PREPARATION OF A DOCUMENTATION FOR THE FIRST REGISTRATION OF A BUILDIN LOCATED IN UAT OBÂRȘIA-COLOȘANI, MEHEDINȚI COUNTY

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Abstract: *Obârşia-Coloşani commune is located in the northern part of Mehedinti county, with an area of 7,846 ha and is bordered: to the north with Padeş Gorj commune, to the south with Isverna and Ponoarele communes, to the west with Isverna village, and to the east with Baia de Aramă town. Compared to the municipality of Drobeta Turnu Severin is located at a distance of 80 km, and from the town of Baile Herculane at about. 50 km. The Mehedinti Plateau, although it is a geographical unit with heights characteristic of the hilly regions, has a petrographic composition and a geological structure specific to the mountains (it belongs from a geo-structural point of view to the Southern Carpathians, meeting here almost all their structural units: the Getic canvas, the Danubian native and the Severin cloth); 50 to 55%. The objective of the work is to draw up a documentation for the first registration of the building located in OBARŞIA-CLOŞANI Commune, extravilan, Mehedinnti County. The topo-cadastral operations existing in the area are the following: geodetic works, photogrammetric and cartographic topo, topographical plans at 1:25000 scale in STEREOGRAFIC system 1970, Black Sea reference level. In order to execute the work, it was necessary to raise the topographical site at the scale of 1:5000. For the radiated points were calculated the rectangular coordinates in the stereographic system, which used the analytical calculation of the surface to be drawn up in the plane. In order to determine the coordinates of the station points, azimuth and zenith observations were executed by the horizon tour method, and the radiated points were determined by the radiation method. For the calculation of rectangular coordinates and the analytical calculation of surfaces, specialized programs were used. The data was uploaded, then processed into the AutoCAD system, which is a CAD system, used in the design of two-dimensional (2D) design plans, less in 3 dimensions (3D), invented and marketed by the American company Autodesk. System-specific ("native") files are dwg files, as well as dxf (Drawing eXchange Format) files, which are extremely widespread. For measuring angles and distances, the total station LEICA TS 02 was used.*

Keywords: *AutoCAD, Autodesk, dwg, dwf, Leica TS 02*

INTRODUCTION

In the last years ACREA (Agency of Cadastre and Real Estate Advertising) has realized and included a modernization project specific to the national geodesic network, where it managed to install several equipments, which are constituted in a geodesic network of permanent stations that can be also found under the name of permanent GNSS stations (MIȚA ET ALL, 2020). Once the process of placing this permanent station in another country is completed, there appeared the problem of uniformization specific to the uniformization mode, which is specific to the embodiment, the GNSS measurement files and all other documentation using these methods (ȘMULEAC ET ALL, 2012, 2017).

According to the decision number 1 of 2009 regarding GNSS measurements, in September the ROMPOS (Romanian Position Determination System) system was developed and launched, system which includes real-time positioning services and the promotion of the realization

of coordinated determinations conducted by GNSS measurements. ROMPOS is a Romanian positioning system that provides precise positioning in the European reference and coordinate system ETRS89. ROMPOS is based on Global Navigation Satellite Systems including GPS, Glonass and Galileo and based on the national network of GNSS permanent stations. ROMPOS system is a project of the National Agency for Cadastre and Real Estate Advertising (ANPCI) and was launched in Romania in September 2008 (POPESCU ET ALL, 2016).

The present work aims to draw up a documentation for the first registration of a building located in Obârșia-Coloșani commune, Mehedinti County. High-tech measuring instruments (ȘMULEAC ET ALL, 2013, 2014, 2015) will be presented, which are described, along with the processes that represent them, each in different chapters. Using high-tech measuring instruments, each apparatus is accompanied by several steps specific to their use.

For this work we have chosen a structure consisting of chapters that include the entire process of drawing up this documentation from Obârșia-Coloșani.

In the chapter "Materials and methods" was presented in detail the total station Leica TS 02, as working material, as one of the basic apparatus of measurement. The office work was carried out with the help of the AutoCad Civil 2013 and TopoLT programs (POPESCU ET ALL, 2016).

In the next chapter, being the final chapter of the paper, entitled "Results and discussions", we have presented in detail the steps taken to carry out the road lifting work. The first stage refers to the purpose of the work, in which we also made a brief history of the locality where the measure took place.

The secondary stage is the field operation, which is the main factor of the chapter. The office operation as a stage of this chapter concerns the processing of data and its processing, which lead to completion. At the end of the work we have attached various photos that represent the measurements made and last but not least, we will present some conclusions and bibliographies (Șmuleac et all, 2019).

MATERIAL AND METHODS

The statement "easy to use" seems to be everywhere. Whether this promise can be kept becomes clear only in practice. Because professional experts in measurement, Total Station, were involved in their development

Leica FlexLine TS06 (ȘMULEAC ET ALL, 2019; MIȚĂ ET ALL, 2020) plus allows you to work quickly and efficiently.

In the current context of measurements with standard measurement technology, the Leica Flexline TS02 is one of the ideal instruments, designed for applications with low average accuracy. Using state-of-the-art, wireless, Bluetooth technology to connect to any type of data collector, using Leica SmartWorx Viva processing software (ȘMULEAC ET ALL, 2020), software that matches the required tasks.

The Leica FlexLine TS02 total station offers the possibility to select from or series of EDM options, having the ability to measure both in terms of prism and direct object, without the need for a reflector. In the basic package, it comes with USB plug and play functionality thus allowing very fast data transfer such as GSI, ASCII, CSV and many more. With an alpha numeric keypad with numbers, letters and special characters, Leica FlexLine TS02, allows much easier data entry, minimizing errors, thus increasing productivity.

Leica Flexline TS02, for a longer life, uses Lithium-Ion batteries that provide a fast charge with up to 20 hours of operation. Flexline has dust and water protection according to IP55 specifications. Using the laser beam as a guidance process and a start-up sequence, the Leica Flexline TS02 is easy to set up. Error-free data entry to simplify operation is provided by the ergonomic keys and large display.

Electronic Distance Measurement:

Whenever the accuracy of measuring long distances is required, you may be faced with a challenge of this demanding task with TS06plus. It offers Electronic Distance Measurement.

Prism module

„Accuracy + (1.5 mm + 2 ppm),, Speed (1 second)

Prism-Free Module

„Accuracy (2 mm + 2 ppm)

„PinPoint EDM with small coaxial laser pointer and measuring radius for precision indication and measurement.

By using the measurement without a reflector up to 1,000, fewer settings are required, as targets for which it is not possible to set a reflector can be measured.

Leica FlexLine TS06plus Communication Side Cover allows wireless connection to any data collector via Bluetooth, for example Leica field controllers

Viva CS10 or Leica Viva CS15 with SmartWorks Viva software The USB memory stick allows the flexible transfer of such information as GSI, DXF, ASCII, LandXML and CSV (Șmuleac et all, 2017, 2019).

If you want to measure a plot of land or objects on a construction site, determine the measured points on facades or rooms, or collect the coordinates of a bridge or a tunnel - Leica TS06plus total stations can offer the right solution for each application.

The technology combines the results on which easy-to-use operational applications are based. The total stations are designed to meet the specific requirements of modern technologies that allow work quickly and productively.

Fig. 1 Leica TS02

In the general sense of the notion, **AutoCAD** (Computer-Aided Design) is a system used in the design of all construction plans in two (2D) or three dimensions (3D), with a software component, a software package, also developed by the company Autodesk. The equipment on which these programs work is not a component of the CAD system itself. However, from the point of view of the working relationship, in which the hardware components are also highlighted, it can be accepted as a general scheme of a CAD system.

Based on the literature, computer aided design systems are intended for the interactive creation of models of real technical objects, the analysis of these models, the generation of documentation for their manufacture and the production of graphic and non-graphic data derived from the model.

To define this concept with a fairly wide applicability for, it is relatively difficult because it includes as many of the fields in which these systems are used: mechanics, electronics, electrical engineering, construction, architecture, urban systematization or cartography, multimedia, etc ..

System-specific ("native") files are extremely widespread and are dwg, as well as dxf (Drawing eXchange Format) files.

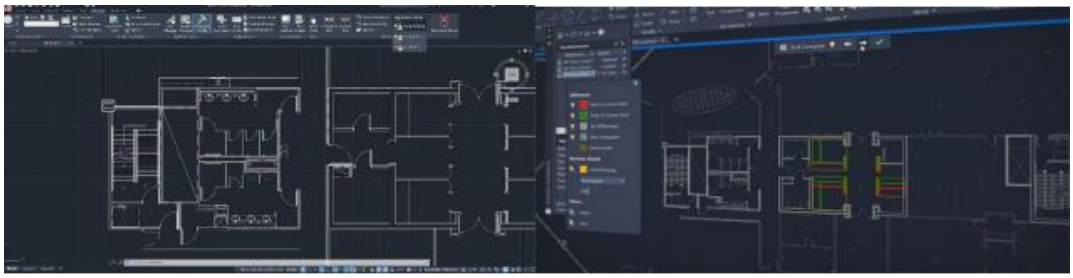


Fig. 2 Graphical representation in AutoCAD

ProfLT is a program that offers a number of facilities in terms of configuration, modification, drawing and layout of longitudinal terrain profiles, as well as cross-sections. The author of ProfLT application is 3D SPACE, a company with a rich experience in the field of geodetic works and software design. The program was created to work in the AutoCAD, BricsCAD or ZWCAD environment. This solution was chosen in order to benefit from the specific functions offered by the CAD programs. The program was created to work in the AutoCAD, BricsCAD or ZWCAD environment. This solution was chosen in order to benefit from the specific functions offered by the CAD programs.

ProfLT application allows inserting points from a coordinate file, and based on the codes of these points or the three-dimensional model, the program generates longitudinal and transverse profiles. The configuration options allow to modify the predefined models for the profiles, but also to save new models, so each user has the possibility to customize according to the requirements of the work.

RESULTS AND DISCUSSIONS

Obarsia Closani commune is located in the northern part of Mehedinti county, having an area of 7846 ha and is bordered: to the north with pades GJ commune, to the south with The

villagesIsverna and Ponoarele, to the west with Isverna village, and to the east with Baia de Arama town.

Compared to the Drobeta Turnu Severin Municipality is located at a distance of 80 km, and from the town of BaileHerculane at about. 50 km. The Mehedinti Plateau, although it is a geographical unit with heights characteristic of thedelurous regions, has a petrographic composition and a geological structure specific to the mountains (it belongs from a geo-structural point of view to the Southern Carpathians, meeting here almost all their structural units: the Getic canvas, the Danubian native and the Severin cloth); 50 to 55%.

The investigated area is located on the south-eastern flank of the great anticlinal of the Mehedinti Mountains, oriented north-east south-west, belonging to the Danubian Autochthon.Insâmburele anticlinalului there are crystalline rocks, over which are arranged shale-loastry, filitus, with intercalations of quartitic sandstones; it follows the archosian andconglomerated sandstones, then the reef limestones, 200-300 meters thick. Over the limestones are arrangedemarnocalcare, clays and sandstones.

Fig. 3 Map of the locality seen from the satellite

The topocadstrastral operations performed are the following: Geodetic works, topo.fotogrametric and cartographical existing in the area: topographical plans 1:25000 in STEREOGRAFIC system 1970, black sea reference level. For the execution of the work it was necessary to raise the topographical site at the scale of 1:5000.

For the topographical elevation, the points OBC1 and OBC2, 10100, 10110, 10120,10120 were used and new station points were created 1001, 1002, 1003, 1004, 1005, 1006, 1007, 1008, 1009, 1010, 1011, 1012, 1013, 1014, 1015, 1016, 1017, 1018, 1019, 1020, 1021, 1022, 1023, 1024, 1025, 1026, 1027, 1028, 1029, 1030, 1031, 1032, 1033, 1034, 1035, 1036, 1037, 1038, 1039, 1040, 1041, 1042, 1043, 1044, 1045, 1046, 1047, 1048, 1049, 1050, 1051, 1052, 1053, 1054, 1055, 1056,

1057, 1058, 1059, 1060 from which the radiated points on the contour of the terrain were measured.

For the radiated points were calculated the rectangular coordinates in the stereographic system, which used to write the plane and the analytical calculation of the surface. In order to determine the coordinates of the station points, azimuth and zenith observations were executed by the horizon tour method, and the radiated points were determined by the radiation method.

For the calculation of rectangular coordinates and the analytical calculation of surfaces, specialized programs were used. For measuring angles and distances, the total station LEICA TS 02 was used.

The site and delimitation plan of the building in the area was executed, respectively also the PARCEL MOVEMENT TABLE that includes data about the land and constructions.

Points GPS :

- OBC1 1 (400250.631, 314380.557)
- OBC2 2 (400160.849, 314597.585)
- 10130 (397336.792, 316420.890)
- 10100 (397281.340, 316376.532)
- 10120 (395548.998, 317052.159)
- 10110 (395382.121, 317076.522)

Nr.	X	Y	ABATERE STANDARD(M)
1	395097.035	317493.962	0.05
2	395112.842	317469.116	-0.06
3	395126.357	317446.696	-0.08
4	395147.899	317414.540	+0.04
5	395160.594	317395.297	+0.02
6	395175.970	317366.364	-0.07
7	395190.017	317339.787	+0.06
8	395193.262	317333.852	+0.05
9	395195.025	317331.113	-0.01
10	395223.908	317290.731	-0.03
11	395232.594	317279.580	0.05
12	395258.479	317258.166	-0.06
13	395269.687	317248.780	-0.08
14	395275.884	317242.288	+0.04
15	395280.172	317236.210	+0.02
16	395292.731	317215.534	-0.07
17	395296.943	317204.793	+0.06
18	395301.196	317185.504	+0.05
19	395301.383	317180.929	-0.01
20	395299.765	317167.599	-0.03
21	395296.472	317156.803	0.05
22	395290.267	317141.482	-0.06
23	395287.585	317129.574	-0.08
24	395291.004	317115.039	+0.04
25	395300.479	317099.868	+0.02
26	395310.155	317087.787	-0.07
27	395334.906	317064.538	+0.06
28	395367.888	317023.859	+0.05
29	395387.814	317020.983	-0.01
30	395388.081	317036.408	-0.03
31	395384.979	317057.755	0.05
32	395386.128	317063.573	-0.06
33	395389.724	317068.332	-0.08
34	395393.959	317071.446	+0.04
35	395404.018	317070.169	+0.02

Fig. 4 Inventory of coordinated points on the outline-St-1Dr

The measurement was made with the Total Leica TS 02 Station which has a response time of less than 0.5 sec and a standard deviation of 7"(2 gon). The calculation of the coordinates was made in STEREO 70 system by the analytical method.

Measuring sheet by classical methods :

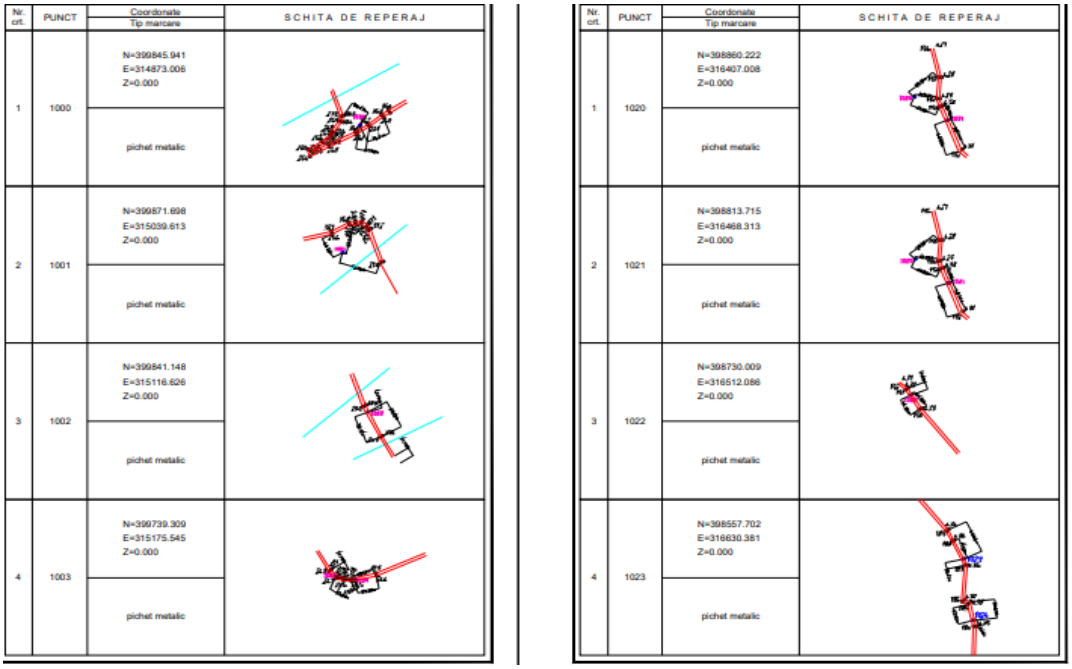
Punct statie	Punct vizat	Distante reduse	Directii orizontale	Unghiuri zenitale	Cod punct
OBC1	329	163.269	5.1862	100	LIMITA PROPRIETATE
	328	186.507	394.3424	100	LIMITA PROPRIETATE
	327	208.96	389.0394	100	LIMITA PROPRIETATE
	326	216.431	388.6642	100	LIMITA PROPRIETATE
	325	227.842	389.3659	100	LIMITA PROPRIETATE
	324	238.258	389.2651	100	LIMITA PROPRIETATE
	323	267.239	386.1385	100	LIMITA PROPRIETATE
	322	315.902	382.2638	100	LIMITA PROPRIETATE
	321	327.501	382.0429	100	LIMITA PROPRIETATE
	320	370.357	382.2144	100	LIMITA PROPRIETATE
	319	375.639	382.511	100	LIMITA PROPRIETATE
	318	397.57	384.7873	100	LIMITA PROPRIETATE
	317	416.836	386.2102	100	LIMITA PROPRIETATE
	316	449.413	387.8659	100	LIMITA PROPRIETATE
	315	454.75	388.3652	100	LIMITA PROPRIETATE
	314	461.866	389.5044	100	LIMITA PROPRIETATE
	313	476.056	392.7367	100	LIMITA PROPRIETATE
	312	481.072	394.0199	100	LIMITA PROPRIETATE
	311	485.933	393.6811	100	LIMITA PROPRIETATE
	310	480.853	392.377	100	LIMITA PROPRIETATE
	309	466.385	389.0671	100	LIMITA PROPRIETATE
	308	458.448	387.7871	100	LIMITA PROPRIETATE
	307	451.88	387.1635	100	LIMITA PROPRIETATE
	306	418.95	385.4359	100	LIMITA PROPRIETATE
	305	400.232	384.0181	100	LIMITA PROPRIETATE
	304	378.075	381.6689	100	LIMITA PROPRIETATE
	303	371.34	381.2746	100	LIMITA PROPRIETATE
	302	327.352	380.9721	100	LIMITA PROPRIETATE
	301	314.803	381.1689	100	LIMITA PROPRIETATE
	300	265.247	384.9126	100	LIMITA PROPRIETATE
	299	237.032	387.7988	100	LIMITA PROPRIETATE
	298	228.378	387.8268	100	LIMITA PROPRIETATE
	297	216.653	387.0188	100	LIMITA PROPRIETATE

Fig. 5 Measuring sheet by classical methods

CONCLUSIONS

In conclusion, those achieved in the above lines, the purpose I proposed in this work was to draw up a documentation for the first registration of a building located in Obârșia-Coloșani commune, Mehedinti County. We also came up with a series of photos taken within the measurements for the preparation of documentation.

The information recorded in the field is easy to process and can be transmitted directly to a GIS (Geographic Information System), a system that will find wide use in road management by performing the data, which is entered in the respective computer databases, making access to the information (HERBEI ET ALL, 2013, 2017, 2018).



Nr. crt.	PUNCT	Coordonate / Tip marcare	SCHITA DE REPERAJ
1	1000	N=399845.941 E=314873.006 Z=0.000 pichet metalic	
2	1001	N=399871.698 E=315039.613 Z=0.000 pichet metalic	
3	1002	N=399841.148 E=315116.626 Z=0.000 pichet metalic	
4	1003	N=399739.309 E=315175.545 Z=0.000 pichet metalic	

Nr. crt.	PUNCT	Coordonate / Tip marcare	SCHITA DE REPERAJ
1	1020	N=398860.222 E=316407.008 Z=0.000 pichet metalic	
2	1021	N=398813.715 E=316468.313 Z=0.000 pichet metalic	
3	1022	N=398730.009 E=316512.086 Z=0.000 pichet metalic	
4	1023	N=398557.702 E=316630.381 Z=0.000 pichet metalic	

Fig. 6 Topographical descriptions of new points

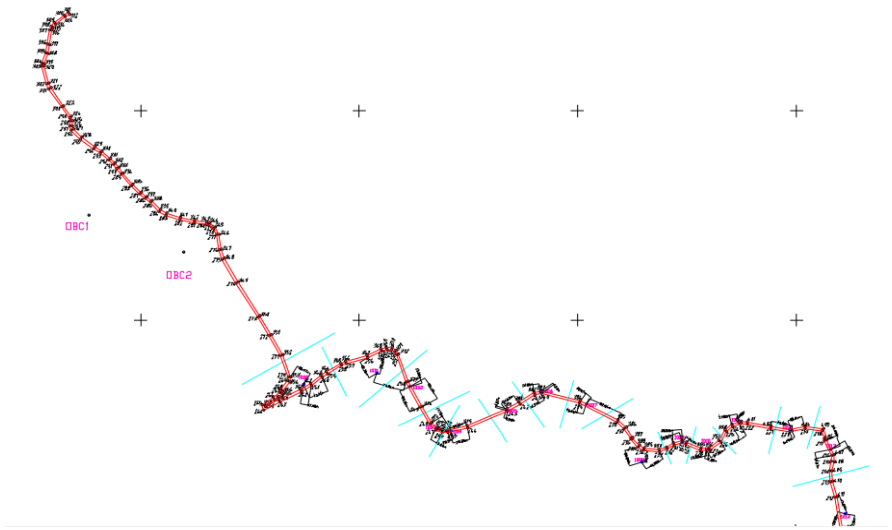


Fig. 7 Sighting in AutoCAD

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