 2009).

The proposed system allows to apply various forms of presentation of reference maps such as simple digital terrain model, satellite images of territory, satellite images together with the general geographic objects and other combinations according to the required purposes.

3.2. Geographic object database

The development of the system architecture (Fig. 1a) requires all its elements to have their respective structures defined and the connections among the individual databases established.
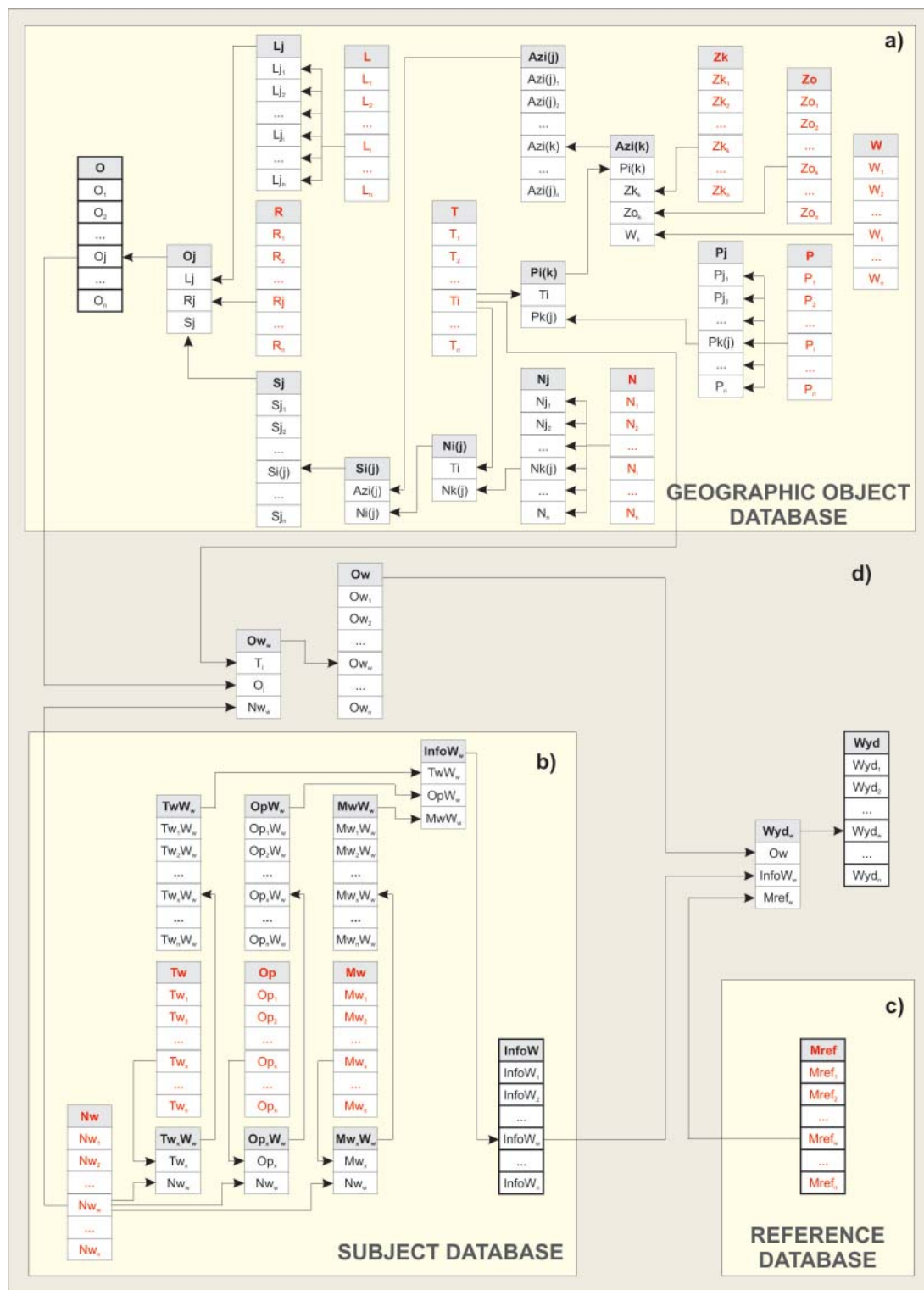
Fig. 1. Architecture of the system

Explanation of symbols:

GEOGRAPHIC OBJECT DATABASE a):

W – validity of a geographic object location;

Zo – descriptive source, on the basis of which the information of a geographic object was obtained;

Zk – cartographic source, on the basis of which a geographic object was localized;

P – location of a geographic object;

Pj – location of a jth geographic object;

Pk(j) – primary k^{th} location of a jth geographic object;

Pi(k) – primary k^{th} location of a geographic object in the ith time period;

T – time (collection of dates/time periods);

Ti – i^{th} time period;

Azi(k) – modifiable attributes of primary k^{th} location of a geographic object in the ith time period;

Azi(j) – set of modifiable attributes of the jth geographic object in the ith time period;

N – names of geographic objects;

Nj – name of the jth geographic object;

Nk(j) – primary k^{th} name of the jth geographic object;

Ni(j) – names of the jth geographic object in the ith time period;

Si(j) – state of the jth geographic object in the ith time period;

Sj – set of instantaneous states of the jth geographic object;

R – categories of geographic objects;

Rj – category of the jth geographic object;

L – localizations of geographic objects in the Bible;

Lj – localizations of the jth geographic object in the Bible;

Oj – j^{th} geographic object;

O – geographic object database.

SUBJECT DATABASE b):

Nw – name of a topical event;

Nww – name of the wth topical event;

Tw – routes (or other geometric objects) of topical events;

Twx – primary x^{th} route of a topical event;

Op – descriptions (or other textual data) of a topical event;

Opx – primary x^{th} description of a topical event;

Mw – multimedia content on a topical events;

Mwx – primary x^{th} multimedia data of a topical event;

TwxWw – primary x^{th} route of the wth topical event;

OpxWw – primary x^{th} description of the wth topical event;

MwxWw – primary x^{th} multimedia data on the wth topical event;

TwWw – set of routes of the wth topical events;

OpWw – set of descriptions of the wth topical event;

MwWw – mulitmedia set for the wth topical event;

InfoWw – set of topical information on the wth topical event;

InfoW – subject database of topical events.

REFERENCE DATABASE c):

Mref – reference map database;

Mrefw – reference map for the wth topical event.

MISCELLANEOUS d):

Oww – primary geographic object relevant to the wth topical event;

Ow – set of geographic objects relevant to the wth topical event;

Wydw – package of data necessary for representation of the wth topical event;

Wyd – topical event database.

A spatiotemporal model of a geographic object is a key element in the structural development of the database dedicated to the geographic objects in the Bible (Fig. 1a) (Moscicka and Brzezinska, 2008a; Moscicka and Brzezinska, 2008b). The implementation of the spatiotemporal model of a geographic object involves development of a table blueprint which contains the information on all components of biblical geographic objects: their spatial location, time element and attributes. The interconnections and relationships among individual tables should also be defined. Figure 1a represents the suggested architecture of the geographic object database. Data which can directly be entered into the database are marked in red. This information includes:

– localization of the geographic object in the Bible (L), i.e. places in the Holy Bible where the object is mentioned;

– category of the geographic object R;

– spatial location of the geographic object (geometry information) P;

– descriptive (Zo) and cartographic (Zk) sources, which have yielded information about the geographic object;

– validity of the location of the object W,

– geographic names of the object N,

– dates or time periods T, when a name change or a location change have occurred.

Remaining tables are derivative and contain data which was pre-selected and contingent either on the category of the object "j" or the time period "i".

Arrows on the diagram indicate relationships among individual tables. They define directions and methods of using individual attributes, depending on how they are assigned to a given object "j" and/or a given time period "i". Such solution makes possible multiple uses for objects with similar (recurring) attributes, without the need for repetitive entry of data or its duplication.

3.3. Subject database

The architecture of the subject database shown in Figure 1b is similar in design to that of the geographic object database. Marked in red are the primary tables with those elements which need to be entered in the database directly. Such elements are:
– names of the events Nw,
– courses of the events Tw,
– descriptions of the events Op,
– multimedia content of the events Mw.

Arrows indicate how individual names of the events are related to the routes of the events, their descriptions and multimedia, thus creating a complete set of subject data on a specific biblical event InfoWw.

The structure of the reference database (Fig. 1c) differs somewhat from other databases. The reference database contains only reference maps Mref of different scales; on their background, the biblical events on a specific subject can be represented. The elements of this database are divided into two categories:
– primary elements: numerical model of the terrain and hydrography;
– secondary elements: current situational content.

The architecture of a spatiotemporal information system about biblical events rests on the structures of the three databases described above. It is also enhanced with information on relations and interdependence among the individual databases (Fig. 1d). A given name of an event Nww from the geographic database is attributed with a set of geographic objects Ow, which, in connection with the set of subject information on the InfoWw, represents an event Wydw on the background of an chosen basemap Mrefw. Thus, the database of the biblical events contains sets of cartographic and descriptive information on thematic events.

According to the stated purpose and principles of the project, the end result is a product which allows the representation of biblical events on maps. Figure 2 demonstrates the method and the pattern of representation of an event to a user. The diagram shows all three databases which comprise the spatial information system as well as specific information on a given topic, collected from each of these databases.

The database of geographic objects supplies information on attributes of geographic objects relevant to a given event, as well as the states of these objects (i.e. their shape) at the time when the event occurred.

Information of the route of a given event, its description as well as its multimedia elements, which allow representation of the event, is drawn from the subject database.

The basemap relevant to the category of the event and its scope comes from the reference database.

Geometric information (basemap, routes of the events, geographic objects) selected from these databases allows the development of the subject map of a biblical event. Attributes, description and multimedia are combined to provide additional information which leads to a deeper understanding of the event presented on that map. These types of information, first of all, enable a user to establish the localization of the event in the Bible (quotations make it possible to pinpoint where in the Bible and how a given event is described); they also refer a user to different descriptive and cartographic sources (which often provide an alternative interpretation of the same events).

An additional bonus from the localization of biblical events in time and space is that they provide a foundation for reports and comparisons; they also allow for the construction of inquiries and spatiotemporal analyses. It is also possible to:
– retrieve information on geographic objects which appear in the area of interest in the given time period;
– retrieve information on geographic objects which appear in a given book of the Holy Bible;
– retrieve information on the biblical events which took place in a given area or during a given time period;
– compile combinations of names of the geographic objects during a given time period.
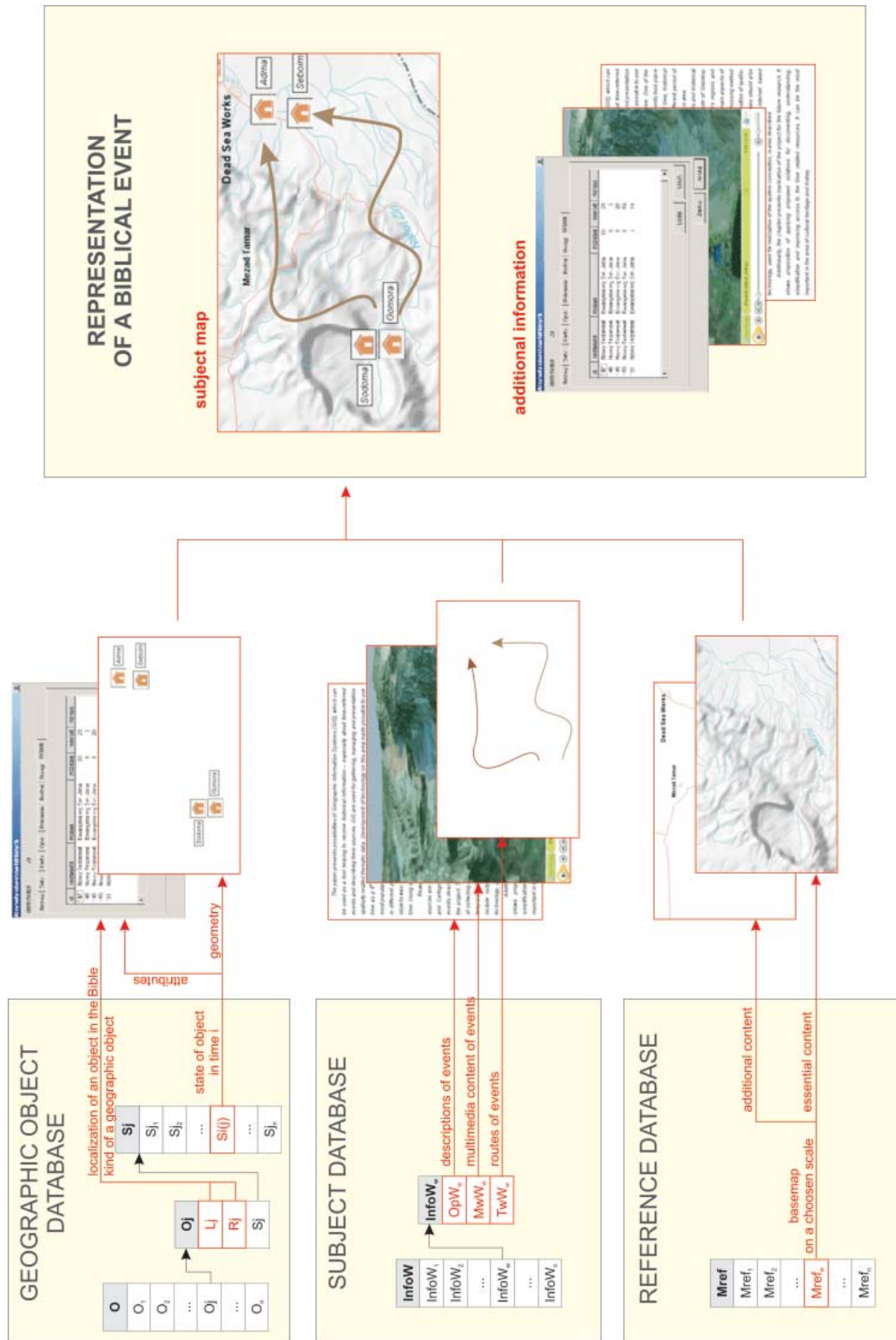
Fig. 2. Representation of the biblical event

4. Final conclusions

In the presented concept of the spatiotemporal geo-information system of the Bible events the influence of the of the Bible geographic objects peculiarities was analysed and considered in the architecture of the system. The proposed system offers a new tool for the Bible research and Bible readers. The Bible text can be connected with the described territory on which the geographic objects or Bible events are located. Furthermore all these phenomena are time related hence the system can be classified as special kind of historical GIS. In the object/thematic data base also the non-Bible information regarding the description and the history of the particular geographic object can be attached.

Acknowledgements

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Wpływ właściwości biblijnych obiektów geograficznych na koncepcję czasowo-przestrzennego systemu geoinformacyjnego

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Streszczenie. W artykule przedstawiono wpływ właściwości biblijnych obiektów geograficznych na koncepcję systemu geoinformacji czasowo-przestrzennej o wydarzeniach biblijnych. W zaprezentowanej koncepcji systemu szczególną uwagę zwrócono na biblijne obiekty geograficzne oraz związki zachodzące pomiędzy nazwami tych obiektów i ich lokalizacją w przestrzeni geograficznej. W Biblii, zarówno w Starym jak i Nowym Testamencie, występują setki nazw obiektów geograficznych, jednakże ich selekcja z tekstów Pisma Świętego nie jest taka łatwa. Wynika to stąd, iż te same nazwy są stosowane zarówno do imion własnych jak i do obiektów geograficznych. Kolejny problem stanowi klasyfikacja obiektów geograficznych, ponieważ w wielu przypadkach ta sama nazwa używana jest do jest to różnej kategorii obiektów takich jak miejscowości, góry, wzgórza, doliny itp. Bardzo istotną jest także sprawa zmienności nazw tych samych obiektów geograficznych w różnych okresach historycznych. Relacja pomiędzy nazwą obiektu geograficznego a jego lokalizacja w przestrzeni geograficznej to jeden z najistotniejszych problemów wymagających głębokiej analizy tekstów biblijnych. Wynika to z faktu, iż ta sama nazwa obiektu geograficznego odnosi się do różnych lokalizacji obiektów geograficznych, które muszą być odpowiednio skorelowane z odpowiednimi fragmentami Biblii.

Wspomniane wyżej właściwości obiektów geograficznych mają niezmiernie istotny wpływ na koncepcję proponowanego systemu, który opiera się na współdziałaniu trzech baz danych: bazy referencyjnej, bazy obiektów geograficznych oraz bazy tematycznej. Element kluczowy systemu stanowi architektura bazy obiektów geograficznych, której koncepcję szczegółowo opisano w artykule.

Wzajemne powiązanie wyżej wymienionych baz danych, pozwala czytelnikowi Biblii na połączenie wybranego tekstu Biblii z odpowiednim obrazem przestrzeni geograficznej odnoszącym się do opisywanych wydarzeń. Dodatkowo czytelnik ma dostęp do innych geograficznych i historycznych informacji dotyczących obiektów geograficznych występujących w tekstach biblijnych.

Słowa kluczowe: geografia, historia biblijna, teledetekcja, historyczny GIS, czasoprzestrzenny