

## Uloga metapodataka u prezentaciji turbeta u digitalnom okruženju The role of metadata in the presentation of türbe in digital environment

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### Sažetak / Abstract

Savremene tehnologije omogućavaju prezentaciju raznolikih objekata pokretnog i nepokretnoga kulturnog naslijeđa u digitalnom okruženju na nove i kreativne načine, što je na međunarodnom nivou rezultiralo izgradnjom brojnih i raznovrsnih digitalnih zbirki koje su kreirale informacijske i druge ustanove. Budući da je vidljivost takvih zbirki u virtualnom prostoru ovisna o bogatstvu metapodataka dodijeljenih izvorima u zbirka, očekivano je ove inicijative pratio i razvoj u domeni metapodataka. S tim u vezi, a s obzirom na to da do sada nije istražena uloga metapodataka u predstavljanju turbeta kao vrlo specifičnih objekata bosanskohercegovačkog nepokretnog kulturnog naslijeđa u online okruženju, cilj ovoga istraživanja je identificirati koji standardi metapodataka ili njihove kombinacije mogu biti korišteni za obradu turbeta u Omeka Classic okruženju, a na tom tragu, kreirati zbirku odabranog korpusa turbeta, dostupnu u otvorenom pristupu, pri čemu se korpus istraživanja odnosi na turbeta koja su proglašena nacionalnim spomenicima u Federaciji Bosne i Hercegovine. Rezultati istraživanja pokazuju da se unutar radnog prostora Omeka Classic platforme za objavljivanje sadržaja na webu, korištenjem predefiniраних polja metapodataka Dublin Core i VRA Core u kombinaciji, mogu zadovoljiti elementarne potrebe obrade korpusa, na pregledan, ujednačen i informativan način, ali se u tom pogledu donose i naznake budućeg razvoja zbirke u kontekstu njenog semantičkog bogaćenja.

Modern technologies enable the presentation of diverse movable and immovable cultural heritage objects in a digital environment in new and creative ways, which at the international level has resulted in the development of numerous and diverse digital collections created by information and other institutions. Since the visibility of such collections in the virtual environment depends on the wealth of metadata assigned to the sources in the collections, as expected, these initiatives were accompanied by development in the metadata domain. In this regard, and considering that the role of metadata in the presentation of turbe as very specific objects of the immovable cultural heritage of Bosnia and Herzegovina in the online environment has not been examined so far, the goal of this research is to identify which metadata standards or their combinations can be used for the description of turbe in Omeka Classic environment, and consequently to create a collection of the selected corpus of turbe, available in open access, whereby the corpus of research refers to turbe (türbe/tomb) that are named as national monuments in Federation of Bosnia and Herzegovina. The results of the research indicate that within the workspace of the Omeka Classic web publishing platform by using the predefined Dublin Core and VRA Core metadata fields in combination, the basic needs of corpus description can be met in a clear, uniform, and informative way, but in this regard, indications of the future development of the collection in the context of its semantic enrichment are also provided.

## Uvod

Posljednjih desetljeća došlo je do evidentne ekspanzije na webu dostupnih informacija o kulturnoj baštini. Galerije, biblioteke, arhivi i muzeji kreirali su mnoge pojedinačne digitalne zbirke dostupne online, koje su okupljene na portalima poput Europeane, koji pružaju integrirani pristup informaciji o kulturnoj baštini agregacijom disperznih podataka. Obim digitalne informacije se neprestano povećava, što usložnjava upravljanje digitalnim informacijama različitog tipa, u različitim formatima, gdje su razvijeni mnogobrojni alati koji pomažu pretraživosti i otkrivanju ovih informacija na globalnoj razini. "Metapodaci o kulturnoj baštini se ponajviše fokusiraju na deskriptivne informacije" (Riley, 2017: 5), pri čemu "metapodatkovni opis pojedinačnih izvora pomaže grupirati slične izvore na temelju korisničkih potreba" (Zeng & Qin, 2016: 10). Za potrebe pretraživanja i otkrivanja informacija o kulturnoj baštini unutar zajednica biblioteka, arhiva, muzeja i galerija, "metapodacima se upravlja pomoću standarda i dobrih praksi koje su razvijene i održavane unutar samih zajednica, s ciljem osiguravanja kvalitete, konzistentnosti i interoperabilnosti" (Gilliland, 2016: 2). "Standardi metapodataka osiguravaju smjernice za strukturu podataka, vrijednost podataka, sadržaj podataka i razmjenu podataka" (Zeng & Qin, 2016: 37), dakle, standardizacija osigurava razumljivost metapodataka, kako iz perspektive stvarnih korisnika, tako i iz aspekta softverskih aplikacija.

Za upravljanje informacijama o kulturnoj baštini, od 1990-ih do 2000-ih godina, razvijen je niz standarda koji definiraju strukturu podataka (engl. *standards for metadata structures, data structure standards, metadata element sets, schemas*), poput primjerice Categories for the Description of Works of Art (CDWA), Dublin Core Metadata Element Set (DCMES ili DC) ili Visual Resources Association Core Categories (VRA Core). Set metapodatkovnih elemenata sadrži skupinu elemenata koji se koriste za opis izvora specifičnog tipa, ili za određenu namjenu, a kao rezultat nastanka mnogobrojnih shema, povećan je i broj projekata koji su rezultirali izgradnjom mnogobrojnih digitalnih zbirki. Komunikacija kulturne baštine u digitalnom obliku jeste dinamično područje koje se kreće ka globalnom informacijskom okruženju integriranog pristupa i koje otvara nove mogućnosti za istraživanje, te je preduvjet demokratičnog pristupa izvorima baštine. Opremanjem digitalnih objekata odgovarajućim metapodacima, u digitalnom predstavljanju pokretne ili nepokretne kulturne baštine, povećava se dakle

## Introduction

In recent decades, on the web, there has been an evident expansion of available information about cultural heritage. Galleries, libraries, archives, and museums have created many individual digital collections available online, which are gathered on portals such as Europeana and give integrated access to information about cultural heritage by aggregation of dispersible data. The volume of digital information is constantly increasing, which complicates the management of digital information of different types, in different formats, where numerous tools have been developed that help the searchability and discovery of this information on a global scale. "Cultural heritage metadata focuses heavily on descriptive information" (Riley, 2017: 5), whereby "the metadata description of individual sources helps group similar sources based on user needs" (Zeng & Qin, 2016: 10). For the purposes of searching and discovering information about cultural heritage within the communities of libraries, archives, museums, and galleries, "metadata is frequently governed by community-developed and community-fostered standards and best practices in order to ensure quality, consistency, and interoperability" (Gilliland, 2016: 2). "Metadata standards provide guidelines for data structure, data value, data content, and data exchange" (Zeng & Qin, 2016: 37), therefore standardization ensures metadata comprehension, from the perspective of the user, as well as from the aspect of software applications.

For cultural heritage information management, from the 1990s to the 2000s, sets of standards have been developed that define the structure of data (standards for metadata structures, data structure standards, metadata element sets, schemas), such as Categories for the Description of Works of Art (CDWA), Dublin Core Metadata Element Set (DCMES or DC) or Visual Resources Association Core Categories (VRA Core). The metadata element set contains a group of elements that are used for source description of a specific type, but also for the specific purpose, and as a result of many scheme occurrences, the number of projects that resulted in the construction of numerous digital collections also increased. Cultural heritage communication in the digital form is a dynamic area that is moving towards a global information environment of integrated access that opens new possibilities for research and is the precondition for democratic access to the sources of heritage.

Providing digital objects with appropriate metadata

pristupačnost i omogućava lakše pretraživanje objekata baštine, a preliminarnim istraživanjem (Hajdarpašić, Dizdar & Khattab, 2019) utvrđeno je kako do sada, na našim prostorima, nije istražena uloga metapodataka u predstavljanju turbeta u online okruženju, kao značajnog i specifičnog segmenta bh. nepokretnog kulturnog naslijeđa.

Prema Čengić (2009: 84) turbe potiče od arapske riječi *turab*, što znači “zemlja”, “prah”, “prašina” – “natkriveni mezar, monumentalna memorijalna grobnica, mauzolej: sepulkralna tradicija euroazijskog dijela islamskih populacija”, a Bušatlić (2001: 205) slično pojašnjava da “riječ *turbetun* znači grob, grobnica, groblje, mauzolej. Naš arabizam *turbe* (u nekim krajevima Bosne i Hercegovine sačuvan u varijanti *tulbe*) označava građevinu nad mezarom umrlog koja može biti od različitog materijala, različitog oblika i izvedbe.”

Naglašavajući da “turbeta ili mauzoleji podizani su nad grobovima paša, šehova i nekih drugih istaknutijih ili imućnijih osoba”, pri čemu “neka su gradili pojedinci sami za sebe, druga su opet podizali nasljednici ili štovatelji pokojnika”, Bejtić donosi podjelu tri osnovna tipa turbeta u Bosni i Hercegovini “kupolasti zatvoreni, kupolasti otvoreni i obični, drveni tip” (Bejtić 1952: 289).<sup>1</sup>

U postojećoj literaturi o turbetima prisutne su slične podjele ovih važnih spomenika kulture; tako Namečak (1939: 80) govori o “tri vrste turbeta: a) ozida-

in the digital representation of movable or immovable cultural heritage, therefore, accessibility is increasing and enables easier search for heritage objects, preliminary research (Hajdarpašić, Dizdar & Khattab, 2019) determined that the role of metadata in the presentation of turbes (türbes) in the online environment, as a significant and specific segment of BH immovable cultural heritage, has not been investigated so far in our region.

According to Čengić (2009: 84) turbe (türbe) comes from the Arabian word *turab* which means “soil”, “ash”, “dust” – “covered grave, monumental memorial tomb, mausoleum: the sepulchral tradition of the Eurasian part of Islamic populations” and Bušatlić (2001: 205) similarly clarifies that “word *turbetun* means grave, tomb, cemetery, mausoleum. Our Arabism *turbe* (in some parts of Bosnia and Herzegovina preserved in variable *tulbe*) signifies construction above the grave of the deceased that can be made of different materials, different shapes, and realization.”

Emphasizing that “turbes or mausoleums were built above graves of Pashas, Sheikhs, and some other more prominent or wealthy persons”, whereby “some were built by individuals for themselves, others were built by heirs or devotees of the deceased”, Bejtić divides three basic types of türbes in Bosnia and Herzegovina: “closed dome, opened dome, and ordinary wooden type” (Bejtić, 1952: 289).<sup>1</sup>

<sup>1</sup> Kako autor pojašnjava, “prvi tip ima u tlocrtnoj šemi uvijek pravilan ili približno pravilan oktagon, a zidan je redovito iz tesana i nežbukana kamena, mahom sedre ili sige. U okolnim zidovima su obično tri prozora s demirima, dva nasuprot jedan drugom, a naprama trećem je opet lijepim lukom nadsvođen ulaz u turbe, koji gotovo uvijek ima nadstrešnicu. Masivni i razmjerno dosta visoki zidovi prelaze u kamenu i olovom prekrivenu kupolicu obično preko trompa, ali tu i tamo preko pandantiva. Na sred srijede unutrašnjeg osmerokutnog prostora je grobnica (negdje jedna, a negdje i dvije), uvijek obilježena praznim drvenim sarkofagom ili kuburom. Ta kubura na gornjem dijelu ima oštri hrbat, a sva je presvučena zelenom čohom. Više uzgavlja je drveni ili kameni stalak i na njemu od naravnog materijala turban, što ga je pokojnik nosio.” (Bejtić, 1952: 289) Kao primjer ovoga tipa turbeta može se izdvojiti Turbe Gazi Husrev-bega u Sarajevu. “Drugi tip turbeta u tlocrtu ima najčešće čisti kvadrat. Takvo je turbe otvoreno sa svih strana, a kupolu nosi kolonada od četiri ili osam stupova, često s vrlo pomno obrađenim bazama, kapitelima i lukovima. Sve je od tesana kamena. Neka turbeta toga tipa, međutim, nemaju uopće one masivne, kamene kupole. Njen vanjski oblik tu samo imitira lagana žičana mreža, upeta u okolni zid. Unutrašnja je površina kod nekih takvih turbeta u razini same okoline, ili tek nešto uzdignutija, a kod drugih je opet tu visoki podij, a na njemu još i kameni oklop.” (Bejtić, 1952: 290) Kao primjer ovoga tipa turbeta može se izdvojiti Turbe Hadži Sinan-age i njegove supruge Sakine u Sarajevu. “Bosanska turbeta trećeg tipa posve su drugačije konstrukcije. U osnovici imaju kvadrat ili paralelogram, a građeni su od mješavine čerpiča, kamena i drveta. Kupole nemaju, nego su uvijek prekriveni daščanim krovom na četiri vode. To su zapravo vrlo jednostavne kućice, upravo kolibe, a podizao ih je najnužnijim sredstvima narod na grobovima derviša iz poštovanja prema takvim ljudima. Na sredini unutrašnjeg popođenog prostora je drveni kenotaf, kao i kod one prve vrste turbeta, a oko ovčije kožice, na kojima se neuki svijet molio i tražio pomoć posredstvom tih derviša.” (Bejtić, 1952: 291)

<sup>1</sup> As the author explains, “first type in the floor plan always has straight or approximately straight octagon and is built regularly from hewn and unplastering stone, mostly with tufa or speleothems. There are usually three windows in the surrounding walls with grilles over the windows, two opposite each other, and opposite the third is the entrance to the türbe with a beautiful arch, which almost always has a canopy. Massive and relatively high walls pass into a stone and lead-covered dome usually over squinch, but from time over pendentive. In the middle of the inner octagonal space is a tomb (somewhere one and sometimes two), always marked with an empty wooden sarcophagus or coffin. The coffin on the upper part has a sharp ridge, and it is all covered with a green cloth. Above the headboard is wooden or stone stand and on it a natural material turban, which the deceased wore.” (Bejtić, 1952: 289) As an example of this kind of türbe, Gazi Husrev-begovo turbe / Gazi Husrev-bey türbe in Sarajevo can be selected. “The second type of türbe in the floor plan mostly has straight square. This kind of türbe is opened from all sides, and the dome is carried by a colonnade of four or eight pillars, with often carefully refined bases, capitals, and arches. Everything is made of hewn stone. Some türbes of this type, however, do not have at all those massive, stone domes. Its exterior shape is mimicked by a light wire net, restrained in the surrounding wall. The interior surface in some of those türbes is at the level of surroundings, or just slightly higher, and in others, there is high stand, and also stone armor on it.” (Bejtić, 1952: 290) As an example of this kind of türbe, Turbe hadži Sinan-age i njegove supruge Sakine / Türbe Hadži Sinan-agma and his wife Sakina in Sarajevo can be selected. “Bosnian türbes of the third type have completely different constructions. In the base, they have a square or parallelogram and they are built from a mix of mudbrick, stone, and wood. They do not have a dome, and they are always covered with a wooden roof on the four-sided structure. These are actually very simple houses, actually, huts, and they were built with the most necessary means by the people on the graves of dervishes out of respect for such people. In the middle of the inner

nih i prekrivenih običnim krovom ili kupolama, b) na stupovima i prekrivenih i c) otkrivenih”, Hadžiosmanović i Memija (2008: 9) o formi otvorenog te zatvorenog turbeta, dok Bušatlić (2001: 205-206) slično razlikuje zatvorena turbeta, otvorena turbeta i jednostavne građevine,<sup>2</sup> dalje donoseći podjelu sarajevskih turbeta prema ličnostima kojima su turbeta podignuta, i to turbeta gazija, turbeta vakifa, turbeta istaknutih šejhova, dječija i ženska turbeta.

Širom Bosne i Hercegovine, većina turbeta se identificira po imenu pojedinca, s napomenom da “dok se većina turbeta podiže u sklopu džamija, kao značajne zadužbine preminulog, širom Balkana općenito, a posebno u Bosni i Hercegovini, turbeta se nalaze unutar ili izvan većih groblja” (Buturović, 2016: 75-76).

Kao značajne bosanskohercegovačke sepulkralne građevine, veliki broj turbeta u Bosni i Hercegovini predstavlja nacionalne spomenike; tako je u Federaciji Bosne i Hercegovine, u okviru graditeljske cjeline ili kao samostalne historijske građevine, ukupno 29 turbeta proglašeno nacionalnim spomenikom, od kojih se tri turbeta (Turbe Ajvazdede, Turbe šejha Juje i Turbe Ibrahim-dede) nalaze na Privremenoj listi nacionalnih spomenika,<sup>3</sup> zaključno sa 2022. godinom. Kao korpus za istraživanje uloge metapodataka u prezentaciji ovih objekata kulturne baštine u digitalnom okruženju, odabrana su turbeta koja imaju oznaku nacionalnih

In the existing literature, similar divisions are present in these important monuments of culture, thus Name-tak (1939: 80) talks about “three kinds of türbe: a) walled and covered with ordinary roof or domes, b) on pillars and covered c) exposed”, Hadžiosmanović and Memija (2008: 9) talk about the shape of opened and closed türbe, while Bušatlić (2001: 205-206) similarly differs closed türbes, opened türbes and simple constructions,<sup>2</sup> bringing further division of Sarajevo türbes by figures for whom türbes were built, e.i. Ghazi türbes, Waqif türbes, türbes of prominent Sheikhs, children and women türbes.

All over Bosnia and Herzegovina, the majority of türbes are identified by the name of the individual with the note “that majority of türbes are built as a part of mosques, as the significant endowment of the deceased, throughout the Balkans in general, but especially in Bosnia and Herzegovina, where türbes are found in or out the greater cemeteries” (Buturović, 2016: 75-76).

As significant BH secular monumental structures, a large number of türbes in Bosnia and Herzegovina represent national monuments, in the Federation of Bosnia and Herzegovina, within the frame of the civil engineering entirety or as independent historical buildings, the total number of 29 türbes have been declared a national monument, from which three türbes (Türbe of Ajvaz-dedo, Türbe of Sheikh Jujo and Türbe of Ibrahim-dedo) are on the Provisional list of the national monuments,<sup>3</sup> concluding

<sup>2</sup> Bušatlić (2001: 205-206) u vezi s ovom podjelom turbeta precizira da zatvorena turbeta “po svom prostornom uređenju slična su potkupolnim džamijama, ali nemaju kvadratni tlocrt već oktogonalnu osnovicu. Zidana su, kao i džamije, od kamenih klesanaca i pokrivena olovnom kupolom.” Kod otvorenih turbeta “su stubovi spojeni zidanim lukovima koji nose nizak osmostrani tambur s kupolom pokrivena olovom ili bakrom”. Konačno, “treći tip čine sasvim jednostavne građevine kvadratne osnove, zidane od drveta i ćerpiča sa krovom od šindre ili ćeremide, čija je strana prema ulici od razmaknutih letvica da se mogu vidjeti kubure u turbetu prilikom učenja Fatihe.”

<sup>3</sup> Vidjeti: Komisija za očuvanje nacionalnih spomenika Bosne i Hercegovine. Privremena lista nacionalnih spomenika. [http://kons.gov.ba/data/Novi%20dokumenti/Peticije/Privremena\\_lista\\_sa\\_donesenim\\_odlukama-11.11.2022.pdf](http://kons.gov.ba/data/Novi%20dokumenti/Peticije/Privremena_lista_sa_donesenim_odlukama-11.11.2022.pdf).

Također, vidjeti: Komisija za očuvanje nacionalnih spomenika. Odluke o proglašenju dobara nacionalnim spomenicima. <http://aplikacija.kons.gov.ba/kon-s/public/nacionalnispomenici>.

Kada je Privremena lista nacionalnih spomenika Bosne i Hercegovine u pitanju, prema čl. II Odluke Komisije za očuvanje nacionalnih spomenika “Komisija će, u skladu sa čl. V i VII Aneksa 8 Opšteg okvirnog sporazuma za mir u Bosni i Hercegovini, da donese pojedinačnu odluku o proglašenju dobra nacionalnim spomenikom za svako dobro upisano na Privremenu listu”, a prema čl. III “Do donošenja pojedinačnih odluka iz tačke II ove odluke, sva dobra upisana na Privremenu listu smatraće se nacionalnim spomenikom i uživati će zaštitu propisanu Zakonom o sprovođenju odluka Komisije za zaštitu nacionalnih spomenika, uspostavljene prema Aneksu 8 Opšteg okvirnog sporazuma za mir u Bosni i Hercegovini (‘Službene novine Federacije BiH’, br. 2/02 i 10/02, ‘Službeni glasnik Republike Srpske’, broj 9/02 i ‘Službeni glasnik Brčko Distrikta’, broj 2/02)” (Komisija za očuvanje nacionalnih spomenika Bosne i Hercegovine, 2002).

covered space is a wooden cenotaph, as with the first type of türbe, and all-around sheep skins, on which uneducated people prayed and asked for help through those dervishes.” (Bejtić, 1952: 291)

<sup>2</sup> In connection with this division of türbe Bušatlić (2001: 205-206) specifies that closed türbes “according to its spatial arrangement are similar to sub-domed mosques, but they do not have the square floor plan, but octagonal base. They are built as mosques with dressed stones and covered with lead.” With open türbes “pillars are connected by masonry arches that carry a low eight-sided tholobate with dome covered lead or copper.” Finally, “third type they form quite simple structures with a square base, masoned from wood and mudbrick with roof from shingles or with monk and nun roofing, whose side facing the street is made of spaced slats so that coffin in türbe can be seen during the prayer al-Fatiha.”

<sup>3</sup> See: Provisional list of the national monuments. Commission for the preservation of national monuments of Bosnia and Herzegovina. [http://kons.gov.ba/data/Novi%20dokumenti/Peticije/Privremena\\_lista\\_sa\\_donesenim\\_odlukama-11.11.2022.pdf](http://kons.gov.ba/data/Novi%20dokumenti/Peticije/Privremena_lista_sa_donesenim_odlukama-11.11.2022.pdf).

See, also: Decisions on the declaration of assets as national monuments. Commission for the preservation of national monuments of Bosnia and Herzegovina. <http://aplikacija.kons.gov.ba/kon-s/public/nacionalnispomenici>.

When it comes to the Provisional List of National Monuments of Bosnia and Herzegovina, according to Art. II of Decision of the Commission for the Preservation of National Monuments “The Commission will, in accordance with Article V and VII of Annex 8 of the General Framework Agreement for Peace in Bosnia and Herzegovina, make an individual decision on the declaration of a property as a national monument for each property entered on the Provisional List”, and according to Art. III “Until individual decisions from point II of this decision are made, all goods entered on the Provisional List will be considered a national monument and will enjoy the protection

spomenika u Federaciji Bosne i Hercegovine, a cilj istraživanja je identificirati koji standardi metapodataka ili njihove kombinacije mogu biti korišteni za obradu turbeta kao vrlo specifičnih fizičkih objekata bh. kulturne baštine u Omeka Classic okruženju, odnosno sistemu za upravljanje sadržajem, a na tom tragu, kreirati zbirku odabranih turbeta s područja Federacije Bosne i Hercegovine, koja će biti u otvorenom pristupu, čiji je akcent na jednostavnosti razumijevanja opisa i naziva polja, a koja je, usto, prema našim saznanjima, prva informativna, promotivna i edukativna zbirka te vrste u Bosni i Hercegovini.

### Prikaz literature

Savremene tehnologije omogućavaju prezentaciju raznolikog nepokretnog kulturnog naslijeđa (ali i pokretnog kulturnog naslijeđa) u digitalnom okruženju na nove i kreativne načine, što je, na međunarodnom nivou, rezultiralo izgradnjom brojnih i raznovrsnih digitalnih zbirki koje su kreirale informacijske i druge ustanove. Budući da su opis i vidljivost zbirki u virtualnom prostoru ovisni o bogatstvu metapodataka dodijeljenih izvorima u zbirkama, očekivano je ove inicijative pratio i razvoj u domeni metapodataka, a posljedično tome što “ne postoji ‘one-size-fits-all’ shema metapodataka, kontrolirani rječnik ili standard koji definira sadržaj katalogizacije” (Baca, 2016). U trećem izdanju dokumenta pod nazivom *A Framework of Guidance for Building Good Digital Collections* iz 2007. godine, koji su kolaborativno izradili National Information Standards Organization (NISO) i Institute of Museum and Library Services, naglašava se kako “dobri” metapodaci zahtijevaju interoperabilnost, ponovnu upotrebljivost, konzistentnost, verifikaciju, dokumentaciju i podršku pravima intelektualnog vlasništva (NISO Framework Working Group, 2007: 1).

U ponudi postojećih standarda metapodataka, priručnika, smjernica i konceptualnih modela, a u domeni kulturnog naslijeđa, Dublin Core (koji je dobio oznaku ISO 15836: 2009), kao jedna od međunarodno najzastupljenijih, odnosno najpopularnijih shema metapodataka,<sup>4</sup> korištena u različitim projektima, donosi 15 Dublin Core elemenata za opis bilo koje vrste građe: Title, Subject, Description, Source, Language, Relation, Coverage, Creator, Publisher, Contributor, Rights, Date, Type, Format, Identifier, pri čemu je pobrojane

<sup>4</sup> Vidjeti: DCMI Community Groups. <https://www.dublincore.org/groups/>.

with 2022. As a corpus for researching the role of metadata in the presentation of these cultural heritage objects in a digital environment, türbes that have the designation of national monuments in the Federation of Bosnia and Herzegovina were selected and the aim of the research is to identify what metadata standards or their combinations for türbes processing as very specific physical objects of BH cultural heritage in Omeka Classic environment i.e. what system for content management can be used and, on that track, will create a collection of selected türbes from the territory of the Federation of Bosnia and Herzegovina, which will be in the open access, and whose emphasis is on the simplicity of understanding description and name of the field, which, according to our knowledge, is the first informative, promotional and educational collection of its kind in Bosnia and Herzegovina,

### Review of literature

Modern technologies enable the presentation of diverse immovable cultural heritage (but also movable cultural heritage) in the digital environment in new and creative ways, which has, at the international level, resulted in the construction of many and diverse digital collections that were created by information and other institutions. Since the description and visibility of collections in the virtual space depend on metadata richness assigned to the sources in collections, as expected, these initiatives were accompanied by developments in the domain of metadata, and consequently, why “metadata scheme ‘one-size-fits-all’, a controlled vocabulary or standard that defines the content of the cataloging, doesn’t exist” (Baca, 2016). The third edition of the document “A Framework of Guidance for Building Good Digital Collections” from 2007, created by the National Information Standards Organization (NISO) in collaboration with the Institute of Museum and Library Services, emphasized how “good” metadata now demand interoperability, reusability, persistence, verification, documentation, and support for intellectual property rights (NISO Framework Working Group, 2007: 1).

In the offer of existing metadata standards, manuals, guidelines, and conceptual models, and in the do-

prescribed by the Law on the Implementation of Decisions of the Commission for the Protection of National Monuments, established according to Annex 8 of the General Framework Agreement for Peace in Bosnia and Herzegovina (‘Official newspaper of the Federation BiH’, No. 2/02 i 10/02, ‘Official Herald of the Republika Srpska’, No. 9/02 and ‘Official Herald of Brčko District’, No 2/02).” (Komisija za očuvanje nacionalnih spomenika Bosne i Hercegovine, 2002)

elemente Dublin Corea moguće proširiti sa DC proširenim skupom elemenata metapodataka.<sup>5</sup>

Vizualizacija kulturne baštine najčešće se bavi opisom i dostupnošću reprodukcija umjetničkih i arhitektonskih ostvarenja. Visual Resources Association (VRA) razvila je metapodatkovni standard, čija je glavna odlika distinkcija između opisa djela kulturne baštine i njihovih reprezentacija. Za opis fotografija i objekata kulturne baštine koje fotografije reprezentiraju, dostupan je VRA Core<sup>6</sup> (4.0 shema iz 2007. godine), pri čemu “djela vizualne kulture mogu uključivati objekte ili događaje kao što su slike, crteži, skulpture, djela arhitekture, fotografije, kao i knjige, dekorativna i izvedbena umjetnost”.<sup>7</sup> Dok VRA Core održava istoimena zajednica, XML shemu i dokumentaciju održava Kongresna biblioteka u Washingtonu. VRA Core sadrži 19 elemenata opisa (work, collection, or image (id); agent; culturalContext; date (type); description; inscription; location (type); material (type); measurements (type, unit); relation (type, relids); rights (type); source; stateEdition (count, num, type); stylePeriod; subject; technique; textref; title (type); worktype) te dodatnih 9 atributa za kvalifikaciju (dataDate; extent; href; pref; refid; rules; source; vocab; xml:lang).<sup>8</sup> Tako će u praksi isti VRA Core element biti iskorišten za opis djela, odnosno njegove fotografije, ali će element imati druge vrijednosti, poput primjerice različitog datuma nastanka ili podatka o agentu (Riley, 2017: 34).

Sa VRA Core u vezi, treba spomenuti i Categories for the Description of Works of Art (CDWA) koje donose upute za “katalogizaciju i opis umjetničkih djela, djela arhitekture, druge materijalne kulture, grupa i zbirke djela te srodnih slika/fotografija”<sup>9</sup> kroz 540 kategorija i potkategorija informacija, od kojih su neke, pored pomenutih VRA Core, uključene u Cataloging Cultural Objects: A Guide to Describing Cultural Works and Their Images (CCO), priručnik koji je “dizajniran posebno za članove zajednica koje se bave opisom i dokumentiranjem umjetničkih djela, djela arhitekture, kulturnih artefakata i slika/fotografija koje se odnose na njih – za stručnjake muzejske dokumentacije, kustose vizualnih izvora,

main of cultural heritage, Dublin Core (received the designation ISO 15836: 2009), one of the most represented internationally. i.e. most popular scheme of metadata,<sup>4</sup> used in various projects, brings 15 Dublin Core elements for the description of any kind of materials: Title, Subject, Description, Source, Language, Relation, Coverage, Creator, Publisher, Contributor, Rights, Date, Type, Format, Identifier, whereby all enumerated elements of Dublin Core can be expanded with DC expandible set of metadata elements.<sup>5</sup>

Visualization of cultural heritage is most often engaged with the description and availability of reproduction of artistic and architectural achievements. Visual Resources Association (VRA), developed a metadata standard in which the main characteristic is a distinction between the description of works of cultural heritage and its representations. For a description of photographs that represent objects of cultural heritage, VRA Core<sup>6</sup> (4.0 scheme from 2007) is available, whereby “works of visual cultures can include objects or events such as images, drawings, sculptures, works of architecture, photographs, as well as books, decorative and performing arts”.<sup>7</sup> While VRA Core is maintained by the community of the same name, XML schema and documentation are maintained by the Library of Congress in Washington. VRA Core has 19 elements descriptions (work, collection, or image (id); agent; culturalContext; date (type); description; inscription; location (type); material (type); measurements (type, unit); relation (type, relids); rights (type); source; stateEdition (count, num, type); stylePeriod; subject; technique; textref; title (type); worktype) and additional 9 attributes for qualifications (dataDate; extent; href; pref; refid; rules; source; vocab; xml:lang).<sup>8</sup> In practice, all the same VRA Core elements will be used for work descriptions i.e. its photograph, but the elements will have different values, such as different dates of origin or data about the agent (Riley, 2017: 34).

Regarding VRA Core, it should mention Categories for the Description of Works of Art (CDWA) which bring guidelines for “cataloging and description of artistic works, works of architecture, other material

<sup>5</sup> DCMI Metadata Terms. <https://www.dublincore.org/specifications/dublin-core/dcmi-terms/>.

<sup>6</sup> VRA Core. <https://www.loc.gov/standards/vracore/>.

<sup>7</sup> Vidjeti: An Introduction to VRA Core. [https://www.loc.gov/standards/vracore/VRA\\_Core4\\_Intro.pdf](https://www.loc.gov/standards/vracore/VRA_Core4_Intro.pdf).

<sup>8</sup> VRA Core 4.0 Outline. [https://www.loc.gov/standards/vracore/VRA\\_Core4\\_Outline.pdf](https://www.loc.gov/standards/vracore/VRA_Core4_Outline.pdf).

<sup>9</sup> Categories for the Description of Works of Art (CDWA). [https://www.getty.edu/research/publications/electronic\\_publications/cdwa/introduction.html#general](https://www.getty.edu/research/publications/electronic_publications/cdwa/introduction.html#general).

<sup>4</sup> See: DCMI Community Groups. <https://www.dublincore.org/groups/>.

<sup>5</sup> DCMI Metadata Terms. <https://www.dublincore.org/specifications/dublin-core/dcmi-terms/>.

<sup>6</sup> VRA Core. <https://www.loc.gov/standards/vracore/>.

<sup>7</sup> See: An Introduction to VRA Core. [https://www.loc.gov/standards/vracore/VRA\\_Core4\\_Intro.pdf](https://www.loc.gov/standards/vracore/VRA_Core4_Intro.pdf).

<sup>8</sup> VRA Core 4.0 Outline. [https://www.loc.gov/standards/vracore/VRA\\_Core4\\_Outline.pdf](https://www.loc.gov/standards/vracore/VRA_Core4_Outline.pdf).

arhiviste, bibliotekare ili bilo koga ko dokumentira kulturne objekte i njihove slike/fotografije” (Baca et al., 2006: xii).

Ispred ICOM zajednice, ICOM/CIDOC Documentation Standards Group, razvijen je CIDOC object-oriented Conceptual Reference Model (sa oznakom ISO 21127) koji “predstavlja ‘ontologiju’ za informaciju o kulturnoj baštini tj. formalnim jezikom opisuje eksplicitne i implicitne koncepte i odnose relevantne za dokumentaciju kulturne baštine. Primarna uloga CIDOC CRM-a je da posluži kao osnova za posredovanje informacija o kulturnoj baštini i time osigura semantičko ‘ljepilo’ potrebno za transformaciju današnjih različitih, lokaliziranih informacijskih izvora u koherentan i vrijedan globalni izvor”,<sup>10</sup> pri čemu, u okviru predviđenog opsega CIDOC CRM-a, pod pojmom “dostupni dokumentirani i materijalni dokazi” zapravo “smatraju se sve vrste prikupljene i izložene građe od strane muzeja i srodnih institucija, kako ih definira ICOM, i drugih zbirki, in-situ objekata, lokaliteta, spomenika i nematerijalne baštine koji se odnose na područja kao što su društvena historija, etnografija, arheologija, likovna i primijenjena umjetnost, prirodna historija, historija nauke i tehnologija” (vidjeti: Bekiari et al., 2022: 10).

Istovremeni razvoj semantičkog weba omogućio je publiciranje povezanih podataka (engl. *Linked Data*) putem interneta, gdje “termin ‘povezani’ implicira kako se ‘stvari’ iz različitih izvora mogu povezati jedne sa drugima unutar mreže informacija, koje se zatim mogu jednostavno mašinski obraditi” (LIBER Linked Open Data Working Group, 2021: 2). Organizacije poput Kongresne biblioteke u Washingtonu ili CERL-a (The Consortium of European Research Libraries) već dijele odabrane informacije kao povezane podatke, dodjeljujući im otvorenu licencu, što su aktivnosti koje povezuju biblioteke sa recentnim trendovima u kontekstu osiguravanja pristupa informacijama. Kao ključne prednosti publiciranja otvorenih povezanih podataka unutar zajednice biblioteka, arhiva, muzeja i galerija, ističe se kako “LOD format čini podatke atraktivnijim i jednostavnijim za analizu, kombiniranje i integraciju” (LIBER Linked Open Data Working Group, 2021: 3).

Nepokretnom kulturnom naslijeđu pažnju posvećuju također ispred kreirane ICOM zajednice International Core Data Standard for Archaeological and Architectural Heritage, čija je posljednja verzija iz 2014. godine dostupna u formi nacrtu, a koji je na-

of cultures, groups, and collections of works and related images/photographs”<sup>9</sup> through 540 categories and subcategories, from which, besides mentioned VRA Core included in *Cataloging Cultural Objects: A Guide to Describing Cultural Works and Their Images (CCO)*, manual which “has been designed especially for members of communities who work on description and who document artistic work, architectural work, cultural artifacts and images/photographs related to them – for museum documentation specialists, curators of visual resources, archivists, librarians or anyone who documents cultural objects and their images/photos” (Baca et al., 2006: xii).

In front of the ICOM community, ICOM/CIDOC Documentation Standards Group, CIDOC object-oriented Conceptual Reference Model (with designation ISO 21127) is developed and “represents ‘ontology’ for information about cultural heritage, i.e. with formal language, describes explicit and implicit concepts and relationsions relevant for documenting cultural heritage. The primary role of CIDOC CRM is to serve as the basis for mediating information about cultural heritage and thereby ensure the semantic ‘glue’ needed for the transformation of nowadays various, localized information sources into a coherent and valuable global source”,<sup>10</sup> whereby, in the frame of the intended scope of CIDOC CRM, under the term “available documented and material evidence” in fact “consider all kinds of collected and exhibited material by museums and related institutions, as defined by ICOM, and other collections, in-situ objects, sites, monuments and intangible heritage related to areas such as social history, ethnography, archaeology, fine and applied arts, natural history, history of science and technologies” (see: Bekiari et al., 2022: 10).

Simultaneous development of the semantic web made possible publishing of Linked Data via the Internet, where “the term ‘linked’ implies, the ‘things’ from multiple resources can be linked to each other resulting in an interconnected web of information that can be easily machine-processable” (LIBER Linked Open Data Working Group, 2021: 2). Organisation as the Library of Congress in Washington or CERL (The Consortium of European Research Libraries) already share selected information

<sup>10</sup> Vidjeti: CIDOC object-oriented Conceptual Reference Model (CRM). Short Intro. <https://www.cidoc-crm.org/node/202>.

<sup>9</sup> Categories for the Description of Works of Art (CDWA). [https://www.getty.edu/research/publications/electronic\\_publications/cdwa/introduction.html#general](https://www.getty.edu/research/publications/electronic_publications/cdwa/introduction.html#general).

<sup>10</sup> See: CIDOC object-oriented Conceptual Reference Model (CRM). Short Intro. <https://www.cidoc-crm.org/node/202>.

mijenjen kao vodič, te u njegovom okviru “određeni broj sekcija, podsekcija i polja su izborni, a ne obavezni, kako bi se različitim organizacijama omogućilo bilježenje do razine koja odgovara njihovim ciljevima i izvorima” (vidjeti: International Core Data Standard for Archaeological and Architectural Heritage, 2014: 10). Core Data Standard donosi sljedeće sekcije: Names and references of item or groups (mandatorno), Location (mandatorno), Type (mandatorno), Dating (mandatorno), Physical condition (izborno), Designation/protection status (izborno), Descriptions (izborno), Materials and techniques (izborno), Measurements (izborno), Persons and organisations (izborno).

Međunarodna naučna i stručna zajednica kontinuirano ulaže napore orijentirane ka pronalasku odgovarajućih rješenja za obradu objekata nepokretnog i pokretnog kulturnog naslijeđa (vidjeti npr. Riley, 2010), istovremeno pažnju posvećujući i pitanjima interoperabilnosti, posljedično donoseći i “intelektualno” mapiranje ovdje spomenutih i drugih standarda, ontologija (vidjeti: Baca et al., 2022), kao i shema za pobiranje, poput recimo CARARE sheme, koja je “aplikacijski profil temeljen na MIDAS Heritage i CIDOC CRM-u” (Ferne et al., 3) ili pak LIDO XML Harvesting Scheme, koja se “može koristiti za sve vrste objekata, npr. umjetnost, arhitekturu, kulturnu historiju, historiju tehnologije i prirodnu historiju”.<sup>11</sup> Takvo što je, kako je ranije pomenuto, dodatno osnažilo realizaciju brojnih projekata (ali i njihovu promociju), odnosno izgradnju zbirke različitih objekata baštine ispred zajednice arhivista, muzeologa i bibliotekara, te drugih zajednica – neke od tih zbirke okuplja Europeana i to od više od 4.000 različitih institucija.<sup>12</sup>

U Bosni i Hercegovini mali broj istraživanja je demonstrirao značaj metapodataka u izgradnji digitalnih zbirki. Vaska Sotirov Đukić je u svom projektu pod nazivom “Primjena novih tehnologija u rekonstrukciji kulturne baštine i identiteta Bosne i Hercegovine” (2016) ukazala na važnost metapodataka u predstavljanju digitalnih zbirki, a vizualizacijom i mapiranjem bosankohercegovačke kulturne baštine, u okviru upravljanja znanjem, bavili su se još Handžić i Dizdar (2016; 2017). Istraživanjem o ulozi metapodataka u identifikaciji i prezentaciji bh. nepokretnog kulturnog naslijeđa – turbeta – pokušava se dati doprinos bh. raspravama i istraživanjima u domeni metapodataka.

as linked data, granting it an open license, which are activities that connect libraries with recent trends in the context of providing access to information. As the key advantage of publishing open linked data in the community of libraries, archives, museums, and galleries, it is emphasized how “LOD format makes data more attractive and is easier to analyse, combine, and integrate” (LIBER Linked Open Data Working Group, 2021: 3).

Immobile cultural heritage is also given attention, in front of the ICOM community International Core Data Standard for Archaeological and Architectural Heritage was created, which latest version from 2014 is available in the form of a draft document and is intended as a guide, with the same “number of sets, subsets, and fields that are optional but no mandatory, to allow different organizations to describe to a level that suits their goals and resources” (see: International Core Data Standard for Archaeological and Architectural Heritage, 2014: 10). Core Data Standard brings the following sets: Names and references of items or groups (mandatory), Location (mandatory), Type (mandatory), Dating (mandatory), Physical condition (optional), Designation/protection status (optional), Descriptions (optional), Materials and techniques (optional), Measurements (optional), Persons and organizations (optional).

The international scientific and professional community continuously is making efforts oriented toward the discovery of suitable solutions for the processing of immovable and movable cultural heritage (see for example: Riley, 2010), while paying attention also to the questions of interoperability, consequently bringing “intellectual” mapping of the here-mentioned and other standards, ontologies (see: Baca et al., 2022), as well as a scheme for data harvesting, such as CARARE scheme, which is “application form based on MIDAS Heritage and CIDOC CRM” (Ferne et al., 3) or even LIDO XML Harvesting Schema that “can be used for all kind of objects, e.g. art, architecture, cultural history, history of technology or natural history”.<sup>11</sup> It has, as was already mentioned, additionally strengthened the implementation of numerous projects (but also their promotion) i.e. building collections of various heritage objects in front of the community of archivists, museologists, and librarians, and other communities, some of these collections are brought together by Europeana from more than 4,000 different institutions.<sup>12</sup>

<sup>11</sup> Vidjeti: What is LIDO (Lightweight Information Describing Objects). <https://cidoc.mini.icom.museum/working-groups/lido/lido-overview/about-lido/what-is-lido/>.

<sup>12</sup> Vidjeti: Europeana. About. <https://www.europeana.eu/en/about-us>.

<sup>11</sup> See: What is LIDO (Lightweight Information Describing Objects). <https://cidoc.mini.icom.museum/working-groups/lido/lido-overview/about-lido/what-is-lido/>.

<sup>12</sup> See: Europeana. About. <https://www.europeana.eu/en/about-us>.



## Metode i istraživački korpus

Uspješno predstavljanje nepokretne kulturne baštine u digitalnom okruženju ovisi o bogatstvu dodijeljenih metapodataka objektima baštine, te se u ovom istraživanju, u kontekstu definiranja seta metapodataka neophodnih za identifikaciju turbeta, a trgom analize preporuka nacrtu CIDOC International Core Data Standard for Archaeological and Architectural Heritage, te podataka dobivenih konsultiranjem i detaljnom analizom postojeće dostupne literature o turbetima, prepoznalo šest osnovnih kategorija opisa ovog vrlo specifičnog predmetnog korpusa: I Identifikacija; II Lokacija; III Datacija; IV Pojedinci i organizacije vezani uz historiju turbeta; V Opis; VI Nematerijalna kulturna baština vezana uz turbe. U vezi sa navedenim kategorijama kao prijedlozima, tj. polazištima za osnovni opis turbeta, kao fizičkih objekata, dalje su se u Omeka Classic okruženju, koje je odabrano kao platforma za prezentaciju turbeta, odnosno kreiranje zbirke odabranih turbeta u otvorenom pristupu, identificirali Dublin Core i VRA Core kao standardi koji mogu biti korišteni za obradu turbeta u navedenom sistemu za upravljanje sadržajem, odnosno standardi koji odgovaraju potrebama opisa prirode objekata iz zbirke. Temeljni kriterij selekcije turbeta za uključivanje u zbirku bio je geografski – područje Federacije Bosne i Hercegovine; dodatno, u zbirku su uključena samo ona turbeta koja imaju oznaku nacionalnog spomenika, te je istraživanje obuhvatilo ukupno 29 turbeta iz Federacije Bosne i Hercegovine.

## Rezultati

Odabir platforme za izradu predmetne zbirke vođen je zahtjevima da platforma treba biti ponuđena u otvorenom pristupu, fleksibilna, jednostavna za instalaciju i korištenje, sa pratećom dokumentacijom te ponuđenim standardom metapodataka, koji je po potrebi moguće modificirati. U setu postojećih rješenja, a trgom pomenutih kriterija, za potrebe ovoga istraživanja odabrana Omeka (Classic, verzija 3.0.3) omogućava ne samo izradu zbirki već i kreiranje izložbi objekata kulturnog naslijeđa. Također, “od svog prvog izdanja u februaru 2008., Omeka Classic se etablirala kao vodeća platforma otvorenog koda za publiciranje digitalnih zbirki na webu. Dodatno, softver je preuzet preko 500.000 puta i sistem je za upravljanje sadržajem na hiljade web stranica koje su razvile biblioteke, arhivi, muzeji, naučnici i korisnici entuzijasti”,<sup>13</sup> a osim

In Bosnia and Herzegovina, a small number of research have demonstrated the importance of metadata in the construction of digital collections. Vaska Sotirov Đukić in her project titled Application of New Technologies in the Reconstruction of the Cultural Heritage and Identity of Bosnia and Herzegovina (2016) pointed out the importance of metadata in the presentation of digital collections, and visualization and mapping of BH cultural heritage, in the framework of knowledge management, have been addressed by Handžić and Dizdar (2016; 2017). By researching the role of metadata in the identification and presentation of BH immovable cultural heritage – türbes, an attempt is made to contribute to BH debates and research in the domain of metadata.

## Methods and Research Corpus

Successful representation of immovable cultural heritage in the digital environment depends on the wealth of metadata assigned to heritage objects, and in this research, in the context of defining a set of metadata necessary for türbes identification, the context of defining the set of metadata necessary for türbes identification, and following the analysis of draft recommendations CIDOC International Core Data Standard for Archaeological and Architectural Heritage, as well as with data obtained by consulting and detailed analysis of existing available literature on türbes, six basic categories of description of this specific subject corpus is recognized: I Identification; II Location; III Dates; Individuals and organizations related to the history of türbes; V Description; VI Intangible cultural heritage related to türbes. In connection to the stated categories as suggestions, i.e. starting points for a basic description of turbe, as physical objects, further, in the Omeka Classic environment, which has been selected as a platform for türbe presentation, Dublin Core and VRA Core were identified as standards that can be used for cataloging of türbes in the mentioned system for content management, i.e., standards which match to the description needs of the nature of the object in the collection. The basic criterion for the selection of türbes for inclusion in the collection was geographical – the territory of the Federation of Bosnia and Herzegovina, additionally, only those türbes that have the designation of a national monument were included in the collection, so the research included a total of 29 türbes from the Federation of Bosnia and Herzegovina.

<sup>13</sup> Vidjeti: Omeka. <https://omeka.org/about/project/>.

pomenutog, donosi dodatne brojne funkcionalnosti koje se pojavljuju u obliku različitih programskih dodataka, kojih za Omeka Classic ima oko 100.<sup>14</sup>

Omeka dolazi sa predefinisanim poljima metapodataka, koja se temelje na Dublin Coreu, i stoga su se u obradi turbeta, zbog interoperabilosti, kao i zahtjeva odabranog radnog okruženja te funkcionalnosti sučelja namijenjenog korisnicima, popunjavala najprije polja DC-a Title i Identifier. Omeka, osim što nudi mogućnost dodavanja dodatnih polja opisa, daje mogućnost i ponavljanja polja opisa iz DC, što se s ciljem donošenja preglednijeg prikaza turbeta u Omeki iskoristilo, s akcentom na jednostavnom prikazu i razumijevanju metapodataka od strane raznolikih potencijalnih korisnika zbirke.

Međutim, turbeta su vrlo specifični objekti baštine, to su historijske građevine koje su nerijetko vakufi,<sup>15</sup> a koji se prevashodno podižu zaslužnim pojedincima. Usto, to su objekti baštine o kojima, ponekad, jedine "izvore" informacija crpimo iz usmene predaje, što se istovremeno odnosi i na pojedince koji su sahranjeni u turbetima. Nadalje, neka turbeta iz predmetnog korpusa su demontirana (promijenila su lokaciju), brojna imaju natpise na nišanima, a podignuta su u periodu od 16. do 20. stoljeća (od perioda Osmanske uprave u Bosni i Hercegovini do perioda Kraljevine Jugoslavije).

Zbog brojnih različitih karakteristika turbeta, a samim tim i karakterističnih elemenata opisa, a

## Results

The selection of platform for creating the subject collection was managed by requirements that the platform has to be offered in Open access, flexible, easy to install, and easy for use, with accompanying documentation, and offered metadata standards which can be modified if necessary. In sets of existing solutions, following the mentioned criteria, for the needs of this research selected Omeka (Classic, version 3.0.3), enables not only the creation of collections but also the creation of exhibitions from the objects of cultural heritage. Also, "from the first release in February 2008, Omeka Classic has established itself as a leading open source platform for publishing digital collections on the web. In addition, the software has been downloaded over 500.000 times, and the system for content management is at the thousands of web pages that have been developed by libraries, archives, museums, scientists and enthusiastic users",<sup>13</sup> and apart mentioned, it brings additional numerous functionalities that appear in the form of various program plugins, which for Omeka Classic are around 100.<sup>14</sup>

Omeka comes in predefined fields of metadata which are based on Dublin Core, and therefore in the processing of turbes, because of interoperability, as well as the requirements of the selected work environment and the functionality of the interface intended for users, DC's fields Title and Identifier were filled at the beginning. Omeka, in addition to offering the option of adding additional description fields, gives the possibility of repeated description field from DC, which was used with the aim of bringing a more comprehensive presentation of the turbes in Omeka, with a focus on simple presentation and understanding of by diverse potential users of the collection. However, turbes are very specific

<sup>14</sup> Ibid. Zbirke posvećene nepokretnoj ili pokretnoj kulturnoj baštini, osim što su ili fokusirane na opis stvarnog objekta baštine ili pak na njegove "digitalne manifestacije", te pored toga što koriste korpusom definirane neophodne standarde za obradu, temelje se nerijetko i na različitim "platformama", u setu kojih veliku popularnost, u oblasti digitalne humanistike, kako Toscano, Cobo i Herrera-Viedma (2022: 4) navode, imaju: "1. Sistemi za upravljanje sadržajem: MediaWiki; Drupal; BackdropCMS; WissKI; Mukurtu; Omeka Classic; Omeka S; AlchemyCMS; 2. Sistemi za upravljanje digitalnim objektima: Islandora; Arches; CollectiveAccess; 3. Virtualna okruženja za istraživanja sa podacima: ResearchSpace; Nodogoat; 4. Platforme za istraživanja na temelju crowdsourcing-a: Zooniverse; Pybossa; EnrichEuropeana; CrowdHeritage." Kao jedno od rješenja u kategoriji sistema za upravljanje sadržajima, Omeka, kao popularni radni prostor za pomenute projekte (vidjeti: Omeka Directory: <https://omeka.org/classic/directory/>) koji, prema zaključku autora, a temeljem komparativne analize pomenutih rješenja, pored Drupala, Pybossa te Nodogoata, spada u "najzanimljivije produkte u kontekstu digitalne humanistike", radno je okruženje koje karakterizira upravo "pristup stvaranju digitalnih zbirki sa standardnim metapodacima" (Ibid.: 12).

<sup>15</sup> Vakuf (tur. *vakıf*, ar. *waqf*, od osnove *wqf* u značenju "zastati, zadržati") ima značenje zadužbine, zavještanja, zaklade; lukrativne ustanove, objekta, zemlje, novca i drugih pokretnih i nepokretnih imovina zavještanih za podizanje, održavanje i funkcioniranje vjerskih i dobrotvornih ustanova (usp. Šabanović, 1964: 25-26). U Osmanskoj državi institucija zadužbine imala je važnu vjersku, obrazovnu, socijalnu i ekonomsku ulogu, koju su Osmanlije, uključujući i termin vakf (vakuf) kojim se ona imenuje, naslijedili od prethodnih islamskih država, zbog čega je vakuf već od početka postojanja Osmanske države mogao steći stabilan oblik koji će se nepromijenjen održati do početka 20. stoljeća (usp. Filan, 2013: 19).

<sup>13</sup> See: Omeka. <https://omeka.org/about/project/>.

<sup>14</sup> Ibid. Collections dedicated to immovable or movable cultural heritage, besides being focused on the description of the real object or its "digital manifestation" and besides the use of defined necessary standards for processing, are often based on various "platforms", in the set of which great popularity, in the field of digital humanities, as Toscano, Cobo and Herrera-Viedma (2022: 4) state, have: "1. Content management systems: MediaWiki; Drupal; BackdropCMS; WissKI; Mukurtu; Omeka Classic; Omeka S; AlchemyCMS; 2. Systems for managing digital assets: Islandora; Arches; CollectiveAccess; 3. A virtual research environment with data: ResearchSpace; Nodogoat; 4. Platforms for research based on crowdsourcing: Zooniverse; Pybossa; EnrichEuropeana; CrowdHeritage." As one of the solutions in the category of content management systems, Omeka, a popular workspace for mentioned projects (see: Omeka Directory: <https://omeka.org/classic/directory/>), which according to the author's conclusion, and based on the comparative analysis of the mentioned solutions, in addition to Drupal, Pybossa, and Nodogoat, falls under "most interesting products in the context of digital humanistic", is workspace characterized by "approach to the creation of digital collections with standard metadata" (Ibid.: 12).

tragom analize CIDOC Core Data Standard-a, te mapiranja DC i VRA Core-a (vidjeti: Baca et al., 2022), uz navedena polja DC-a (Title i Identifier), dalje su se u obradi ujednačeno popunjavala polja DC-a Subject, Temporal Coverage i References.

S ciljem rasterećenja polja Description te polja Subject u DC u obradi turbeta te zahtjeva za izradom zbirke u kojoj je moguće predstaviti i opisati turbeta kao fizičke objekte, ali i njihove digitalne reprodukcije u formi fotografija, dalje je korišten VRA Core za potrebe predstavljanja pomenutih specifičnosti korpusa na korisnicima razumljiv način.

Opis turbeta, nakon instalacije plugina VRA Core (verzija 1.2), obogaćen je sljedećim poljima iz VRA Core: Work Type (uključujući napomene), Cultural context (uključujući napomene), Location (uključujući napomene), Agent (uključujući napomene), Description, Material, Measurements, Inscriptions i Style Period. Dakle, pored pet korištenih DC polja, a zbog potpunijeg i preglednijeg predstavljanja predmetnog korpusa, vodeći računa i o pomenutoj funkcionalnosti sučelja namijenjenog korisnicima, uvršteno je devet polja iz VRA Corea. U konačnici, u predloženom modelu opisa, koji se bazira na DC i VRA Core standardima, te Omeka Classic okruženju, najbolje dokumentirana turbeta sadrže ukupno 22 polja opisa (uključujući polja napomena), od kojih se pojedina polja ponavljaju (Subject, Identifier).

U dokumentaciji VRA Core sheme ponuđene su dvije verzije, od kojih je jedna sa ograničenjima, a druga bez ograničenja, gdje su svi atributi nekontrolirani. Verzija sa ograničenjima proširuje shemu bez ograničenja, limitirajući vrijednosti mnogih atributa prema nabrojanim listama, te ograničavajući datume prema ISO 8601 formatu (Visual Resources Association, 2007). Prilikom obrade turbeta, slijedile su se preporuke sheme bez ograničenja.

Kreirana zbirka<sup>16</sup> je dostupna u licenci 4.0. Creative Commons, zajedno sa pripadajućim fotografijama turbeta, geolokacijom i tagovima koji su se dodjeljivali zbog povećanja vidljivosti i pretraživosti izvora. U vezi s funkcionalnošću prikaza informacije o geolokaciji unutar korisničkog interfejsa, valja istaknuti kako je instalacija dodatka "Geolocation", u odnosu na predefinirano polje DC Extended pod nazivom Coverage, koje također omogućava prikaz mape, doprinijela boljem korisničkom

objects of heritage, they are historical buildings that are quite often waqfs (endowments),<sup>15</sup> and which are primarily raised for deserving individuals. Besides, they are objects of heritage about which, sometimes, only "sources" of information we draw from the oral tradition, which also applies to individuals buried in türbes. Furthermore, some of the türbes from the subject corpus were dismantled (the location has changed), many of them have inscriptions on the tombstones (*nišani*) and were built in the period from the 16th to the 20th century (from the period of the Ottoman administration in Bosnia and Herzegovina to the period of the Kingdom of Yugoslavia).

Due to the many different characteristics of türbes, and therefore characteristic elements of the description, and following the analysis of CIDOC Core Data Standard and mapping of the DC and VRA Core (see: Baca et al., 2022), in addition to the specified DC fields (Title and Identifier), the DC fields Subject, Temporal Coverage, and References were uniformly filled in during the processing.

With the aim of relieving Description and Subject fields in DC, in the processing of türbes, and requests for the creation of a collection in which it is possible to present and describe türbes as physical objects, but also their digital reproduction in the form of photographs, further, VRA Core was used for the purposes of presenting the mentioned specificities of the corpus in a way understandable to users.

Description of türbes, after installation of the VRA Core (version 1.2) plugin, it is enriched with the following fields from VRA Core: Work Type (including notes), Cultural context (including notes), Location (including notes), Agent (including notes), Description, Material, Measurements, Inscriptions and Style Period. Therefore, in addition to the five DC fields used, and due to a more complete and transparent presentation of the subject corpus, taking into account the aforementioned functionality of the user interface, nine fields from VRA Core have been included. Ultimately, in the proposed

<sup>16</sup> Kulturno naslijeđe Bosne i Hercegovine: Turbeta u Federaciji Bosne i Hercegovine. <http://kin.ff.unsa.ba/turbeta/>. U formi poster izlaganja, zbirka Turbeta u Federaciji Bosne i Hercegovine je predstavljena na međunarodnoj konferenciji "Libraries in the Digital Age (LIDA)", u maju 2023. godine, u Osijeku u Republici Hrvatskoj.

<sup>15</sup> Vakuf (Turkish: *vakıf*, Arabic: *waqf* from the stem *waqf* in meaning "to stop, to keep") has the meaning of endowment, bequest, foundation; lucrative institutions, buildings, land, money and other movable and immovable assets bequeathed for the establishment, maintenance, and functioning of religious and charitable institutions (Cf. Šabanović, 1964: 25-26). In the Ottoman state, the institution of the endowment has an important religious, educational, social, and economic role, which the Ottomans, including the term *vaqf* (*waqf*) by which it is called, inherited from previous Islamic states, which is why the *waqf* was able to acquire a stable form from the beginning of the Ottoman state's existence, which would remain unchanged until the beginning of the 20th century (Cf. Filan, 2013: 19).

iskustvu u smislu jasnijeg i preciznijeg te vizualno atraktivnijeg prikaza mapiranja. Osim navedenoga, opis objekata u zbirci popraćen je referencama, što je rezultat najzahtjevnije ocijenjene faze izrade ove zbirke – prikupljanja i analize izvora o korpusu. Tokom obrade su konsultirani Getty kontrolirani rječnici Art & Architecture Thesaurus (AAT) i Getty Thesaurus of Geographic Names (TGN), ali i Wikidata.<sup>17</sup>

Za provjeru dostupnih te prikupljanje nedostajućih metapodataka, terenska istraživanja su bila neophodna i dragocjena, posebno s obzirom na činjenicu da su se turbeta iz zbirke tokom vremena mijenjale, a te promjene nerijetko nisu prisutne u postojećoj dostupnoj novijoj literaturi. Istraživačice su u periodu od oktobra 2022. do februara 2023. godine proputovale preko 1500 kilometara, posjetile i fotodokumentirale sva turbeta iz zbirke (vanjski izgled svih turbeta, i unutrašnjost – izuzev unutrašnjosti četiri turbeta, zbog opravdanih razloga), čije su fotografije integrirale unutar zbirke u formi datoteka, i to ukupno 151 fotografiju, u formi prilagođenoj webu, zbog ograničenja prostora pohrane za postavljanje sadržaja. Fotografije u datotekama su opisane korištenjem DC, gdje su ponuđeni osnovni metapodaci (Title, Identifier, Author, Date, Type, Rights), uz korištenje polja Relation iz VRA Core, radi uspostavljanja odnosa između objekta i njegove reprodukcije. Fotografije su također dostupne pod licencom 4.0. Creative Commons.

U zbirci “najmlađe” obrađeno turbe je Turbe Osmana Đikića (1936. godina), nakon kojeg slijedi Turbe Avde Sumbula i Behdžeta Mutevelića (1932. godina), dok najstarija turbeta datiraju iz 16. stoljeća (npr. Turbe u Prači, Turbe Gazi Husrev-bega, Turbe u Solunu), kojih je u zbirci ukupno sedam. Najveći broj turbeta iz korpusa datira iz 18. stoljeća, njih ima ukupno 10, iz 17. stoljeća u zbirci se nalaze dva turbeta, a iz 19. stoljeća ukupno šest turbeta, dok jedno turbe iz zbirke datira iz 19/20. stoljeća, te jedno iz 16/17. stoljeća. Zbirka sadrži osnovne prikupljene informacije o ukupno 13 otvorenih i 16 zatvorenih turbeta, a kada je zastupljenost turbeta po kantonima u Federaciji Bosne i Hercegovine u pitanju, iz zbirke se najveći broj turbeta nalazi u Sarajevu, Mostaru i Travniku, pri čemu se ukupno 12 turbeta iz zbirke nalazi uz džamije, pet turbeta na grobljanskim cjelinama, šest turbeta uz tekije, a šest turbeta samostalno. U zbirci nema nijedno žensko

description model, which is based on the DC and VRA Core standards, and the Omeka Classic environment, the best-documented türbes contain a total of 22 description fields (including note fields), of which some fields are repeated (Subject, Identifier).

In VRA Core scheme documentation, two versions are offered, one of which is with restrictions, and another version without restrictions, where all attributes are uncontrolled. Version with restriction expands scheme without restrictions, limiting values of many attributes according to itemized lists, and limiting dates according to ISO 8601 format (Visual Resources Association, 2007). When processing türbes, the recommendations of the scheme without restrictions were followed.

The created collection<sup>16</sup> is available in 4.0. Creative Commons license, together with accompanying photograph of türbes, geolocation, and tags which were assigned to increase the visibility and searchability of sources. In connection to the functionality of displaying geolocation information within the user interface, it is important to emphasize that installation of the plugin “Geolocation”, in relation to the predefined DC Extended field named Coverage, which enables the display of maps, contributed to a better user experience in terms of a clearer and more precise, and visually more attractive mapping display. In addition to the above, the description of the objects in the collection is accompanied by references, which is the result of the most demanding evaluation of the collection’s construction stage – collection and analysis of sources on the corpus. During processing, Getty controlled dictionaries Art & Architecture Thesaurus (AAT) and Getty Thesaurus of Geographic Names (TGN) were consulted, but also Wikidata.<sup>17</sup>

To check available and to collect missing metadata, field research was necessary and valuable, especially given the fact that türbes from the collection have changed over time, which changes are often not present in the available recent literature. From October 2022 to February 2023, researchers have traveled over 1,500 kilometers, visited and photo-documented all the türbes from the collection

<sup>17</sup> Art & Architecture Thesaurus® Online. <https://www.getty.edu/research/tools/vocabularies/aat/>; Getty Thesaurus of Geographic Names® Online. <https://www.getty.edu/research/tools/vocabularies/tgn/>; Wikidata. [https://www.wikidata.org/wiki/Wikidata:Main\\_Page](https://www.wikidata.org/wiki/Wikidata:Main_Page).

<sup>16</sup> Kulturno naslijeđe Bosne i Hercegovine: Turbeta u Federaciji Bosne i Hercegovine (Cultural heritage of Bosnia and Herzegovina: Türbes in the Federation of Bosnia and Herzegovina). <http://kin.ff.unsa.ba/turbeta/>. In the form of a poster presentation, the Türbes collection in the Federation of Bosnia and Herzegovina was presented at an international conference “Libraries in the Digital Age (LIDA)”, in May 2023, Osijek, Republic Croatia.

<sup>17</sup> Art & Architecture Thesaurus® Online. <https://www.getty.edu/research/tools/vocabularies/aat/>; Getty Thesaurus of Geographic Names® Online. <https://www.getty.edu/research/tools/vocabularies/tgn/>; Wikidata. [https://www.wikidata.org/wiki/Wikidata:Main\\_Page](https://www.wikidata.org/wiki/Wikidata:Main_Page).

samostalno turbe, ali su u četiri dvostruka turbeta iz zbirke, sahranjene Sakina, supruga Hadži Sinan-age (Sarajevo), zatim supruga Mehmed-age Krehe (Mostar) kojoj se ne zna ime, zatim, u Turbetu u Prači, sahranjena je supruga Husein-paše, kojoj se također ne zna ime, te je u turbetu u Travniku sahranjena Ajiša-hanuma, supruga Mehmed-efendije. Usto, u trostrukim turbetima se nalaze i dva dječija mezara i/ili sarkofaga, i to u Prači i u Travniku.

Trenutno, ukupan broj dodijeljenih metapodataka u zbirci u dokumentima iznosi preko 560, a u datotekama je pak dodijeljeno preko 1200 metapodataka, dok je navigacija kroz zbirku moguća na više načina, pretraživanjem mape, svakog dokumenta ponosob ili pak pretraživanjem pojedinih polja opisa, datoteka ili tagova, kojih ima preko 380.

### Diskusija

Dosljednu obradu turbeta, kombinacijom DC i VRA Core standarda, pratilo je nekoliko izazova. Kao prvi treba izdvojiti neujednačeno korištenje imena pojedinaća vezanih za historiju turbeta ili samih naziva turbeta u službenoj dokumentaciji, kao i postojećoj literaturi, što je iziskivalo navođenje napomena za sve pronađene oblike imena pojedinaća vezanih uz historiju turbeta te različite nazive turbeta u dokumentaciji. Sljedeći izazov je bio određivanje godine podizanja turbeta, zbog čega se opredijelilo za navođenje stoljeća u kojem je turbe podignuto, osim u rijetkim slučajevima gdje je relevantna i pouzdana dokumentacija donosila informaciju o godini izgradnje turbeta, što se navodilo, uz ostala dostupna pojašnjenja (npr. Turbe Osmana Đikića). Također, u procesu obrade većine turbeta konsultirala se literatura, ponekada stara i preko stotinu godina, kao i sačuvane vakufname, tj. njihovi prijevodi, te putopisi, koji su postali neizostavnim informacijskim izvorima za popunjavanje nedostajućih podataka tokom obrade, s čim u vezi valja naglasiti kako postoji nesrazmjer u smislu bogatstva podataka koji su bili dostupni u literaturi, u zavisnosti od interesa istraživača ili značaja turbeta, što se reflektiralo i na popunjenost pojedinih polja opisa.

Važna odlika ove kulturnohistorijske baštine Bosne i Hercegovine ogleda se u tome što je čak 12 turbeta iz zbirke, u okviru graditeljske cjeline ili samostalno, zadužbina ili vakuf. S obzirom na značaj institucije vakufa, u opisu, uz navođenja tipa objekta (Worktype) u VRA Core, u formi napomena, donosile su se informacije o vakufskom statusu graditeljske cjeline i/ili turbeta, pored informacija o njihovom statusu nacionalnog spomenika. S druge

(exterior view of all türbes, and interior – except the interior of four türbes because of valid reasons) which photographs are integrated into the collection in the form of files, a total of 151 photos, and in a web-adapted form, due to storage space limitations for uploading content. Photographs in files are described by use of DC, where elementary metadata are offered (Title, Identifier, Author, Date, Type, Rights), with the use of the field Relation from VRA Core, for implementation of relation between object and its reproduction. Photographs are also available under 4.0. Creative Commons license.

In the collection “youngest” processed türbe is Turbe Osmana Đikića / Türbe of Osman Đikić (1936), follows Turbe Avde Sumbula i Behdžeta Mutevelića / Türbe of Avdo Sumbul and Behdžet Mutevelić (1932), while the oldest türbes date from 16th century (eg. Turbe u Prači / Türbe in Prača, Turbe Gazi Husrev-bega / Türbe of Gazi Husrev-bey, Turbe u Solunu / Türbe in Solun), of which there are a total of seven in the collection. The biggest number of türbes in the corpus dates from the 18th century, there are 10 of them in total, from the 17th century in the collection are two türbes, and from the 19th century in total six türbes, while one türbe from the collection dates from 19th–20th century, and one from 16th–17th century. The collection contains general, collected information about 13 open and 16 closed türbes in total, and when it comes to the presence of türbes in the Cantons of the Federation of Bosnia and Herzegovina, from the collection, the biggest number of türbes are in Sarajevo, Mostar and Travnik, where 12 türbes from the collection in total are located next to mosques, five of türbes on grave entities, six türbes next to tekke, and six türbes independently. In the collection, there is no independent woman türbe, but in the four double türbes from the collection are buried Sakina, Hadži Sinan-agma's wife (Sarajevo), then the wife of Mehmed-agma Kreho (Mostar), whose name is unknown, then, in the Türbe in Prača, wife of Husein-Pasha is buried, whose name is also unknown, and in the türbe in Travnik, Ajiša Khanum, wife of Mehmed Effendi, is buried. In addition, in triple türbes, there are two children's graves and/or sarcophagi, in Prača and in Travnik.

At the moment, the total number of assigned metadata in the collection is over 560, and in the files, over 1200 metadata is assigned, while navigation through the collection is possible in several ways, by searching the folder, each document individually, or by searching individual description fields, files or tags, that are more than 380.

strane, podaci o pojedincima koji su podizali turbeta, vakifima, navodili su se u polju Agent, sa preciziranjem uloge agenta u napomenama, ne u elementu Role (preporuka VRA Core dokumentacije), a s obzirom na nejasan prikaz tog elementa na objavljenoj stranici unutar sučelja namijenjenog korisnicima zbirke (slični problemi prikaza uočeni su i u polju Location).

Navođenje ovih podataka, korištenjem pomenuta dva načina, uz zadržavanje funkcionalnosti prikaza, bilo je moguće primjenom VRA Core standarda.

Specifičnost turbeta kao objekata nepokretnog kulturnog naslijeđa Bosne i Hercegovine ogleda se i u tome što se uz njih nerijetko vežu i različiti elementi nematerijalne kulturne baštine, poput usmene predaje (priča, legendi), a jednako tako i narodnih običaja, kao i događaja.<sup>18</sup> U korpusu se za 19 turbeta veže usmena predaja iz koje “saznajemo” kada je turbe nastalo ili ko je u turbetu sahranjen, pa se, u odsustvu historijskih izvora, obrada takvih turbeta temeljila na sačuvanoj usmenoj predaji. Prikupljanje takvih podataka bilo je zahtjevno, posebno jer su pojedine zabilježene predaje nerijetko u znaku proturječnosti, pri čemu su se u obradi, u polju Description, nastojali ponuditi različiti oblici predaje (npr. za Turbe Ajvaz-dede).

Izbjegavajući da se u pomenutom polju Description, tragom mapiranja shema metapodataka, navode i natpisi na nišanima ili drugi natpisi na turbetima, prednost se u navođenju takvih podataka dala polju Inscription iz VRA Core,<sup>19</sup> dok se za navođenje podataka o lokaciji turbeta također odlučilo za VRA Core, s obzirom na potrebu da se donesu odgovarajuće napomene o onim turbetima koja su tokom svog postojanja mijenjala lokaciju, odnosno bivala demontirana, te dodatne napomene o lokaciji turbeta, u sklopu graditeljske ili neke druge cjeline.

<sup>18</sup> U prijevodu dokumenata o sarajevskim evlijama i njihovim grobovima, nepoznatog autora, pod naslovom “Nekoliko poimeničnih navoda turbeta i časnih grobova poštovanih šejhova, časnih dobrotvora te glasovite uleme dobrih ljudi pokopanih u gradu Sarajevu, koji se smatraju evlijama, a čiji su grobovi mjesta hodočašća na koja se ide na murad” čiji prijevod donosi Bejtić, smatrajući da “je nastao negdje poslije 1832. godine” (Bejtić, 1981: 112), pojavljuju se i neki pojedinci vezani uz historiju turbeta iz zbirke, i to:

*Turbe znamenitog Gazi Husrev-bega, dobrotvora, pred njegovom časnom džamijom. U dobrom stanju. Mjesto hodočašća (ziyāretgāh).* (Bejtić, 1981: 113)

*Turbe emira Murad-vojvode, oslobođenog roba gore imenovanog. U dobrom stanju.* (Bejtić, 1981: 113)

*Turbe Jusuf-paše, na groblju zvanom Ali Ufak. Znamenito i očuvano mjesto hodočašća.* (Bejtić, 1981: 113)

*Dobrotvor divan-kاتب Hajdar-efendija. Turbe mu je u dobrom stanju. Ispred [njegove] časne džamije. Glasovito.* (Bejtić, 1981: 114)

<sup>19</sup> Svi natpisi u zbirci, na nišanima i/ili turbetima, preuzimani su od Mujezinović, 1998.

## Discussion

Consistent processing of türbes, with a combination of DC and VR Core standards, several challenges followed. The first thing that should be highlighted is the uneven use of the names of individuals related to the history of türbes or the names of türbes themselves in the official documentation, as well as in the existing literature, which required the provision of notes for all found forms of the names of individuals related to the history of türbes and different names of türbes in the documentation. The following challenge was defining the year of the türbe construction, which is why it was decided to indicate the century in which the türbe was built, except in rare cases where relevant and reliable documentation provided information about the year of the türbe's construction, which was stated, along with other available explanations (eg. Turbe Osmana Đikića / Türbe of Osman Đikić). Also, in the process of processing of the most türbes, literature was consulted, sometimes older than one hundred years, as well as preserved waqfiyyas i.e. their translations, and travelogues which became essential information sources for filling in missing data during processing, in connection with which it should be emphasized that there is a disproportion in terms of the richness of data that was available in the literature, depending on the interest of the researcher or the significance of the türbe, which was also reflected in the filling of individual description fields.

Important characteristics of the cultural and historical heritage of Bosnia and Herzegovina are reflected in the fact that there are as many as 12 türbes from the collection, within the building complex or independently, endowment or waqf. With regard to the importance of the institution of waqf, in the description, with the indication of the type of object (Worktype) in VRA Core, in the form of notes, information was provided about the waqf status of the building complex and/or türbe, in addition to information about their status as a national monument. On the other hand, data about individuals who have been building türbes, waqifs, were added in the field Agent, specifying the role of the agent in the notes, not in the element Role (recommendation of the VRA Core documentation), considering the unclear presentation of that element on the published page within the interface intended for users of the collection (similar problems of the display were observed in the field Location).

Specifying this data, using the mentioned two methods, while maintaining the functionality of the

Poblize informacije o kulturnom kontekstu, periodu u kojem su podizana turbeta i sl., ali i o materijalima izgradnje i dimenzijama turbeta također su se donosile u predefinisanim poljima iz VRA Core, dok su se u polju Subject iz DC navodili normativni podaci na ujednačen način, u smislu redosljeda navođenja ovih elemenata.

Rečenim su se nastojale prezentirati navedene informacije na korisniku pregledan i razumljiv način, rasterećenjem polja Subject i Description iz DC.

Nadalje, instalacijom plugina Item Relations omogućeno je uspostavljanje odnosa među pojedinim digitalnim objektima, što je bilo potrebno definirati među turbetima koja se dovode u vezu na temelju agenta u ulozi vakifa. Primjerice, uspostavljena je relacija između Turbeta Ajvaz-dede i Turbeta Hasana Kafije Pruščaka, koji je podigao Turbe Ajvaz-dede. Ovaj plugin Omeke Classic slijedi RDF model za definiranje odnosa među digitalnim objektima, što podrazumijeva formu tripleta kao temeljne strukture RDF-a.<sup>20</sup> Radi efikasne mašinske obrade tripleta, potrebno je nedvosmisleno identificirati dijelove trojke korištenjem URI-ja, što će dalje omogućiti pretraživanje teksta i pobiranje informacija prema načelima semantičkog weba.

Uza sve navedene izazove u obradi turbeta, ali i evidentirane probleme u vezi sa funkcionalnim prikazom zbirke (redosljed i način prikaza elemenata opisa), kombinacijom DC i VRA Core standarda, za koje se u Omeke Classic okruženju nude predefinisana polja opisa, moguće je zadovoljiti elementarne zahtjeve obrade korpusa, na pregledan, ujednačen i informativan način, uz nužno iskorištavanje napomena uz pojedina polja opisa iz VRA Core, koje dodatno doprinose potrebama opisa i razumijevanju ovih specifičnih objekata bh. baštine.

S tim u vezi, nastala digitalna zbirka doprinos je i rješavanju praktičnih problema kreiranja zbirki, odnosno načina na koji je standarde moguće implementirati u praksi, iz perspektive mogućnosti Omeke softvera za upravljanje digitalnom zbirkom, kao i mogućnosti Dublin Core i VRA Core seta metapodataka u katalogizaciji izvora – turbeta.

Kao, prema našem saznanju, prva zbirka metapodataka o bosanskohercegovačkim turbetima, koja je dostupna u otvorenom pristupu, zbirka Turbeta u Federaciji Bosne i Hercegovine može predstav-

display, was possible by applying the VRA Core standard.

The specificity of türbes as objects of the immovable cultural heritage of Bosnia and Herzegovina is also reflected in the fact that they are often associated with various elements of intangible cultural heritage, such as oral tradition (stories, legends), as well as folk customs and events.<sup>18</sup> In the corpus for 19 türbes, an oral tradition is associated with 19 türbes from which we “find out” when the türbe was created or who was buried in the türbe, so in the absence of historical sources, the processing of such türbes was based on the preserved oral tradition. Collection of such data was demanding, especially because some of the recorded traditions are often contradicted, while in the processing, in the field Description, different forms of oral traditions were tried to be offered (e.g. for Türbe of Ajvaz-dedo).

As a result of the mapping of the metadata schemes, in the mentioned field Description, avoiding adding inscriptions on the gravestones or other inscriptions on türbes, priority was given to add such data in the field Inscription of VRA Core,<sup>19</sup> while for providing data on the location of the türbe, it was also decided to use the VRA Core, with regard to the need to make appropriate notes about those türbes that changed their location during their existence, i.e. were dismantled, and additional notes about the location of türbes, as part of a construction or some other entity.

More detailed information about the cultural context, the period in which the türbes were built, etc., as well as the construction materials and dimensions of türbes were also provided in predefined fields from VRA Core, while in the Subject field from the DC, authority data were stated in a uniform manner, in terms of the order in which these elements are stated.

<sup>18</sup> In the translation of documents about Sarajevo awliya and their graves, by an unknown author under the title “A few mentions by name of the türbes and honorable graves of respected sheikhs, honorable benefactors and famous ulama of good people buried in the city of Sarajevo, who are considered to be awliyas, and whose graves are places of pilgrimage to which one goes to pray for a wish” whose translation Bejtović brings, considering that “it was created sometime after 1832” (Bejtović, 1981:112), a few individuals are also appearing, related to the history of türbes from the collection:

*Türbe of the famous Gazi Husrev-bey, benefactor, in front of his venerable mosque. In good condition. A place of pilgrimage (ziyāretgāh).* (Bejtović, 1981:113)

*Türbe of emir Murad-vojvoda (Emir Murad-Duke), the freed slave named above. In good condition.* (Bejtović, 1981: 113)

*Türbe of Jusuf-pasha, in the cemetery called Ali Ufak. A famous and preserved place of pilgrimage.* (Bejtović, 1981: 113)

*Benefactor divan-katib (katib scribe) of Imperial divan Hajdar-Effendi. Türbe is in good condition. In front of [his] venerable mosque. Famous.* (Bejtović, 1981: 114)

<sup>19</sup> All inscriptions in the collection, on tomb stones and/or türbes, were taken from Mujezinović, 1998.

<sup>20</sup> Vidjeti: Omeke Classic User Manual. Plugins. Item Relations. <https://omeka.org/classic/docs/Plugins/ItemRelations/>.

ljati polazište za popularizaciju turbeta kao značajnih objekata bosanskohercegovačkog nepokretnog kulturnog naslijeđa. Naredni korak u istraživanju korpusa može se prepoznati u dodatnom ispitivanju mogućnosti uspostavljanja semantičkih relacija među objektima. U tom smislu je potrebno istražiti funkcionalnost platforme Omeka Semantic kao nove generacije, koja je orijentirana publiciranjem otvorenih povezanih podataka i integraciji digitalnih zbirki nastalih ispred biblioteka, arhiva, muzeja i galerija, sa drugim izvorima dostupnim online,<sup>21</sup> uz iskorištavanje preporuka CIDOC CRM-a, te pratiti razvoj plugina za dato radno okruženje.

### Zaključak

Mnogo toga se posljednjih desetljeća promijenilo u vezi sa turbetima koja su bila predmet ovoga istraživanja, ali i na lokaciji na kojoj su podignuta (Čelebija je primjerice na Buni zatekao “raznovrsne”, “zlatne i krasne” ribe te “mnogo surih orlova” (Çelebi, 1967: 454), prirodno bogatstvo kakvom danas, nažalost, ne možemo svjedočiti). Neki od ovih spomenika kulture su silom prilika demontirani, kod drugih su pak natpisi sa nišana i/ili turbeta nestali, brojni su, tokom svog postojanja, bili oštećeni, što zbog “zuba vremena”, prirodnih nepogoda (npr. Turbe Hadži Sinan-age i njegove supruge Sakine), ali i gnusnih otuđenja dijelova turbeta (metala poput željeza, bakra i sl., kao npr. turbeta na Alifakovcu), pa su određene bilješke ranijih istraživača predmetnog i povezanog korpusa bile dragocjene (Mujezinović, Hasandedić itd.) u istraživanju korpusa.

Većina turbeta iz zbirke su svakako obnovljena, ili je pak planiran proces obnove (npr. turbeta u Solunu i Prači), što povoljno utječe kako na zaštitu, tako i promociju turbeta kao nacionalnih spomenika Bosne i Hercegovine. Kulturno mapiranje postaje relevantno i za različite jedinice uprave u ispunjavanju njihove uloge zaštite i promocije kulturnog naslijeđa koje je pod njihovom upravnom jurisdikcijom. Rezultati mapiranja doprinose procesima zaštite kulturnog naslijeđa, potiču izgradnju angažiranih zajednica korisnika te pružaju podršku podučavanju o kulturnoj baštini.

Osmanski period u Bosni i Hercegovini, kao jedan od progresivnijih perioda bosanskohercegovačke historije, koji je trajao gotovo pet stoljeća, oblikovao je kulturni život građana primarno pod utjecajem islama, koji će biti jedna od monoteističkih religija koje će, uz kršćanstvo i judaizam, te sekula-

With the above, an effort was made to present the above information to the user in a clear and comprehensible way, by relieving the Subject and Description fields from the DC.

Furthermore, by installing the plugin Item Relations, it was possible to establish a relationship between individual digital objects, which was necessary to define among the türbes that are brought into connection on the basis of the agent in the role of waqif. For instance, the relationship between Türbe of Ajvaz-dedo and Türbe of Hasan Kafi Pruščak, who built Türbe of Ajvaz-dedo, was established. This Omeka Classic plugin follows the RDF model for defining relationships between digital objects, which implies the triplet form as the basic structure of RDF.<sup>20</sup> For the efficient machine processing of triplets, it is necessary to unambiguously identify the parts of the triplet using URIs, which will further enable text searching and information gathering according to the principles of the Semantic Web.

In addition to all the challenges in the processing of türbes, as well as recorded problems related to the functional display of the collection (order and display of description elements), the combination of DC and VRA Core standards, for which predefined description fields are offered in the Omeka Classic environment, is possible to satisfy elementary requirements of corpus processing, in a reviewed, uniform and informative manner, with the necessary use of notes in addition to individual fields of description from the VRA Core, which additionally contribute to the needs of description and understanding of these specific objects of BH heritage.

In this regard, the resulting digital collection is also a contribution to solving the practical problems of creating collections, i.e. the way in which standards can be implemented in practice, from the perspective of the capabilities of the Omeka software for managing digital collections, as well as the capabilities of the Dublin Core and VRA Core metadata sets in cataloging of sources – türbes.

As, to our knowledge, the first collection of metadata on BH türbes, which is available in open access, the collection of türbes in the Federation of Bosnia and Herzegovina can represent a starting point for the popularization of türbes as significant objects of the immovable cultural heritage of Bosnia and Herzegovina. The next step in corpus research can be recognized in the additional examination of the possibility of establishing semantic relations between

<sup>21</sup> Vidjeti: Omeka S. <https://omeka.org/sl/>.

<sup>20</sup> See: Omeka Classic User Manual. Plugins. Item Relations. <https://omeka.org/classic/docs/Plugins/ItemRelations/>.



rizam i komunizam tokom moderne historije, nastaviti oblikovati bosanskohercegovačko društvo kroz različite socijalne i historijske implikacije. Nastala zbirka turbeta u Federaciji Bosne i Hercegovine doprinos je dodatnoj popularizaciji ovoga značajnog bosanskohercegovačkog nepokretnog kulturnog naslijeđa u digitalnom okruženju. Jedan od motiva za iniciranje ovoga istraživanja leži i u činjenici da u Bosni i Hercegovini ne postoji veliki broj dostupnih zbirki kreiranih ispred zajednica biblioteka, arhiva, muzeja i galerija, unatoč bogatstvu bosanskohercegovačke baštine. Zbirka donosi pronađene osnovne informacije o turbetima, predstavljene na ujednačen način, kombinacijom DC i VRA Core metapodatkovne sheme, koja je omogućila kreiranje jedinstvenog sučelja koje integrira osnovna karakteristična polja opisa, identificirana tokom ovoga istraživanja, a sadržajima zbirke različiti korisnici, turisti, informacijski stručnjaci, sudionici osnovnog, srednjeg i visokoškolskog obrazovanja, te drugi zainteresirani korisnici mogu pristupiti bilo kada, sa bilo kojeg mjesta ili uređaja.

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#### Posveta i zahvalnica

Ovo istraživanje istraživačice posvećuju dragoj prof. dr. Lamiji Hadžisomanović (1931–2016), koja je ulagala velike napore orijentirane ka donošenju popisa svih turbeta u Bosni i Hercegovine, kao omaž našoj Profesorici i uz izraze zahvalnosti na njenom naučnom radu, kojem smo željele dati i svoj doprinos kroz izradu zbirke odabranih turbeta, odnosno njihovu identifikaciju i prezentaciju u digitalnom okruženju.

Istraživačice se svesrdno zahvaljuju svim pojedincima iz Sarajeva, sela Solun kod Olova, Tuzle, Prače, Prusca, Bihaća, Mostara, Travnika, Fojnice, Vukeljića i Oglavka koji su odvojili svoje dragocjeno vrijeme za razgovor o turbetima predstavljenim u zbirci.

objects. In this sense, it is necessary to investigate the functionality of the Omeka Semantic platform as a new generation, which is oriented towards the publishing open linked data and the integration of digital collections created in libraries, archives, museums, and galleries, with other sources available online,<sup>21</sup> using the recommendations of CIDOC CRM, and following the development of the plugin for the given working environment.

#### Conclusion

A lot has changed in recent decades in relation to the türbes that were the subject of this research, but also in the location where they were built (Çelebi found, for instance, on Buna, “various”, “golden and beautiful” fish and “many golden eagles” (Çelebi, 1967: 454), natural wealth which, unfortunately, we cannot witness today). Some of these cultural monuments were dismantled by force of circumstances, in others the inscriptions from the tombstones and/or türbe have disappeared, many were damaged during their existence due to “the ravages of time”, natural disasters (e.g. Türbe of Hadži Sinan-aga and his wife Sakina) but also the heinous theft of parts of the türbe (metals such as iron, copper, etc., such as türbe on Alifakovac), so certain notes of earlier researchers of the subject and related corpus were precious (Mujezinović, Hasandedić, etc.) in corpus research.

Most of the türbes from the collection have certainly been restored, or a restoration process is planned (e.g. türbets in Solun and Prača), which has a favorable effect on both the protection and promotion of türbes as national monuments of Bosnia and Herzegovina. Cultural mapping becomes relevant for different administrative units in fulfilling their role of protection and promotion of cultural heritage under their administrative jurisdiction. Mapping results contribute to the processes of cultural heritage protection, encourage the building of engaged communities of users, and provide support for teaching about cultural heritage.

The Ottoman period in Bosnia and Herzegovina, as one of the more progressive periods of BH history, which lasted almost five centuries, shaped the cultural life of the citizens primarily under the influence of Islam, which will be one of the monotheistic religions that, along with Christianity and Judaism, and secularism and communism during modern history, continue to shape BH society through var-

<sup>21</sup> See: Omeka S. <https://omeka.org/s/>.

ious social and historical implications. The resulting collection of türbes in the Federation of Bosnia and Herzegovina is a contribution to the additional popularization of this significant BH immovable cultural heritage in the digital environment. One of the motives for initiating this research lies in the fact that in Bosnia and Herzegovina, there is not a large number of available collections created in the communities of libraries, archives, museums, and galleries, despite the richness of Bosnian heritage. The collection brings found basic information about türbes, presented in a uniform way, by a combination of DC and VRA Core metadata schema, which enabled the creation of a unique interface that integrates the basic characteristic fields of description, identified during this research, and the contents of the collection different users, tourists, information experts, participants in primary, secondary and higher education, as well as other interested users can access at any time, from any place or device.

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### Dedication and thanks

The researchers dedicate this research to dear Prof. Dr. Lamiya Hadžisomanović (1931–2016), who made great efforts to list all the türbes in Bosnia and Herzegovina, and as a tribute to our Professor and with expressions of gratitude for her scientific work, we wanted to give our contribution through the creation of the collection selected türbes, i.e. their identification and presentation in a digital environment.

The researchers wholeheartedly thank all individuals from Sarajevo, the village Solun near Olovo, Tuzla, Prača, Prusac, Bihać, Mostar, Travnik, Fojnica, Vukeljić and Oglavak who took their precious time to talk about the türbes presented in the collection.

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