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THE POTENTIAL OF SOCIAL MEDIA AS AN ARCHIVAL AND SOURCE CENTER IN THE SEARCH AND IDENTIFICATION OF HISTORICAL INFORMATION

ABSTRACT:

To effectively search for and obtain quality historical information, the user has created a system of algorithms in the Internet environment for searching and identifying Internet sources of historical facts. We have presented the results of a research, which revealed the signs of bias based on the use of preconditions that affect the knowledge of the truth of the witness or the author of the source. In particular, the inconsistency of the blocks that indicate the verification of the meaning of logical expressions in the algorithm "Detection of signs of bias or distortion of facts" have been found. As a result of approbation of the systems of algorithms on an example of the found source the unreliable information has been revealed. It has been established that the information provided by the participant of the event contained negative words – markers that purposefully contribute to the formation of contempt, aggression and doubts about the military units of the state. Based on the developed system of algorithms for searching and identifying the Internet source, it is possible to significantly increase the amount of verified historical data on contemporary history by using the social environment of the Internet. In addition, based on the developed algorithms for searching and identifying the Internet source, it is possible to recognize information confrontations and information-psychological influences in the social environment of the Internet.

INTRODUCTION.

Consolidated information resources play an important scientific and educational role in the information space of Ukraine, given their ability to mobile and prompt information delivery to the user. The advantage of multimediality, accessibility to historical information on the Internet, in the electronic media makes them a valuable source of information, a significant information potential for the modern historian. In the context of information warfare, the Internet environment is one of the channels for spreading false

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information. Dissemination of unreliable information through websites, forums, blogs, social networks, electronic media influences the mass consciousness, the assessment of historical events by citizens, which destabilizes the situation in the society.

Under such conditions, the issue of relevant information retrieval of Internet sources and their identification following certain algorithm becomes relevant. This algorithm must take into account the variety of sources by typological and generic characteristics, by different time of creation and designated use.

Against the background of information confrontation, the issue of reliability, objectivity of the information disseminated on the Internet and, in particular, information on historical events, becomes relevant. Social and communication technologies simulating virtual reality create huge opportunities for information disclosure that is not based on the necessary factual and documentary evidence.

Analysis of literature data and problem statement. Given the rapid impact and accumulation of Internet sources, which provide new, unlimited opportunities for their use in various spheres of society, special attention should be paid to the methodology of search and classification of Internet sources. Therefore, the relevance of the topic is that the use of new information technologies in historical and source research allows us to select, search for the necessary information by types, nature of sources and forms of presentation of material in the up-to-date information space.

The issues of research of historically-targeted Internet sources are quite diverse, as they include all spheres of life of the society studied by Ukrainian scholars, such as Boriak H., Kashevarova N., [1], Kulikov V. [2], Papakin H. [3], Yurkova O. [4], Zhdanovych O. [5], et al [6 – 19]. Among the foreign segment that studies the peculiarities of searching for historical sources on the Internet we can mention the works of such scientists as Griffin Roger [20], Graham Suzanne [21], Hensen Steven [22], Robertson Stephen [23], et al [24–26].

The research objective is to determine the algorithm for searching and identifying an Internet source on a historical event for a modern historian and to classify the groups of Internet sources for processing the available historical information.

To achieve this objective it is necessary to perform the following tasks:

- check for the signs of bias or distortion of facts in the found Internet source;
- determine the classification belonging of the Internet source;
- find out the motivation for the emergence of the Internet source.



MATERIALS AND METHODS OF RESEARCH OF DEVELOPMENT OF ALGORITHMS FOR SEARCHING AND IDENTIFYING HISTORICAL INFORMATION.

The developed set of Internet sources for the study of historical processes makes it possible to create their classification made of six groups depending on their location and method of reproduction of Internet sources. The first group of Internet sources consists of archival, library and museum resources, which were digitized by institutions and presented in the form of web exhibitions, 3D tours. The second group includes websites of the leading Ukrainian scientific institutions. The third group of Internet sources, which are presented quite diversely on the Internet, forms a huge segment of social media. The fourth group of Internet sources includes reference web resources, web encyclopedias and web portals. The fifth group of sources consists of online versions of electronic media. The sixth group of Internet sources includes bibliographic and abstract databases [19]. Among the groups associated with the websites of the leading Ukrainian scientific institutions are the official website of the Institute of History of Ukraine of the National Academy of Sciences of Ukraine, which represents a wide range of issues of the Ukrainian history (<http://www.history.org.ua>), the website of the Institute of Archeology of the National Academy of Sciences of Ukraine, which covers the problems of ancient and medieval history and culture of Ukraine (<http://www.iananu.kiev.ua>).

The segment of social media includes historical Internet forums and blogs, as well as social networks (Facebook, Instagram, LinkedIn, Twitter). The online versions of electronic media include official television websites (television interviews, talk shows), as well as newspapers and magazines that have their representative bodies on the Internet and use video hosting "YouTube". Bibliographic and abstract databases include Academic Search Premier, Econlit, Index Copernicus, Journal Citation Reports®, Master FILE Premier, News paper Source, Scimago Journal & Country Rank (SJR), Scopus, Web of Science (WoS), Wilson Business Abstracts, Wilson Humanities Abstracts, Wilson Social Sciences Abstracts. From the above-mentioned general group of Internet sources, which contain historical information, we can distinguish Internet sources of scientific information by types - primary and secondary. Please note that Internet sources can be classified according to both primary and secondary information. Among them, we distinguish groups such as virtual communities and social networks; online versions of electronic media. For example, the primary sources of information on social networks include photos,

posts, memories of key events in Donbass, posted by direct participants, offering their views on the event from the inside. However, the source of information on social networks can be secondary, depending on the context of information, if the publication on social networks offers generalization, analysis, synthesis, interpretation or evaluation of information and data to the reader [11].

Much attention should be paid to the methods of searching for and selecting sources to establish their reliability and information value of the source. One of the main methods that a researcher should use in proving the authenticity, determining the probability of the source, its reliability, scientific significance – is source analysis, which highlights the analytical criticism [27]. First of all, it is determined whether the source found makes it possible to characterize the actual evidence of certain historical events or phenomena. Firstly, the authenticity of the source depends on many factors, including the chronological framework with the events described in it. In particular, the most authentic are considered the sources that collect information obtained from direct participants or witnesses of the events during the period of their implementation. Among the next stages of work with the found source – is the level of correspondence of the facts of the source to the specific events described in it, i.e. checking the reliability of the facts.

THE RESULTS OF THE RESEARCH ON THE DEVELOPMENT OF ALGORITHMS FOR SEARCHING AND IDENTIFYING HISTORICAL INFORMATION.

For an analytical criticism of the source found on social media, it is proposed to consider the following algorithm (Fig. 1). The algorithm of search and identification of the Internet source on a historical event is carried out repeatedly for various input parameters of the search. The formation of sets of parameters is a separate task, which is solved by the forms of ontology of the historical event. In Figure 1, we can see that the scheme of the algorithm is formed as follows: first of all, the researcher enters the parameters of historical information search and historical information is searched by the entered parameters. The next step is to find a set of possible sources, after which we enter a certain cycle of the algorithm – the process of identifying the technical identifier of the source, which appears to the researcher in the form of a URL. That is, when finding a link in a post on social networks or an article on the forum pages, the researcher finds in the overwhelming majority of cases not a full source, but only part of it.

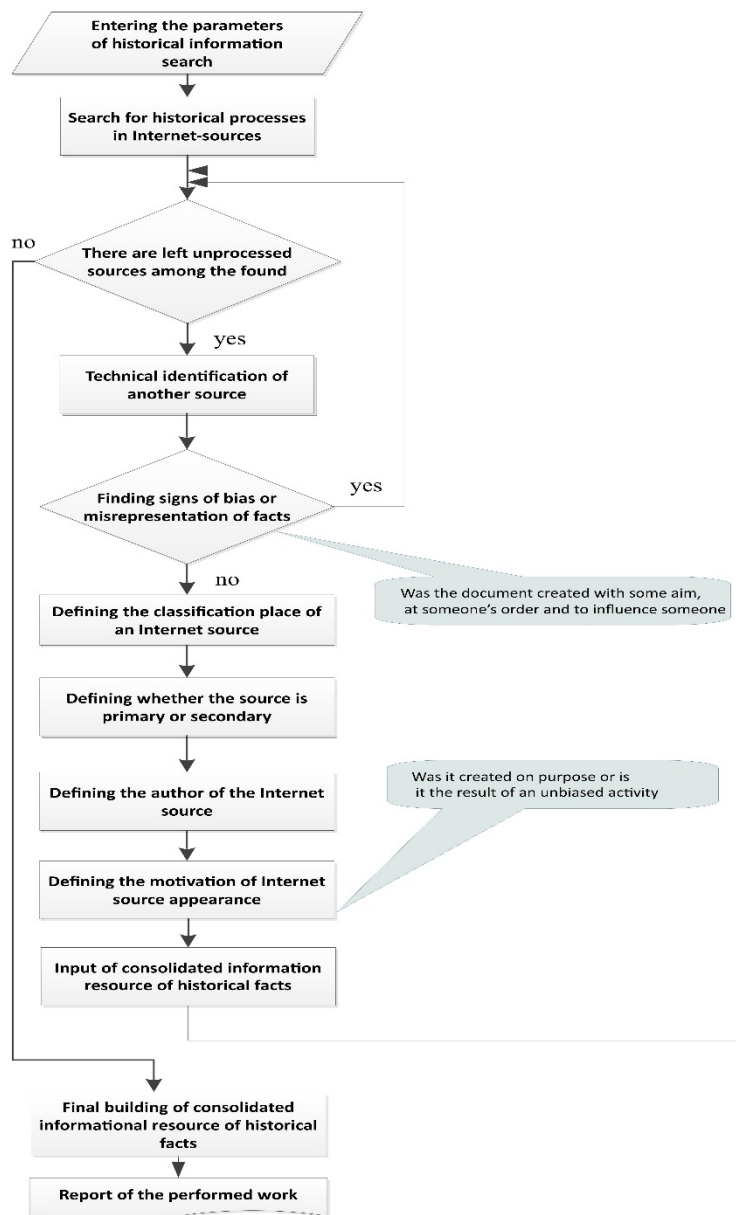


Fig. 1. Scheme of the algorithm for searching and identifying an Internet source on a historical event



In this case, the researcher has the task of finding a link to the author or the community where the information first appeared. The next step of the algorithm is to check for signs of bias or distortion of facts, if there is a certain distortion, it is necessary to repeat the previous step, i.e. to search for historical information on another resource. If the result is successful and there is no distortion of information, the following steps are performed according to the following algorithm:

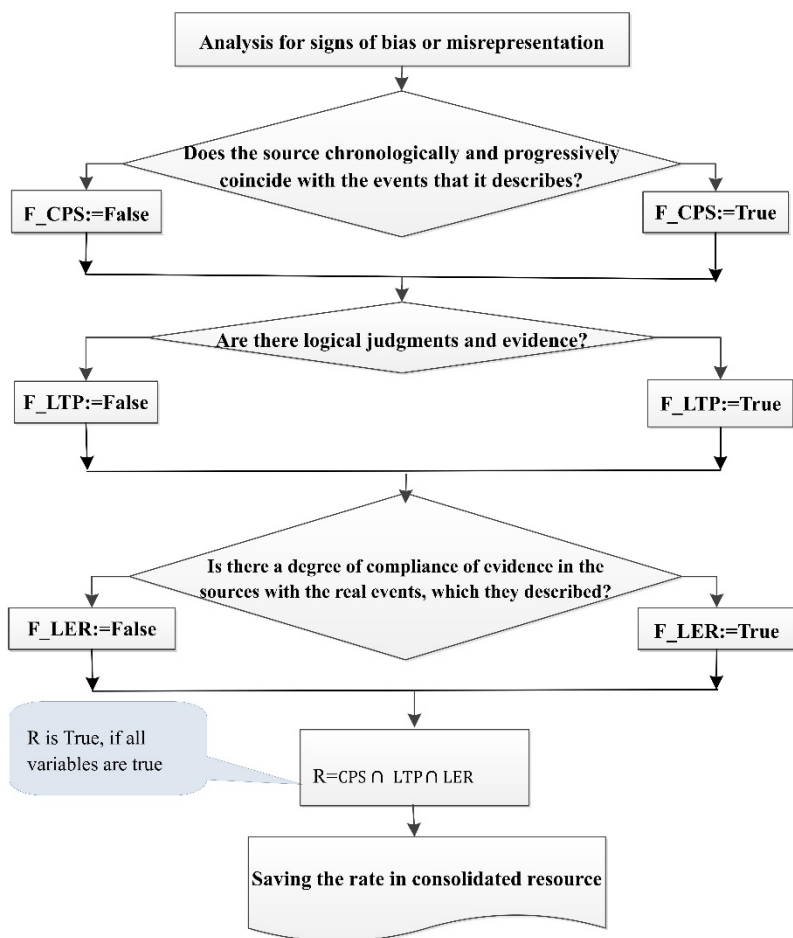
- determination of belonging to the group of the Internet source;
- establishing the primary or secondary nature and authorship of the Internet source;
- finding out the motivation for the emergence of the Internet source;
- formation of a consolidated information resource of historical facts.

If the information resource has already got a complete picture of this historical event, then we can complete the search according to the specified parameters and form the final consolidated information resource of historical facts, as well as draw up a report on the work. However, if the step of identifying the discrepancy of facts with other sources of the same issue and the criterion of completeness of the information resource are not satisfactory, it is necessary to return to the step of unprocessed sources from the set of the found ones [18]. In order to specify and better understand the basic algorithm, there is a need to detail the process, which will allow solving the problem as fully as possible.

Let us consider one of the most important stages in the process of searching for and identifying an Internet source on a historical event – specification of the process of the algorithm "Detection of signs of bias or distortion of facts" (Fig. 2). In order to obtain the result accurately later on, we attribute three signs, namely chronology, logic and compliance.

The process of analyzing the signs of bias and distortion of facts is presented in the form of three blocks, which indicate verification of the value of the logical expression of the condition. The first check is made whether the sign (S) of chronology and gradualness of the source (CGS) is fulfilled, then we assign it either False or True. The next block is to check the sign for the logic of judgment and proof (LGP) and check the sign for the degree of conformity of evidence (DCE). That is, the algorithm is composed of three consecutive blocks that are not nested in each other. Each block looks like an entry into branching, if no, then this change is assigned to False, if yes, the change is assigned to True, which converge and move on to the next such block. At the end, there is one operator in which the result (R) occurs, i.e. $R \in \text{True}$, if the signs are the elements of conjunction $\text{CGS} \cap \text{LGP} \cap \text{DCE}$.





**Fig. 2. Specification of the process of the algorithm
«Detection of signs of bias or distortion of facts»**

Quite often, it is difficult to distinguish biased or distorted information from the reliable one on social media, given the situation in the country being in the midst of the information war, one of the tools of which is the dissemination of false information [8, 9]. Distorted or inaccurate information can be found among photo documents created in software such as Photoshop, or in a false post using a real image, specially created videos, written or fabricated false news that are difficult to distinguish from the true ones.



Revealing the authenticity of photographic documents in the search for information on social networks by the historian-researcher. To identify the authenticity of the image in the study of a historical event on social networks, forums or communities, the verification of information is carried out according to certain rules. The fact is verified as follows: establishing the author or the original source of the image; cross-checking with other sources; paying attention to small details of the image, which are often the clues.

Confirmation of time parameters and approximate place where the photo was taken, as well as comparison of the image with what is specified in the post. A genuine image may be posted or presented in a false context. Image verification is also possible due to software services. *Google Search by Image*, *TinEye*, *Image Edited?*, *Yomapic* services are used to reverse search for images of their original source and locate published copies [28].

The problem of archiving sources on social media. Almost every modern historian has had to face a problem in the process of searching for the necessary information on the pages of social networks for an important post, to which he/she refers or studies in the research, but which was suddenly deleted by the owner. We can capture information using a screenshot or software services such as *Archive.is* - a tool that archives web pages. *Archive.is* will create it and provide you with a link where a copy is available. You can also find a recently deleted page using *Google Cache*. Archived versions of the pages can also be searched using the *Wayback Machine*. The tool will show on the calendar when archival copies were made from the specified resource [29].

The problem of authorship of the posted source has been around for quite a long time and, in fact, the connection between the author and the source is much more complicated. In the scientific work [30], the author developed a system of prerequisites for the knowledge of truth by a witness or an author of the source, which with some reservations can be taken into account in our time. Establishing the authorship of the source is an important link in the algorithm for searching and identifying the Internet source, through which we can trace the authenticity and motivation of the distributed source. Figure 3 presents an information scheme for the phased reflection of a historical event on social media and the prerequisites for the verification of historical information by the historian-researcher: 1 – Immediacy of perception of the fact; 2 – The degree of participation in the implementation of the fact; 3 – Interest in the facts (theoretical or practical); 4 – The place of the witness in relation to the fact; 5 – Completeness of the feelings experienced by the witness from the perception of the fact; 6 – Attentiveness of the witness, his/her self-control; 7 – The level



of education and the availability of technical preparation for the perception of the fact; 8 – Time of witnessing the fact; 9 – The mood of the witness at the time he/she mentions the fact; 10 – Does the witness remember the experience quite accurately; 11 – Does he/she understand what he/she knows and what he/she does not know, what he/she remembered and what he/she did not remember; 12 – Does the witness want to tell the truth; 13 – Does the witness strive for cognitive or selfish goals when telling about the experienced fact.

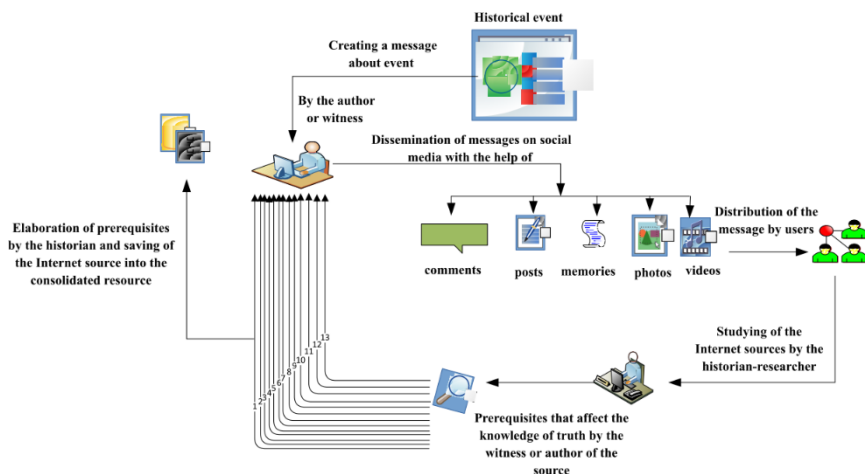


Fig. 3. Information scheme of dissemination of a historical event on social media and prerequisites for verification of the historical event by a historian-researcher

DISCUSSION OF RESEARCH RESULTS.

Let us consider the process of the algorithm and specifying the processes of this algorithm in the search for the location of a historical event in the village of Novotroitske, Donetsk region, located in the JFO area (Joint Forces Operation). As a result of the algorithm, a large number of Internet sources related to military events (actions) near the village of Novotroitske were obtained. Let us analyze in the algorithm the decision-making block "detection of signs of bias or distortion of facts" in comparison with other Internet sources found on the example of TSN TV websites (<http://tsn.ua/ukrayina/viyskovipoblizu-novotroyickogo-zaynyali-panivnu-visotu-565657.html>), x-true.info websites (<http://x-true.info/30676-svodki-ot-opolcheniya-novorossii-5->

yanvary-2016.html), NEWS-MAIL.BY (<http://news-mail.by/2016/01-/04/novosti-novorossii-04-01-2016/>).

In the article entitled "Summaries of the militia of Novorossiia of January 5, 2016" found on the x-true.info website in the section of the material "04.01.16. Review of the situation from the war correspondent Mikhail Afanasyev", we can find an excerpt of the review, which mentions the capture of the strategic height by the Ukraine's Armed Forces near the village of Novotroitske. Below is the text in the original language (Fig. 4.).

Поскольку причины для таких «обстрелов» начисто отсутствуют, в пресс-центре штаба АТО пришлось сочинять байки о том, что «бандиты, получая соответствующие приказы от своих кураторов из Москвы, ежедневно ведут по позициям украинских сил огонь, целью которого являются попытки спровоцировать подразделения сил АТО на открытие огня в ответ и заставить украинских защитников также нарушить предварительные договоренности о мирном урегулировании конфликта». При этом украинские солдаты, как утверждают их пиарщики, мужественно не поддаются на провокации – настолько не поддаются, что телеканал ТСН снял репортаж о том, как ВСУ заняли стратегическую высоту у поселка Новотроицкий. Как именно они смогли ее занять, одновременно соблюдая перемирие, не уточняется.

Fig. 4. Excerpt from the review, which mentions the capture of the strategic height by the Ukraine's Armed Forces near the village of Novotroitske on the website x-true.info

The capture of the strategic height is also mentioned in the blog NEWS-MAIL.BY in the article "Novorossiia News Today 04.01.2016 Map, summary #DPR #Donetsk #Novorossiia #Ukraine". However, the website page was deleted during the study. However, the archived page of the website can be viewed using the above-mentioned tool Wayback Machine to download a copy of the site page. Below is the text in the original language (Fig.5.).

**04.01.16. 18:00 Вблизи Новотроицкого украинские
неонацисты заняли стратегическую высоту**

Теперь они могут следить за перемещениями ополченцев.
Бойцам ДНР теперь в случае начала наступления будет тяжело
отбивать атаку оккупантов. Репортаж с оккупированной
украинцами высоты от украинских СМИ.

Fig.5. Excerpt from the review in the blog NEWS-MAIL.BY, which mentions the capture of the strategic height by the Ukraine's Armed Forces near the village of Novotroitske

When we analyze the excerpt of the text, we can observe an aggressive informational impact on the reader using negative words-markers that reinforce the emotional assessment of events that would correspond to the negative part of the pro-Russian mass consciousness such as neo-Nazis, Bandera followers, fascists, nationalists, ultra nationalists, junta. Thus, it can be argued about purposeful verbal aggression, the impact on the minds of citizens who have limited access to complete information about events.

In a report filmed by TSN journalists, which was later referenced by other media, the military shared information that they had reached the strategic height near the village of Novotroitske, after which the separatists had to observe a peace and quiet order.

We process information about the positions near the village of Novotroitske from the media archive of the 112 Ukraine TV channel from Vladyslav Selezniiov, the speaker of the General Staff of the Armed Forces of Ukraine (the website's archive page can be viewed via Wayback Machine), and on the social video hosting platform YouTube <https://www.youtube.com/watch?v=2i9RmZZBjcM> (Fig. 6.) at 2.40 min. of the video it is quoted: "Again, referring to the Minsk agreements, I can assure you that the Ukraine's Armed Forces do not violate the red line separating the Armed Forces of Ukraine and the gang formations of self-proclaimed "LPR" and "DPR".



Fig. 6. Video segment of the Vladyslav Selezniiov's interview, the Speaker of the General Staff of the Armed Forces of Ukraine about the positions near the village of Novotroitske on the social platform of video hosting YouTube



The dominant height in question is the height that used to be under our control before that and, in accordance with the Minsk agreements, is Ukrainian land, Ukrainian territory under the control of the ATO forces. As a result of measures related to the rotation of troops and ATO forces, this height was transferred from the area of responsibility of one of the brigades to the area of responsibility of the other brigade. As before, this territory, this height is under our control. There is no progress on the part of the Ukrainian AF. Moreover, it is not difficult to check because we have a clear interaction with the representatives of the OSCE monitoring mission and they constantly monitor the situation, including in the territories under the control of the Ukrainian AF. Thus, we have access to all areas along the demarcation of the parties, so the fact that this dominant height near the village of Novotroitske was controlled by the Ukraine's Armed Forces can also be confirmed by representatives of the monitoring mission", V. Selezniiov said.

This topic of the event was also spread by the users of social networks such as Facebook, Twitter microblogging network.

CONCLUSIONS.

The Internet sources of researches of historical processes have been considered, the classification by the groups of the Internet sources has been created based on the analysis. It has been established that the studied source belongs to the third and fifth groups of classification of belonging of the found Internet source. This classification allows the historian to distinguish information, structure and obtain the necessary data from Internet sources. Given that the country has been in the midst of the information war for the past 7 years, the possibility of spreading false information on the Internet is one of the tools for spreading false information through websites, forums, blogs, social networks, electronic media that affect consciousness, judgment of citizens and destabilize situation in the society. However, it should be noted that the social environment of the Internet is a valuable source of information through which you can increase the amount of historical data on contemporary history. Accordingly, special algorithms for searching and identifying the Internet source have been developed for that purpose. The historical event in the village of Novotroitske, Donetsk region has been analyzed with the help of the proposed algorithm for searching and identifying the Internet source and the signs of bias and distortion of facts according to the last two blocks have been established. Inaccurate information has also been found using negative marker words. It has been determined that the submission of information by



the participant of the event is aimed at the formation of contempt, aggression and doubts about the military units of the state. As a consequence, the information is historically unreliable.

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