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Analysis of Circulation of Information in Local Surveying Documentation Centre**

1. Introduction

Local (district) documentation surveying centre, plays an essential role in supervising and controlling quality of surveying works. This fact is especially important for those works, which must be submitted to the centre, before they are performed by surveyor. Quality of surveying works is strongly connected with the style of functioning of surveying centre itself, and especially tied with so called "circulation of information in surveying documentation centre". This term will be later called shorter "circulation of information" or even "circulation". Circulation is especially visible in local (district) documentation centre. In turn, the manner of circulation in local surveying centre is of great importance not only for professional surveyors, performing works under the inspection of centre, but also for clients, for authorities and for courts running land register. One should remark, that especially important is time of duration of centre activities. Unfortunately, there is no possibility to determine even approximate time of duration of following processes made in centre. It causes, that one can not determine time of performing some of surveying or legal works. As an good example may serve here subdivision process. In this case, surveyor usually being not able to determine time of inspection of surveying file and its accepting to store (by means of a special seal and signature of a chief of centre) will not give a date of delivering this file to client or authorities for making suitable decision of real estate subdivision. The second important problem is establishing rules of performing and preparing documentation of surveying works. In spite of existing legal [7, 10, 11] and technical [2–5] regulations, applied in centres, rules differ significantly. In this paper an analysis of the first aspect of circulation of information in local surveying centre has been made.

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It is connected with the time of performing following processes in the centre. There has also been made an analysis of quantity of works and time of their performing, taking into account time of activities of centre. The basis of analyses is selected local surveying documentation centre, located in Małopolska region.

2. Legal and Technical Regulations of Circulation of Information in Local Surveying Documentation Centre

The main regulations dealing with circulation of information are:

- *Surveying and Mapping Law – Act from 1989* [11],
- *Ordinance of Minister of Infrastructure from 2004 – in case of amount of payments for surveying activities and furnishing information and also for making copies and extracts from surveying file* [6],
- *Ordinance of Minister of Regional Development and Buildings Structure from 2001 – in Case of Submitting Surveying Works, Recording Systems and Keeping Backups Saving Databases and also General Conditions of Contracts of Rendering these Bases* [7],
- *Ordinance of Minister of Regional Development and Buildings Structure from 2001 – in case of cadastre* [8],
- *Ordinance of Minister of Home Office and Administration from 1999 – in case of determination of kinds of documents being country surveying store data, ways of their collecting and excluding documents from store and rendering data store accessible* [9],
- *Ordinance of Minister of Home Office and Administration from 1999 – in case of technical standards concerning geodesy, cartography, surveying, mapping and country land information system* [10].

The main regulations dealing with circulation of information are:

- *Technical regulation O-1: General rules of performing surveying works* [2],
- *Technical regulation O-3: Rules of completing of surveying documentation* [3],
- *Technical regulation O-4: Rules of managing surveying documentation centres* [4].
- *Technical regulation G-4: Detailed and height surveys* [5].

3. Description of Analysed Examples

Analysed examples concern one of local surveying documentation centre, located in Małopolska region. Functioning of the centre is made mainly by computer technologies. Surveying works are submitted to the centre both in traditional way, by means of suitable form of submitting shown in ordinance [7] and also through electronic way.

Professional surveyor can use here Internet service, where after logging one can have possibility to submit surveying work to the centre. Besides one can, for example, find demanded real estate, take some data accessible in centre store and look over map containing drawn points of control.

One should also mention that some documents are accessible only in the centre without any possibility to render them accessible via electronic way. They are:

- copies of base map (both copies and original drawings),
- copies of cadastral map and copies of cadastral registers of existing cadastre and of former, Austrian cadastre,
- surveying files stored in archive of centre.

Computer system applied in the centre, registers dates and times:

- of submitting of surveying work,
- of reaction of centre as a result of submitting work,
- of delivering surveying file for inspection,
- of inspection of surveying file,
- of accepting of surveying file by affixing it of special stamp and signature.

4. Analysis of Circulation of Information in Local Surveying Documentation Centre

There are three aspects of circulation of information being analysed in the paper. They are mentioned below:

- time of duration the following activities of the center;
- time of duration activities of surveyor, performing following works;
- structure of works, submitted to documentation centre.

4.1. Analysis of Time of Duration the Following Activities of the Centre

At the beginning, one should remark, that a special assumption has been assumed here. It depends on that data, being the subject of analyses, coming from the centre, are reliable and true. It is especially essential assumption, because putting into a system assisting the centre, unreliable and untrue data, is relatively easy.

Confirming of Submitting Surveying Work

Confirming of submitting surveying work and qualifying it to specified group of works, together with registering it by number in a special book (register of surveying works), should be done, according to [7], at once but not later than next day after submitting.

Reaction of the centre, in turn should last not longer than 10 days. It depends on that centre gives to surveyor suitable data needed for work and general tips how to perform this work. Unfortunately, analysed examples do not contain time of submitting work. They only contain time of responding of centre, being reaction of centre for submitting.

In analysed example, time of responding of surveying documentation centre, being reaction of centre for submitting surveying work, is shown on figure 1.

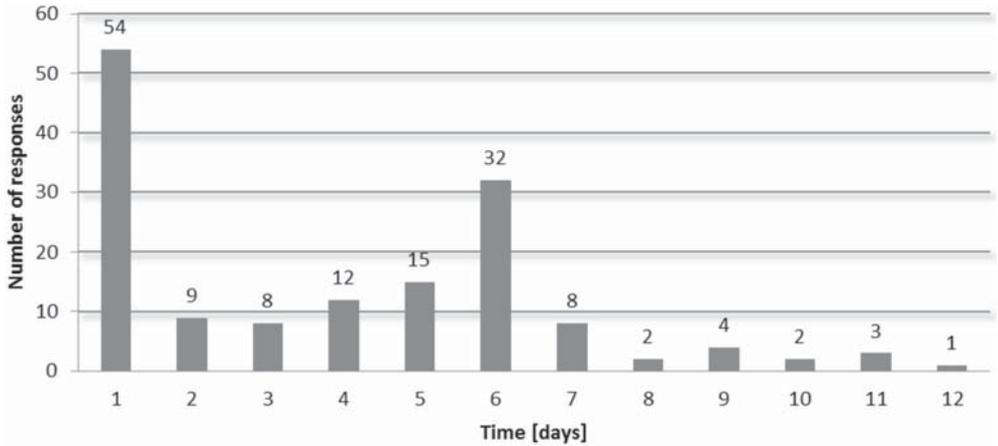


Fig. 1. Time of reaction of surveying documentation centre for submitted works

Activities connected with reaction of the centre for submitting works, do not exceed (excluding individual cases) time admissible by regulations [7].

Inspection of Surveying File

After delivering by centre, suitable data to surveyor, necessary to perform work, the following activity made by centre is inspection of surveying file, prepared by surveyor, being the final result of surveying work. Inspection of surveying file should last, according to [7] not longer than 6 days. Figure 2 shows the time of inspection of surveying file in analysed centre.

It is visible in this case significant delay in duration of inspection time of surveying file. Majority of inspections, that is 65%, is being done after the date described in mentioned regulations (6 days). Medium time of inspection reaches as many as 10 days.

Analysing this case more detailly one can see, that delay concerns mostly rather complicated works of surveying-legal kinds. Figure 3 shows graph of distribution of inspection time of surveying files connected with updating of base map.

Figure 4 shows in turn graph of distribution of inspection time of surveying files connected with as-built surveys, and figure 5 shows graph of distribution of inspection time of surveying files connected with real estate subdivisions.

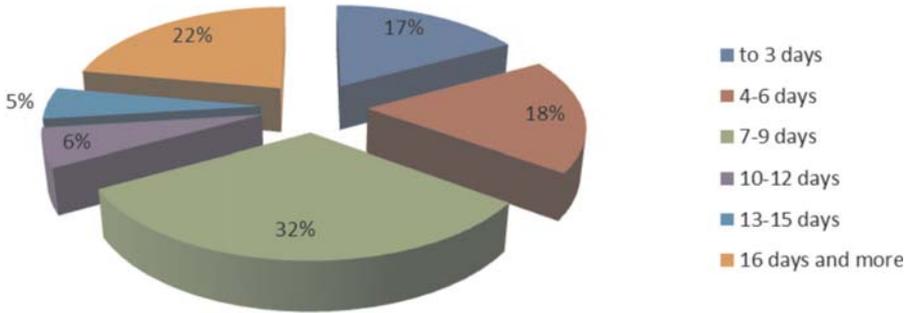


Fig. 2. Graph of combination of inspection time of surveying file, delivered to surveying documentation centre

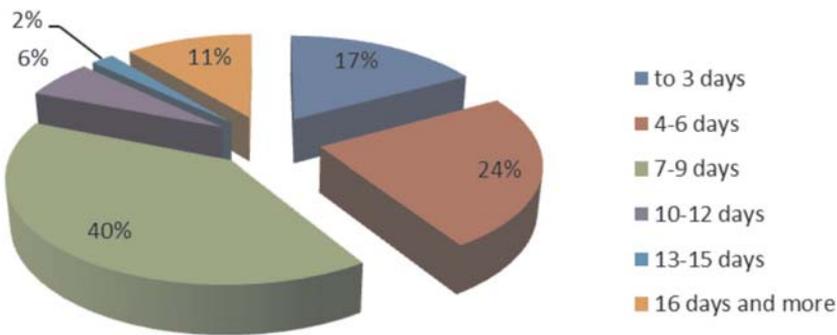


Fig. 3. Graph of distribution of inspection time of surveying files connected with updating of base map

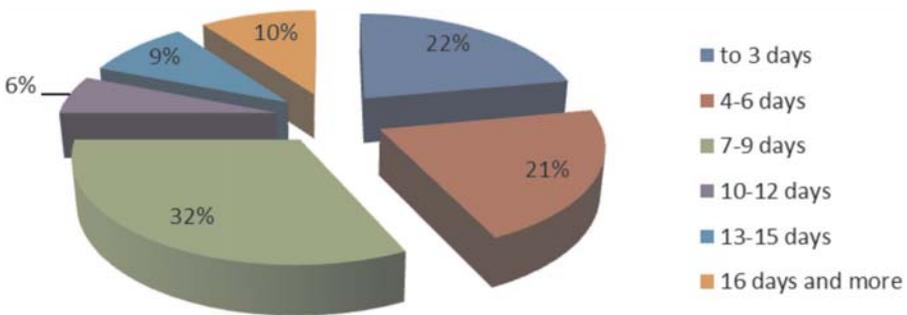


Fig. 4. Graph of distribution of inspection time of surveying files connected with as-built surveys

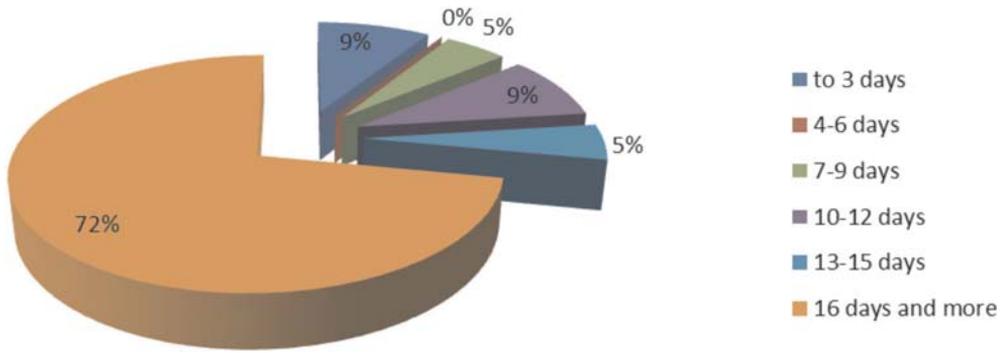


Fig. 5. Graph of distribution of inspection time of surveying files connected with real estate subdivisions

Presented above graphs do not give any doubt that surveying files of legal kind need much more time for inspection. One should mention here, that in analysed centre there is not any specification of inspections between staff, depending on type of work. It does exist dependently on location of performed work. It means, that member of centre staff, inspects all kinds of surveying files. One should also mention, that given times include also all corrections of surveying files. Unfortunately, analysed centre did not register if surveying file was taken back to surveyor when errors were found. Such circumstance surely would increase time of inspection.

The last analysis includes time of accepting of surveying files, which successfully passed out a process of inspection. Figure 6 shows results of this analysis.

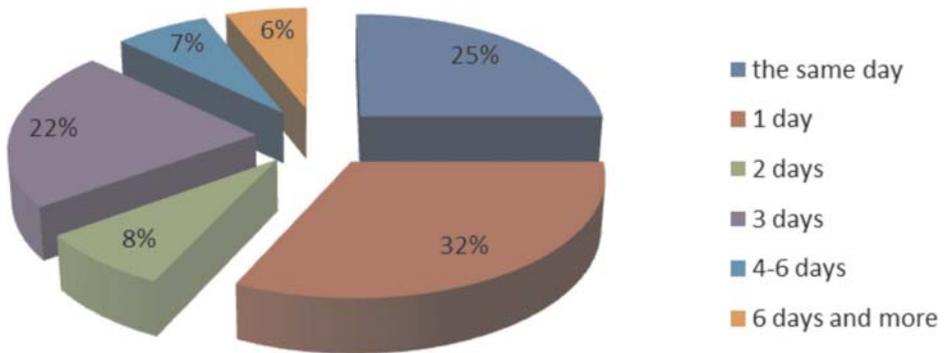


Fig. 6. Duration of accepting of inspected surveying file by affixing it of special stamp and signature

Majority of surveying files, that is as much as 87%, are accepted before expiration of 3 days, that is before the date determined in regulation [7]. This is surely good result.

4.2. Analysis of Time of Performing Work by Surveyor

Time of performing by surveyor the following parts of work, has been computed as difference between the date of submitting work and the date of delivering ready surveying file to inspection to the centre. One should mention here that the date of reaction of the centre for submitting work has not been accepted because of practice reasons. It comes from the fact, that surveyor, despite the lack of response for submitting work, makes some preparatory activities connected with this work, as for example field reconnaissance. Times of performing work have been computed as medium values together with giving standard deviations, depending on kind of work. Results are shown on figure 7.

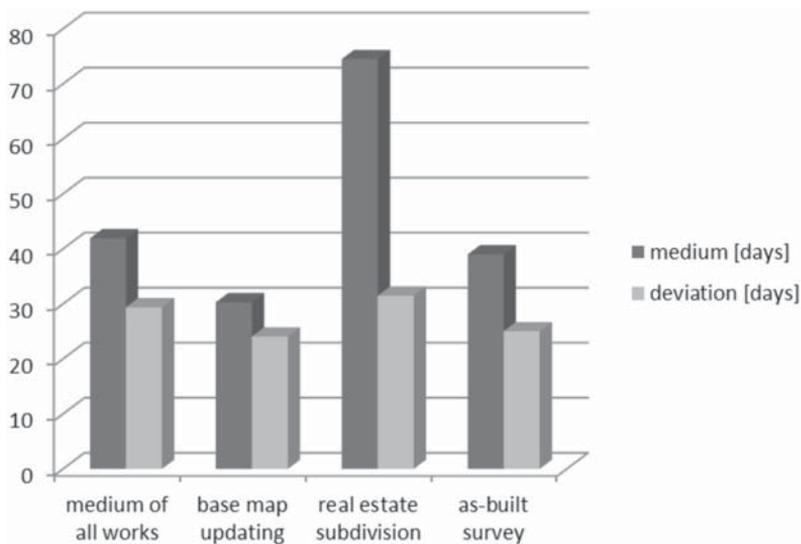


Fig. 7. Time of performing selected works by surveyor

Works of surveying-legal kind are performed in the longest time. On the contrary, typical surveying works as for example updating of base map, are performed in shorter period of time. Nevertheless, the time of their performing is relatively long. It is worth mentioning big dispersion of time of performing works (big values of standard deviations). It is the smallest, in the relation to medium time of performing works of legal kinds.

4.3. Analysis of Structure of Surveying Works Submitted to Documentation Centre

The last analysis concerns kinds of submitted surveying works. Distribution of submitted works, according to their sorts, shows figure 8.

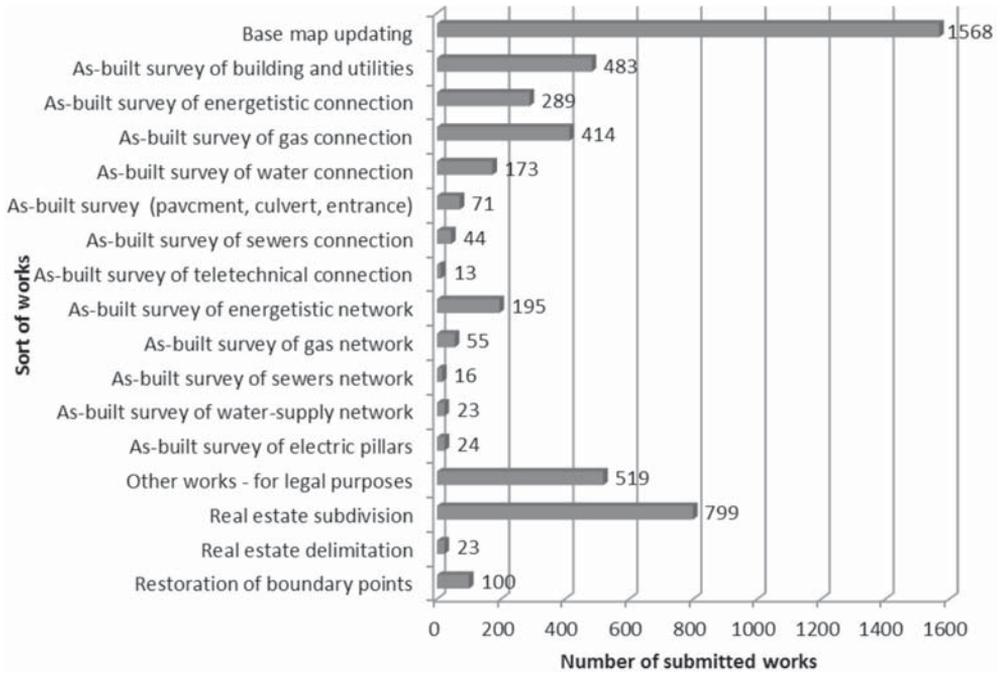


Fig. 8. Quantity of works submitted to surveying centre in 2009 in dependency on their sort

As it has been expected, works submitted to local surveying centre are mainly: updating of base map, as-built survey of utilities connections and buildings and real estate subdivisions. This kind of works are as much as 79% from 4809 submitted works. One should mention that there were submitted only 23 delimitations and only 100 restorations of boundary points. Big quantity other works, applied for legal purposes, for example: regulation of legal status of real estate including synchronized list, confirms big demand for such works. It also confirms big quantity real estate of not regulated legal status.

5. Conclusions

A typical circulation of information between surveyor and documentation centre and also in the centre itself, shows figure 9.

Circulation of information in analysed centre has been related to typical circulation determined suitable regulations. Exceeding accessible dates, concerns mainly period of time of inspection of surveying file delivered by surveyor after finishing work.

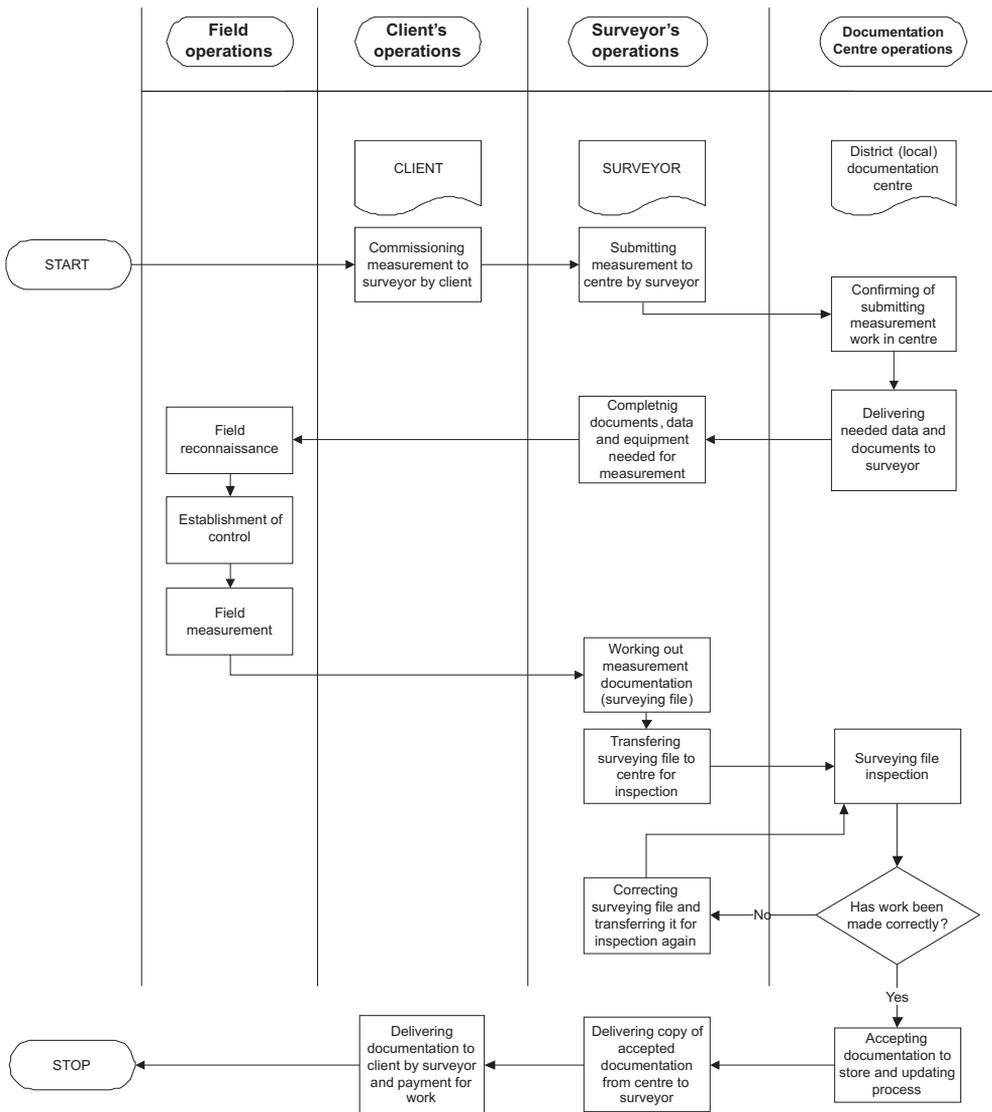


Fig. 9. Circulation of information between local documentation centre and surveyor
 Source: according to [1], slightly modified

The more complex work and file the longer is the period of time of file inspection. Surveying-legal files, for example real estate subdivision, are inspected even a few times longer than 6 days, a period time fixed by regulation [7]. From the other hand, so long time of inspection can be connected with necessity of correction of file made by surveyor. This fact might have not been registered in computer system of centre.

Works of mainly surveying kinds were inspected significant shorter. It is worth remarking that time of performing work – from the moment of its submitting to the centre to the moment of its end, expressed by affixing surveying file by stamp and signature and giving it out to client, according to deal – reaches almost 79 days. It is average value. Adding to this time activities of commune authorities, being necessary within subdivision process (opinion of subdivision possibility, decision of subdivision itself) the whole time of performing this work will be included between 4 and 5 months. Analysis of structure of performed works proves temporary trends on real estate market. Big quantity of investments as one can observe within last years transmits on big quantity of surveying works made for projects, subdivisions and as-built surveys. In turn, little quantity of delimitations and restoration of boundary points may cause some reflections. It proves common opinion that surveyors do not like these works and few of them perform these kinds of surveying works.

References

- [1] Hanus P., Hycner R.: *Surveying aspect of registration of land information in Poland*. Geomatics and Environmental Engineering, vol. 5, no. 1, 2011, pp. 51–62.
- [2] *Instrukcja techniczna O-1: Ogólne zasady wykonywania prac geodezyjnych – wydanie 4* (Technical Regulation O-1: General Rules of Performing Surveying Works – 4th Edition). GUGiK (General Office of Geodesy and Cartography), Warszawa 1988.
- [3] *Instrukcja techniczna O-3: Zasady kompletowania dokumentacji geodezyjnej i kartograficznej – wydanie 2* (Technical Regulation O-3. Rules of Completing Surveying Documentation – 2nd Edition). GUGiK (General Office of Geodesy and Cartography) Warszawa 1987.
- [4] *Instrukcja techniczna O-4: Zasady prowadzenia Państwowego Zasobu Geodezyjnego i Kartograficznego* (Technical Regulation O-4: Rules of Managing State Surveying Store). GUGiK (General Office of Geodesy and Cartography), Warszawa 1987.
- [5] *Instrukcja techniczna G-4: Pomiary sytuacyjne i wysokościowe* (Technical Regulation G-4: Detailed and height surveys). GUGiK (General Office of Geodesy and Cartography) Warszawa 1983.
- [6] *Rozporządzenie Ministra Infrastruktury z dnia 19 lutego 2004 r. w sprawie wysokości opłat za czynności geodezyjne i kartograficzne oraz udzielanie informacji, a także za wykonywanie wyrysów i wypisów z operatu ewidencyjnego* (Ordinance of Minister of Infrastructure from 2004 – in case of amount of payments for surveying activities and furnishing information and also for making copies and extracts from surveying file). Dz. U. z 2004 r. Nr 37, poz. 333).

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- [7] *Rozporządzenie Ministra Rozwoju Regionalnego i Budownictwa z dnia 16 lipca 2001 r. w sprawie zgłaszania prac geodezyjnych i kartograficznych, ewidencjonowania systemów i przechowywania kopii zabezpieczających bazy danych, a także ogólnych warunków umów o udostępnianie tych baz* (Ordinance of Minister of Regional Development and Buildings Structure from 2001 – in Case of Submitting Surveying Works, Recording Systems and Keeping Backups Saving Databases and also General Conditions of Contracts of Rendering these Bases Accessible). Dz. U. z 2001 r. Nr 78, poz. 837.
- [8] *Rozporządzenie Ministra Rozwoju Regionalnego i Budownictwa z dnia 29 marca 2001 r. w sprawie ewidencji gruntów i budynków* (Ordinance of Minister of Regional Development and Buildings Structure from 2001 – in case of cadastre). Dz. U. 2001 r. Nr 38, poz. 454.
- [9] *Rozporządzenie Ministra Rozwoju Regionalnego i Budownictwa z dnia 15 lipca 2001 r. w sprawie określenia rodzajów map, materiałów fotogrametrycznych i teledetekcyjnych, stanowiących państwowy zasób geodezyjny i kartograficzny, których rozpowszechnianie, rozprowadzanie oraz reprodukowanie w celu rozpowszechniania i rozprowadzania wymaga zezwolenia, oraz trybu udzielania tych zezwoleń* (Ordinance of Minister of Regional Development and Buildings Structure from 2001 – in Case of Definition of Kinds of Maps, Photogrammetric and Remote Sensing Documents, Being State Surveying Store which Dissemination and Reproducing Needs Permission and Mode of Giving these Permissions). Dz. U. z 2001 r. Nr 56, poz. 588.
- [10] *Rozporządzenie Ministra Spraw Wewnętrznych i Administracji z dnia 24 marca 1999 r. w sprawie standardów technicznych dotyczących geodezji, kartografii oraz krajowego systemu informacji o terenie* (Ordinance of Minister of Home Office and Administration from 1999 – in case of technical standards concerning geodesy, cartography, surveying, mapping and country land information system). Dz. U. z 1999 r. Nr 30, poz. 297.
- [11] *Ustawa z dnia 17 maja 1989 r. – Prawo geodezyjne i kartograficzne* (Surveying and Mapping Law – Act from 1989). Dz. U. z 1989 r. Nr 30, poz. 163.