

TOPO-CADASTRAL WORKS CARRIED OUT FOR BOUNDARIES AND PERIMETERING OF THE INTRAVILAN FROM UAT SASCHIZ MUNICIPALITY, MUREȘ COUNTY

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ABSTRACT: *The work refers to the need to create a topographical support, which will support the topographic-cadastral works necessary for the materialization in the field of the intravillage limit of an Administrative-Territorial Unit (UAT), in order to modify and update its general urban plan (PUG).*

In the case of the commune of Saschiz (UAT Saschiz), this topographical support was materialized in the field through a geodetic network of densification, which would ensure both the implementation of the land works necessary for the materialization and determination of the intra-village limit of the component villages of the commune (Saschiz, Cloasterf and Mihai Viteazu) as well as the subsequent performance of various topo-cadastral works intended for the sustainable development and urban development of the respective administrative territory, such as: sewerage expansion; cadastre works, modernization of street infrastructure, etc.

Keywords: *Cadastral delimitation; general urban plan; administrative territory.*

Introduction

The town of Saschiz is located in Mures county, northeast of the Hârțibaciului Plateau and south of the Târnavă Mare river.

The intra-village limits of the component localities of the Saschiz commune were established on the ground based on the specifications of the general urban plan and were materialized through standard wooden posts or posts, as well as through long-lasting planimetric details.

The suburbs of the component villages of the Saschiz commune include both the land areas intended for existing constructions and facilities, as well as the areas needed for urban development for a specific period.

The establishment of the location and the materialization in the field of the delimitation points of the inner city was carried out in accordance with the provisions of Order 534/2001.

Material and methods

The current territory of the Saschiz commune includes 3 localities: Saschiz village (communal residence), Cloasterf village and Mihai Viteazu village (fig.1).

According to the legislation in force, a cadastral delimitation file is drawn up for each intra-village.

Data processing

In order to carry out the works of drawing up the General Urban Plan (PUG) and delimiting the inner villages of the Saschiz commune, a geodetic network of densification was designed and made, consisting of 30 points, located in the inner villages of the component localities of the commune and materialized on the ground through terminals, of which 22 points in the township of Saschiz, 3 points in the township of Cloasterf and 5 points in the township of Mihai Viteazu (fig. 2).

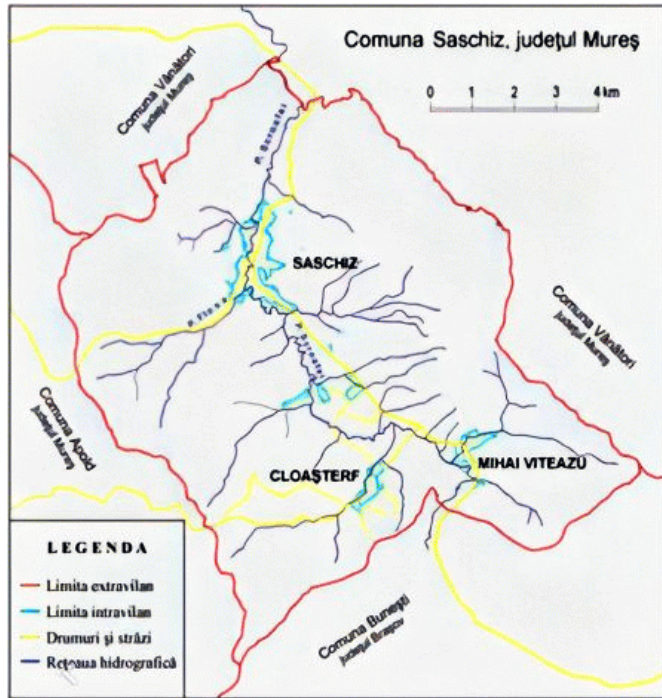


Fig. 1. Saschiz commune and its component villages

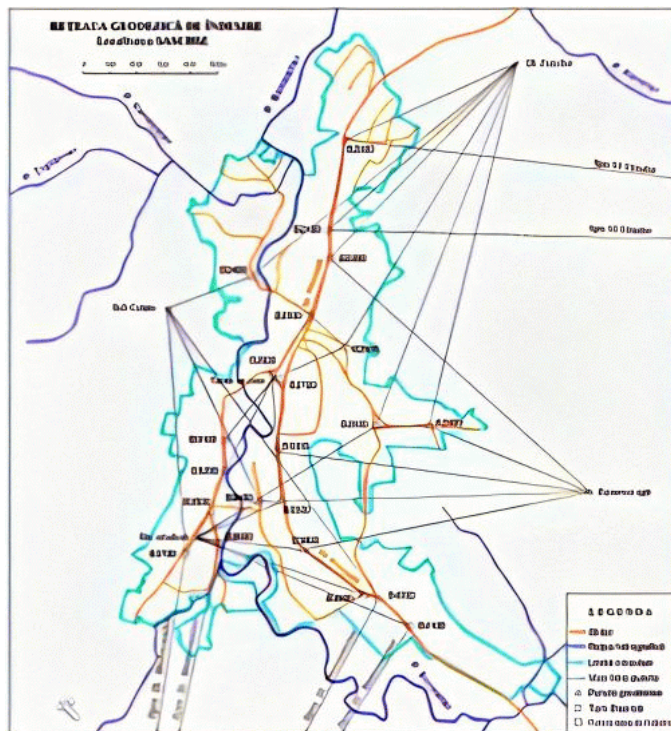


Fig. 2. The project of the geodetic network of densification, Saschiz locality

Bounding the points of the geodetic network of densification in the field was done with standardized concrete blocks, established in the stage of recognition in the field, at the locations indicated by the intra-village delimitation commission. The terminals used are standard H70 terminals (height 70 cm), with dimensions 17×17 cm at the top and a recessed metal type A mark.

The Trimble R8 model 2 receiver and

municipality.

For the planimetric determination of the intravillage delimitation points of the component villages of the Saschiz commune (Body A1, Body B1 and Body C1), planimetric journeys supported on the points of the geodetic network of densification were carried out and erasures from the points of the journeys, aiming at the border points of the inner villages (fig.3) .

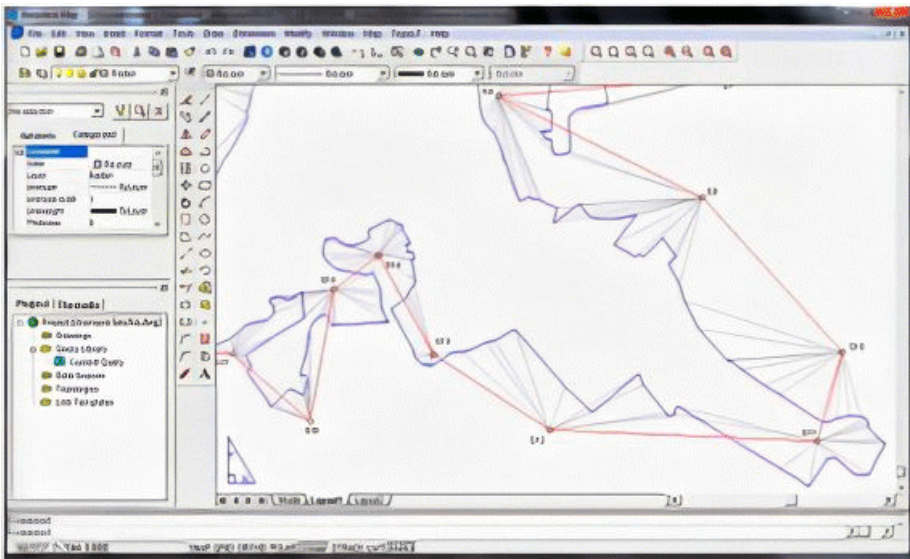


Fig. 3. Planimetric hiking with a closed circuit, Saschiz village

specialized software for managing measurement and data processing operations (Windows Mobile, Trimble Survey Controller, Trimble Access and TransDataRo_code_source and AutoCAD).

Following the measurements made with the GPS receiver Trimble R8 model 2 and processed with TransDataRo, the inventory of the coordinates of the points of the geodetic network of densification in the urban areas of the Saschiz commune was obtained.

The PENTAX W-825NX Total Station and specialized software for managing measurement and data processing operations (Carlson SurvCE and AutoCAD) were used to perform the measurements in the field necessary for the delimitation of the Saschiz

The process of compensation and determination of the coordinates of the polygonation points was carried out with Carlson SurveyCE software. The values of the compensated absolute coordinates of the Saschiz village planimetric polygonation points, calculated with the Carlson SurvCE software after the calculation process described above, are given in fig. 4.

In a similar way, it was carried out both for the locality of Cloasterf and Mihai Viteazu.

The inventory of coordinates of the delimitation points of the Saschiz commune includes points whose coordinates were determined with the PENTAX W-825NX total station and points determined by GPS with the Trimble R8 model 2 receiver.

Nr punct	X	Y
B2100	522189,095	497268,058
B2000	522530,059	497332,432
s1	522586,940	497349,305
s2	522771,604	497469,285
s3	522606,138	497695,008
s4	522256,022	497622,231
s5	521720,955	497604,535
s6	521527,062	497948,801
s7	521281,856	497743,032
s8	521243,276	497253,981
s9	521021,956	497711,033
s10	520684,700	496024,565
s11	520491,295	497968,062
s12	520515,547	497369,007
s13	520680,665	497108,621
s14	520895,442	496985,044
s15	520822,420	496885,526
s16	520534,991	496832,658
s17	520681,036	496658,501
s18	520682,796	496465,076
s19	520871,098	496432,441
s20	521062,170	496559,302
s21	521285,963	496552,318
s22	521733,315	496565,548
s23	521930,194	496764,563
s24	522374,388	496644,550
s25	522551,831	496913,348
s26	522524,562	497136,315
s27	522799,155	497183,218
s28	522957,759	497322,202
s29	522898,997	497546,061
s30	522594,942	497345,427
B2000	522530,059	497332,432
B2100	522189,095	497268,058

Fig. 4. The coordinates of the polygonation points Saschiz village

With the PENTAX W-825NX total station, the delimitation points of Saschiz village (Body A1), Cloasterf village (B1 Body) and Mihai Viteazu village (Body C1), where there is a geodetic network of densification, were determined.

With the GPS receiver Trimble R8 model 2, the intravillage points of the annex bodies, Saschiz (Boundaries A2 to A15), Cloasterf (Boundaries B2 to B5) and Mihai Viteazu (Boundaries C2 to C4), where no geodetic network of densification was created, were

determined.

Also through GPS measure-ments with the Trimble R8 model 2 receiver, the coordinates of 6 new boundary points were determined (points: 70, 127, 227, 308, 393, 466), located on the border of the village of Saschiz (Trup A1)

The extension of the urban area is highlighted by the difference between the area of the existing urban area registered and the area of the urban area resulting from the measurements (fig. 5).

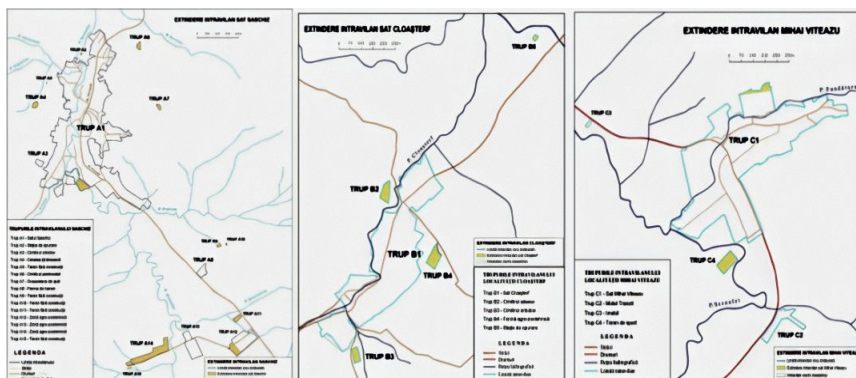


Fig. 5. The expansion of the Saschiz urban area

Conclusions

The extension of the urban area is highlighted by the difference between the

area of the existing urban area registered and the area of the urban area resulting from the measurements (fig. 6).

Trup	Denumire Trup intravilan	Intravilan existent (vechi) (ha)	Intravilan extins (nou, măsurat) (ha)	Extindere intravilan (ha)
A1	Trupul principal: Saschiz	145.862	149.4974	3.6354
A2	Stație de epurare	-	0.0675	0.0675
A3	Căminatul ortodox	0.7915	0.7915	0.0000
A4	Cetatea plimească	-	0.5526	0.5526
A5	Teren	-	0.0187	0.0187
A6	Căminul pentecostal	-	0.4000	0.4000
A7	Gospodărie de apă	-	0.2846	0.2846
A8	Fermă de hamei	1.5554	1.5551	-0.0003
A9	Teren	-	0.1884	0.1884
A10	Teren	-	0.0536	0.0536
A11	Teren	-	0.6213	0.6213
A12	Zonă agro-zootelică	3.8835	7.9721	4.0886
A13	Zonă agro-zootelică	5.5578	5.6671	0.1093
A14	Zonă agro-zootelică	-	5.7303	5.7303
A15	Teren	-	0.0616	0.0616
Total		157.6502	173.4618	15.8116

Trup	Denumire Trup intravilan	Intravilan existent (vechi) (ha)	Intravilan extins (nou, măsurat) (ha)	Extindere intravilan (ha)
B1	Trupul principal: Cloașterf	27.7209	27.3875	-0.3334
B2	Căminatul săseac	-	0.5058	0.5058
B3	Căminatul ortodox	-	0.3192	0.3192
B4	Fermă agro-zootelică	-	0.6400	0.6400
B5	Stație de epurare	-	0.0675	0.0675
Total		27.7209	28.9200	1.1991

Trup	Denumire Trup intravilan	Intravilan existent (vechi) (ha)	Intravilan extins (nou, măsurat) (ha)	Extindere intravilan (ha)
C1	Trupul principal	32.6041	34.5456	1.9415
C2	Motel Tranzit	1.1648	1.1648	0.0000
C3	Imobil	0.0608	0.0608	0.0000
C4	Teren de sport	-	0.7000	0.7000
Total		33.8297	36.4712	2.6415

Fig. 6. The situation of the expansion of the Saschiz commune

References

1. ORDER no. 534 of October 1, 2001(*updated*) regarding the approval of the *Technical Norms for the introduction of the general cadastre*;
2. Datui, Victor, (2021) *Lucrări Topo-Cadastrale realizate în vederea bornării și perimetrării intravilanului de pe UAT comuna Saschiz, Județul Mureș, în vederea modificării PUG*, Bachelor's Degree Thesis: "1 Decembrie 1918" University of Alba Iulia, scientific coordinator: Assoc.prof.eng.PhD. Magdolna Eva Koncsag
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