



Twinning Project MD 13 ENPI OT 01 16 (MD/26)
Support to promote cultural heritage in the Republic of Moldova
through its preservation and protection

Component 4

Direct support to Moldovan heritage protection institutes

Activity 4.1

Support to digital classification, documentation and cataloguing of the cultural immovable heritage

**Outline of an IT cataloguing system for the
Moldovan immovable heritage**



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List of abbreviations

AIRM	Agency of Inspection and Restoration of Monument
ALRC	Agency for Land Relations and Cadastre
EU	European Union
GIS	Geographic Information System
ICT	Information and Communications Technology
LIS	Land Information System
LPA	Local Public Authority
MECR	Ministry of Education, Culture and Research
MS	Member State
NAA	National Archaeological Agency
NAR	National Archaeological Repertory
NARe	National Archaeological Register
NDS	National Development Strategy Moldova 2020
NGDF	National Geospatial Data Fund
NGO	Non-Governmental Organizations
NSDI	National Spatial Data Infrastructure
SFM	Soros Foundation Moldova



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Term of Reference of the Document

The present document has been elaborated for the EU Twinning Project between Italy and Moldova MD 13 ENPI OT 01 16 (MD/26) “Support to promote cultural heritage in the Republic of Moldova through its preservation and protection” within Component 4 “Direct support to Moldovan heritage protection’s institutes”, as the due deliverable of Activity 4.1 “Support to digital classification, documentation and cataloguing of the cultural immovable heritage”, according to what is set out in Annex A1 – Description of the Action of Contract Ref.Ares(2017)4121713/ 22.08.2017 – 2017/ 387-025.

The report includes an analysis of current situation of the standard of documentation of protected immovable cultural heritage as well as a proposal for the modernization of the national catalogue of immovable cultural heritage.

Executive Summary

At present a unified system of national cataloguing of cultural assets does not exist in Moldova. The basic elements that compose/constitute/ a cataloguing system (i.e. standards for different types of cultural heritage, technological infrastructure and administrative procedures that hinge the process of identifying and cataloguing cultural assets within the framework of general rules for the protection of cultural heritage) are not yet in place. In this sense it is virtually impossible to address the issue of digitization of existing databases because of the fragmentary nature of the theoretical and technological solutions adopted by the various institutions responsible for the protection and of the lack of a unified system capable of receiving the information.

It is therefore necessary a complete rethinking of the entire cataloguing mechanism and the enlistment procedure of the immovable cultural heritage, by tackling the new design of a national cataloguing information system capable of exploiting the existing positive experiences and the synergies created between the different institutions.

Three steps are necessary to complete this re-foundation:

1. elaboration of standards and cataloguing norms based on existing legislation through a rigorous process of data analysis, standardization and unification of regulations related to the different types of cultural heritage;
2. design and implementation of a robust geographic information system through the implementation of existing relationships between the Ministry of Education, Culture and Research (MoECR), the National Archaeological Agency (NAA), the Agency of Inspection and Restoration of Monuments (AIRM) and Agency for Land Relations and Cadastre (ALRC);



3. inventory, analysis and migration of existing databases within the new national system.

These three essential points are accompanied by the need to make the mechanism of identification, enlistment and protection of cultural heritage more effective from a regulatory and procedural point of view.

As a preliminary action for the preparation of this report, a survey was undertaken to identify and analyse the databases, with particular attention to those created and maintained by the two national protection agencies (NAA and AIRM). This survey has allowed to observe a complex and inhomogeneous situation. The part relating to the archaeological sites, edited by the NAA, appears to be considerably more developed than that concerning architectural and monumental heritage. Moreover, the NAA, thanks to an agreement signed with ALRC, has included on the national geoportal a large part of the approximately 7000 archaeological site that are thus geo-referenced. On the other hand, the situation concerning monumental goods is rather dramatic, and at the moment it can only count on some databases that are no longer maintained. In general, the structure of the cards available for the different types of cultural heritage appears very simple; the entry fields are often not normalized and a complete analysis of the data before their digitization does not seem to have been conducted. No operational co-operation was detected between the two agencies to unify the collection of common information (geographical and administrative location, references to protection measures ...).

Parallel to this reconnaissance work, the current legislation was also analysed, with particular attention to the mechanisms for the proposal and registration of immovable cultural heritage in the national registers. Although the laws have not been expressly designed to set up a national cataloguing system, the regulations for classifying the cultural heritage can be used as the basis for creating a unified cataloguing standard with modular and progressive characteristics.

A significant part of the work contained in the report concerns the comparison of the different existing cataloguing standards in order to find a common point that harmonises the legal provisions with the existing databases with a view to multi-precision. A unified cataloguing model based on preliminary data analysis and field normalization is proposed. This model can be the starting point for the definitive elaboration of an information system that will be elaborated through a specific working group that includes all the main actors involved.

Town planning and land planning, risk management and daily protection actions cannot be separated from a correct and updated location of cultural heritage. This is one of the most critical aspects of the current situation, since the attention to the spatial datum of immobile cultural heritage is almost entirely lacking. The situation is even more serious if we consider that there is currently no connection with the cadastral data. This lack reflects negatively on the notification and protection mechanisms of assets and must be resolved by means of appropriate regulatory acts. From the point of view of the national catalogue system this serious gap can be filled by strengthening the collaboration and agreements already existing between AIRM, NAA and the national geoportal. The ALRC seems to be currently the only public entity able to offer the necessary technological skills for the implementation of a geographic information system dedicated to the national catalogue of immovable cultural heritage.

In any case, beyond the technological platform that will be chosen, the new catalogue system cannot in any way disregard the implementation of the space component and mechanisms of close integration with the database of the cadastral system.



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Plan for digitalization and documentation of protected monuments and sites in the Republic of Moldova

Modernisation of cultural institutions and digitisation in the arts and culture field is one of the objectives of the *National Strategy for the Development of Culture of the Republic of Moldova / Culture 2020* which aims to ensure real and virtual circulation of the cultural product. The specific objective of the Strategy is to make the information system of the cultural field operational.

Among the priority actions of the Strategy are:

- digitisation of the cultural heritage
- formation of a single information system in the cultural field

In 2012 the National Programme for the informatization of the sphere of culture for 2012- 2020 was approved; the Programme objective being 75% digitisation of tangible and intangible cultural heritage of the Republic of Moldova by 2020. Another document containing provisions on culture is the National Strategy on Information Society E-Moldova.

The National Programme for the informatization of the sphere of culture for 2012-2020 also provides for creating infrastructure and cultural information spaces necessary for the provision of electronic services in cultural field.

CULTURAL HERITAGE REGISTERS

Total area of Moldova is 33,7 thousand km², its population 3,5 Mln in 2016. Moldova is divided into thirty-two districts (raions), three municipalities, and two autonomous regions (Gagauzia and Transnistria⁷). There are 1,681 localities, of which 982 localities have their own local public authority (LPA). Five localities have municipality status, 66 have city status, and 916 are villages with commune status (The World Bank - *Land Registration and Property Valuation Project (P161238)*- 8th June 2018).

According to the law 1.530/1.993 the Register of the monuments protected has been published on 2010. It includes buildings of historical and artistic interest and areas of archaeological interest, of Local (L) or National (N) through a single comprehensive act; it has been set up on the pre-existing designation and is subject to periodic reviews which must also be approved by Parliament. It is only descriptive (data on building, location with address and house number, time of construction, type of property) and does not include any connection to the land registry, nor any reference to the existing cartography.



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The *Registrului național al monumentelor de for public*, has been approved by Parliament on 20th July 2018. It consists of a table categorized by code of the work, address, location, monument name and date. The quantities are as follows:

Tab. 1 Cultural assets per administrative area (based on the Register of the monuments protected by Law No. 1531/1993 as adopted by Monitorul Oficial al Republicii Moldova, 2010, nr. 15-17, Art.24. Update approved by Parliament on 20th July 2018

ZONA DE CENTRU		
1	Raionul Anenii Noi	157
2	Raionul Călărași	82
3	Raionul Criuleni	129
4	Raionul Dubăsari	95
5	Raionul Grigoriopol	74
6	Raionul Hîncești	125
7	Raionul Ialoveni	139
8	Raionul Nisporeni	146
9	Raionul Orhei	321
10	Raionul Slobozia	76
11	Raionul Strășeni	102
12	Raionul Telenești	126
13	Raionul Ungheni	148
TOTAL		1.720
ZONA DE NORD		
14	Raionul Briceni	192
15	Raionul Camenca	149
16	Raionul Dondușeni	185
17	Raionul Drochia	135
18	Raionul Edineț	380
19	Raionul Fălești	195
20	Raionul Florești	253
21	Raionul Glodeni	162
22	Raionul Ocnița	175
23	Raionul Rezina	141
24	Raionul Rîbnița	96



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25	Raionul Rîșcani	194
26	Raionul Sîngerei	320
27	Raionul Soroca	243
28	Raionul Șoldănești	183
TOTAL		3.003
ZONA DE SUD		
29	Raionul Basarabeasca	21
30	Raionul Cahul	32
31	Raionul Cantemir	28
32	Raionul Căinari	40
33	Raionul Căușeni	51
34	Raionul Ciadîr-Lunga	22
35	Raionul Cimișlia	36
36	Raionul Comrat	17
37	Raionul Leova	36
38	Raionul Ștefan-Vodă	73
39	Raionul Taraclia	20
40	Raionul Vulcănești	40
TOTAL		416
41	Municipiul Chișinău	419
42	Orașul Bălți	42
43	Orașul Tiraspol	58
44	Orașul Tighina (Bender)	37
TOTAL GENERAL		5.695

Tab. 2 Cultural assets per category (based on the Register of the monuments protected by Law No. 1531/1993 as adopted by Monitorul Oficial al Republicii Moldova, 2010, nr. 15-17, Art.24. Update approved by Parliament on 20th July 2018)

CATEGORY	NUM.
Archaeology	2.688
Architecture	1.203
Architecture and Art	47



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Architecture and History	155
Popular Architecture	16
Art	120
Art & History	74
History	1.245
Other, mixed interest and No Category	147
TOTAL	5.695

The Register includes monuments and archaeological areas of National and Local interest: 4485 are classified of national importance, 1210 of local importance.

Joint work with MoECR representatives and Agencies began at the end of February 2018 on specific concrete topic of updating the registry of Historic monuments (1993) with cadastral data and basic information using all available tools.

MECR is proceeding with the revision of the Register (Old Classification) with additions and limited updates (New Classification), as well as with the division of the Register into further lists, as envisaged by the current planned law, without foreseeing, at the moment, any connection with the cadastral data, despite having an agreement with the Land Registry (ALRC), which would allow the access to data.

At the present further versions based on items typologies are being drafted, i.e. *Registrul monumentelor istorice* and the *Registrul siturilor arheologice*).

DATA STANDARDS AND STATE OF THE ART ON THE DIGITIZATION OF DATABASES

The existence of two separate agencies and the lack of one single legal instrument for the protection of cultural heritage as well as unified catalogue standards that collects and harmonize the diverse rules on cultural heritage as well as the different disciplinary approach are the main causes of the confusing situation that can be observed in the state of cataloguing and digitization of archaeological heritage and monumental assets. The present situation can be summarized as follows.

Archaeological heritage regulatory framework

The catalogue form for archaeological sites has been inherited from the former soviet period and is known as "Passport". It is a very synthetic form, which was used for all categories of cultural heritage. The number of records of this type related to archaeological sites currently used is not clear. Contrary to what happens for monuments, the Passport form does not seem to be relevant for archaeological heritage.



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Current legislation, and in particular Law no. 218/2010 (Article 2, par.1, let. t), provides for the establishment of a “database of archaeological sites - electronic database in which are recorded information about the archaeological sites included in the National Archaeological Repertory (Repertoriul arheologic național) and in the National Archaeological Register (Registrul arheologic național)”.

Both of these registers are updated by the **National Archaeological Agency** (hereinafter NAA) which has also adopted the methodology for classification of archaeological sites, in collaboration with the Academy of Sciences of Moldova, the National Archaeological Commission and the Ministry (Law no. 218/2010 art. 12, par.3. let. l; art. 13, par. 1, let. f, art. 14, par. 8, let. h, j, k).

The **National Archaeological Repertory** (hereinafter NA Repertory), “in paper and electronic form”, “includes a list of all archaeological sites discovered on the territory of the Republic of Moldova” and it is “elaborated on the basis of the published scientific data, of the archive, as well as of the recent scientific data provided by the archaeological institutions”; it “includes site descriptions, map data, photographic images, legal and administrative data” (Law no. 218/2010 , Art. 15; Annex 3: Regulation on the National Archaeological Repertory and the National Archaeological Register, of the Order of the Minister of Culture no. 126 of 25.04.2013. NA Repertory is in fact a project of study and scientific publication of archaeological data which, at present, is not implemented.

The **National Archaeological Register** (hereinafter NA Register) “is the state document which lists the archaeological sites of national and international significance taken under state protection. The archaeological sites of the National Archaeological Register are an integral part of the Register of Historical Monuments of the Republic of Moldova”. “The Register is drawn up on the basis of the National Archaeological Repertory by the National Archaeological Agency, in collaboration with the archaeological institutions, and approved by the Parliament at the proposal of the Government initiated by the Ministry of Culture” (Law no. 218/2010, Art. 16; Annex 3: Regulation on the National Archaeological Repertory and the National Archaeological Register, of the Order of the Minister of Culture no. 126 of 25.04.2013.

According to the Law the NA Register shall contain some basic information on archaeological sites (see

1.	Denumirea sitului	Site name
2.	Adresa	Address
3.	Coordonatele GPS	GPS coordinates
4.	Tipul sitului	Type
5.	Apartenența culturală	Cultural attribution
6.	Cronologia	Chronology
7.	Categoria de protecție	Level of Protection
8.	Număr-Registru	Registry Number
9.	Număr-Cadastru	Archaeological Cadastre Number

The NA Register envisages a number of information to be collected only slightly higher than those required for the Register of Historical Monuments.



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The Law 218/2010 also provides the creation of an **Archaeological Cadastre** (“Cadastrul archeologic”) conceived as a *system of the archaeological sites and the archaeological heritage of the National Archaeological Register* containing information about the *legal status, the protection regime and the area of their protection* (Law no. 218/2010, Art. 7).

The regulations on Cadastre, provided for by art. 48 of the Law no. 218/2010, has not yet been issued. However, it is likely that information relating to protection measures will be added in the land registry system to strengthen the protection action in transactions and trades of areas and buildings.

None of the Registers provides by the current regulations has given rise to organic and structured databases on immovable archaeological assets.

The Regulation on the evidence and classification of archaeological heritage (Regulamentul cu privire la evidența și clasarea patrimoniului archeologic, Annex 1 of the Order of the Minister of Culture no. 126 of 25.04.2013) finally provided for the setting up of an **archive of archaeological sites** by NAA. It should “*represent the entirety of archaeological sites of the Republic of Moldova, being the primary document through which any archaeological discovery is recorded to the state*”. This archive is organized in dossiers that are listed in the “Inventory of archaeological sites from the Republic of Moldova” (Inventarul dosarelor siturilor arheologice din Republica Moldova). These files constitute the basis for the elaboration and updating of the NA Repertory and the Archaeological Cadastre of the Republic of Moldova. Article. 27 of the regulation establishes the information that must be contained in the dossier including the fields of a type sheet of the archaeological site (Article 28).

The dossier structure is reported in the Tab. 4 whilst the type sheet of the archaeological site is reported in Tab. 5. This archive, adopted in 2013, is not yet applied.



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Tab. 3 Data structure of National Archaeological Register.

1.	Denumirea sitului	Site name
2.	Adresa	Address
3.	Coordonatele GPS	GPS coordinates
4.	Tipul sitului	Type
5.	Apartenența culturală	Cultural attribution
6.	Cronologia	Chronology
7.	Categoria de protecție	Level of Protection
8.	Număr-Registru	Registry Number
9.	Număr-Cadastru	Archaeological Cadastre Number

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Tab. 4 Structure of the archive of archaeological site (Order of the Minister of culture No. 126/2013, Art. 27).

a)	număr de inventar, denumirea dosarului	Inventory number, dossier's name
b)	fișa de evidență a documentelor și materialelor din dosar	Index of the documents and materials contained within the dossier
c)	fișa tip a sitului arheologic	Archaeological site sheet
d)	documente ce țin de cadrul juridic și administrativ al sitului	Documents related to the legal and administrative framework
e)	acte de protejare a sitului semnate cu proprietarii terenurilor corespunzătoare	Protection acts signed by the owners of the relevant land
f)	acte de expertizare a sitului	Expertise documents
g)	acte de inspectare a sitului	Inspection documents
h)	informații privind cercetarea arheologică a sitului	Information on archaeological site research
i)	informații despre descoperiri arheologice întâmplătoare	Information on random archaeological discoveries
j)	contracte de arendă/valorificare a siturilor	Contracts for the lease / capitalization of the sites
k)	planul de situație a sitului arheologic	Detailed plan
l)	planul topografic al sitului arheologic	Topographical map
m)	dosarul cadastral al sitului	Cadastral dossier
n)	fotografii ale sitului cu indicarea datei fotografierii	Photographs reporting the shooting date
o)	materiale digitale pe CD, DVD referitoare la sit	Digital annexes

Tab. 5 Structure of archaeological site sheet (Order of the Minister of culture No. 126/2013, Art. 28). The bold text identifies the fields also present in the NA Register

a)	<i>nume sit</i>	<i>Name</i>
b)	<i>adresa juridică: satul, comuna, raionul</i>	<i>Legal address: village, commune, rayon</i>
c)	<i>categoria clasării sitului</i>	<i>Category</i>
d)	<i>data clasării, referință la documentul de clasare</i>	<i>Date of classification, reference to the classification document;</i>
e)	<i>număr de înregistrare în Registrul arheologic național</i>	<i>Registration number in the National Archaeological Register</i>
f)	<i>număr de înregistrare în Cadastrul arheologic</i>	<i>Registration number in the Archaeological Cadastre</i>
g)	<i>coordonatele GPS ale sitului (reperul central)</i>	<i>GPS coordinates of the site (centroid)</i>
h)	<i>denumirea locală a punctului în care se află situl</i>	<i>Alternative/traditional name</i>
i)	<i>tipul sitului</i>	<i>Type</i>
j)	<i>dimensiunile sitului (lungimea-lățimea sau diametrul-înălțimea)</i>	<i>Dimensions (length-width or diameter-height)</i>
k)	<i>apartenența cultural-cronologică a sitului</i>	<i>Cultural attribution</i>
l)	<i>caracteristici ale suprafeței sitului, repere</i>	<i>Site surface characteristics</i>



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<i>m)</i>	<i>gradul de conservare a sitului</i>	<i>State of conservation</i>
<i>n)</i>	<i>anul descoperirii sitului și autorul descoperirii</i>	<i>Year and the author of the discovery</i>
<i>o)</i>	<i>cercetarea arheologică a sitului (anul, autorul, suprafața cercetată, număr secțiuni)</i>	<i>Archaeological research (year, author, surface investigated, number of sections);</i>
<i>p)</i>	<i>bibliografie referitoare la sit</i>	<i>References</i>
<i>q)</i>	<i>data elaborării fișei, nume, prenume</i>	<i>Date of sheet elaboration: name, first name.</i>



This system was conceived to enforce a continuous flow starting from the first identification of the archaeological asset up to the registration procedures (Fig. 1). Most of this system, however, appears to have never been applied. It would be advisable to reverse the flow, foreseeing a lower degree of complexity upon the first identification of the asset with an increase of details within the process of inclusion in the Register. The creation of an archaeological cadastre could be overcome by the practice of transcription of the protection measures in the national cadastre.

In general, the whole system is redundant, the procedures for registration is very long. In fact, from the moment of identification of the asset to its enlistment, the process takes years.

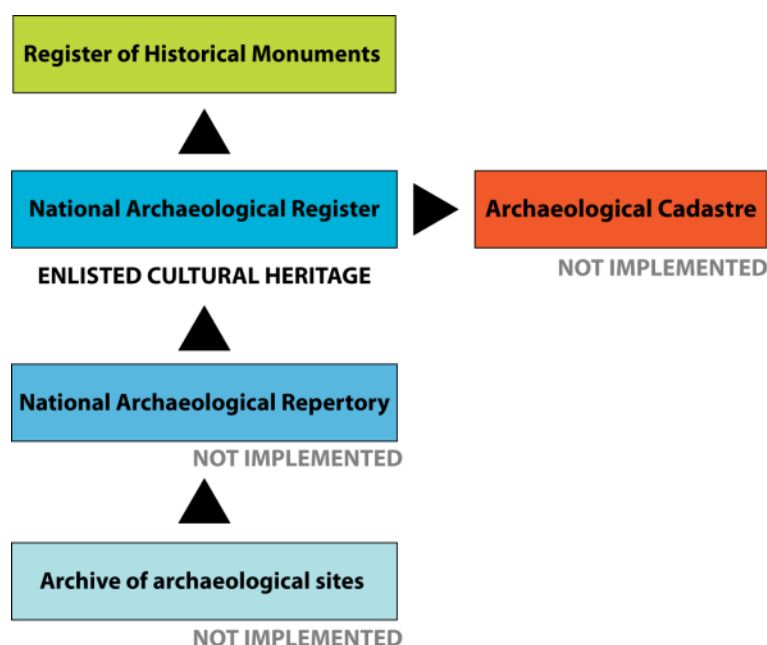


Fig. 1 Archaeological sites cataloguing process according to current legislation.

Digitization Projects

Compared to the standard forms required by law, NAA currently manages, maintains and updates two different digital databases:

1. a sort of Inventory of archaeological sites, which collects data on assets included in the register and on many other non-registered sites;
2. a georeferenced layer hosted within the geoportal.md portal following specific agreements with the Agency for Land Relations and Cadastre.

The inventory of archaeological sites is a working tool made with internal resources of the agency and, roughly, constitutes the equivalent of Archive of archaeological site, although the regulations of the two systems are not entirely equivalent.



The second is a database containing the vector perimeter of about 7.000 archaeological sites associated with some basic information.

This considerable amount of information is an indispensable pre-requisite for current archaeological protection and is the indispensable starting point for the revision and update of the cataloguing standards.

NAA Inventory of Archaeological Site (Dosar de Inventariere)

This is a standard developed independently by NAA to meet the daily needs of protection. The inventory sheets were created with internal resources in tabular form, using Microsoft Excel, and organizing the information in dossiers, as it is envisaged for the archive of archaeological sites. In general, it is a very valid and complete file, but it includes too descriptive fields (Descriptions, historical notes, conservative status); it contains the reference to the COD of registration to the Registry but not to a general univocal number and lacks normalization.

The “Dosar de inventariere” presents a section with property data, a section on historical data on the building, on the author and on the history of the site. It provides descriptive data with reference to the landscape and the structure and an accurate vocabulary regarding the object, a section on the state of Conservation on the missing monument. It also includes an accurate part on the Registry and the declaration. It contains references to approved Projects and historical maps and to the classification system, as well as enlistment proposal. This file which has already been used for many archaeological sites, combines the functions of the Archives of archaeological sites required by law (see Fig. 2). The general structure of the dossier is reported in Tab. , while the archaeological site file is reported in the

Tab. . The information included in the dossier is comparable with those provided for the archive of archaeological sites.

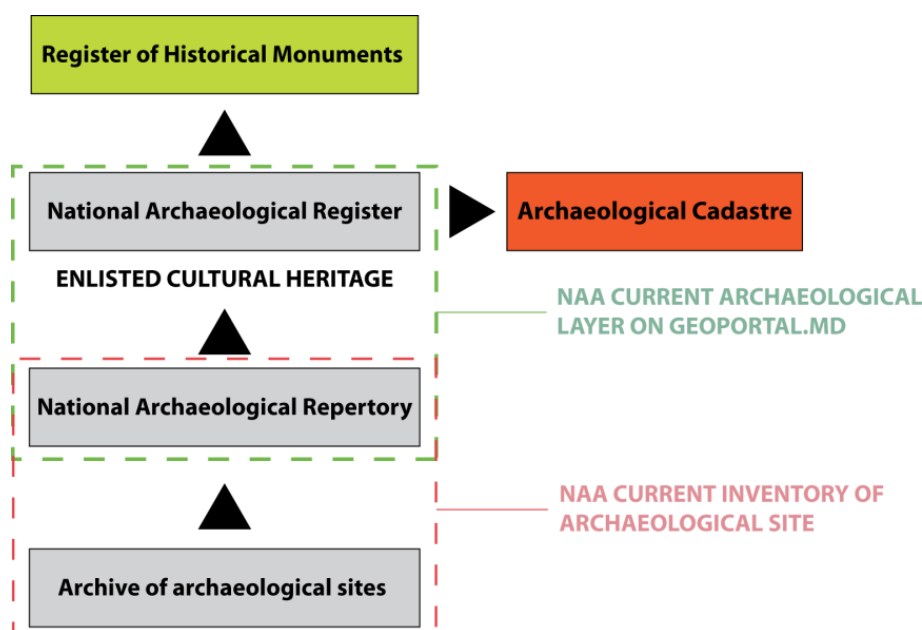


Fig. 2 Relationship between digital databases and cataloguing standards required by law.



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Tab. 6 Structure of the current Inventory of archaeological sites (Dosar de Sit Arheologic) used by NAA. The last column shows the corresponding sections of the archive of archaeological sites (Tab. 4)

Sect.	Descriere	Description	Corr. Sections of Tab. 4
I	Foaia de titlu (instituția, număr de inventar, denumire dosar, data deschiderii dosarului);	Dossier Cover (Institution, Inventory number, File name, Date of creation of the file)	a)
II	Fișa de evidență a documentelor și materialelor din dosar;	Index of the documents and materials contained within the dossier	b)
III	Fișa de sit arheologic;	Archaeological site sheet	c)
IV	Acte ce țin de cadrul juridic și administrativ al sitului;	Documents related to the legal and administrative framework	d)
V	Acte de inspectare /expertizare a sitului;	Inspection and expertise documents	f); g)
VI	Contracte privind darea în locațiune a sitului arheologic;	Contracts for the lease / capitalization of the sites	j)
VII	Materiale digitale pe CD/DVD referitoare la sit.	Digital annexes	o)

Tab. 7 Structure of the archaeological site sheet (Fișă se Sit Arheologic) used by NAA. The last column shows the corresponding sections of the archive of archaeological sites (Tab. 5)

Sec.	Descriere	Description	Corr. Sections of Tab. 5
I	DATE DESPRE LOCALIZAREA SITULUI	SITE LOCATION DATA	---
a)	codul sitului conform Repertoriului Arheologic Național:	RAN (National Archaeological Repertory) Code	
b)	numărul sitului conform Registrului monumentelor Republicii Moldova ocrotite de stat:	RegMOS (Register of Historical Monuments of the Republic of Moldova) Code	
c)	numărul sitului conform Registrului Arheologic Național:	RegAN (National Archaeological Register) Code	e)
d)	numărul de înregistrare a sitului în Cadastrul Arheologic:	CA (Archaeological Cadastre) Number	f)
e)	denumirea sitului:	Name	a)
f)	denumiri mai vechi ale sitului:	Traditional/historical Name	h)
g)	adresa: localitate (sat, comună/oraș	Address	b)
h)	raion/municipiu/UTA:	District/municipality/UTA	
i)	punct/toponim:	Toponym	
k)	repere localizare:	Location info	



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l)	reper hidrografic:	Hydrography	
m)	forma de relief	Geomorphology	
n)	descriere geografică:	Geography	l)
o)	coordonate GPS:	GPS coordinates	g)
p)	dimensiuni/suprafață sit:	Surface/size	j)
q)	parcela (ele) cadastrală (e)	Cadastral particle	
r)	regimul de proprietate, proprietarul	Legal regime/property	
s)	tipul de exploatare a terenului:	Type of research/excavations	o)
t)	starea de conservare a sitului:	State of conservation	m)
II	DATE ARHEOLOGICE DESPRE SIT	ARCHAEOLOGICAL DATA	
a)	categorie sit	Category	c)?
b)	tip sit	Type	i)
c)	Datare	Chronology	k)
d)	apartenența culturală	cultural attribution	k)
e)	descriere si	Description	
f)	anul descoperirii	Year of discovery	n)
g)	autorul descoperirii	Author of discovery	n)
h)	cercetarea sitului (anii, autorii)	Archaeological research (year, author)	o)
i)	vestigii descoperite	Remains uncovered	
k)	locul de păstrare a materialelor descoperite	Storage's place for discovered materials	
III	IMAGINI	GRAPHIC AND PHOTOGRAPHIC ANNEXES	
a)	Hărți	Maps	
b)	Planuri	Plans	
c)	Desene	Drawings	
d)	fotografii de suprafață	Photographs	
e)	fotografii artefacte	photos of findings	
f)	fotografii aeriene	aerial photos	
g)	imagini satelitare	satellite Photos	
IV	BIBLIOGRAFIE	REFERENCE	
a)	rapoarte de cercetare arheologică	excavation Reports	
b)	Publicații	scientific publications	p)
V	INFORMAȚII ÎNTOCMIREA/MODIFICAREA FIȘEI	PRIVIND COMPILATION INFORMATION	
a)	data întocmirii fișei, nume persoană și instituția	date of filing, name of person and institution	q)



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b)	data modificării fișei, nume persoană și instituția, compartimentele modificate	date of updating, name of person and institution, modified compartments
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Archaeologic layer in geoportal.md

In addition to the inventory of Archaeological sites, NAA, through an agreement with the Agency for Land Relations and Cadastre, manages a specific layer of the national information system on geoportal.md. The agreement allows NAA to enter the perimeter of archaeological sites directly in the national information system, having at their disposal the various cartographic layers made available by the geoportal.

This catalogue consists of approximately 7,000 records: it represents the most advanced level in the digitization of archaeological heritage. The agreement with the land registry allowed for the creation of a georeferenced vector layer that can be used with the GIS topological research tools. For information quantities this database is placed at an intermediate level between the NA Register and the archive of archaeological sites. However, it is noted that not all the fields of the table associated with the vector theme are compiled and that the structure of the file has not been normalized. The NAA staff then complains about difficulties in using the geoportal when entering data (which has not prevented the NAA from inserting a significant amount of data). The structure of the attribute table of the vector theme is comparable with both those used by the NAA and with the archives of the archaeological sites regulated by the law (See Tab. 8).

The vector layer of archaeological heritage within the geoportal represents the most advanced digitization model in Moldova. The reshaping of this system, through the creation of a more rigorous and complex data structure, represents the starting point for the setup of a unified cataloguing system of the immovable cultural heritage.

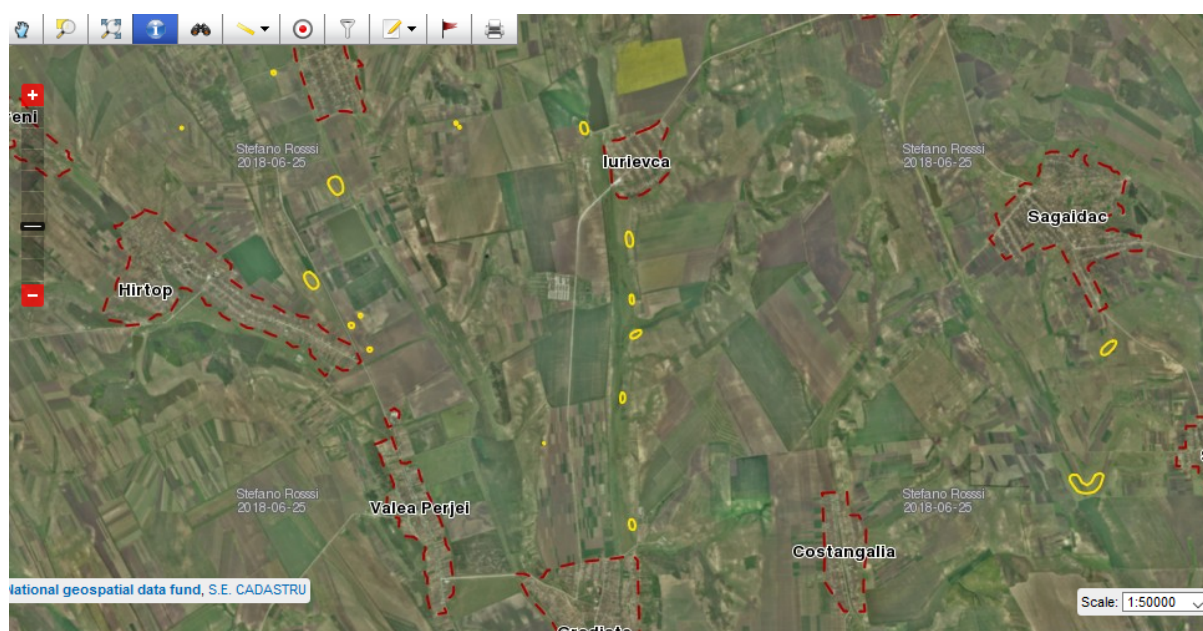


Fig. 3 Example of archaeological assets displayed on geoportal.md (in yellow).



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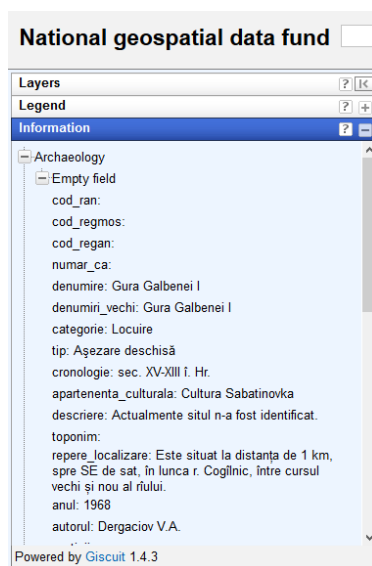


Fig. 4 Part of the attributes of the vector layer.



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Tab. 8 Data Structure of the Archaeological layer on Geoportal.

Cod RAN	RAN (National Archaeological Repertory) Code
Cod RegMOS	RegMOS (Register of Historical Monuments of the Republic of Moldova) Code
Cod RegAN	RegAN (National Archaeological Register) Code
Număr CA	Archaeological Cadastre Number
Localitate/Comună	Locality/Place/Municipality
Unitate administrativă superioară	District
Denumire	Name
Denumiri mai vechi	Traditional/historical Name
Categorie:	Category
Tip:	Type
Cronologie	Chronology
Apartenența culturală:	Cultural Attribution
Descriere	Description
Toponim	Toponym
Repere localizare	Localization Info
Coordonate GPS	GPS Coordinates
Dimensiuni/suprafață sit:	Surface/Size
Anul descoperirii/cercetării	Year of discovering
Autorul descoperirii/cercetării	Author of discovering
Vestigii descoperite	Remains uncovered
Parcelă cadastrală	Cadastral particle/s
Regimul de proprietate	Legal Regime/Propriety
Tipul de exploatare a terenului	Type of Research/Excavations
Starea de conservare a sitului	State of Conservation
Imagini: (fotografii, desene)	Graphical and Photographical documentation
Bibliografie	Reference
Data întocmirii/modificării fișei	Creation/Update Information



Monumental and Historical heritage

Regulatory framework

As in the case of archaeological heritage, the identification of cultural heritage during the Soviet period was based on a single catalogue card called "**Passport**", used for every types of cultural heritage. The AIRM archives keep a large number of these cards in paper form and some have been partially digitized. The structure of the data contained in the Passport cards is very essential and some important information are missing; the model is no longer in use. Today the importance of Passport cards is historical-documentary. These are in fact often accompanied by a rich photographic apparatus, drawings and inspection reports that often constitute the only information available for buildings that no longer exist today.

As mentioned in the introduction, article 1 of the law Nr. 1530 of 22.06.1993 *on the protection of monuments* (privind ocrotirea monumentelor) introduced the **Register of monuments of the Republic Moldova protected by the State** (Registrul monumentelor Republicii Moldova ocrotite de stat, hereinafter referred to as the **Register of Monuments**). The National Register shall be specified, approved by the Parliament and should be updated on the basis of additional lists at a period of three years. According to Article 18 of the same Law *"additional lists shall be drawn up on the basis of the inventory studies of the museum, archaeological, architectural, urban, ethnographic, plastic and memorial funds ... Data is centralized, verified and processed by the Ministry of Culture"*. The current version of the Register has been approved by Parliament in 2010 and is expected to be revised.

The Order No. 380 of 27.12.2016 *on the approval of the Regulation on the National Registry and Local Registries of Monuments in public space* (Regulamentului privind Registrul național și Registrele locale ale monumentelor de for public) introduced new fundamental regulations dedicated to the 'monuments in public space'. Annex 1 of the decree drafts the structure and the compilation rules of both Registers (Tab. and Tab.).

Tab. 9 Data Structure of the National Register of Monuments in public space.

Nr.	Cod RNMFP	Localitate/ Administrative- territorial unit	Adresă/Address (stradă, bulevard, piață)/ (street, avenue, square)	Denumirea monumentului/Name of the monument	Data/Date of Building
	Registrul Național al Monumentelor de For Public/National Register of Monuments in public space	(municipiu, oraș, comună, sat)/(Municipality, Town; communes, villages)			
1	2	3	4	5	6
1	C-A-m-c-000	municipiul Chișinău, orașul Chișinău	bd. Ștefan cel Mare și Sfânt, colț cu str. Mitropolit G. Bănulescu - Bodoni (Grădina Publică „Ștefan cel Mare și Sfânt”)	Monumentul „Ștefan cel Mare și Sfânt”	29.04.1928



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Tab. 4 Data structure of the Local Register of Monuments in public space from the district (municipality).

Nr. crt.	Cod RLMFP Registrul Local al Monumentelor de For Public/ Local Register of Public Monuments Code	Localitate/ Administrative- teritorial unit (municipiu, oraș, comună, sat)/(Municipality, Town; communes, villages)	Adresă/Address (stradă, bulevard, piață)/(street, avenue, square)	Denumirea monumentului/ Name of the monument	Data/Date of Building
1	2	2	4	5	7
1	C-B-m-c-000	municipiul Chișinău, orașul Chișinău	str. Maria Cebotari, 53, în fața Liceului Teoretic „Spiru Haret”	Bustul lui Spiru Haret	5.10.2016

Detail of the Registry structure

For both registers, the monument card consists of seven mandatory fields.

1. Unique identifier.

2. **NNMFP Code** (National Register of Monuments in public space) / RLMFP Code (Local Public Monuments Register): alphanumeric code composed by: An acronym identifying the administrative II level administrative unit in which it is built;- the category in which the monument was classified (A for monuments with national protection status or L for monuments with a local protection status); the character of the public monument (decorative monument - m; memorial monument - m-c, religious monument - m-r; an identification number (e.g. 001 which, unlike the order number in the Register, will remain unchanged). In the reported example of Tab. 3: C-B-m-c-000 = C(hișinău)-B(local)-m-c(memorial monument)-000(Progressive number).

3. **Administrative-territorial unit** (in the case of NNMFP); Town. The succession of localities within municipalities / districts is: - the city of residence of district / municipality; - the other localities, in their alphabetical order - towns, communes, villages (for the villages in communes, in the column locality it is first mentioned the commune then the village).

4. **Address.** Location of public monuments: - the monuments are registered according to the alphabetical sequence of the street names; monuments on the same street appear in the sequence of postal addresses / numbers; in the localities where the streets have no names, the location of the monument is identified by indicating the nearest building or, as the case may be, urban planning element (public garden, square, etc.); topographical and local toponyms are indicated for suburban monuments.

5. **Official name of the monument** the official name of the monument with which it was ranked. This heading, in brackets, also indicates the previous official names in the event of their existence.

6. **Date of building** / installation in the form dd-mm-yyyy.

A thesaurus is provided for the compilation of the abbreviations of the administrative units (See Tab.).



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Tab. 5 Thesaurus for the alphabetical acronym of municipalities/raions.

Nr. de ord.	Sigla /raioanelor / rayons	alfabetică Alphabetical acronym of municipalities	a municipiilor Name of municipalities and districts
1	B		municipiul Bălți
2	C		municipiul Chișinău
3	TG		municipiul Tighina
4	TS		municipiul Tiraspol
Raioanele			
5	AN		Anenii Noi
6	BR		Briceni
7	BS		Basarabeasca
8	CC		Camenca
9	CH		Cahul
10	CL		Călărași
11	CM		Cimișlia
12	CR		Criuleni
13	CS		Căușeni
14	CT		Cantemir
15	DB		Dubăsari
16	DN		Dondușeni
17	DR		Drochia
18	ED		Edineț
19	FL		Fălești
20	FR		Florești
21	GE		UTA Gagauz-Yeri
22	GL		Glodeni
23	GR		Grigoriopol
24	HN		Hâncești
25	IL		Ialoveni
26	LV		Leova
27	NS		Nisporeni
28	OC		Ocnîța
29	OR		Orhei
30	RB		Râbnîța



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31	RS	Râșcani
32	RZ	Rezina
33	SD	Șoldănești
34	SG	Sângerei
35	SL	Slobozia
36	SR	Soroca
37	SV	Ștefan Vodă
38	TR	Taraclia
39	TL	Telenești
40	UN	Ungheni

The National Register and the Local Registries should be the basis for the establishment of the public monument record sheets, of landscaping and urban plans, as well as a Public Monuments Database “*kept in electronic format and is managed and completed by the Ministry of Culture on the basis of the National Registry and the Local Registers*”.

Chapter 4 of Order No. 380/2016 introduces the Inventory of Monuments in public space in the form of a dossier (Inventarierea monumentelor de for public, see Tab. 6) and the Evidence Sheet of Monuments in public space (Fișei de evidență a monumentului de for public, see

Tab.) respectively illustrated in annexes 2 and 3. The dossier and the evidence sheet are both organized by thematic sections and contain numerous common fields. The legislation does not exhaustively clarify the relationship between the two levels of cataloguing that are assumed to be progressive, by analogy with archaeological sites.

Tab. 6 Data Structure of the Inventory of Monuments in public space (Dosar de Inventariere a monumentului de for public).

1. IDENTIFICARE – IDENTIFICATION	
1.1.	Cod înscris în Registrul național sau Registrul local / Code recorded in the National Register or local register
1.2.	Nr. cadastral al terenului monumentului / Cadastral number of the land of the monument
1.3.	Denumire oficială a monumentului / Oficial name of the monument
2. LOCALIZARE ADMINISTRATIVĂ/ADMINISTRATIVE LOCALIZATION	
2.1.	Raion; municipiu; unitat, Autonomă /District; city; autonomous unit
2.2.	Localitate (oraș, comună, sat) / Locality (town, commune, village)
2.3.	Denumirea localității la momentul edificării monumentului (în caz dacă a fost modificată) Name of the settlement at the moment of building the monument (if it has been modified)
2.4.	Adresă (stradă, număr) actuală / current Address (street, number)
2.5.	Adresă anterioară (în caz dacă a fost modificată) / Previous address (if modified)
2.7.	Coordonate geografice/Geographical coordinates
2.7.1.	Referințe geografice /Geographical references



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2.7.2.	Identificare cartografică /Cartographic identification
2.7.3.	Sistem cartografic utilizat / Cartographic system used
2.7.4.	Coordonate X,Y / X-Y Coordinate
3. TIP DE PROPRIETATE /TYPE OF PROPERTY	
3.1.	Proprietate publică a statului / Public property of the state
4. DATARE/DATE-CHRONOLOGY	
4.1.	Secol / Century
4.2.	Datare prin intervale de ani / Dating through intervals of years
4.3.	Datare exactă (data, luna, anul) / Exact date (date, month, year)
5. ISTORIC. ACTE LEGALE/HISTORIC. LEGAL ACTS	
5.1.	Istoricul edificării / History of edification
5.1.1.	Decizia autorității administrației publice locale privind edificarea monumentului (numărul și data adoptării) / Decision of the local public administration authority on the monument's building (number and date of adoption)
5.1.2.	Hotărârea Guvernului RM privind edificarea monumentului de for public (numărul și data adoptării) / RM Government Decision on the building of the public monument (number and date of adoption)
5.1.3.	Avizul Ministerului Culturii (<i>în baza deciziei Consiliului Național pentru Monumentele de For Public privind evaluarea ținutei artistice a monumentului</i>) (numărul și data aprobării) / Opinion/notification of the Ministry of Culture (based on the decision of the National Council for the Public Monuments on the evaluation of the monument's artistic outfit) (number and date of approval)
5.1.4.	Autorizația de construire (numărul și data aprobării) / Building Authorization (number and date of approval)
5.1.5.	Act de recepție finală a lucrărilor de edificare (numărul și data aprobării) / Act of Final Reception of Building Works (Number and Date of Approval)
5.2.	Autor (arhitect, sculptor) / Author (architect, sculptor)
5.3.	Antreprenor / Entrepreneur
5.4.	Finanțator – Subsidizer
6. DESCRIERE – DESCRIPTION	
6.1.	Descrierea zonei de amplasare / Description of location area
6.2.	Descrierea elementelor de peisaj cultural și natural / Description of the cultural and natural landscape elements
6.3.	Tipul monumentului / The monument type Compozițiespațial-volumetrică/ <i>space-volumetric composition</i> ; Statuie/ <i>statue</i> bust; placă cu relief sculptural / sculptural relief plate panou în relief/ panel in relief, Troiță/cruce/Crucifix / cross
6.4.	Caracter / Features Decorativ/commemorativ/ religios / Decorative/memorial/religious
6.5.	Descrierea monumentului/Description of the monument (dimensiuni, materiale de execuție, tehnici de realizare, inscripții)/ (Size, material of execution, construction techniques, inscriptions)
6.6.	Reglementări urbanistice/ Urban regulations - Hotarul terenului monumentului (descriere succintă cu referire la actul de aprobare) / The land of the monument (short description referring to the approval act);



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- Hotarul zonei de protecție (descriere succintă cu referire la actul de aprobare) /The buffer zone (short description referring to the approval act)	
7. CONSERVARE, RESTAURARE, AMENAJĂRI (caracteristica stării tehnice a monumentului) / CONSERVATION, RESTORATION, LANDSCAPE APPEARANCE (features of the monument's technical condition)	
7.1.	Stare generală de conservare / General conservation status (foarte bună, bună, medie, precolaps, colaps/very good good average precolapses collapse)
7.1.1.	Fundație/Foundation (foarte bună, bună, medie, precolaps, colaps/very good good average precolapses collapse)
7.1.2.	Postament – pedestal (foarte bună, bună, medie, precolaps, colaps/very good good average precolapses collapse)
7.1.3.	sculptură, relief sculptural, elemente ale compoziției spațial-volumetrice / sculpture, sculptural relief, elements of the spatial-volumetric composition (foarte bună, bună, medie, precolaps, colaps/very good good average precolapses collapse)
7.1.4.	amenajarea terenului aferent/ landscaping (foarte bună, bună, medie, precolaps, colaps/very good good average precolapses collapse)
7.1.5.	elemente de înverzire / greening elements (foarte bună, bună, medie, precolaps, colaps/very good good average precolapses collapse)
7.2.	Lucrări anterioare de restaurare / Previous restoration work
7.2.1.	descrierea generală a lucrărilor executate / General description of executed works
7.2.2.	data/perioada executării lucrărilor / Date - period of execution of the works
7.2.3.	Autori / Authors
7.2.4.	locul păstrării documentației privind restaurarea / the place where the restoration documentation is kept
7.3.	Riscuri/amenințări (eroziune, inundații, alunecări de teren, ș.a.) / Risks / threats (erosion, floods, landslides, etc.)
8. DOCUMENTARE (Anexe) /Documentation (Annexes)	
8.1.	Bibliografie / Bibliography
8.2.	Dosare și rapoarte în arhive / Folders and reports in archives
8.3.	Hărți, desene, fotografii de epocă /Maps, drawings, vintage photographs
8.4.	Fotografii vederi generale și detalii (color și alb-negru) / Photos general views and details (color and black and white)
8.5.	Plan situație / Plan situation
8.6.	Plan general / General plan
8.7.	Planul zonei de protecție / Protection area plan
8.8.	Desene de relevu / Drawings surveying
8.9.	Documentații de proiect privind intervenții de restaurare / Project documentation on restoration interventions
9. CLASARE/ CLASSIFICATION	
9.1.	Categoria / Category (A or B)
9.2.	Criterii generale de evaluare pentru categoria A / General evaluation criteria for category A (criteriul valorii artistice și urbanistice / the criterion of artistic and urban value; criteriul valorii memorial-simbolice / memorial symbolic value criterion; criteriul vechimii /age criterion)



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9.3.	Denumirea, numărul, data adoptării documentului de clasare / Name, number, date of adoption of the classification document
9.3.1.	<i>pentru categoria A</i> – numărul și data avizului CNMFP privind clasarea monumentului / for category A - the number and date of the CNMFP opinion on the classification of the monument
9.3.2.	<i>pentru categoria A</i> – numărul și data adoptării Hotărârii Parlamentului de înscriere în Registrul Național / for category A - the number and date of the Parliament's decision to register in the National Register
9.3.3.	<i>pentru categoria B</i> – numărul și data adoptării deciziei autorității administrației publice locale de nivel II înscriere în Registrul local / for category B - the number and date of the decision of the local public administration authority of II level registration in the local register

10. GESTIUNE / ADMINISTRATION

10.1.	Instituția care administrează monumentul, data intrării în administrare / The institution administering the monument, the date of entry into administration
	Data scoaterii din administrare și instituția în administrarea căruia a intrat monumentul (după caz) / Date of removal from administration and institution administered by the monument (as the case may be)
	Numele și prenumele elaboratorului dosarului / Surname and first name of the file developer
	Funcție, specialitate / Function, specialty
	Semnătura persoanei care a elaborat dosarul / The signature of the person who drew up the file
	Semnătura și ștampila conducătorului instituției în cadrul căreia s-a redactat dosarul / Signature and stamp of the head of the institution in which the dossier has been drawn up
	Data finalizării elaborării dosarului / Date of completion of the dossier

Tab. 7 Data structure of the Evidence Sheet Of Monuments in public space/ Fișa de evidență a monumentului de for public

1. IDENTIFICARE –IDENTIFICATION

1.1.	Cod înscris în Registrul național sau Registrul local / Code recorded in the National Register or local register
1.2.	Nr. cadastral al terenului monumentului / Cadastral number of the land of the monument
1.3.	Denumire oficială a monumentului / Official name of the monument

2. LOCALIZARE ADMINISTRATIVĂ - ADMINISTRATIVE LOCALIZATION

2.1.	Raion; municipiu; unitate autonomă / District; city; autonomous unit
2.2.	Localitate (oraș, comună, sat) / Locality (town, commune, village)
2.3.	Adresă actuală (stradă, număr) / current Address (street, number)
2.4.	Cod poștal; nr. cadastral / Postal code; no. Cadastral
2.5.	Localitate anterioară (după caz) / Previous locality (as the case may be)
2.6.	Adresă anterioară (după caz) / Previous adress (as the case may be)

3. TIP DE PROPRIETATE/TYPE OF PROPERTY

3.1.	Proprietate publică a statului / Public property of the state
------	---

4. DATARE/CHRONOLOGY

4.1.	Datate prin perioade (secolul) / Dating through periods (century)
4.2.	Datate prin intervale de ani / Dating through intervals of years



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4.3.	Datare exactă (data, luna, anul) /Exact date (date, month, year)
5. ISTORIC. ACTE LEGALE / HISTORIC. LEGAL ACTS	
5.1.	Scurt istoric al monumentului / Short history of the monument
5.2.	<p>Avize, autorizații / Opinions/notifications, authorizations</p> <p>Decizia autorității administrației publice locale privind edificarea monumentului nr. din</p> <p>The decision of the local public administration authority regarding the building of the monument no. of</p> <p>Hotărârea Guvernului Republicii Moldova privind edificarea monumentului de for public nr. din</p> <p>RM Government Decision on the building of the public monument number date of adoption....</p> <p>Avizul Ministerului Culturii al Republicii Moldova privind evaluarea ținutei artistice a operei de artă plastică monumentală nr. din</p> <p>Opinion/notification of the Ministry of Culture (based on the decision of the National Council for the Public Monuments on the evaluation of the monument's artistic outfit) number date of approval.....</p> <p>Autorizația de construire nr. din</p> <p>Building Authorization number date of approval....</p> <p>Act de recepție finală a lucrărilor de edificare nr. din</p> <p>Act of Final Reception of Building Works Number Date of Approval...</p>
6. CONSERVARE – CONSERVATION	
6.1	Stare generală de conservare / General conservation status (foarte bună, bună, medie, precolaps, colaps/very good good average precolapses collapse)
7. DOCUMENTARE (Anexe)/ DOCUMENTATION (Annexes)	
7.1.	Fotografii – Photos (<i>Se anexează la prezenta fișă /It is attached to this fiche</i>)
7.2.	Plan situație cu indicarea zonei de protecție / Plan situation indicating the protection area (<i>Se anexează la prezenta fișă /It is attached to this fiche</i>)
8. CLASARE / CLASSIFICATION	
8.1.	Categoria/ Category (A or B)
8.2.	<p>Documentul prin care monumentul a fost plasat sub protecție /The document by which the monument was placed under protection</p> <p><i>Exemplu:</i> Registrul național al monumentelor de for public (aprobat prin HP nr. ... din ..., publicat în Monitorul Oficial ...) <i>sau</i> Registrul local al monumentelor de for public din raionul ... (aprobat prin decizia Consiliului raional ... nr. din ...) / Example: National Register of Public Monuments (approved by PD No. ... of ..., published in the Official Gazette ...) or the local register of public monuments in the rayon ... (approved by the decision of the district council ... No of ...)</p>
9. GESTIUNE –ADMINISTRATION	
9.1.	Instituția care administrează monumentul/ The institution administering the monument
	Numele și prenumele elaboratorului fișei de evidență/ Surname and first name of the file developer
	Funcție, specializare/ Function, specialty
	Semnătura specialistului care a elaborat fișa / The signature of the person who drew up the sheet
	Semnătura și ștampila conducătorului instituției în cadrul căreia s-a redactat fișa/ Signature and stamp of the head of the institution in which the sheet was drawn up



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Data finalizării elaborării fișei/ Date of completion of the sheet

The cataloguing regulations introduced by Order No. 380/2016 finally provides an administrative instrument of an operative nature even if some procedural aspects need to be clarified and the authorities responsible for the compilation must be more precisely identified.

A standard relating to historical monuments is being developed along the lines of the regulations on monuments in public space (as an Annex of a upcoming National and Local Register for historical monuments - Registrul național și Registrele locale ale monumentelor istorice, see Tab. 13). The completion of this draft and its transformation into an implementing standard would mark a very significant step forward in the process of establishing a national cataloguing system.

Although it is a draft, this model is positively characterized by the presence of a tentative of data normalization, the indication of the obligatory nature of the fields and the presence of numerous thesauri.



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Tab. 83 Draft of Data Structure of the Inventory of Historical Monuments (Dosar de inventariere a monumentului istoric).

1. IDENTIFICARE – IDENTIFICATION	
1.1.	Cod înscris în Registrul național sau Registrul local/ Code recorded in the National Register or local register
1.2.	Categorie/Category
1.3.	Denumire oficială a monumentului istoric/ Official name of the historic monument
2. LOCALIZARE ADMINISTRATIVĂ/ADMINISTRATIVE LOCALIZATION	
2.1.	Stat/Country
2.2.	Raion/ municipiu/ unitate /District; city; autonomous unit
2.3.	Localitate (actuale) / Locality (town, commune, village)
2.4.	Stradă, număr (actuale) / current Address (street, number)
2.5.	Cod poștal / Postal Code
2.6.	Denumirea anterioară a localității / Previous-historic address (if modified)
2.7.	Stradă, număr anterioare / Previous-historic Address (street, number)
2.8.	Coordonate geografice/Geographical coordinates
2.8.1.	Referințe geografice /Geographical references
2.8.2.	Identificare cartografică /Cartographic identification
2.8.3.	Sistem cartografic utilizat / Cartographic system used
2.8.4.	Coordonate X,Y / X-Y Coordinate
3. TIP DE PROPRIETATE /TYPE OF PROPERTY	
3.1.	Stat / Public
3.1.1.	Proprietate publică a statului / Public Property of the State
3.1.2.	Proprietate privată a statului / Private property of the State
3.2.	Mixt / Mixed Property
3.3.	Privat / Private Property
4. DATARE/DATE-CHRONOLOGY	
	Datate prin perioade mari istorice/secole
4.1.	Secol/Century
4.2.	Datate prin intervale de ani / Dating through intervals of years
4.3.	Datate exactă (data, luna, anul) / Exact date (date, month, year)
5. ISTORIC. EVENIMENTE, PERSOANE ASOCIATE ISTORIEI MONUMENTULUI / HISTORIC. EVENTS, PERSONS ASSOCIATED TO THE MONUMENT'S HISTORY	
5.1.	Istoric / History
5.2.	Autor / Author
5.3.	Ctitor /Comanditar / Creator/ founder



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5.5.	Meșter / Artisan
5.6.	Pictor, sculptor / Painter, sculptor
6. DESCRIERE – DESCRIPTION	
6.1.	Descriere zonă și unitate administrativ- teritorială / Area description and administrative-territorial unit
6.2.	Descrierea elementelor de peisaj cultural și natural / Description of the cultural and natural landscape elements
6.2.1.	Peisaj cultural / Cultural Landscape
6.2.2.	Peisaj natural / Environment
6.3.	Categoria de arhitectură / Architectural Category
6.3.1.	Funcțiunea actuală / Current function
6.3.2.	Funcțiunea anterioară / Previous-historic function
6.4.	Descriere obiectiv individual / Individual objective description
6.4.1.	Plan /plan
6.4.2.	Fațade / Façade
6.4.3.	Formă acoperiș / Roof
6.4.4.	Extinderi /Expansions
6.4.5.	Anexe / Depandance
6.5.	Structură / Structure
6.6.	Materiale de construcție / Construction materials
6.6.1.	Materiale de construcție acoperiș / Roof construction materials
6.7.	Tehnici de construcție / Bulding Technique
6.8.	Încadrare stilistică / Stylistic framing
6.9.	Inscripții / Inscriptions
7. CONSERVARE, RESTAURARE, AMENAJĂRI (caracteristica stării tehnice a monumentului) / CONSERVATION, RESTORATION, LANDSCAPE APPEARANCE (characteristic of the monument's technical condition)	
7.1.	Stare generală de conservare / General conservation status
7.1.1.	Fundație / Foundation
7.1.2.	structură portantă / Structure
7.1.3.	Acoperiș / Roof
7.1.3.	elemente decorative exterioare /External decorative elements
7.1.4.	elemente decorative interioare /Internal decrative elements
7.1.5.	amenajarea terenului aferent / landscaping
7.1.6.	elemente de înverzire / Garden
7.2.	Lucrări anterioare de restaurare / Previous restoration work
7.2.1.	descrierea generală a lucrărilor executate / General description of previous restoration work
7.2.2.	data/perioada executării lucrărilor / Date – period of previous restoration work



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7.2.3.	Autori / author
7.2.4.	locul păstrării documentației privind restaurarea / place where the restoration documentation is kept
7.3.	Riscuri/amenințări (eroziune, inundații, alunecări de teren, ș.a.) / Risks / threats (erosion, floods, landslides, etc.)
8. DOCUMENTARE / DOCUMENTATION	
8.1.	Bibliografie / Bibliography
8.2.	Dosare și rapoarte în arhive / Folders and reports in archives
8.3.	Hărți, desene, fotografii de epocă / Maps, drawings, vintage photographs
8.4.	Fotografii vederi generale și detalii (color și alb-negru) / Photos general views and details (color and black and white)
8.5.	Plan situație / Plan situation
8.6.	Plan general / General plan
8.7.	Planul zonei de protecție / Protection area plan
8.8.	Desene de relevu / Drawings surveying
8.9.	Documentații de proiect privind intervenții de restaurare / Project documentation on restoration interventions
8.10.	Alte informații / Other information
9. NIVEL CLASARE/ CLASSIFICATION LEVEL	
9.1.	Categoria / Category (A or B)
9.2.	Categoria după natura obiectivului / Category by object nature
9.3.	Criterii generale de evaluare globală / Overall evaluation criteria
9.4.	Denumirea, numărul, data adoptării documentului de clasare / Name, number, date of adoption of the classification document
9.5.	Reglementări urbanistice / Urban regulations
10. INVENTARIERE / INVENTORY	
10.1.	Instituția în cadrul căreia s-a redactat dosarul / The institution within which the dossier was drawn up
10.2.	Autorul dosarului și calitatea acestuia / Author of the file and his qualification
10.2.1.	Numele, prenumele elaboratorului dosarului / Name, first name
10.2.2.	Calitatea acestuia (funcția, specialitate) / (function, specialty)
10.2.3.	Semnătura specialistului care a elaborat dosarul/ Signature of the specialist who prepared the dossier
10.2.4.	Semnătura și ștampila conducătorului instituției în cadrul căreia s-a redactat dosarul / Signature and stamp of the head of the institution in which the dossier has been drawn up
10.3.	Numărul procesului verbal de validare în Consiliul Național al Monumentelor Istorice / Verification validation number in the National Council of Historical Monuments
10.4.	Numărul documentului de clasare / Classification document number
10.5.	Data hotărârii Parlamentului (deciziei Consiliului APL în cazul categoriei B) privind clasarea / Date of Parliament's decision (LPA Council decision in case of Category B) on classification
10.6.	Data finalizării elaborării dosarului / Date of completion of the dossier



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Digitization Projects

Although there are some digitization projects concerning monumental goods, the general situation appears scattered and fragmented and does not exist at the moment an official cataloguing project led by the MECR or responsible agencies.

A pilot project, financed with funds from Soros Foundation Moldova (FSM), concerned the cataloguing of the monuments contained in the Register of Monuments of National and Municipal Importance, approved by the Mayoralty of Chisinau in January 1995. It comprises 977 municipal historical monuments. The proposed site contains photo material, graphic drawings and short historical data complete with a current description of 860 monuments found in the historical centre of the capital. The results of this project have been published on the project website (www.monument.sit.md). Unfortunately, the project is finished and the website is no longer updated.

An example of promotion of immovable cultural heritage through information technologies is the application "E-Patrimoniu" created by the AIRM on the platform www.e-patrimoniu.md thanks to the collaboration with a group of volunteers. In particular, through the e-map project, a webgis related to the Map of the Architectural Monuments of Chişinău (Harta Monumentelor of Arhitectură din oraşul Chişinău) is envisaged. The structure of a catalogue card already exists but the inventory of the sites has not yet begun.

E-Patrimoniu Map

(V.Popovici)

The „E-Patrimoniu Map” is a product developed in ArcGIS by RoyalMap in partnership with the Agency for Inspection and Restoration of Monuments in Moldova, coordinated by Victor Popovici. ArcGIS is a software which is used worldwide for creating and using maps, compiling geographic data, analyzing mapped information, sharing and discovering geographic information, using maps and geographic information in a range of applications, and managing geographic information in a database. Royal Map is a private entity specialized in working with GIS data and one of the very few entities in Moldova that is licensed and works with ArcGIS professionally.

The product aims to offer an interactive online database of all historical buildings in Moldova, those that are protected and/or may deserve to be protected by the government. The map/database will offer the possibility to the user to search and view monuments that correspond to pre-defined filters/conditions. The database has the following fields and filters for each monument: Registry Name, Alternative Names, Address, Global ID (UUID that will be used to connect this database with others, if necessary), Locality, Raion/Municipality, Cadastral Number, Related Cadastral Numbers, Private/Public/Mixed Property, Historical periods (pre-Tsarist, Tsarist, Interwar, Soviet, Post-Soviet), Exact construction year(s) if known, Type of significance (Historical, Artistic, Architectural), Purpose of construction (religious, administrative building, mansion, residential, trade/commerce, educational, industrial, cultural, other), Architectural styles and elements (neoclassic, neoromanian, modern Romanian, modern, eclectic, neogotic, art deco, traditional, art nouveau, other), Architect Name(s), Condition status (intact, mutilated, ruined, demolished, etc.), Protection status (if yes, then National/Local, Registry Number/Code, Year of introduction into the registry, year of removal from the registry), architectural elements (Doors/Gates, Iron elements, Roof, Pavement, Inscriptions, Columns, Statues, Archeological site, protected/historic vegetation, other), Tags (information extracted from credible sources and included in the database to



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make the monument more searchable online, such as names of former owners, historical events and people related to the building and so on) and general Description of the Monument. Photographs of each monument will be also added for the monuments in the database.

The configuration of the Database/Map will make it very easy for the user to search for monuments constructed in a specific period of time and/or specific architect. Users will also be able to search certain monuments that comply to more than one variable: for instance finding monuments that have “Modern” architectural elements, have “Old Doors” and were built at the “beginning of the 20th century”. Such a search will provide the user with a list of all the monuments that satisfy these conditions and the results will be visible on a map.

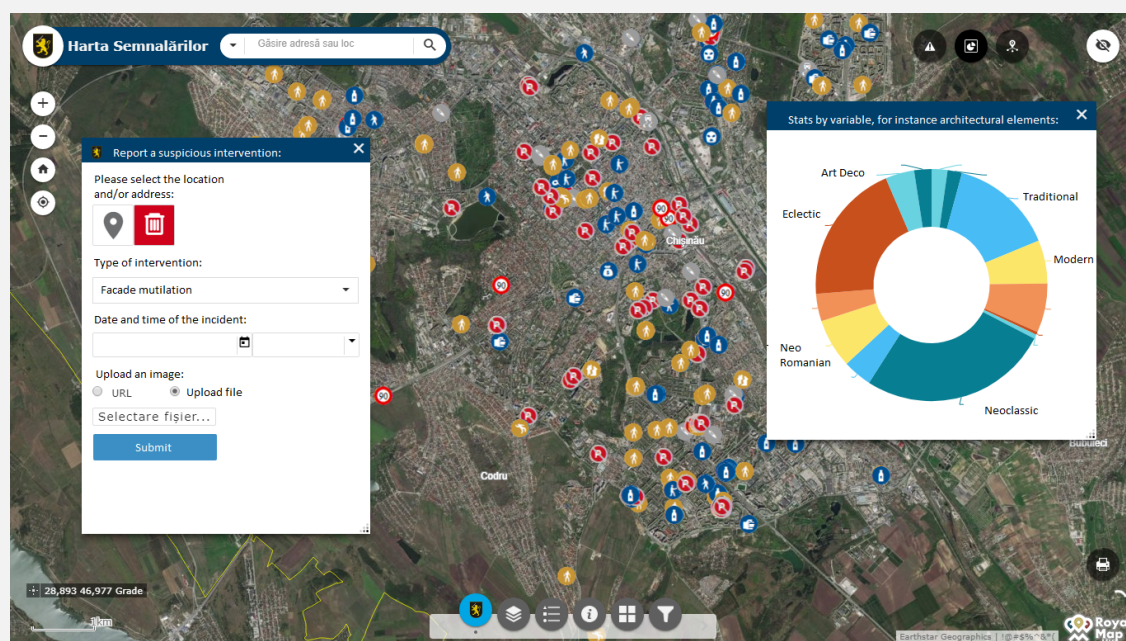
The ArcGIS Map can export data to be included on other platforms, if necessary. Moreover, the product can serve as a solid base for other maps, including national and regional tourism maps and routes.

The map/database will also offer its user the chance to view various statistics regarding the monuments as pie charts, graphs and/or tables as can be seen in the Image1 (below).

The *Image1* represents another map, a product made by Royal Maps in partnership with the Moldovan Police, and allows users to submit and view various categories of threats with regards to public order. The map has been edited and included in this document to offer a perspective on the potential design and instruments that the “E-Patrimoniu Map” could offer.

As can be observed in Image1, we can add an instrument for the public to submit suspicious interventions on historical monuments. The users could select the historical monument from a list, by geographical location and/or address. Afterwards the type of intervention is chosen and eventually the user may submit a photo or video of the suspicious activity. Immediate notifications are sent (via E-mail or whatever setting is chosen) to entities that are responsible for heritage protection.

Image1:



The platform offers the possibility to choose/change the background map according to user's preferences: Open Street Map, Google Maps, Google Sattelite View, Ortophoto 2016, etc.



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The buttons at the bottom have the following functions: 1. Home button 2. Thematic Maps (could be map of "soviet mosaics", could be "Moldovan churches and monasteries", "Soviet Modernism", "soviet bus stops", "traditional houses", "Monuments that are proposed to be included in the registry", etc.) 3. Legend and instructions 4. About the project 5. Background maps 6. Choose filters.

Thus, the database will provide accessible information for enthusiasts, students, journalists, architects and any other individuals that have an interest for immovable cultural heritage.

What has been done:

In the last few years Royal Map, with the help of students and volunteers, managed to extract and place on the map 3200 monuments, an important step towards the development of the "E-Patrimoniu Map".

The database started with Chişinău, and it currently includes over 900 monuments. The geographical location and the address for each monument has been double checked. The project team has included all the currently available data (nearly all above-mentioned fields) for over 900 monuments in the Chişinău municipality. The data has been selected from the national and local registry of protected monuments, the monument.sit.md platform and other credible sources. Potential filters and instruments have been discussed with architects; representatives of the Moldovan Ministry of Culture, Education and Research; representatives of the Moldovan Agency for land Relations and Cadastre; and Italian experts that were involved in the Twinning project.

The platform offers a high degree of automatization: the cadastral data could, for instance, be included in the database automatically, by simply reading the official Cadaster Map and the layers that it has for the points (coordinates) that we have selected for our monuments.

At the moment, the only structured data base is the one hosted on the national Geoportal; however there are possibilities to coordinate the work developed for the E-Patrimoniu map with what exists in the Geoportal.

Monuments layer in geoportal.md

AIRM also started a collaboration with the Land Registry Agency for the input of data on monuments on the national geoportal. The result is the "Monuments" layer (Fig. 5) that can be freely consulted online. The structure of the attributes connected to the layer is very simple (see Tab.). This collaboration is now interrupted due to lack of staff. Although it has not been possible to obtain detailed information, since none of the staff units currently employed at AIRM deals any longer with the insertion of data on geoportal, the monumental assets in the information system seem to coincide with those already catalogued for the project funded by FSM with the addition of some monument outside the municipality of Chisinau. The data structure is also the same.



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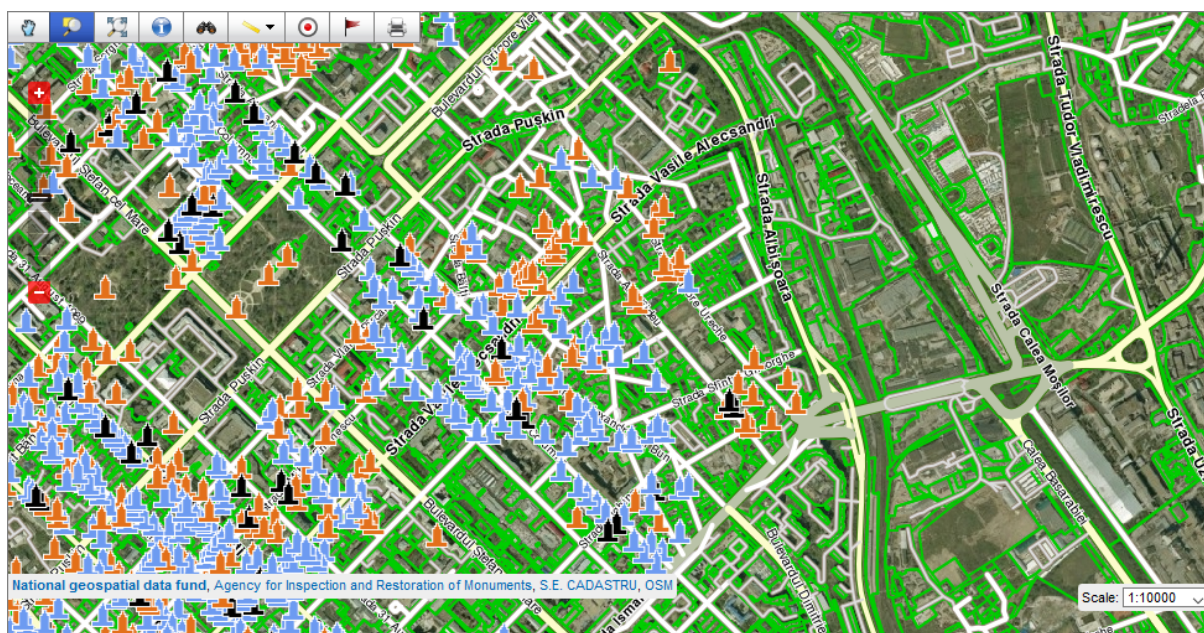


Fig. 5 A View of the layer "Monuments" on the Geoportal (orange, national monuments; blue, local monuments, black, demolished monuments)

Tab. 9 Data Structure of the attributes of the Monuments layer on geoportal

Name	denomination of the monument
Category	category of the monument national/local
Type	type of monument according to the National Register
Date	generic date (century...)
Date	more precise chronology
Description	description of the monument
Photo	link to a media file
Demolished	true/false

NATIONAL GEODATA REPOSITORY

As previously mentioned Both AIRM and NAA have collected data in the system of the Agency for Land Relations and Cadastre.

The Agency for Land Relations and Cadastre (ALRC), was founded on June 27, 1994 by the Decree No. 230 of the President of the Republic of Moldova. The institution was established for the purpose of development and promotion of state policy and strategy in the field of land administration and regulation of land relations, erosion protection, cadastre and real estate valuation, geodesy, mapping and geographical and spatial information. The institution is directly subordinated to the Government of the Republic of Moldova.



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ALRC takes part in forecasting of country's socio-economic development, coordinates actions of central branch authorities and local authorities in the field of development and promotion of national programs and plans. Moreover, ALRC carries out execution, control, supervising, and other functions in the field of land relations, geodesy, mapping, cadastre and Geographic Information System (GIS) activities, to some extent Land Information System (LIS) activities, and also activities for building up the National Spatial Data Infrastructure (NSDI) of the country.

When it comes to land relations, the corresponding group of tasks of ALRC includes land management with special reference to updating of land records, proper recording of land rights and speedy resolution of conflicts and disputes relating to land. The concept of land relations is therefore closely linked to land cadastre. The latter tool includes cartographic details of the ownership, the tenure, the precise location, the dimensions the cultivation (if rural), and the rule of individual parcel of land.

To carry out its task and implementation of its decisions and policies ALRC set up four state enterprises:

- S.E. “Cadastru”. The main activities of this enterprise are to create and maintain the cadastre of real estate property, to implement the State Programme for valuation of real estate property objects for fiscal purposes, and to maintain and administrate the central database of real property;
- S.E. Institute “INGEOCAD”. The Institute's main activities include: geodetic and engineering geodetic activities; mapping and photogrammetric work for provision of users with different scale maps, having various thematic purposes; cadastral work, state frontier delimitation; etc. In terms of mapping, the following achievements have been realized: Chisinau city electronic maps, 1:200,000 scale digital topographic map of Moldova; Moldova administrative map; outlines of the towns Chisinau, Balti, Orhei, Comrat, road map of Moldova 1:250,000 etc. In cooperation with European Association of Mapping the Cadastre Agencies, EuroGeographics, and through ALRC, S.E. INGEOCAD takes part in the development and update of certain European digital maps;
- S.E. Planning Institute of Land Management “IPOT”. In the area of planning, IPOT carries out i.e. the following activities: agricultural land consolidation schemes; public property land delimitation means; identification, inventory of state property agricultural land stocktaking for registration purposes; public property land delimitation and their registration in the register of real estate property; etc.
- S.E. “Soil Protection and Land Improvement”. This state enterprise aims at organizing and coordinating works in the field of soil protection and restoration, and their production increase. Each of the 12 state territorial subordinated bodies has its own equipment, machines and special mechanisms, which are necessary for the construction of the hydro technical tools that are needed for the construction of erosion-preventive places.

For the purposes of centralized inventory, keeping and use of topographical, geodetic and mapping documents there is National Geospatial Data Fund (NGDF) at ALRC. Topographical, geodetic and mapping documents for the whole territory of the Republic of Moldova are stored in this fund. These materials are of technical, scientific, economic, historical, social and cultural interest. Access to the geospatial data, i.e. scanned topographic maps at different scales, geodetic networks, digital maps, ortophotos etc., is provided to public authorities, the private sector and citizens.



National Spatial Data Infrastructure

In the ALRC system the following layers are accessible to the Public and many other raster resources and vector themes are available to operators of governmental organizations or they are under development:

1. Public Infrastructure
 - Information and Security Service
 - Airspace
 - Administrative Infrastructure
2. Environment
 - Core areas of the ecological network
 - Soils
 - Environmental Inspectorate
 - Ecological Expedition Tsipova
 - Aquatic resources
3. Cadastre
 - Delimitation (year 2003)
 - Buildings and Land (2018-04-19), OSM Roads
 - Buildings, Land, Streets (2018-04-19)
4. Culture, society, demography
 - Population 2011
 - Monuments
5. Base layers
 - Relief
 - 1: 50,000 (1982)
 - 1: 50,000 (2013)
 - Orthophoto
 - Ortofoto 2011 (Chişinău)

ANALYSIS OF THE CURRENT STATUS OF CATALOGUING RELATED TO CULTURAL HERITAGE

The current legislation on cultural heritage of the Republic of Moldova does not envisaged an overall system for cataloguing immovable cultural heritage. The classification system is based on the registration of assets in the appropriate Registers by the Parliament upon proposal of the Ministry of Culture. Although legislation has been amended and repeatedly updated over the past few years, the procedure for enlistment of cultural assets still remains unclear.

The classification mechanism is quite uncertain, the procedures for identifying, describing and cataloguing the assets are rather complex, not applied or applied only minimally. In this context, any digitization project is almost impossible due to the lack of homogeneous databases, of infrastructures and technological systems.



Furthermore, the fragmented nature of the competences and regulations between the various protection systems weakens the entire system. So, it is very difficult at present to envisage the development of a shared system of digital documentation that could make available to the various stakeholders the necessary data.

One of the most serious problem is the inexistence of an effective link between the registers and the cadastral system. This link would strengthen the practice of protection of properties with regard to private holders.

The absence of a unified catalogue system makes it virtually impossible to implement information systems linked with other national databases, preventing the creation of effective urban and territorial planning tools or the development of risk maps.

The process of identification of new cultural assets, being it archaeological or monumental, results in the inclusion into the National Register, which is divided into disciplinary areas (archaeological, monumental and historical) and administrative (local and national).

The information included in the Register (and in the respective disciplinary and administrative registers) are well identified and described by the laws in force (Law No. 1530/1993 and Law No. 218/2010 and their related regulations: Order of the Ministry of Culture No. 380 / 2016 and No. 126/2013).

In case of archaeological heritage, the law provides for an enquire organized on three steps:

1. opening of a file in the Archives of archaeological sites;
2. inscription of the asset in the National Archaeological Repertory;
3. inscription into the National Archaeological Register and into the Archaeological Cadastre.

Similarly, monuments should first flow into the Inventory of Public Monuments and then be included in the National Registry or the Local Registries of Public Monuments. Unfortunately, these archives and inventories have never been made fully operational, so the processes cannot be correctly implemented.

Furthermore, the data included into these inventories have not been designed for an IT application, therefore these are not suitable for smooth transposition into a digital informative system. In order to overcome this serious constraint a professional data analysis is compulsory. As well is to address the spatial treatment of data, which is yet not regulated.

To set up an effective information system of immovable cultural heritage it is pivotal to adopt a unified progressive and modular cataloguing system to be applied on every type of immovable cultural heritage.

The modularity would allow to respond to the diversity of goods, by providing a series of specific modules tailored on different types (archaeological, monumental, historical ...) in the framework of a unified and data structure. Of utmost importance would be the adoption of a basic data set related to the identification out of the asset (administrative data, georeferencing, location, cadastral data, properties, metadata). Such approach of the cataloguing process would also ease the access to the different levels of detail necessary in the different procedural phases, from first identification of the asset up to enlistment's proposal, protection and monitoring.



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Outline of IT Cataloguing system for the Moldovan immovable heritage

RATIONALE

The management of Cultural Heritage is a complex whole of legal and institutional frameworks, capacities, resource that all together addressed to assure the physical protection of the properties, the adequacy in related administration activities, and the public enjoyment.

The catalogue aims to identify and describe cultural heritage for which artistic, historical, archaeological or ethno-anthropological importance has been recognized. The general catalogue of cultural heritage collects and centrally organizes the descriptive and administrative data of the protected monuments. It also collects data of monuments not yet listed and under protection for research purposes.

The general catalogue of cultural heritage is the proper tool for supporting the protection and enhancement of cultural heritage, the planning of interventions aimed at conservation and constitutes the essential level of knowledge for landscape planning and for an effective prevention against natural and man-made threats.

As a matter of fact, artefacts are by definition located somewhere on a territory or landscape. As any other man-made artefact these live complex physical processes and may be affected and degraded by several decay factors. From the environment arises an endless series of dynamic events, strictly connected with the individual features of the artefact itself (typology, constitutive materials, building characteristics, renewals, re-uses, surroundings, etc.).

Nowadays, data related to the different components that make up the environment together with information on the conditions of single built units can be gathered together into information systems specifically devoted to heritage protection. These information systems provide concerned administrators with tools to be used in the rationalization of the administrative and technical decision-making processes of heritage management.

Modern technologies, such as the Geographic Information Systems, supply the basic tools to perform such new tasks at various levels of sophistication: from simple collection and storage of basic data, to the application of statistical methods and algorithms in data processing. In case of low technological contexts, low sophisticated structures are likely to be successfully performed as strategic steps introductory to more complex systems.

In Moldova heritage protection policy and decision-making processes show various degrees of vertical autonomy and low degrees of horizontal relationships. This partly arises on one hand from the lack of adequate technical equipment, on the other from the lack of easily accessible and common basic



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information on heritage. This bottle-neck could be overdrawn if basic information on heritage would be made more easily accessible in a common, coherent mode by means of updated IT.

In the perspective of a general development policy for Moldovan institutional and administrative asset the implementation of an autonomous *IT cataloguing system for the Moldovan immovable heritage* is of strategic importance.

The *IT cataloguing system for the Moldovan immovable heritage* will be an integrated relational spatial database that allow users to explore, overlap and process information about cultural assets and the potential risk factors. It will aim to provide heritage managers with a technological tool to support scientific and administrative activities.

The data bank of the above data will be visible on a cartography based of GIS software that will allow queries from the web like

- viewing the region's cartography with the positions of the immovable properties and data on territorial danger;
- consulting the index of movable and immovable properties;
- consulting the vulnerability sheets of the movable and immovable properties;
- inserting new vulnerability sheets of the movable and immovable properties;

Particularly:

Registry search: it will be possible to search for information on architectural and archaeological cultural heritage starting from the ID data (denomination, region, municipality, location,). The results of the searches will be displayed in a list from which it is possible to access for each item the detail sheet with the relative attachments present. At any time, it is possible to use the maps available to view the goods on the territory.

Geographic search: starting from the maps of Google, it is possible to select, through simple cartographic tools, a portion of the territory and obtain the representation of the architectural and archaeological assets of any kind registered by the agencies, identified by type and level of protection. From the cartography it will be possible to access the data sheet of the property. Furthermore, it will be possible to recall thematic cartographic layers on which to visualize cultural heritage, with ease and flexibility, from maps of seismic risk to maps of tourist information.

Search for administrative acts: through the ID data of an item it will be possible to search all the administrative documents (listing decrees) connected to it, and to display the information.

Statistics: tools will be made available for the user to obtain statistics on the items recorded in the system

PROPOSED BASIC FEATURES AND FUNCTIONS

The *IT cataloguing system for the Moldovan immovable heritage* will be based on open source SW and managed by the MECR and the Agencies that are about to be reformed. It will be planned and realized as follows.

The design will include the definition of:

- system architecture and spatial database



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- technological development platform
- system interface (for the web and GIS web application) and all its functionalities

Data preparation

This phase involves the retrieval, validation and processing of both alphanumeric and cartographic information useful to the system:

- cultural heritage in their various categories
- administrative limits
- personal data
- land registry data
- territorial and urban planning
- network of roads, railways
- seismic data
- basic cartography (eg orthophotos)

The vector data may have a text label associated with each element that allows immediate identification of the data through the cartographic display only. Cultural heritage will basically have a punctual vector cartographic representation; however, it will also be possible to provide a linear and polygonal representation thereof in order to manage any future needs.

For the spatial component it will be necessary to consider a single reference system, evaluating the choice between the local reference systems and those widespread internationally; it will also be necessary to consider the geo-referencing of data already available or in any case recoverable. In preparing the data, the possibility of having cartographic data in different reference systems and having to homogenize them in a single reference must be indicated as critical.

The realization of the system will be based on two different subsystems, one alphanumeric and one cartographic, on different interconnected platforms both at a logical and functional level.

The system will be based on the following interfaces:

- initial login: in which the user enters his user and password
- main interface: menu and the main toolbar for activating the functions
- window for querying items and cards, consisting of:
 - i. panel of search criteria for goods / cards
 - ii. results list display panel
 - iii. link to open the details of the asset / card selected in the results list
- item registry
- asset card
- cartographic window, which contains:
 - i. map with default reference system
 - ii. overview of the map
 - iii. legend of the layers that can be activated in the map
 - iv. feature toolbar
 - v. status bar for interactive messaging
 - vi. panel for setting cartographic functions



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The basic alphanumeric features will be:

- a) research of cultural heritage: research can be done on the basis of the criteria of naming and location of the property, categories of membership (type of card)
- b) consultation of the registry of an asset: after searching for a property, selecting it from a list, it is possible to view the registry details
- c) consulting the card of an asset: after searching for a card, selecting it from a list, details visible
- d) creation of an asset
- e) modification of an asset: after having searched for a good, select it from the list of results and open its registry in edit
- f) modification of a card: after searching for a card, selecting it from a list, it is possible to view and modify its details
- g) statistics on assets and cards: possibility of consulting the data bank by setting some parameters for their grouping into classes, such as administrative limits, type of asset or card, date or range of creation / modification; the statistics will be displayed in a tabular report

The basic cartographic features will be:

- a) map display functionality:
 - zoom +/- interactively from a map or a graduated scale
 - pan (shift) interactively from map or directional arrows
 - full extent (maximum view)
 - display of the current scale
 - displaying the cursor coordinates on the map
- b) turn map layers on and off
- c) modification of the layer rendering (symbology) in legend and in the map
- d) info on the displayed assets map: by clicking on an element of a given layer, it will be possible to view the information of the element and link it directly to its alphanumeric data or to the detailed sheet
- e) info on other significant layers such as administrative limits, cadastral data
- f) searching for goods: from the same alphanumeric search functionality, by selecting an item from the list of results, it will be possible to view it as selected directly in the cartography
- g) spatial selection of goods: tracing a point, a line, a polygon or a circle in the map it is possible to select all the goods that have a specific spatial relationship (to be contained, to intersect, to be external.) with the geometry drawn
- h) spatial selection for other significant layers
- i) distance measurement and areas: tracing a broken line on the map can calculate its length and tracing a polygon if the area can be calculated; the measurements will be expressed metric values (eg meters and square meters)
- j) map printing: it will be possible to print the map with its active content at the moment; printing can also be understood as printing on file

The *IT Cataloguing system for the Moldovan immovable heritage* will be created within the existing IT system of the Agency for Land Relations and Cadastre (ALRC), where the data bank of archaeological assets already exists and where the setting up of the data bank of the monuments.



TOWARDS A UNIFIED CATALOGUING SYSTEM FOR MOLDOVAN CULTURAL HERITAGE

Introductory remark

The legislative changes of classification of cultural heritage rules in recent years have finally provided Moldova with a complex of norms that can suitably form the basis for the setting up of an integrated cataloguing system.

The changes have been introduced by:

- ≡ Amendments to the Law No. 1530/1993 On the protection of monuments (privind ocrotirea monumentelor);
- ≡ Order/decreed No. 380 of 27.12.2016 *On the approval of the Regulation on the National Registry and Local Registries of Public Monuments*
- ≡ Law No. 218/2010 and Order of the Minister of Culture No. 126/2013 for the Archaeological immovable heritage.

The relevant models of inventorying and documentation already developed by MECR include:

- ≡ The National Register of Monuments in public spaces (Tab.) and the Local Register of Monuments in public spaces (Tab.) both parts of the Register of monuments of the Republic Moldova protected by the State (Registrul monumentelor Republicii Moldova ocrotite de stat);
- ≡ The Inventory of Monuments in public space (Inventarierea monumentelor de for public, Tab. 6) and the Evidence Sheet of Monuments in public space (Fișei de evidență a monumentului de for public, Tab.);
- ≡ The National Archaeological Repertory (Repertoriul arheologic național) and the National Archaeological Register (Registrul arheologic național,

1.	Denumirea sitului	Site name
2.	Adresa	Address
3.	Coordonatele GPS	GPS coordinates
4.	Tipul sitului	Type
5.	Apartenența culturală	Cultural attribution
6.	Cronologia	Chronology
7.	Categoria de protecție	Level of Protection
8.	Număr-Registru	Registry Number
9.	Număr-Cadastru	Archaeological Cadastre Number

The NA Register envisages a number of information to be collected only slightly higher than those required for the Register of Historical Monuments.

The Law 218/2010 also provides the creation of an **Archaeological Cadastre** (“Cadastrul arheologic”) conceived as a *system of the archaeological sites and the archaeological heritage of the National*



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Archaeological Register containing information about the *legal status, the protection regime and the area of their protection* (Law no. 218/2010, Art. 7).

The regulations on Cadastre, provided for by art. 48 of the Law no. 218/2010, has not yet been issued. However, it is likely that information relating to protection measures will be added in the land registry system to strengthen the protection action in transactions and trades of areas and buildings.

None of the Registers provides by the current regulations has given rise to organic and structured databases on immovable archaeological assets.

The Regulation on the evidence and classification of archaeological heritage (Regulamentul cu privire la evidența și clasarea patrimoniului arheologic, Annex 1 of the Order of the Minister of Culture no. 126 of 25.04.2013) finally provided for the setting up of an **archive of archaeological sites** by NAA. It should *“represent the entirety of archaeological sites of the Republic of Moldova, being the primary document through which any archaeological discovery is recorded to the state”*. This archive is organized in dossiers that are listed in the "Inventory of archaeological sites from the Republic of Moldova" (Inventarul dosarelor siturilor arheologice din Republica Moldova). These files constitute the basis for the elaboration and updating of the NA Repertory and the Archaeological Cadastre of the Republic of Moldova. Article. 27 of the regulation establishes the information that must be contained in the dossier including the fields of a type sheet of the archaeological site (Article 28).

The dossier structure is reported in the Tab. 4 whilst the type sheet of the archaeological site is reported in Tab. 5. This archive, adopted in 2013, is not yet applied.



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- ≡)
- ≡ The archive of archaeological site (Tab.) and type sheet of the archaeological site (
- ≡ Tab.);

As for archaeological sector the Archaeological Site (Dosar de Inventariere) drafted by NAA (Tab. ,

Tab.), used for the data collection within national geoportal (Tab.). The number of records so far collected is high.

The draft for historical monuments has not been considered (See Tab. 13) although it is noted that it largely follows that for monuments in the public space from which it differs due to the presence of interesting innovations in terms of standardization and data analysis.

This articulated set of regulations must however undergo a thorough revision to allow the setting up of a unified digital georeferenced information system. This system will collect data on every type of immovable cultural properties, both monumental and archaeological, regardless their classification and level of protection, and will constitute an operational tool to support the decision-making processes in cultural heritage protection, in territorial planning and in control. To achieve this goal, it is necessary to address a number of fundamental issues that are addressed below.

System outlining requirements and needed equipment.

The IT Cataloguing system for the Moldovan immovable heritage will be based on a data bank of the listed and unlisted monuments and archaeological assets. The data bank will be made of

- 1) archaeological sites;
- 2) monuments (including monuments in public space) both listed and unlisted. All monuments and archaeological assets will be enquired by a Unified Inventory Form and by files on Monuments and Archaeological assets. These are based on the data set adopted in the following:

→ Order No. 380 of 27.12.2016 on the approval of the Regulation on the National Registry and Local Registries of Monuments in public space;

→ Regulation on the evidence and classification of archaeological heritage, Order of the Minister of Culture No. 126 of 25.04.2013 already collected in the system.

The first action to be undertaken is the unification of all archives and inventories into a unified catalogue system that overcomes the regulatory and procedural differences between archaeological and monumental assets. This operation will make it possible to optimize the available resources and to give homogeneity to the data collection and analysis while respecting the differences related to the different disciplinary needs.

At the operational level, unification can be pursued by providing the catalogue with a modular structure. The basic information of both types of items will be collected with a unified module while the specific information will be collected and treated with different modules.

Information to be collected with the unified modules are:

- property identification data;



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- references to the various classification systems and to existing registers / inventories;
- administrative references;
- cadastral references;
- geographic positioning and georeferencing;
- information on the legal status and ownership of the property;
- information on data and binding documents;
- graphic and photographic attachments;
- bibliography;
- metadata;
- information relating to the creation and updating of the cards;
- level of visibility / public accessibility of the card.

Each of the points listed above could constitute a specific section of the unified form. The informative content of these sections should be extracted from the Inventory of Public Monuments and the archives of archaeological sites.

The modules specifically related to the monuments in public space and archaeological site will be made of the remaining fields of the Evidence Sheet of Monuments in public space and of the type sheet of the archaeological site, the latter both in the version contained in the archive of archaeological sites and in the elaborate one from the NAA. For the part relating to historical monuments, the draft of the specific form (See Table 14) may be used once approved by the government. This solution would make it possible to achieve the twofold purpose of implementing the classification measures adopted by the laws, and presently largely misapplied, and to provide a valid instrument applicable to both disciplinary areas.

It will also be necessary to introduce a mechanism of progressivity in the data collection. It will be advisable to fix different levels of detail based on the ranking of the asset.

The spatial feature of catalogue is crucial for improving both cultural heritage protection and territorial planning in the country. The new catalogue should therefore be quickly merged into a geographic information system. This process can be done by strengthening the existing collaboration between the Agencies and the Agency for Land Relations and Cadastre. In fact, the latter currently appears to be the most suitable institution to host the catalogue database and to develop and manage the related infrastructure. The collaboration would also allow to address and solve the serious problem represented by the failure to include cadastral data as a result of measures in the record of the protected monuments and cross-referencing cadastral data with information on the status of the parcels.

Standard content of catalogues and outline of needed data analysis

To achieve the purpose of creating an information system of the catalogue of cultural properties it is also necessary to undertake a technical data analysis of the present tools. The inventories, the files and the dossiers established by laws and regulations have not addressed the matter of data organization and the possibility of their use in IT systems.

In order to overcome this difficulty, it is necessary to review the cards presently in use focusing on:

- design the relational structure between the database components;
- verify and set the data hierarchy;



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- implement the spatial component of the information system;
- verify and set the system of codes and primary keys;
- verify the obligatory nature and repeatability of fields and modules;
- subdivide the data into separate information groups (eg address block);
- create specific vocabularies;
- prepare compilation rules;
- implement metadata.

In Tab. 15 a preliminary study of normalization of the fields and of the revision of the data structure is presented, while Tab. 16 and Tab.17 refer respectively to the preliminary standard for archaeological sites and monuments. The proposal is intended to constitute a starting point. For each field or section, the obligatory, repetitiveness and the need to provide a specific thesaurus are indicated. *The last columns show the references to the different regulations reported in the form of tables.*

The proposal should be discussed and validated within a working group involving NAA and AIRM, the Ministry, ALRC and any other stakeholder once the basic form below will have been adopted. The proposed models will necessarily have to be revised according to the technological solution that will be adopted.



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Tab. 10 Draft proposal content of catalog card (ID common form)

				COMPLUSORY	REPETITIVE	THESAURUS	TYPE	Tab. 5	Tab. 7	Tab. 8	Tab. 11 and Tab. 12
1	IDENTIFICARE	IDENTIFICATION		Yes	No	---	---	---	---	---	---
	Identificator unic (Codul general al catalogului)	Unique Identifier (General Catalog Code)	Yes	No	No	Num	No	No	No	No	No
	Denumire oficială a monumentului	Official name of the monument	Yes	No	No	Text	a)	1.e	Yes	1.3	
	Denumiri mai vechi ale sitului	Traditional/historical/ alternative Name	No	Yes	No	Text	h)	1.f	Yes	No	
	Tip de bun cultural	Type of cultural asset	Yes	No	Yes	Text	No	No	No	No	
2	CLASARE	CLASSIFICATION	No	No	---	---	---	---	---	---	---
	Categoria clasării sitului	Category	Yes	No	Yes	Text	c)	No	No	8.1	
	Data clasării	Date of classification	Yes	No	No	Date	d)	No	No	8.2	
	Referință la documentul de clasare	Reference to the classification document	Yes	No	No	Text	d)	No	No	8.2	
	Numărul sitului conform Registrului monumentelor Republicii Moldova ocrotite de stat sau Registrul local	RegMOS (Register of Historical Monuments of the Republic of Moldova) Code	Yes	No	No	Text	No	1.b	Yes	1.1	
	Codul sitului conform Repertoriului Arheologic Național	RAN (National Archaeological Repertory) Code	No	No	No	Num	No	1.a	Yes	No	
	Numărul sitului conform Registrului Arheologic Național	RegAN (National Archeological Register) Code	No	No	No	Num	e)	1.c	Yes	No	
	Numărul de înregistrare a sitului în Cadastrul Arheologic	CA (Archaeological Cadaster) Number	No	No	No	Num	f)	1.d	Yes	No	
3	LOCALIZARE ADMINISTRATIVĂ	ADMINISTRATIVE LOCALIZATION	Yes	No	---	---	---	---	---	---	---



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Raion/Unitate autonomă	Rayon/Autonomous unit	Yes	No	Yes	Text	b)	1.h	No	2.1.
Municipiu	Municipality	Yes	No	Yes	Text	b)	1.h	No	2.1.
Oraș	City	Yes	No	Yes	Text	b)	1.g	No	2.2.
Comună	Commune	Yes	No	Yes	Text	b)	1.g	No	2.2.
Sat	Village	Yes	No	Yes	Text	b)	1.g	No	2.2.
Adresă actuală (stradă, număr)	Current Address (street, number)	Yes	No	No	Text	No	No	No	2.3.
Cod postal	Postal code	Yes	No	Yes	Num	No	No	No	2.4.
Localitate anterioară (după caz)	Previous locality (as the case may be)	No	Yes	Yes	Text	No	No	No	2.5.
Adresă anterioară (după caz)	Previous address (as the case may be)	No	Yes	No	Text	No	No	No	2.6.
Toponim	Toponym	No	No	No	Text	No	1.i	Yes	No
Repere localizare	Location info	No	No	No	Text	No	1.k	Yes	No
4 LOCALIZARE GEOGRAFICĂ	GEOGRAPHICAL LOCALIZATION	Yes	No	---	---	---	---	---	---
Coordonate X/Longitudine (reperul central)	X Coordinate/Longitude (centroid)	Yes	No	No	Num	g)	1.o	Yes	2.7.4.
Coordonate Y/Latitudine (reperul central)	Y Coordinate/Latitude (centroid)	Yes	No	No	Num	g)	1.o	Yes	2.7.4.
Altitudine medie	Average altitude	No	No	No	Num	No	No	No	No
Referințe geografice – Proiecție	Geographical references - Projection	Yes	No	Yes	Text	No	No	No	2.7.1/2.7.3
Referințe geografice – DATUM	Geographical references - DATUM	Yes	No	Yes	Text	No	No	No	2.7.1/2.7.3
Metoda de poziționare	Positioning method	Yes	No	Yes	Text	No	No	No	No
Precizia de poziționare	Positioning accuracy	Yes	No	Yes	Text	No	No	No	No
5 DATELE CADASTRALE	CADASTRAL DATA	Yes	No	---	---	---	---	---	---
Nr. cadastral al terenului monumentului	Cadastral number of the land of the monument	Yes	Yes	No	Num	No	1.q	Yes	1.2
	Cadastral particles	Yes	Yes	Yes	Num	---	---	---	---



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regimul de legal proprietate	regime	Yes	No	Yes	Text	No	1.r	Yes	3.1
proprietarul (persoană fizică, companie sau instituție)	Owner (physical person, company or institution)	Yes	Yes	No	Text	No	1.r	Yes	3.1
6 DESCRIERE	DESCRIPTION	Yes	No	---	---	---	---	---	---
Descrierea	Description	Yes	No	No	Text	No	2.e	Yes	6.1
Descrierea elementelor de peisaj cultural și natural	Description of the cultural and natural landscape elements	No	No	No	Text	l)	1.n	Yes	6.2
Măsurarea (tipul)	Measurement (type)	No	Yes	Yes	Text	j)	1.p	Yes	6.3
Măsurarea (unitate de măsură)	Measurement (unit of measurement)	No	Yes	Yes	Text	j)	1.p	Yes	6.3
Măsurarea (valoarea)	Measurement (value)	No	Yes	No	Num	j)	1.p	Yes	6.3
Reper hidrografic	Hydrography	No	No	No	Text	No	1.l	No	6.2
Forma de relief	Geomorphology	No	No	No	Text	No	1.m	No	6.2
Utilizarea curentă a terenurilor	Current Land Use	No	No	No	Text	No	No	No	6.2
Utilizarea ulterioară a solului	Past Land Use	No	Yes	No	Text	No	No	No	6.2
7 DOCUMENTARE (Anexe)	DOCUMENTATION (Annexes)	No	No	---	---	---	---	---	---
Hărți	Maps	No	Yes	No	Media	No	3.a	Yes	8.3
Plan situație	Plan situation	No	Yes	No	Media	No	3.b	Yes	8.5
Plan general	General plan	No	Yes	No	Media	No	No	Yes	8.6
Desene de relevu	Drawings surveying	No	Yes	No	Media	No	3.c	Yes	8.8
Fotografii vederi generale și detalii	Photos general views and details	No	Yes	No	Media	No	3.d	Yes	8.4
Fotografii Aeriene	Aerial Photos	No	Yes	No	Media	No	3.f	Yes	No
Imagini Satelitare	Satellite Photos	No	Yes	No	Media	No	3.g	Yes	No
8 BIBLIOGRAFIE	BIBLIOGRAPHY	No	Yes	---	---	---	---	---	---
Trimitere la fișierul bibliografic general	Reference to the general bibliography file	No	Yes	No	Numeric	p)	4.a-b	Yes	8.1
Pagini	Pages	No	Yes	No	Text	No	No	No	No
9 GESTIUNE	ADMINISTRATION	Yes	No	---	---	---	---	---	---
Data elaborării fișei	Date of elaboration	Yes	No	No	Date	q)	5.a	Yes	



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Numele prenumele elaboratorului dosarului	și	Surname and first name of the file developer	Yes	No	No	Text	q)	5.a	Yes	10.1
Funcție, specialitate		Role, specialty	Yes	No	No	Text	No	No	No	10.1
Instituția		Institution	Yes	No	No	Text	No	No	No	10.1
data modificării fișei		Date of updating	Yes	Yes	No	Date	q)	5.b	No	10.1
Numele prenumele elaboratorului dosarului	și	Surname and first name of the file developer	Yes	Yes	No	Text	No	No	No	10.1
Funcție, specialitate		Role, specialty	Yes	Yes	No	Text	No	No	No	10.1
Instituția		Institution	Yes	Yes	No	Text	No	No	No	10.1
Note privind modificările		Notes on the changes	Yes	Yes	No	Text	No	No	No	No



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Tab. 11 Draft proposal for archaeological site standard.

			COMPLUSORY	REPETITIVE	THESAURUS	TYPE	Tab. 5	Tab. 7	Tab. 8
A.1	DATE ARHEOLOGICE DESPRE SIT	ARCHAEOLOGICAL DATA	Yes	No	---	---	---	---	---
	Categorie sit	Category	Yes	Yes	Yes	Text	c)	2.a	Yes
	Tip sit	Type	Yes	Yes	Yes	Text	i)	2.b	Yes
	Datare	Chronology	Yes	Yes	Yes	Text	k)	2.c	Yes
	Apartenența culturală	Cultural attribution	Yes	Yes	Yes	Text	k)	2.d	Yes
	Descrierea arheologică	Archaeological Description	Yes	No	No	Text	No	2.e	Yes
	Anul descoperirii	Year of discovery	No	No	No	Date	n)	2.f	Yes
	Autorul descoperirii	Author of discovery	No	No	No	Text	n)	2.g	Yes
	Cercetarea sitului (anii)	Archaeological research (year)	No	Yes	No	Date	o)	2.h	Yes
	Cercetarea sitului (autorii)	Archaeological research (author)	No	Yes	No	Text	o)	2.h	Yes
	Tipul de exploatare a terenului	Archaeological research (type)	No	Yes	Yes	Text	o)	1.s	Yes
	Vestigii descoperite	Remains uncovered	No	No	No	Text	No	2.i	Yes
	Locul de păstrare a materialelor descoperite	Storage's place for discovered materials	No	Yes	Yes	Text	No	2.k	No
A.2	STAREA DE CONSERVARE A SITULUI	STATE OF CONSERVATION	Yes	Yes	---	---	---	---	---
	Starea de conservare a sitului	State of conservation	Yes	Yes	No	Text	t)	1.m	Yes
	Data de observare	Date of observation	Yes	Yes	No	Date	---	---	---
	Numele și prenumele	Surname and first name	Yes	Yes	No	Text	---	---	---
	Funcție, specialitate	Role, specialty	Yes	Yes	No	Text	---	---	---
	Instituția	Institution	Yes	Yes	No	Text	---	---	---



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Tab. 12 Draft proposal monument standard

								Tab.11 and Tab. 12
				COMPLUSORY	REPETITIVE	THESAURUS	TYPE	
M.1	MONUMENTE ISTORICE	MONUMENTS	Yes	No	---	---	---	
	Categorie	Category	Yes	Yes	Yes	Text	No	
	Tip	Type	Yes	Yes	Yes	Text	No	
	Descrierea	Description	Yes	Yes	Yes	Text	No	
M.2	DATARE	CHRONOLOGY	Yes	Yes	---	---	---	
	Datare prin perioade (secolul)	Dating through periods (century)	Yes	Yes	Yes	Text	4.1	
	Datare prin intervale de ani	Dating through intervals of years	No	Yes	No	Text	4.2	
	Datare exactă (data, luna, anul)	Exact date (date, month, year)	No	Yes	No	Date	4.3	
M.3	ISTORIC. ACTE LEGALE	HISTORIC. LEGAL ACTS	No	Yes	---	---	---	
	Scurt istoric al monumentului	Short history of the monument	Yes	No	No	Text	5.1	
	Avize, autorizații (anii)	Legal Acts (Date)	No	Yes	No	Date	5.2	
	Avize, autorizații (Ref.)	Legal Acts (Ref.)	No	Yes	No	Text	5.2	
	Avize, autorizații (Instituția)	Legal Acts (Institution)	No	Yes	No	Text	5.2	
	Avize, autorizații (Descrierea)	Legal Acts (Contents)	No	Yes	No	Text	5.2	
M.4	CONSERVARE, RESTAURARE	CONSERVATION, RESTORATION						
	Stare generală de conservare	General conservation status	Yes	No	No	Text	7.1	
	Fundație	Foundation	Yes	No	Yes	Text	7.1.1	
	Postament	Pedestal	Yes	No	Yes	Text	7.1.2	
	Sculptură, relief sculptural, elemente ale compoziției spațial-volumetric	Sculpture, sculptural relief, elements of the spatial-volumetric composition	Yes	No	Yes	Text	7.1.3	
	Amenajarea terenului aferen	Landscaping	Yes	No	Yes	Text	7.1.4	
	Elemente de înverzire	Greening elements	Yes	No	Yes	Text	7.1.5	
	Descrierea generală a lucrărilor executate	General description of executed works	Yes	Yes	Yes	Text	7.2.1	
	Data/perioada executării lucrărilor	Date - period of execution of the works	Yes	Yes	No	Date	7.2.2	
	Autori	Authors	Yes	Yes	No	Text	7.2.3	
	Instituția	Institution	Yes	Yes	No	Text	No	
	Locul păstrării documentației privind restaurare	Place where the restoration documentation is kept	Yes	Yes	No	Text	7.2.4	



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Riscuri/amenințări inundații, alunecări de teren, ș.a.)	(eroziune, Risks / threats (erosion, floods, landslides, etc.)	Yes	Yes	No	Text	7.3
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IMPLEMENTATION PHASES

The *IT Cataloguing system for the Moldovan immovable heritage* will constitute one of the section of the Moldovan geoportal managed by the Agency for Land Relations and Cadastre (ALRC). The layer will recover the data already collected in the system by both AIRM and NAA.

The working phases will be as follows:

Phase 1

- a) common drafting of detailed compilation rules for the above-mentioned forms
- b) drafting up and adoption by the Ministry Culture of a Regulation of the *IT Cataloguing system for the Moldovan immovable heritage* that should include
 - i. the official ID Common Form, Monument descriptive form, and Archaeological asset descriptive form
 - ii. the detailed compilation norms for the filling up of the forms
 - iii. the technical features of the IT Cataloguing system for the Moldovan immovable heritage
- c) realization of a data entry software for completing the above ID Common Form for
 - i. all the 5695 archaeological and monumental items of national and local interest included in the Register of the monuments protected by the law 1531/1993 as adopted by Monitorul Oficial al Republicii Moldova, 2010, nr. 15-17, art. 24
 - ii. the additional archaeological and monumental assets still to be filed under protection according to the Order No. 380 of 27.12.2016 on the approval of the Regulation on the National Registry and Local Registries of Public Monuments and the Regulation on the evidence and classification of archaeological heritage Order of the Minister of Culture No. 126 of 25.04.2013 already collected in the system and strengthening of existing collaboration with Cadastre to create a GIS application and host the catalogue system and retrieve spatial and cadastral data
- d) first phase of completing the ID forms of the records already stored within the system, both on listed and unlisted monuments and archaeological assets, and transfer of data into the unified layer

Phase 2

- a) merging of the data bank realized by AIRM and NAA into a unique IT system
- b) realization of a unified data entry software for the completing of the above
 - Monument descriptive form
 - Archaeological asset descriptive form
- c) revision of the data already collected within the existing system and re-organization of data based on the above forms



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Upcoming Twinning project on National Spatial Data Infrastructure

The Twinning project for the Agency of Land Relations and Cadastre (ALRC) – Organization, Streamlining and Computerization Process in Mapping in the Republic of Moldova (2014-2016), successfully established the legal framework and the physical basis for the setting up of Moldovan National Spatial Data Infrastructure. The Twinning was realized with basic reference to the technical principles adopted by European Union with the Directive of the European Parliament and of the Council of 14 March 2007 establishing an Infrastructure for Spatial Information in the European Community (INSPIRE). The goal of the directive is to support the drafting of policies that can have a direct or indirect impact on the environment, and is based on the interoperability of spatial data infrastructures created by member states.

The detailed technical planning and design of the merging of AIRM and ANA data banks within the Agency for Land Relations and Cadastre's system and the setting up of the *IT Cataloguing system for the Moldovan immovable heritage* should constitute one of the objective of the upcoming Twinning project *Support to the development of National Spatial Data Infrastructure by improving spatial data sharing and cooperation in accordance with EU standards*, whose beneficiary will be the Agency for Land Relations and Cadastre as for the previous project.

On the basis of the present outline document, the project should design in detail the process for:

- a) unifying the data entry software presently used by AIRM and ANA for the respective data banks as for the *Unified ID form* above drafted for both monuments and archaeological assets
- b) updating the current software used for the descriptive parts of forms on Monuments and archaeological assets on the basis of the version included in this document



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