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LEGAL AND TECHNICAL ASPECTS OF HARMONIZATION OF DATABASES OF BUILDINGS

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Keywords: database harmonization, attributes of buildings, real estate cadastre, record data of buildings

Abstract

The article analyses the legal regulations which govern the principles of maintaining the real estate cadastre in Poland and the database of topographic objects, tax records as well as the system of land and mortgage registers, with reference to buildings as objects of these databases. Particular attention was paid to descriptive attributes of buildings, such as building identifier, building status, building type, class, and function, regarding the possibility to capture these attributes, and concerning reference data sources. It was assessed which of them result directly from the European Union provisions and which from the Polish legal regulations. Another aspect of the analysis was to identify these attributes that should supply the remaining databases in question, for which the real estate cadastre is the reference database. By comparing attributes of the building collected in each of these databases, it was defined which of them are necessary and which are not used uniformly in the databases and could be deleted from the cadastral database without compromising its quality.

PRAWNE I TECHNICZNE ASPEKTY HARMONIZACJI BAZ DANYCH W ZAKRESIE BUDYNKÓW

Słowa kluczowe: harmonizacja baz danych, atrybuty budynku, kataster nieruchomości, dane ewidencyjne budynku

Abstrakt

W artykule przedstawiono analizę przepisów prawnych, które regulują zasady prowadzenia katastru nieruchomości w Polsce oraz prowadzenia bazy danych obiektów topograficznych, ewidencji podatkowej i systemu ksiąg wieczystych, w aspekcie budynków jako obiektów tych baz. Szczególną uwagę poświęcono atrybutom opisowym budynków, takim jak: identyfikator budynku, status budynku, rodzaj budynku, klasa budynku i funkcja budynku w aspekcie możliwości ich pozyskania i referencyjnych źródeł danych. Ocenie poddano, które z nich wynikają wprost z przepisów Unii Europejskiej (w tym najważniejszy – zewnętrzny identyfikator obiektu oraz geometria obiektu), a które z polskich przepisów prawa. Kolejnym aspektem analizy było określenie atrybutów, które powinny zasilać pozostałe omawiane bazy, dla których kataster nieruchomości jest bazą referencyjną. Poprzez porównanie atrybutów budynku, gromadzonych w każdej z wymienionych baz danych, zostało określone, które z atrybutów budynku są niezbędne, a które nie są wykorzystywane jednolicie w bazach danych i mogłyby zostać usunięte z bazy katastru nieruchomości, bez szkody dla jego jakości.

1. INTRODUCTION

One of the consequences of Poland's accession to the European Union in 2004 is the need to comply with the European Parliament Directive of 14 March 2007 es-

tablishing Spatial Data Infrastructure (SDI) in the European Community (INSPIRE) (DIRECTIVE, 2007/2/EC) and the regulations issued subject to this Directive (Regulation, 2008). In Poland, the Directive resulted in the adoption of the Act on Spatial Data Infrastructure



(Act, 2010). Among numerous spatial data themes contained therein, buildings belong to the third theme group. They are mentioned both in the Directive and in the Act as spatial data objects. However, it should be emphasized that they exist only with reference to their geographical location, i.e. information about their spatial location. The technical guidelines developed subject to the Directive of the European Parliament, i.e. in the Building Data Specification (INSPIRE D2.8.III.2, 2013), contain principles for using the UML profile in this respect. The INSPIRE conceptual modelling framework refers to the use of the ISO 19100 international standards for the list of stereotypes and basic types to be used in INSPIRE application schemes. For this article, ISO 19109 is particularly important, based on which object attributes should be defined.

Regarding the object Building, it should be emphasized that in the INSPIRE Generic Conceptual Model contained in the document (INSPIRE D2.5, 2014), Chapter 9.5.1 lays down the general principles regarding the language of conceptual schemes. The example below demonstrates a scheme of classes presenting the specification of a type of a spatial object “Building” in UML. The stereotype `<<featureType>>` specifies its class as a type of a spatial object. It is explicitly stated that a type of a spatial object has five attributes:

- external object identifier;
- date (substitutable by voidable) (only the year can be given) when the building was constructed;
- height (substitutable by voidable), if applicable – must be given in meters;
- compulsory geometry describing the shape of the building at its base;

- zero or more postal addresses that can be associated with the building; (*PostalAddress* is a type of a spatial object defined in another application scheme.) – Fig. 1.

From the schematic diagram illustrated in Fig. 1, it appears what features (attributes) should the object *Building* have, according to the INSPIRE Generic Conceptual Model. These include: identifier, construction date, height, geometry and address. The date and the height can be substituted by the stereotype “voidable” and possibly be supplemented later, and the address may not exist as an attribute of the building. It follows therefrom that the identifier in the database and the geometry describing the shape of the building at its base are necessary in the basic conceptual model for the building. The remaining attributes, which according to the provisions of the Regulation on the Register of Land and Buildings (EGiB), should be entered into the cadastral database for the building, do not follow directly from the Directive of the European Parliament or its secondary legislation. The study of conceptual models in terms of determining the differences between the INSPIRE data models and those of the Register of Land and Buildings, was conducted by (Goźdź, K., Parzyński, Z., Radzio, W., 2014), (Wróblewska K., Pachelski, W., 2015), (Gaździcki J., 2016), and in relation to other reference databases (Głazewski A., 2016), (Gotlib D., 2015).

In terms of geometry of the building (i.e. the geometric description of the contour of the building in the Polish legislation), it should be emphasized that under the provisions of the European law, the contour should be associated with the base of the building. This confirms

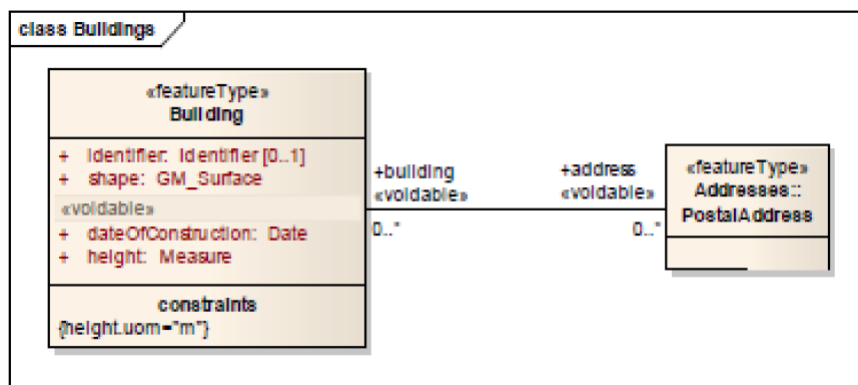


Fig. 1. Example of UML class scheme (*Building*) Source: (INSPIRE D2.5, 2014)

Rys. 1. Przykład schematu klas UML (*Building*) Źródło: (INSPIRE D2.5, 2014)

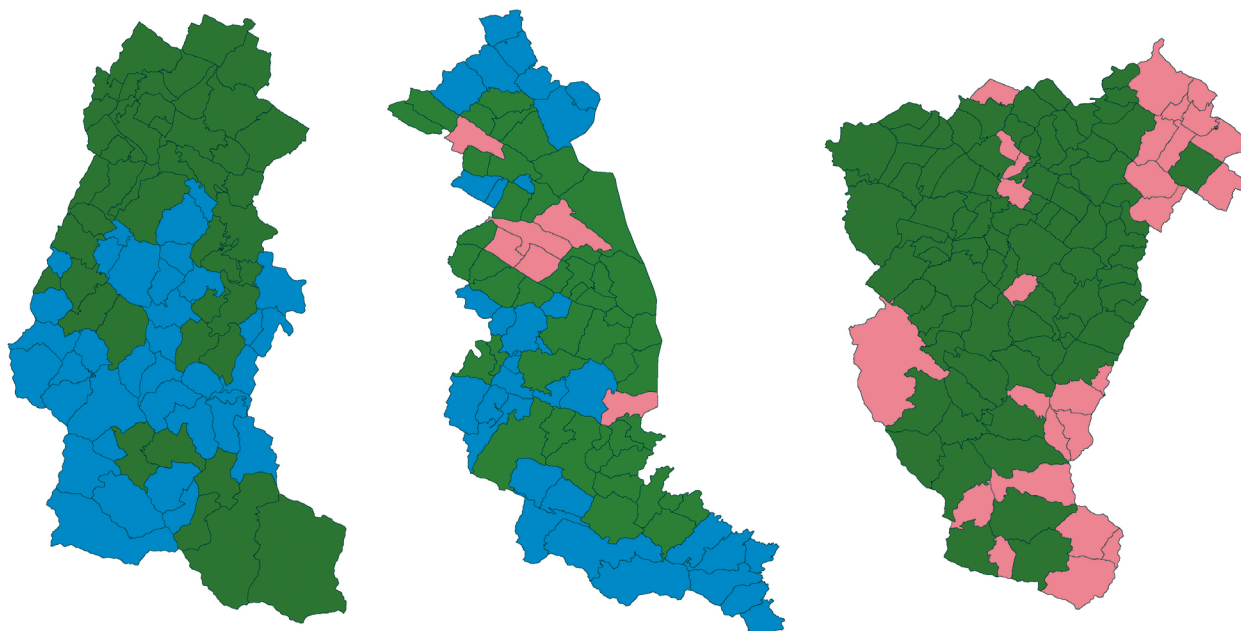


Fig. 2. Counties of Lesko, Ustrzyki Dolne and Sanok, depicting the need for modernization of the Register of Land and Buildings
Rys. 2. Powiat leski, bieszczadzki i sanocki, obrazujące konieczność modernizacji EGiB

the validity of a new definition of the contour, proposed by the author at the conference (Buśko M., 2017b).

One of the effects of applying the Act on Spatial Data Infrastructure is the construction of the Integrated Real Estate Information System (ZSIN). As a result, in recent years, Poland saw extensive modernization of the Register of Land and Buildings. A large part of these projects are financed by the European Union funds. Figure 2 illustrates how urgent these works are to be carried out. There are three counties located in the territory of the Podkarpackie Province, divided into cadastral districts. The districts after the modernization of the Register of Land and Buildings are marked in dark green, the districts where there has been no modernization of the Register yet have been marked in pink, and in blue – the districts where the modernization of the records is currently being carried out in 2017.

2. MATERIALS AND METHODS

This Section will analyse selected attributes of the building as a database object of the real estate cadastre in Poland. These attributes are set out in §63.1f. of the Regulation on the Register of Land and Buildings as obligatory for acquisition for the building for which it is not possible to capture a full set of information as de-

finied in §63.1.1) – §63.1.27) of the Regulation. The basis for their analysis is INSPIRE Reference Document, i.e. Generic Conceptual Model and Data Specification on Buildings – Technical Guidelines (INSPIRE D2.5, 2014) and (INSPIRE D2.8.III.2, 2013).

2.1. Building Identifier

External object identifier allows for an unambiguous definition of a spatial object such as the building. According to Chapter 14.1 of the Generic Conceptual Model (INSPIRE D2.5, 2014) regarding identifier management, the building identifier must be unique and meet the four requirements: uniqueness, persistence, traceability, feasibility. The identifier must remain unchanged during the life-time of the spatial object. As far as buildings are concerned, which are database objects characterized by relatively high variability of the attributes describing them, the version of the spatial object associated with the version identifier is essential. Changing even one of the building attributes should result in a new version, and the existing version should be saved in the history of the database, becoming one of the components of the life cycle of the spatial object. Naturally, changing the version of an object must be recorded in the database by precisely specifying the time of making the change (Fig. 3). Each

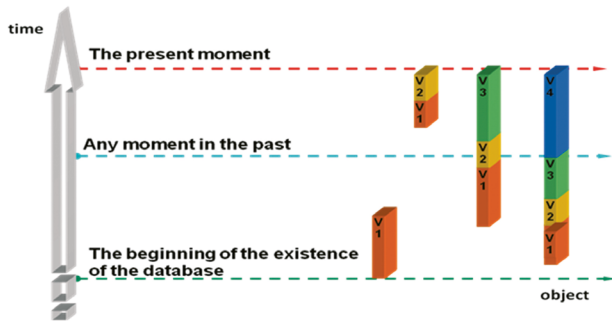


Fig. 3. History of objects in the database

Rys. 3. Historia obiektu w bazie danych

INSPIRE application scheme that distinguishes multiple versions of a spatial object requires that the different versions of the same spatial object (the building) have the same external object identifier.

2.2. Status of the building

The status of the building has been probably included in the list of attributes specified in the Regulation on the Register of Land and Buildings (EGiB), based

on the INSPIRE Generic Conceptual Model (INSPIRE D2.5, 2014). In this document, in Chapter 9.8.2.4. – *Enumerations and Code Lists*, the status of a facility has been examined, but in general terms, referring to a possibility to determine the status of each spatial object of the database. According to the definition contained herein, the status of a facility determines its completion and use (Żwirowicz-Rutkowska A., 2016). However, it is not specifically and obligatorily dedicated to the building. Although it may seem reasonable for terrestrial network elements, as database objects, to determine their status as being in the design stage (*projected*), it is not justified for buildings, because the *projected* building does not necessarily have to be implemented in reality. However, the possibilities provided in (INSPIRE D2.5, 2014) have been largely adapted to the provisions of the Regulation on the Register of Land and Buildings, and correspond to the status of the building set out in §63.2 of the Regulation (Regulation, 2001) (Table 1).

It is essential to emphasize that, according to the INSPIRE Generic Conceptual Model (INSPIRE D2.5, 2014), the attribute Status of the building may (but does

Table 1. Status of *Spatial Object* of Database and Status of *Building* as Database Object

Tabela 1. Status *obiektu przestrzennego* bazy danych i status *budynku* jako obiektu bazy danych

Status of object Value (INSPIRE D2.5, 2014)	Status of object Definition (INSPIRE D2.5, 2014)	Status of building Value (Regulation, 2001)	Status of building Definition (Regulation, 2001)
functional	The facility is functional	constructed	Construction of the building was completed within the meaning of the provisions of the Act of 7 July 1994 – Construction Law, or its actual use has started
projected	The facility is being designed. Construction has not yet started	projected	The building is subject to a construction permit or construction notification, but its construction has not been commenced yet
under construction	The facility is under construction and not yet functional. This applies only to the initial construction of the facility and not to maintenance work	under construction	The building is under construction
disused	The facility is no longer used but is not being or has not been decommissioned	for demolition	The building is intended for demolition
decommissioned	The facility is no longer used and is being or has been decommissioned		

not have to) be specified for the building as one of the spatial objects of the database.

In the Polish legislation, pursuant to the wording of § 63.1.2) of the Regulation on the Register of Land and Buildings, the status of the building as *projected* and *under construction* should be distinguished. Since 2013, when the amended version of the Regulation on the Register of Land and Buildings entered into force introducing the attribute *Status of the building*, the definition of the attributes *projected* and *under construction* has been creating problems for the surveying administration.

The status *projected* should be entered into the cadastre based on the architectural and construction documentation, which is a valid construction permit or a construction notification. However, the circulation of documentation in Poland between architectural and surveying units (maintained by the same authority – the governor, but in various departments of the district administration), leaves much to be desired and has not been implemented as a standard procedure in most counties until this day. Architectural units are reluctant to cooperate with surveying units, and it is not possible to enforce conveyance of legally valid documents from architectural and construction units (Buško M., 2017a). Article 23 section 6 of the Geodetic and Cartographic Law excludes from the obligation the notification of surveying units about the legally valid documents of architectural and construction units. The legislator assumes that if both units are maintained by the same authority (the governor), cooperation should obviously be smooth. Unfortunately, this is not the case in most counties in Poland. The introduction of the status *projected* for the building, besides the very fact of its recording, does not result in any further changes in the real estate cadastre.

A slightly different situation, but also a problematic one, occurs when the status of the building changes from *projected* to *under construction*. The change of the status is determined by the survey report from setting out of the building, entered into the National Geodetic and Cartographic Documentation Database. And this is an important moment, because it changes land use in the real estate cadastre from the existing one (e.g. from agricultural land) to the land use which belongs to the group of developed land uses *Bp* (urban undeveloped land or under development). However, the 2017 analysis of Geodetic and Cartographic Documentation Centres regarding types of geodetic surveys performed

revealed that setting-out surveys are rarely reported and conveyed to the National Geodetic and Cartographic resources. As far as setting out works are concerned, the construction manager usually only makes an entry in the Construction Logbook. When compared to the number of as-built surveys, setting-out surveys constitute only a few percent of all the works reported and submitted to the District Geodetic and Cartographic Documentation Centres. Unfortunately, this disproportion results in lack of basis for updating the cadastre regarding the change of the status of the building from *projected* to *under construction*, as well as updating the land use. It should also be added that, theoretically, a record entity is obliged to report changes occurring within the record data of the objects they manage. However, investors' awareness that such commencement of construction constitutes record data is quite low, so this provision is currently a dead letter.

2.3. Attributes defining intended and actual use of the building

Chapter 11.1 of the Generic Conceptual Model (INSPIRE D2.5, 2014), pertaining to multilingual text and cultural adaptability, specifies requirements for code lists and dictionaries relating to spatial objects of the database. In this context, an example of a building structure, which may have an attribute defining the use of a building, is given here by selecting from the code list. Code list features of the relevant attributes should be expressed in the language of the Member State of the European Union. It is obvious that the intended purpose and actual use of the building should somehow be recorded in the database of the real estate cadastre. In Poland, however, the level of detail currently in force under the Regulation on the Register of Land and Buildings is unreasonably excessive. According to the current legal status in Poland, the actual manner of use of a building is described by as many as four attributes:

- type of the building according to the Classification of Fixed Assets (Regulation, 2016),
- class of the building according to the Polish Classification of Types of Construction (Regulation, 2002);
- main function of the building according to the dictionary (Regulation, 2001),
- other functions of the building according to the dictionary (Regulation, 2001).

The principles of their definition were precisely analysed in (Buśko M., 2017a). From the conducted analysis it follows that it is not possible to provide complete and true information about the building to other authorities for which the cadastral database should be the reference database (e.g. for tax authorities).

According to a well-established court jurisprudence, the database of the Register of Land and Buildings should record the existing legal status rather than create a new one. Therefore, the change in the intended use of a building in the real estate cadastre must result from the documentation of the competent authority in order to create a new legal status. Architectural and construction units, and not surveying services, are the only competent authorities in this respect. Therefore, the changing of the utility function (the class of the Polish Classification of Types of Construction) of the building should be based solely on the documentation approved by the architectural and construction authorities, rather than on the surveying documentation in the form of *A list of changes of building record data*, drawn up by a surveyor (Buśko M., 2014).

In the document D.2.8.III.2 (INSPIRE D2.8.III.2, 2013) – Technical Guidelines for Data Specification on Buildings, on page 267 there is a list of groups comprising different types of uses of building structures. In general, it can be stated that the buildings listed there are grouped in the same way as the classes of buildings specified in the Regulation on the Polish Classification of Types of Construction (Regulation, 2002). It is difficult, therefore, to appreciate such detailed fragmentation of the attributes of buildings or parts thereof, which were compiled in the Polish regulation on the Register of Land and Buildings, as defined in the dictionary of the Regulation as *EGB_FunkcjaBudyunku (Building Function)*. Excessive detail of the existing Polish dictionary of the function of the building (Regulation, 2001), covering as many as 179 items, poses a real threat to the database of the real estate cadastre. This threat is a permanent loss of updatedness of its current data.

It should be noted that even such a detailed dictionary of attributes *EGB_FunkcjaBudyunku (Building Function)* does not ensure harmonization with the database of topographic and general geographic objects (Regulation, 2011). This Regulation, for example, distinguishes between a monastery building (*EGB_FunkcjaBudyunku* in the Regulation on the Register of Land and Buildings: *1130.Kl*) and a rectory building, which

does not exist in the *EGB_FunkcjaBudyunku* dictionary. On topographic maps, such buildings are distinguished and described as “*kl*” or “*pleb*” respectively. Also, as far as public buildings, industrial buildings, or farm buildings are concerned, which are represented in a scale on topographic maps, the building signs are denoted by the corresponding abbreviations listed in the Regulations on the Database of Topographic Objects and on the Database of General Geographic Objects, which do not have any reference to the denotation of the building function in the dictionary of the Regulation on the Register of Land and Buildings. This is yet another argument in favour of removing the attribute *Building Function (Funkcja Budyunku)* from the laws governing the real estate cadastre.

2.4. Sources of capturing selected record data on buildings

Table 2 summarizes record data of the building set out in §63 section 1f of the Regulation on the Register of Land and Buildings, which are obligatory for a building in case not all of its record data are known. They were grouped in columns, due to the relevant source of their capture. According to the already quoted court jurisprudence that the real estate cadastre should reflect the existing legal status and not attempt to create a new one, a large part of the attributes should be introduced into the cadastral database based on the documentation from architectural and construction units. A certain part of the record data may be captured by a surveyor from geodetic measurements, field inspection, building inspections and interviews with the owners of the facility. However, this mainly concerns the updating of the cadastre as part of the modernization of the Register of Land and Buildings. It should also be noted that in order to capture certain attributes, cooperation of various information sources is required (Table 2).

3. DISCUSSION

This Section will list attributes of the building that are significant for the legislation pertaining to other public registers and individual databases, for which the cadastral database should be the reference base. Polish principles for collecting attributes in the cadastre were established pursuant to the Regulation on the Register of Land and Buildings (Regulation, 2001). As far as tax

Table 2. Record data of the building and source of their capture**Tabela 2.** Dane ewidencyjne budynku i źródło ich pozyskania

§63.1. (Regulation, 2001)	Attributes of the building from architectural and construction ad- ministrative units	Attributes of the building from geodetic admini- strative units	Attributes of the building captured by a surveyor based on field surveys	Attributes of the building captured by a surveyor as part of field in- spection	Request of a par- ty (record entity)
1) Building identifier Remarks	– when entering the building into the cadastre – based on architectural and construction documen- tation; – after a positive verification of the survey report from as-built surveys; – when entering a construction project at the request of a party.				
1) Building identifier		Yes			
2) Building status Problems	<p>Projected – no order and no coherent determination of the form of cooperation between departments of the district office in conveyance of architectural and construction documentation; Under construction – no notification of setting-out works under the investment law; Constructed – problem with determining the actual use when there is no occupancy permit issued by the Construction Supervision Inspector; For demolition – no definition of the ruin.</p>				
<i>Projected</i>	Yes Construction permit				
<i>Under construction</i>					Yes Request of the party
<i>Constructed</i>	Yes Occupancy permit issued by the Construction Supervision In- spector		Yes As-built survey		
<i>For demolition</i>	Yes If there is demo- lition order				Yes If declared for demolition
3) Numerical description of the contour of the building Problems	Definition of the contour of the building changed with the amendment of the Regulation on the Register of Land and Buildings in 2013 and in 2015, which resulted in outdatedness of the database of the real estate cadastre. The current definition of the contour of the building is inconsistent with the definition contained in INSPIRE (INSPIRE D2.8.III.2, 2013). The current definition of the contour of the building is inconsistent with the definition contained in the Polish planning nomenclature or the architectural and construction documentation.				
3) Numerical description of the contour of the building			Yes As-built survey At the design and construction sta- ge – centroid is possible		

Table 2 cont.

§63.1. (Regulation, 2001)	Attributes of the building from architectural and construction ad- ministrative units	Attributes of the building from geodetic admini- strative units	Attributes of the building captured by a surveyor based on field surveys	Attributes of the building captured by a surveyor as part of field in- spection	Request of a party (record entity)
Intended purpose and actual use of the building Problems	Different bases for newly constructed buildings – architectural and construction documentation. Different bases when updating the database of the Register of Land and Buildings – request of a party and architectural and construction documentation provided by this party. Different bases when updating the database of the Register of Land and Buildings – field inspection performed by a surveyor. In theory, architectural and construction documentation should always form the basis. However, in practice, this is not always the case, especially for older buildings, which already exist.				
4) type of the building ac- cording to the Classification of Fixed Assets		Yes Pursuant to the Polish Classifica- tion of Types of Construction		Yes During moder- nization of the Register of Land and Buildings, with no architec- tural or construc- tion documen- tation	
5) classification of the building according to the Polish Classification of Types of Construction		Yes Based on the prevailing usable floor space in the construction project		Yes During moder- nization of the Register of Land and Buildings, with no architec- tural or construc- tion documen- tation	
6) the main function of the building		Yes According to the architectural and construction do- cumentation and pursuant to the Polish Classifica- tion of Types of Construction		Yes During moder- nization of the Register of Land and Buildings, with no architec- tural or construc- tion documen- tation	
6) other functions of the building		Yes According to the architectural and construction do- cumentation		Yes During moder- nization of the Register of Land and Buildings, with no architec- tural or construc- tion documen- tation	

records and land registers are concerned, the Regulation on the Integrated Real Estate Information System (ZSIN) (Regulation, 2013) constitutes the basis for the listing of attributes, which is carried out in accordance with the application schemes of notifications of changes in the record data contained therein, transferred among public registers. For the database of topographic ob-

jects, the Regulation (Regulation, 2011) forms the basis for the listing of attributes. The data set out in Table 3 will allow to determine the extent to which attributes of the building recorded in the real estate cadastre are useful for supplying the other registers and databases, and whether all the record data are uniformly used in other registers and databases.

Table 3. Attributes of buildings conveyed from the Register of Land and Buildings to other registers and databases

Tabela 3. Atrybuty budynku przekazywane z ewidencji gruntów i budynków do innych rejestrów i baz danych

Attributes of the building – (Regulation, 2001) + occurs (conveyed) – does not occur (not conveyed)	Direction of flow of the notification of changes in the Register of Land and Buildings to other registers		
	From the Register of Land and Buildings to the tax authorities (Regulation, 2013)	From the Register of Land and Buildings to the district court maintaining land and mortgage registers (Regulation, 2013)	Attributes of the building to the Database of Topographic Objects (Regulation, 2011)
1) building identifier	1) +	1) +	1) +
2) building status defining that: a) construction of the building is completed, within the meaning of the Construction Law, or its actual use has begun, b) the building is under construction, c) the building is subject to a demolition order, d) the building is a subject of a construction permit or a construction notification, but its construction has not been commenced yet,	2) + a) + b) + c) + d) –	2) –	2) +
3) numerical description of the contour of the building	3) –	3) –	3) + (geometry)
4) type of the building according to the Classification of Fixed Assets	4) +	4) +	4) –
5) classification of the building according to the Polish Classification of Types of Construction	5) +	5) –	5) + (called the type of the building according to the Polish Classification of Types of Construction)
6) the main function of the building and other functions of the building	6) –	6) –	6) –

Table 3 cont.

Attributes of the building – (Regulation, 2001) + occurs (conveyed) – does not occur (not conveyed)	Direction of flow of the notification of changes in the Register of Land and Buildings to other registers		
	From the Register of Land and Buildings to the tax authorities (Regulation, 2013)	From the Register of Land and Buildings to the district court maintaining land and mortgage registers (Regulation, 2013)	Attributes of the building to the Database of Topographic Objects (Regulation, 2011)
7) value of the building, if provided,	7) + (cadastral)	7) –	7) –
8) date of completion of the construction process, and in the case of reconstruction – also the date of this reconstruction,	8) +	8) –	8) –
9) degree of certainty of setting the dates referred to in point 8 above,	9) +	9) –	9) –
10) information on the material used for the construction of the outer walls of the building,	10) +	10) –	10) –
11) information on the extent of reconstruction works	11) +	11) –	11) –
12) number of overground and underground floors of the building,	12) + (overground) 12) + (underground)	12) + (total)	12) + (number of the highest floor)
13) development area of the building	13) +	13) –	13) –
14) building usable floor space determined based on: a) measurements b) information included in the construction design,	14) + a) – b) –	14) + a) – b) –	14) –
15) total usable floor space of a) premises constituting separate real estate b) non-separated premises c) additional space belonging to premises,	15) + a) + b) + c) +	15) + a) – b) – c) +	15) –
16) number of separate premises entered into the register	16) +	16) +	16) –
17) reference number of the register of monuments, if the building is entered into this register,	17) +	17) –	17) +

Table 3 cont.

Attributes of the building – (Regulation, 2001) + occurs (conveyed) – does not occur (not conveyed)	Direction of flow of the notification of changes in the Register of Land and Buildings to other registers		
	From the Register of Land and Buildings to the tax authorities (Regulation, 2013)	From the Register of Land and Buildings to the district court maintaining land and mortgage registers (Regulation, 2013)	Attributes of the building to the Database of Topographic Objects (Regulation, 2011)
18) address of the building, which consists of: a) town/city and TERYT identifier of the town/city, b) district, c) street and TERYT identifier of the street, d) serial number, if assigned to the building,	18) +	18) +	18) -
19) identifiers of record parcels on which the building is located	19) +	19) +	19) -
20) information on whether the building was permitted for use in whole or in part	20) -	20) -	20) -
21) denotation of the part of the building permitted for use	21) -	21) -	21) -
22) date on which the building or part thereof was permitted for use	22) -	22) -	22) -
23) according to the construction documentation, number of flats in the residential building: a) with 1 chamber, b) with 2 chambers, c) with 3 chambers, d) with 4 chambers, e) with 5 chambers, f) with 6 chambers, g) with 7 chambers, h) with 8 chambers, i) with 9 chambers, j) with 10 chambers, k) consisting of more than 10 chambers	23) -	23) -	23) -
24) total number of chambers in the residential building	24) -	24) -	24) -
25) date of demolition: a) of the whole building, b) of a part of the building,	25) -	25) -	25) -
26) reason for demolition of the building or a part thereof	26) -	26) -	26) -
27) if the building is ready for high speed internet	27) -	27) -	27) -

4. CONCLUSION

There is no flow of information in Poland which would be consistent with the schemes set out in the Regulation on the Integrated Real Estate Information System (ZSIN), simply because the integrated system has not been implemented yet. The legal acts which have been developed, however, form the foundations for its construction. Thus, it is necessary to strive for their highest quality. From the analysis of the attributes of the building demonstrated in Table 3 it appears that the tax authorities will be most interested in the record data on the building captured from the real estate cadastre, as discussed in (Çağdaş V. et al., 2016). Although some of the attributes contained in §63.20) – §63.27) of the Regulation on the Register of Land and Buildings will not be collected by any of the analysed registers, the real estate cadre should collect them for buildings that will be granted occupancy permit after the revised Regulation on the Register of Land and Buildings entered into force in 2013. They are to be captured from architectural and construction units as well as from construction site inspectors, and therefore it is necessary to formalize the principles for the internal flow of information in order to update the cadastral database by developing valid procedures in this field. It is necessary to make a closed list of building attributes that should be supplied to the database of the real estate cadastre as a unified nomenclature, preferably in the electronic form (automated e-services). In view of the planned implementation of the Urban and Building Code Act at the beginning of 2018, it is advisable to develop these principles and procedures as soon as possible. They should have a form of a regulation issued by the Minister of Infrastructure and Construction, who is a competent authority in this respect.

The Spatial Data Infrastructure Act provides that spatial databases are to ensure the possibility of mutual relationships between conceptual models of the data contained therein. At the same time, they must be interoperable, which means that there must be a possibility of mutual supply and updating of the databases. In order to facilitate such a flow of information between databases, data harmonization is necessary, which is consistency of conceptual models. The grounds for correct functioning of databases, for which the cadastral database is a reference base, is therefore high quality of reference spatial data, avoidance of data redundancy

(repetition of data) and avoidance of excess information. These issues were dealt with in detail by (Bac-Bronowicz, J., et al., 2015), (Chrobak et al., 2017).

None of the registers listed in Table 3, or the supply of the Database of Topographic Objects, or of General Geographic Objects within INSPIRE, justifies the existence of the attribute *building function*, which is too detailed, difficult to determine formally or legally, and which causes frequent loss of updatedness of the Register of Land and Buildings. In addition, this attribute is inconsistent regarding the reference base for the Register of Land and Buildings, i.e. architectural and construction units, or for supplying the Database of Topographic Objects and the Database of General Geographic Objects, which are the databases for which the Register of Land and Buildings is the reference base. It is advisable to delete it from the Regulation on the Register of Land and Buildings during its next amendment, leaving the type of the Classification of Fixed Assets and the function of the Polish Classification of Types of Construction, which should be used both by architectural and construction units, as well as by the Databases of Topographic Objects and of General Geographic Objects. This will allow for the harmonization of the real estate cadastre with other databases and registers in terms of determining the intended purpose and actual manner of use of the building.

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