

PELAGIOS – CONNECTING HISTORIES OF PLACE. PART II: FROM
COMMUNITY TO ASSOCIATION

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Abstract *This article, which forms the second part of a two-part article in this volume, reflects on what we argue to be the most crucial element of any Linked Data enterprise: its community. The first section discusses a variety of funded and unfunded activities conducted under the aegis of Pelagios, and specifically two ‘small grant’ programmes that dramatically expanded its scope and reach. The second section describes the evolution of Pelagios as a ‘community of practice’, in which the work of the initiative, conceived of in terms of both method and tool development, has been facilitated by, and coordinated with, individuals and groups external to its investigative teams. This growing and maturing community has ultimately been realized in the foundation of a formal voluntary organization: the Pelagios Network Association. The paper concludes with brief reflections on some interlinked sister initiatives that have emerged from the Pelagios community and continue to support scholars and practitioners working in related fields.*

Keywords: semantic annotation, linked open data, gazetteers, spatial humanities, sustainability, social computing, Pelagios, *Recogito*

I. THE PELAGIOS NETWORK: A LINKED OPEN DATA COMMUNITY

This article is the second of two in this special section providing a brief history of Pelagios, and the methods, tools and community it has produced.

In Part I we discussed its method and tools, while simultaneously giving an indication of the initiative's evolution through its earliest funding cycles. We first defined Linked Open Data (LOG) and described the Pelagios method of realizing it, using the example of our collaboration with ancient Mediterranean data providers during the *PELAGIOS* and *Pelagios 2* projects. We then went on to describe the challenges faced when seeking to apply the Pelagios method to disciplines other than Classics and Ancient History – a process initiated, if not completed, over the course of *Pelagios 3*, *4* and *5* – and the development of a tool that would help anyone semantically annotate their materials and produce LOG: the online annotation platform *Recogito*. Throughout both sections we also established the key importance of drawing upon a wider community of collaborators and stakeholders to achieve these outcomes. In the initial phases of the project, our formal partners helped us develop the Pelagios method. Later, users would be essential in the development of *Recogito* as contributors of feature requests and through frequent communication with the investigative team. The same community also produced translations for the *Recogito* interface, now available in English, Spanish, Italian, Dutch, Turkish and Farsi.¹ Ultimately, it was *Recogito*'s users who determined the evolution of the platform from a tool for producing LOG, towards a more general means to semantically annotate documents in multiple ways to enhance close reading and the comparison of sources. Both of these cases might be considered examples of 'co-creation', where the community was central to the production of Pelagios's outputs, whether methodologically or technologically.

In Part II we turn our focus to the community itself. In the first section we describe Pelagios Working Groups and Resource Development Grants, two 'small grant' programmes to support independently led projects and collaborations, coordinated under the aegis of the *Pelagios 6*² and *Pelagios 7*³ projects. We then describe the evolution of Pelagios as a 'community of practice', in which the work of the initiative, conceived of in terms of both method and tool development, has been facilitated by and coordinated with individuals and groups external to the core project team. Ultimately, this growing and maturing community has been realized in the foundation of a formal voluntary organization: the Pelagios Network Association.

1.1 Working Groups and Resource Development Grants

Pelagios 6 and *7* had the primary goals of reducing dependence on a central investigative team while also seeking to decouple the overall initiative from a single source of funding over the longer term. To a certain extent, this push towards decentralization can be understood as a natural extension of the original Pelagios vision which, on the one hand, was to work with others to enable them to produce LOD and, on the other, to avoid aggregating or hosting data

in one place. Since its inception, the Pelagios model has been predicated on decentralization, by providing otherwise independent data providers with the means (a method and supporting tools) to link their materials with each other, irrespective of where they are held. Nevertheless, as Pelagios evolved and branched out beyond the ancient Mediterranean during *Pelagios 3*, Pelagios project staff had increasingly been at the forefront of semantically annotating content themselves in order to demonstrate the value of doing so to new communities.

Adopting the same approach to the technical and community structures as we had to the data, *Pelagios 6* and *7* sought to extend and deepen the decentralization of all our activities, rather than manage them in a top-down manner. As we have already seen, this started with developing *Recogito* as an open-source platform for collaborative annotation, as well as providing documentation and training for its use. Our next step was to further reduce technical and resource dependencies on the Pelagios investigative team and its formal roadmap. With support from the Andrew W. Mellon Foundation, using part of our budget to help support other initiatives was introduced in *Pelagios 6*, and continued through *Pelagios 7* with minor alterations.⁴ Via this ‘small grants’ programme, we were able to award eight grants of approximately £3,000–4,000 each year, by issuing an open call to individuals and research groups interested in the semantic geoannotation of historical documents. The aim was to facilitate the creation of digital resources, methods and specifications that have wide application within a particular part of the Pelagios community such as the development of software (whether standalone or code contributions to *Recogito* and *Peripleo*) or essential infrastructural components (especially domain-specific gazetteers), as well as the identification of conceptual challenges and the documentation of potential solutions. Projects had nine months to deliver on their goals and were divided into two categories: Resource Development Grants (RDGs) and Working Groups (WGs).

RDGs were focused on developing resources with a broader value to the community, but which had not been anticipated within the core Pelagios funding proposals. Funds were used to pay for the time of developers or research assistants, facilitate travel and organizing costs for working meetings, and create, adapt or translate digital resources. Between 2016 and 2019 a total of 17 RDG grants were made to small projects. Some of these were to individuals working on projects which were embedded in larger institutions and research groups. Others were granted to collaborative projects, which involved individuals from multiple institutions. All of the grants were focused on developing resources or tools for scholars working on either semantic geoannotation, gazetteer creation, spatially oriented scholarship or some combination of the three (Fig. 1). From the outset, the grants were intended to recognize projects and individuals with aligned approaches, but which were outside of the immediate Pelagios network

Ethiopian documents, colonial-era Mesoamerican maps, the Indian subcontinent in the 1800s, Syriac texts, Ottoman travelogues and diasporic Jewish place names. As well as creating opportunities for collaboration between awardees, and bringing new partners into the Pelagios ambit, the RDGs proved to be an effective sandbox for technical development on *Recogito* and *Peripleo*. Functionality requests made by the grantees, which were vital to the completion of their grants, allowed us to prioritize and streamline the development roadmap for both software tools, and resulted in several unplanned but valuable features, such as collaborative annotation and document sharing, as well as the initial requirements analysis and specification for a spatio-temporal data format, GeoJSON-T.⁵

Meanwhile, Working Groups (WGs) took stewardship of some of the knottier theoretical problems facing researchers working with LOD and historical materials. WGs used their funds to host networking meetings, organize workshops, and produce documentation and resources. Some even produced white papers that would subsequently form the basis for new historical geodata standards. For example, the Linked Places WG led to the development of the Linked Traces annotation model and file format. This new specification defines a set of use patterns for the W3C Web Annotation model and vocabulary for accommodating more kinds of historical entities and more detailed content than had been possible in *Peripleo*.⁶ Below we describe three brief case studies of the kinds of work supported by these small grants: *Kima*, *LatAm* and *Ottoman Recogito*.

1.2 Small grant case studies

Our first example is the Hebrew historical gazetteer *Kima*.⁷ Hebrew place names present particular challenges as diverging cultural, Halachic and liturgical traditions of the Jewish diaspora have created toponymic categories that are anchored in geography but mutable across time and culture. Efforts to record, map and virtually reconstruct these spaces abound, but without a standard digital gazetteer of places available, spatial relations between the surviving abundance of historical Hebrew script materials cannot easily be determined. Supported by an RDG, *Kima* made use of catalogues and authority files from the National Library of Israel resulting in over 400,000 records to translate and aggregate into a GeoJSON schema, which in turn had to be aligned with other gazetteers. At the same time, the team also developed a plugin for *Recogito* to enable automatic mark-up of Hebrew place names. The use of Named Entity Recognition (NER) algorithms in turn presented a further challenge: because many settlements were named after ancient kings and heroes, the NER would frequently identify place names as traditional personal names. To address this problem, temporal subsets of the gazetteer were created, which could assist in the separation of place

references from people. In a second RDG grant, *Recogito* was deployed to annotate place names sourced from two bilingual editions of medieval travel narratives, and incorporated as part of a workflow for gazetteer creation. Since the completion of these projects, *Kima* has joined forces with another grantee, the *Linking Syriac Geographic Data* Working Group, to perform a cross-lingual test of search algorithms for fuzzy matching across Syriac and Hebrew datasets.⁸

The *LatAm Historical Gazetteer of Colonial Latin America and the Caribbean*⁹ is an example of a small grant that successfully collaborated across countries, institutions and languages. The *LatAm* project received RDG funding in order to produce an eighteenth-century historical gazetteer for Latin America. This was based on two primary sources, Antonio de Alcedo's *Diccionario geográfico-histórico de las Indias Occidentales ó América* (1786), a gazetteer describing places within the New World from a Spanish colonial perspective; and George Alexander Thompson's *Geographical and Historical Dictionary of America and the West Indies* (1812), an expanded, English-language version of the *Diccionario*. The primary goal was to use these texts to create a general-purpose dataset that could contribute to the emerging LOD network of historical places in Latin America and the Caribbean. A secondary goal was to develop tools and protocols that would enable scholars working with historical gazetteers to prepare digital editions and GIS datasets from those documents. Drawing on their independent histories, the projects used a combination of methodologies to encode Alcedo/Thompson into formats which could be used as digital gazetteers. During the software enhancement and early encoding efforts, the team came into contact with the *HGIS de las Indias* project based in Graz, Austria. Though strictly a historical GIS rather than a gazetteer, this project had already encoded a large proportion of the entries in the *Diccionario*. By collaborating, the work of the RDG was substantially accelerated, and it was possible to facilitate data extraction and correlation in parallel to the digital edition effort. By the end of the grant period, the preliminary data extracted from both the *Diccionario* and the *HGIS* were ingested into a development copy of the *WorldHistoricalGazetteer* as new datasets. In addition, the project encoded the entirety of Volume I of Thompson's *Dictionary* and the corresponding entries from the *Diccionario*, including cleaning OCR and tagging 5,003 unique toponyms.

*Ottoman Recogito*¹⁰ was an experiment in using *Recogito* as an educational and research tool for students of Ottoman history at Boğaziçi University, Istanbul. It grew out of a postgraduate seminar on spatial Ottoman history in which students explored spatial relationships in different kinds of historical sources. After annotating toponym-rich texts, which included Ottoman travelogues, records of endowments belonging to the founder of a powerful family of Ottoman statesmen (*Köprülü Mehmet pasha*) and readers' letters to one of the first Ottoman women's magazines, *Women's World* (*Kadınlar Dünyası*), students quickly found that the representation of Ottoman toponyms within

Recogito's existing gazetteers was severely limited. The RDG grant allowed a group of postgraduate students to work on extracting toponyms from Ottoman historical sources, as a starting point for developing an Ottoman gazetteer. The team selected one volume of the *Registers of Important Affairs (mühimme defterleri)*, a toponym-rich corpus of summaries of imperial orders dispatched from Istanbul to the provinces. 'Register no. 12', covering the years 1570–1572, consists of 900 pages containing 1,283 orders. After uploading the text to *Recogito*, the team identified those place names which are already part of the gazetteers ingested into *Recogito*, including *Pleiades*, *GeoNames* and the *Digital Atlas of the Roman Empire*, compiled a list of the missing toponyms, and added coordinates and other gazetteer data for those which were missing.

Simply measured in terms of the number of projects supported and the disciplinary and institutional range of the groups involved, the small grants programme was a success that exceeded even our most optimistic expectations. More importantly, the fact that so much was achieved with comparatively little financial support also reflects the importance of a broader context within which the work was carried out. This was the growing network of long-term contributors to the Pelagios community of practice, the 'Pelagios Commons'. Centred on a customized website containing multiple forums and a collective blog,¹¹ the Commons provided a formal community framework for awardees who, after the completion of their own projects, then in turn became part of that support network. Interactions within the Commons reduced duplication of effort, established common conventions, and helped identify gaps in provision. Above all, it assisted in reducing dependency on the investigative team (and particularly Rainer Simon, its Technical Director), by fostering experience and expertise within the community. The final step was to cement this decentralization, by formalizing the Commons into a new voluntary organization independent of the investigative team, the Pelagios Network Association.

2. THE PELAGIOS NETWORK ASSOCIATION

A crucial question for any long-term research endeavour is whether it is ultimately just a sequence of funded projects with the same name and a similar investigative team, or whether aspects of it can transcend this projects-as-grant-cycles model. We have done our best to square both perspectives within Pelagios since 2011, as reflected in its positioning as a facilitation mechanism for interlinking other initiatives that host a wide variety of digital resources. As we have stressed, Pelagios does not produce, hold or aggregate data itself. Its primary contribution is a method and set of tools – a means of enabling a multitude of data producers and curators to link their resources (from large institutions to individual researchers); it is predicated upon the participation of a community in making use of them. Like stone soup,¹² Pelagios acts as

a focal point to which different actors contribute separate but complementary ingredients. The end results benefit everyone, but through the value produced by their combination, rather than some ‘secret sauce’.

Though the initiative has been running for over ten years, every individual grant cycle has been treated as though it might be the last, every output has been openly licensed from the outset. If, for example, the public instance of *Recogito* could no longer be supported at some future date, it can at least be mirrored or re-instantiated by anyone wishing to do so. In this concrete way, we have attempted to mitigate the risk that an absence of future funding would imperil the outcomes of a decade’s worth of work. Yet the end of any grant cycle also brings risks that a community will disperse and the benefits of its collaboration dissipate. It is with the aim of retaining the collective knowledge built up by Pelagios, and indeed, giving prominence to its collaborative essence, that in 2019 the Pelagios Network Association was established.¹³

The Pelagios Network provides a forum for initiatives conducting work related to the semantic geoannotation to work together. These efforts are channelled into six specific fields of collaboration known as Activities. Every Activity is led by a pair of elected Co-ordinators, who serve two-year terms and facilitate regular discussions in order to improve communication, reduce duplication of effort and report recent developments within the field. While the specific focus of these Activities will evolve over time, in 2021 they are:

- **Semantic Annotation**, which supports the use of URI-based annotation to link and explore historical place information, through the development of tools and specifications;
- **Gazetteers**, which establishes core requirements for global authority files on historic places and their alignment;
- **Registry**, which establishes services for registering and discovering LOG collections;
- **Visualisation & Analysis**, which develops methods and tools which make use of semantic annotation;
- **Pedagogy & Documentation**, which supports the use of LOG in education and cultural heritage, as well as training more generally;
- **Collaboration & Resourcing**, which provides a general forum to share resources and cooperate across initiatives.

As a formally constituted organization,¹⁴ there are two ways of joining the Pelagios Network, and neither incur a financial cost. The primary form of participation is through Partnership, which is the principal means through which the Network, as a formal association of independent initiatives, operates. Every Partner has an equal voice through which to contribute and coordinate work within the Network, and to have a say in its management and future direction. Partners have an assigned Representative within the Network who can vote

in collective decision-making (such as whether to recommend a particular methodology or specification, or whether to accept a new Partner) and take a lead in Activity organization by becoming a Coordinator. A simpler form of participation is through Membership, which gives access to the Pelagios mailing list.¹⁵ In doing so, Members can receive Network news, pose questions to the community, and follow discussion relating to the theory and/or practice of semantically annotating place references. Overall governance of the Network is provided by a Committee of the twelve Activity Coordinators, who in turn appoint three Officers – a Chair, a General Secretary and a Partnership Secretary – to coordinate the administrative aspects of the Network. While members of the investigative teams of *Pelagios 1–7* continue to represent individual Partner initiatives within the Network, it is now fully managed and run as a democratic collective.

Because the Network benefits from a large and diverse community, we have thereby tried to keep the barrier of entry low, while at the same time ensuring that all Partners are active contributors. Critical to achieving this balance is the use of Memoranda of Understanding (MoUs) between each Partner and the Association.¹⁶ The MoUs require prospective Partners to define how their planned work aligns with one or more of the Network's Activities over a specified period of time (typically one to three years). Importantly, the MoU is not a contract. Partners are free to terminate their Partnership should their goals subsequently diverge from those of the Network. Yet, while not legally binding, the MoU provides a framework for each Partner to plan, coordinate and share their work in a transparent way that allows them to draw on and contribute to the experience and expertise of particular Activities. Moreover, since Partner MoUs are time-limited and each Activity reports jointly on the work undertaken by its participants biannually, the expectation is that both participation and discussion will stay centred on those Partners who engage with one another.

The Pelagios Network launched in July 2019. At the time of writing, there are over 35 Partners, representing individuals, groups and institutions from all over the world. While several of its founding Partners were Pelagios small grant recipients or long-term collaborators, 2020 saw further growth in Partners joining the network. These include fields as diverse as the evolution of the Black Death,¹⁷ first-millennium Greek mythology¹⁸ and ancient Mesopotamia.¹⁹ Some belong to large, international consortia; others are single researchers, working independently. One area in which we have noted increased interest is from cultural heritage institutions: such partners currently include the Czech National Library,²⁰ the British Library,²¹ the Ure Museum²² and the American Numismatic Society.²³ With their diversity of fields and areas of interest, the Network's Partners not only participate in its Activities but are the central force for shaping its actions, identity and future direction.

3. CODA: THE FUTURE OF LINKED OPEN GEODATA

Taking a step back, it is now possible to see an emergent ecosystem of scholars, data scientists, developers and GLAM institutions coalescing around the use of LOG in order to connect historical sources. This ecosystem is still young, but it has grown steadily in number and in its range of interests since 2011, far beyond the examples that we have been able to discuss here. In concluding this article, we present three further initiatives – the Linked Pasts annual symposium, the Linked Places and Linked Traces specifications, and ongoing *Recogito* development – that, although having their roots in the work of Pelagios, have become fully fledged and independent activities in their own right.

The **Linked Pasts** series of annual symposia, which now serves a wide community of interest in Humanities LOD, was originally established in recognition that Pelagios would have to restrict its own focus to supporting historically oriented LOG in order to retain a tractable focus. Born as a companion event to a Pelagios workshop in 2015, and hosted by King’s College London, the first Linked Pasts symposium thus aimed to facilitate exchange and networking between members of the historical LOD community more generally. In subsequent years, Linked Pasts has become an important venue to exchange ideas, present recent innovations and develop guidelines and best practice together. As an event, it is characterized by an informal, collaborative and partially freeform agenda, where discussion and loose-knit working groups are prioritized over set-piece talks and traditional research presentations.²⁴ While Linked Pasts was initially part-subsidized by Pelagios, it has always been coordinated by an independent organizing committee, led by one or more host institutions.²⁵ Since *Linked Pasts 5* in 2019 it has been entirely independent of Pelagios financially. It continues to grow and evolve, and 2020’s *Linked Pasts 6*, a remotely hosted event due to the COVID-19 pandemic, brought together over 400 registrants from around the world.

Another example of Pelagios outputs seeding further work is the collective effort around the **Linked Places**²⁶ and **Linked Traces**²⁷ data models, pioneered by Karl Grossner and Rainer Simon. Under the coordination of the *World Historical Gazetteer*,²⁸ they aim to define standards for the publication and alignment of URI-based historical gazetteers and general collections metadata as LOG respectively. Linked Places builds directly on the original Pelagios Gazetteer Interconnection Format, following the same conceptual foundations and goals, particularly its prioritization of a linkable and usable data model over semantic purity. However, it also extends its scope and functionality, including much finer-grained control of time information, such as the temporal relevancy of individual names, geometries or administrative associations. In a similar vein, Linked Traces builds on Pelagios’s use of annotations as a generic way to enrich content with LOG, without forcing changes on to the original source data

model. It currently aims to expand its scope and support additional use cases: for example, the annotation of conceptual entities like the journey of a historical actor for which there may be no single source. The overarching goal of both the Linked Places and Linked Trace initiatives is to build a sustainable, independent and self-organizing community that shapes their further development, and in which neither the *World Historical Gazetteer* nor Pelagios hold special roles other than that of being one stakeholder among many.

Finally, and as in the case for data modelling efforts, tool development has also been continued independently of *Pelagios 1–7*. *Recogito* is currently being enhanced further by multiple Pelagios Network Association Partners, such as DARIAH, the Digital Periegesis, Ancient Itineraries, and Living with Machines, with code and implementations made available to all under open licence.²⁹ As the needs of our growing community become ever more diverse, the software architecture of *Recogito* is changing as well. Key components of the platform – such as the user interface elements for text and image annotation – are being transformed into standalone software libraries. This will make it possible for projects to easily add *Recogito*-like functionality into their own platforms, websites or databases, and customize functionality and appearance according to their needs. A plug-in framework allows developers to implement custom extensions, to attach alternative storage backends, for example, or to enable different annotation workflows and automation processes. Modularizing *Recogito* into an ensemble of self-contained subcomponents not only promises to yield technical advantages; it also has the benefit of leading to smaller open-source projects and codebases that are far more approachable for new developers. *Annotorious*,³⁰ the image annotation library spun out of *Recogito*, is already attracting a growing community of developers who have been repurposing it in different domains and environments.³¹

For Pelagios, the year 2021 therefore marks not the end of a decade but the beginning of a new one. Experience suggests it is foolish to predict too precisely the ways in which LOG methods and tools will evolve, but there are encouraging signs that developments are now being driven by multiple communities. There is rising interest, for example, in lightweight approaches to LOD and LOG at digital humanities workshops and conferences, much of it directly or indirectly associated with the work of the Pelagios Network or its Partners. Indeed, the latter are often a model for LOD initiatives that are semantically annotating other reference types, including people, and time periods.³² Scenarios like those outlined in the prologue of Part I may not yet be a reality and key challenges remain – particularly the establishment of stable and persistent identifiers for key historical authorities. Nevertheless, we are convinced that LOG methods, tools and community, as well as the increasing tendency for Arts and Humanities researchers and Cultural Heritage professionals to work online and across disciplines and sectors, are bringing it ever closer within reach. The two parts

of this paper have been a retrospective of one particular initiative's contribution to the field of semantic geoannotation. Many of the most exciting developments still lie ahead.

ACKNOWLEDGEMENTS

It would not be possible to individually name all the projects, organizations and individuals who have worked with and contributed to the Pelagios initiative over the past ten years without doubling the length of what is already a very long article. However, we express our deep gratitude to everyone who has accompanied us on this journey: friends, colleagues and constructive critics alike. We offer particular thanks to the partners, small grant recipients and Advisory Boards of the individual Pelagios projects, as well as all who have participated in our events, workshops and surveys for their vital and constructive feedback. Thanks also go to the many volunteers who have kindly given their time to improve *Recogito*, especially through the translation of its interface into multiple languages. We also gratefully acknowledge the generous financial and planning support provided by Jisc, the Andrew W. Mellon Foundation, the UK Arts & Humanities Research Council, and DM2E, without which this work could not have been undertaken. Working with the Pelagios community has not only been rewarding, but a consistently joyful experience, and we look forward to continuing in this spirit of collegiality and partnership in the years ahead.

APPENDIX: LIST OF PELAGIOS SMALL GRANT RECIPIENTS

2016

Resource Development Grants

1. *CALCS: Cross-cultural AfterLife of Classical Sites* (Institute of Classical Studies, University of London, UK)
2. *CroALa index locorum* (University of Zagreb, Croatia)
3. *KIMA: Towards an Open Digital Historical Hebrew Gazetteer* (Haifa University, Israel)
4. *Linking Linked Places: Modelling Historical Movement* (University of Pittsburgh, US)
5. *Medieval Iberia through Pelagios Commons* (Universidad Nacional de Educación a Distancia, Madrid, Spain)

2017

Working Groups

1. Linked Pasts Working Group
2. Multilingualism Working Group
3. Pedagogy Working Group
4. Time Working Group

Resource Development Grants

1. *Chronicles of Galāwandawos* (University of Hamburg, Germany)
2. *KIMA2* (University of Haifa, Israel)
3. *Pelagios al Sur* (CONICET, Buenos Aires, Argentina)
4. *Roman Empire Vector Map* (Lund University, Sweden)

2018

Working Groups

1. Linked Texts Working Group (leads: German Archaeological Institute, Berlin, Germany; Duke University, US)
2. Urban Gazetteer Working Group (leads: Leiden University, The Netherlands; University of London, UK; University of Victoria, Canada)
3. Australia LAMLOD Working Group (lead: Curtin University, Perth, Australia)

Resource Development Grants

1. *LatAm: A Historical Gazetteer for Latin America and the Caribbean* (Brumfield Labs, US)
2. *Linking Syriac Geographic Data* (Vrije Universiteit Amsterdam, The Netherlands)
3. *Itiner-e: An Online Gazetteer of Historical Roads* (Universidade Nova de Lisboa, Portugal)
4. *Ottoman Recogito* (Boğaziçi University, Istanbul, Turkey)

2019

Working Groups

1. WebMaps-T (lead: British Library, UK)
2. Archaeological and Historical Events Mapping (lead: University of Ghent, Belgium)
3. Recogito TEI (lead: Cologne University, Germany; Duke University, US)
4. LOD Methodologies in Gandharan Buddhist Art and Text (lead: Ruhr University, Bochum, Germany)

Resource Development Grants

1. *Subaltern Recogito* (Lancaster University, UK)
2. *Interchange* (University of Guelph, Canada)

3. *Ethio-Map* (Cesor-EHESS, Paris, France)
4. *AOU Resources as a Pelagios GIS* (Free UK Genealogy, UK)
5. *Pelagios in the Indian Subcontinent* (Lancaster University, UK)

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END NOTES

¹ Significant progress was made in translating the *Recogito* interface at the ‘Enable Bable’ workshop hosted by the Humboldt Institute for the Internet and Society, Berlin, 20–22 Feb 2018.

² *Pelagios 6* (2016–2017) focused specifically on decentralizing Pelagios activities through a series of Special Interest Groups (later to become Working Groups) and online infrastructure called the ‘Pelagios Commons’. Directly funded Partners for *Pelagios 6* were Lancaster University, the Open University, AIT: Austrian Institute of Technology, the Institute of Catalan Studies, the Institute of Classical Studies, London, and the Humboldt Institute for the Internet and Society. This period also saw changes to the Investigative Team with Pau de Soto leaving to take up a Marie Skłodowska-Curie Research Fellowship, and with Valeria Vitale and Rebecca Kahn taking on the newly established roles of Director of Education and Collections Management, respectively, and a new position of Community Director created for Elton Barker. It was funded by the Andrew W. Mellon Foundation.

³ *Pelagios 7* (2018–2019) continued to decentralize the activity of Pelagios through the establishment of the Pelagios Network Association, and the funded support of a variety of independent research and development groups. Directly funded Partners for *Pelagios 7* were the University of Exeter, the Open University, AIT: Austrian Institute of Technology, the Institute of Classical Studies, London, and HIIG: the Humboldt Institute for the Internet and Society. It was funded by the Andrew W. Mellon Foundation.

⁴ Initially, the small grants were offered in the form of Network Grants, providing financial support for small meetings of Special Interest Groups – persistent bodies focused on topics such as Time, People or Place, as well as small grants for resource development. By *Pelagios 7*, Network Grants and Resource Development Grants had become annual awards with a formal application process and the requirement that recipients produce an end-of-project output, such as a white paper, digital resource or prototype software by the end of the grant period.

⁵ <https://github.com/kgeographer/geojson-t>, last accessed 30 Apr 2021.

⁶ The ‘Linked Data Methodologies in Gandhāran Buddhist Art and Texts’ report traces this Working Group’s ongoing work: <https://omp.ub.rub.de/index.php/RUB/catalog/book/148>, last accessed 30 Apr 2021. For details of the development of the Linked Traces format from white paper to data standard, see <http://whgazetteer.org/tutorials/traces>, last accessed 30 Apr 2021.

⁷ For project details, see <https://geo-kima.org>, last accessed 30 Apr 2021 and <https://web.archive.org/web/20190518060141/http://commons.pelagios.org/resource-development-grants/kima>, last accessed 30 Apr 2021.

- ⁸ For details of the collaboration, see <https://medium.com/pelagios/linking-syriac-geographic-data-working-group-place-name-detection-and-comparison-with-hebrew-aad230f35c15>, last accessed 30 Apr 2021.
- ⁹ The international team initially comprised researchers from projects in Argentina (HD CAICYT Humanidades Digitales Lab), and the United States (World Historical Gazetteer, Brumfield Labs and LLILAS Benson Latin American Studies and Collections). For more details, see <https://medium.com/pelagios/final-report-on-latam-a-historical-gazetteer-of-colonial-latin-america-and-the-caribbean-4772c7eae9e2>, last accessed 30 Apr 2021.
- ¹⁰ For project details, see <https://pro.europeana.eu/page/issue-12-pelagios#using-recogito-in-the-ottoman-history-classroom>, last accessed 30 April 2021 and <https://medium.com/pelagios/final-report-for-ottoman-recogito-ottorec-e85733dd8269>, last accessed 30 Apr 2021.
- ¹¹ The Pelagios Commons website was designed by Agile Collective (<https://agile.coop>, last accessed 30 Apr 2021) and based on Commons-in-a-Box: <https://commonsinbox.org/>, last accessed 30 Apr 2021. An archive of the website is available through the Wayback Machine: <https://web.archive.org/web/20171202072350/http://commons.pelagios.org/>, last accessed 30 Apr 2021.
- ¹² https://en.wikipedia.org/wiki/Stone_Soup, last accessed 30 Apr 2021.
- ¹³ Alongside this transition, in 2018 we conducted a survey of the Pelagios Commons. It revealed a wide-ranging community, consisting of library and museum professionals, academics, data scientists, developers, teachers and students, and gazetteer providers. Their experience of working with LOD varied from a basic knowledge of its principles, but not how to use or create it, to being regular LOD producers and consumers. While some used it as a tool for their own research, others focused solely on the creation and publishing of LOD. For a version of the questionnaire and anonymized responses, see <http://doi.org/10.5281/zenodo.4381973>, last accessed 30 Apr 2021. On the basis of this survey, and alongside the transition to a formal association, we redeveloped our web presence to make it better reflect and facilitate community ownership of Pelagios. See <https://pelagios.org>, last accessed 30 Apr 2021.
- ¹⁴ The Association's formal structure is described in its Constitution. This was designed following a survey of other long-term research infrastructure initiatives and professional organizations, as well as intensive consultation with the Pelagios Commons community. <https://github.com/pelagios/pelagios.github.io/files/6414098/Pelagios.Network.Association.Constitution.pdf>, last accessed 30 Apr 2021.
- ¹⁵ <https://groups.google.com/u/1/g/pelagios-network>, last accessed 30 Apr 2021.
- ¹⁶ For a model MoU, see <https://github.com/pelagios/pelagios.github.io/files/6414037/MoUTemplate.pdf>, last accessed 30 Apr 2021.
- ¹⁷ The Black Death Digital Archive Project, <http://globalmiddleages.org/project/black-death-digital-archive-project>, last accessed 30 Apr 2021.
- ¹⁸ The MANTO project, <https://www.manto-myth.org>, last accessed 30 Apr 2021.
- ¹⁹ The MAPA project, Ariel University, Israel.
- ²⁰ Manuscriptorium Digital Library: <http://www.manuscriptorium.com>, last accessed 30 Apr 2021.
- ²¹ Locating a National Collection: <https://github.com/tanc-ahrc/LocatingTANC>, last accessed 30 Apr 2021.
- ²² <https://collections.reading.ac.uk/ure-museum>, last accessed 30 Apr 2021.
- ²³ <http://numismatics.org>, last accessed 30 Apr 2021.
- ²⁴ The structure of Linked Pasts was in part inspired by the Linked Ancient World Data Institutes (LAWDI) held at the Institute for the Study of the Ancient World (2012) and Drew University (2013). For further details of these ground-breaking events, see https://www.niso.org/sites/default/files/stories/2019-11/CR_Elliott-et-al_LAWDI_isqv24no2-3.pdf, last accessed 30

Apr 2021, and a special issue of ISAW Papers: *Current Practice in Linked Open Data for the Ancient World*, ISAW Papers 7 (2014).

²⁵ Since 2015, Linked Pasts has been hosted by Universidad Autónoma Madrid (2016), Stanford University (2017), Mainz Centre for Digitality in the Humanities and Cultural Studies (2018), Université Bordeaux Montaigne (2019) and the University of London in collaboration with the British Library (2020).

²⁶ <https://github.com/LinkedPasts/linked-places>, last accessed 30 Apr 2021.

²⁷ <https://github.com/LinkedPasts/linked-traces-format>, last accessed 30 Apr 2021.

²⁸ The *World Historical Gazetteer* is led by the University of Pittsburgh and funded by the National Endowment for the Humanities, <https://www.worldhistory.pitt.edu/world-historical-gazetteer>, last accessed 30 Apr 2021.

²⁹ DARIAH: <https://www.dariah.eu>, last accessed 30 Apr 2021; Digital Periegesis: <https://www.periegesis.org>, last accessed 30 Apr 2021; Ancient Itineraries: <https://ancientitineraries.org>, last accessed 30 Apr 2021; Living with Machines: <https://www.turing.ac.uk/research/research-projects/living-machines>, last accessed 30 Apr 2021.

³⁰ <https://github.com/recogito/annotorious>, last accessed 30 Apr 2021; <https://github.com/recogito/annotorious-openseadragon>, last accessed 30 Apr 2021.

³¹ For example, in the context of the MicroPasts cultural heritage crowdsourcing framework, or the Archipelago Digital Object Repository software <https://github.com/recogito/annotorious#whos-using-annotorious>; <https://github.com/recogito/annotorious-openseadragon#whos-using-annotorious-openseadragon>.

³² Influential LOD projects beyond the geospatial domain include the *PeriodO* gazetteer of historical periods, and *SNAP:DRGN* – a virtual URI authority list for ancient people. See <https://perio.do>, last accessed 30 Apr 2021, and <https://snapdrgn.net>, last accessed 30 Apr 2021.