



PARTHENOS

Pooling Activities, Resources and Tools
for Heritage E-research Networking,
Optimization and Synergies

D7.1 Initial Training Plan

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1. Executive Summary

This Initial Training Plan forms a summary of the work conducted by Work Package 7 up to May 2016. It incorporates the recommendations of user requirements investigations by members of Task 2.4, as well as additional background research by WP7 members into existing training programmes available within Digital Humanities (DH), and the outcomes of a workshop meeting held in Dublin in February 2016 comprising members of WP7 and DARIAH Teach to discuss the audience types within the DH community, the awareness of Research Infrastructures beyond the scope of the projects within PARTHENOS, and how best to raise awareness and provide training within those communities.

In addition to the outcomes of this workshop, Work Package leaders within PARTHENOS were surveyed to determine what they considered the most pressing areas for training to allow potential users of PARTHENOS's outputs to make the most of them.

Collating all this information, the WP7 members have identified four overarching principles that will guide the further development of the Training Plan:

- 1. The PARTHENOS Training Plan is targeted at users of digital humanities research infrastructure***
- 2. The PARTHENOS Training Plan will address two levels of user need: the 'need to know about' (awareness raising) and the 'need to know how to do' (skills building).***
- 3. Although PARTHENOS is a research infrastructure project, we must conceive of our training interventions as relevant far more broadly than to researchers only.***
- 4. Given the resource restrictions within the project, PARTHENOS will focus on asynchronous delivery, 'train the trainers' approaches and partnerships with other projects and initiatives to attain maximum impact.***

The training plan will be implemented in two phases. The first phase will deliver more generic levels of information, beginning with an 'Infrastructure 101' module designed for those who have little to no experience of DH or Research Infrastructures (RIs), and moving on to modules covering the sharing of data via RIs, knowledge creation, and sustainability. The second phase will move on to more specialized areas of training as highlighted by the work package leaders. Delivery of



this training will be through partnering with other projects, printed materials, and structured modules and curricula. The evaluation of this plan will be conducted through trials of modules at summer and winter schools, and will feed back in to the next iteration of this training plan in the form of D7.2 (to be delivered in Spring 2017).

2. Introduction and context

2.1. The Need for Training within Research Infrastructures

The PARTHENOS Cluster has the stated objective of aligning research infrastructure (RI) developments so as to achieve co-ordination and efficiency in the alignment of standards, policies and technical development. PARTHENOS is also committed to the alignment of training as well. This commitment by the project serves two purposes: first, by expanding perspectives on the central role of training to infrastructural impact and sustainability, and second by developing a deeper understanding of the role infrastructures can play in the long term professional development of researchers.

This report is presented in the form of a training plan to guide a series of interventions mainly consisting in collaborative training with established initiatives, “training the trainers” activities and pilot courses. Its goals are:

- To define and address common issues across the infrastructural partners regarding human capital development within an e-Humanities context.
- To provide appropriate training and professional development opportunities for researchers at early, mid and advanced career stages
- To create and promote best practice and policy documents regarding the formation and promotions of researchers basing their work in DARIAH and CLARIN, and within other partner infrastructure environments.

The plan details audiences and topics and is validated through expert consultation. The plan will be assessed at mid-term after reviewing the early implementation in the second year of the project.

Work will address comprehensive training for researchers at three critical stages in their careers: early stage, when they may still be testing methodologies and seeking basic knowledge about the most appropriate tools to answer their research questions; transitional stage, when they may be



seeking to make a change in their research approach from a traditional to a digital methodology; and established stage, where they may have a solid skills base and be actively and productively working within digital approaches, but find aspects of the macro environment of their work make the most appropriate methodology difficult to determine or implement. Although these cohorts are primarily envisioned as consisting of researchers, they may also include professionals in cultural heritage institutions, given the potential for convergence in the wider environment between digital libraries/archives, heritage agencies in charge of heritage management and protection, and research infrastructures.

2.2. Inputs to the plan

2.2.1. How this plan was developed

The development of this plan was progressed through a series of five stages.

1. User requirements research based upon the published reports of other cognate projects.
2. Desk research to establish a wider baseline of training practice in and near the concerns of DH infrastructure
3. Consultation with the WP leaders of the PARTHENOS project regarding specific needs that may arise from project developments
4. Engagement with cognate projects regarding embedding opportunities within the wider DH training environment
5. Hosting of a two-day development workshop of WP7 partners, including representatives of the DARIAH Teach project

The outcomes of each of these phases will be described in more detail below.

2.3. User requirements report (output of Task 2.4)

It stands to reason, and is indeed good practice, to define our audiences for training before determining what the training needs are. To support this approach, the work from Task 2.4 within the PARTHENOS project specifically looks at the user-requirements around training within the research infrastructure network. The full outputs of this work is contained in the project User Requirements Report (Deliverable 2.1), which will be available when complete from the Deliverables page of the PARTHENOS website (parthenos-project.eu).



It is useful to summarise the methodology and some of the findings of that report here, as a framing mechanism for the Training Plan as a whole.

The PARTHENOS user requirements work drew on a wide variety of documentation produced by the cluster members and other projects. For the purposes of training and skills development, the following documents were reviewed:

Author	Document title	Mentioned audience types
Sahle 2011	Digitale Geisteswissenschaften	Undergrad and Postgrad degree level
Sahle 2013	DH studieren! Auf dem Weg zu einem Kern- und Referenzcurriculum <ul style="list-style-type: none">• DARIAH-DE document	BA, MA, and Ph.D. levels (as well as shorter courses)
Beneš et al. 2014	Report on archival research practices <ul style="list-style-type: none">• CENDARI report	Archivists
Benardou et al 2015	Europeana D1.3 User Requirements Analysis and Case Studies	Humanities-based researchers: Academics (PhD, Postdoc, lecturers), Practitioners in Research Institutes
Engelhardt, Strathmann, and McCadden,	DigCurV Training Needs	Preservation practitioners, Project Managers, UG and PG level students
Arranz et al. 2012	Describing LRs with Metadata: Towards Flexibility and Interoperability in the Documentation of LR	Researchers, content holders and technical developers
Henriksen et al. 2014	Encompassing a Spectrum of LT Users in the CLARIN-DK Infrastructure	Technical Developers and HSS researchers
Quochi, Lemnitzer, and Kemp-Snijders 2009	Usage and Workflow Scenarios	HSS and NLP Researchers
Váradi and Lendvai 2011	Integrated Strategic Plan for Supporting HSS Research	HSS researchers
Gnadt and Engelhardt, n.d	DASISH Report 7.1_training_needs	Developers and managers of data archives and repositories, decision makers from research and education institutions as well as researchers



McCrae et al. 2015	Partial proceedings of the 53rd Annual Meeting of the Association of Computational Linguistics and the 7th International Joint Conference on Natural Language Processing in China (July 2015)	Technology developers working on the harmonization of language resources
Belice Baltussen et al. 2010	“User Requirements and Use Cases” - ECLAP deliverable on use cases and user requirements	Teachers, lecturers, academics and students Leisure and Tourism professionals Cultural heritage professionals Performing arts practitioner Content manager/provider Media Professionals
CENDARI	Domain Use Cases -D4.2 CENDARI Deliverable	Potential users of the infrastructure: historians, graduate students, digital humanists, archivists, and librarians
Barbara Dierickx, Maria Teresa Natale	Report on user needs and requirements in relation to the creative applications for the (re)use of digital cultural heritage content - ARIADNE report	Individuals with a scientific interest and ability to benefit from training in archaeological research data management Priority is given to users who have not previously used the ARIADNE infrastructure, young researchers, researchers working in countries where no such research facilities exist.
Claudia Engelhardt, Katie McCadden and Stefan Strathmann	Report and analysis of the survey of Training Needs • DigCurV report	Staff of cultural heritage institutions Cultural heritage staff, along with students of archive/museum/library studies, teachers and researchers from this area as well as attendees from private entities

Furthermore, we looked at the audience types represented by the key RI-projects within PARTHENOS:

Research Infrastructure title	Audience
EHRI	Historians, archivists, other researchers from the Humanities



	Courses aimed at Graduate level
PERICLES	Academic and scientific communities active in fields related to the project, such as Digital preservation, Computer science, Information science Individuals working with data (e.g. researchers, data creators, data users, data curators, archive managers, conservators, collection holders)
ICCU	Experts, managers of museums, libraries and archives that deal with digital collections Undergraduate and graduate students doing research in the fields for which the institute is responsible
CENDARI	Researchers applying the research infrastructure Researchers applying for research grants needing data management expertise Potential data providers and data centres Students
AthenaPlus	Project partners and wider external stakeholders
DASISH	Developers and managers of data archives and repositories, decision makers from research and education institutions as well as researchers in the field of SSH
IPERION	Potential users of the research infrastructure

The review of these documents raised a number of interesting points for the development of a Training Plan. The most striking observation is that research infrastructure projects seldom strategise or theorise explicitly about their training interventions, and how they interact with the wider environment of digital humanities. This complicated the user requirements task enormously, as there was little concrete basis (aside from a few notable exceptions, such as the work of the DigCurv and DARIAH Teach projects) for determining what the PARTHENOS user base would require.

2.3.1. Course structures: what works best, and what doesn't work

The documentation reviewed ranged from training modules designs to questionnaires. What became apparent was that when seeking information for oneself, there is often the problem of not knowing enough about a field of study to realise what areas need to be covered. Without some manner of guidance, be it through a self-timed course of study, a partially-guided course like a MOOC (Massive Open Online Course), or fully guided courses such as workshops, summer schools or programmes that lead to some manner of qualification, the student can easily miss



something of importance, or deliberately miss something out if they are finding it too difficult to grasp. Put simply, people ‘don’t know what they don’t know’. This can be true of the humanist trying to work out how to write and implement a piece of code, or it could equally be true of a computer scientist trying to understand policy developments surrounding archive cataloguing techniques.

Therefore, self-guided study may not be the best technique for initial training purposes if the intention is for the student to gain an in-depth knowledge of the issues at hand, although it may be useful as a means of an introduction. So, the ideal might be a fully guided course of study. This doesn’t work for most people within our audience types however, as nearly all of them, bar the full-time undergraduate or postgraduate students, have other time-commitments associated with their work. The ‘Policy and Decision Makers’ (aka The Executives) are the least likely to engage in a full-time short course or workshop, and therefore need something precise and accessible that they can interact with quickly and easily.

2.3.2. Face-to-Face delivery versus Distance Learning

Continued professional development does allow some scope for short-term courses or workshops within the workplace, especially if that training is directly applicable to a participant’s work. This has been seen in the Cultural Heritage (CH) sector in particular, with institutions such as the British Library regularly providing its staff with training opportunities in new tools and techniques of data retrieval that might be useful to their customers. Face-to-face training in workshops such as these provide the most contact hours for training, and allow for more immediate feedback. However, they are time-costly for participants, and most effective in short bursts to fit into a work schedule more easily. They can also mean that the participants are fully emerged in the training programme and do not have any other work-related distractions such as emails to keep them from engaging fully in the task at hand. In other words, participants can take the time and ‘allow’ themselves to learn.

Distance Learning is also effective, but requires more personal discipline in order to complete the work. As mentioned by the Europeana Cloud project, “...frustration comes when the ‘student’ becomes stuck in a particular task, and is unable to get the support they need to find the solution in a timely manner”. However, if one is able to allot time that suits them in the day to complete tasks on something like a MOOC, then it makes this style of learning more flexible. Many distance learning courses offer a mentor-style approach where an expert is available to answer questions, either via a chatroom or forum, or through comments sections, or via email.



The most remote delivery format is to provide training materials and leaflets to provide information in formats such as website posts, videos, leaflets, and reading lists.

2.3.3. Learning by doing

Experiential learning was discussed in some of the documents, revealing that in many cases, participants preferred to learn software and techniques in a practical workshop setting rather than through presentations or documentation. The DigCurV project conducted a survey of training needs in 2011 with over 400 responses from across Europe and North America. When asked about training methods, the overwhelming majority (75.3%) of respondents indicated that smaller group workshops were preferred, showing that an interactive practical ‘hands-on’ approach is considered most effective. The least popular methods among the respondents were the much more passive methods such as written manuals, online training and large group workshops.

Work by the Europeana Cloud project looking into APIs and data reuse among researchers also showed that many institutions favoured smaller group training sessions for their staff in which they were taken through the experience of a researcher trying to learn about software. This is apparent in the training held within the British Library for its staff. It is also demonstrated in the CLARIN Summer schools for early-stage researchers.

This closer interaction in a smaller group with a hands-on approach helps to overcome the issue of researchers not knowing what they don’t know, as highlighted by the Software Carpentry team in a reflections of lessons learnt through their training project:

*“The problem is, most scientists are never taught how to do this. While their undergraduate programs may include a generic introduction to programming or a statistics or numerical methods course (in which they’re often expected to pick up programming on their own), they are almost never told that version control exists, and rarely if ever shown how to design a maintainable program in a systematic way, or how to turn the last twenty commands they typed into a re-usable script. As a result, they routinely spend hours doing things that could be done in minutes, or **don’t do things at all because they don’t know where to start.**” (our emphasis)*



2.4. Desk Research: Analysis of the macro environment

2.4.1. Existing training already available

The review of project-generated reports on user requirements was supplemented by WPs 2 and 7 with a thorough overview of existing training resources available openly to digital humanities researchers.

DiRT - Digital Research Tools <http://dirtdirectory.org/> is a registry that enables searching for digital research tools for scholarly use. DiRT is maintained by an international volunteer community of professors, students, and librarians. It can be used for discovering and comparing DH tools. It enables access to a variety of tools that range from software for analysis and visualization work to tools for annotating resources and managing bibliographies. The tool descriptions include information such as the platform (e.g. Windows, iOS, etc.), financial aspects and licensing. In addition one can find reviews, tips, and tricks for efficient use.

The Digital Humanities Course Registry <https://dariah.eu/library/dh-course-registry.html> is an inventory of Digital Humanities courses and programmes. The service offers a search environment that combines a map of Europe with a database that contains information on Digital Humanities courses. Students as well as lecturers can search the database on the basis of topographical location, credits or degrees that are awarded, and keywords. The Digital Humanities Course Registry offers a basic documentation on scholarly education programmes throughout Europe, ranging from typical knowledge of Humanities subjects to expertise in data modelling and preparation for further digital use with emphasis on the appropriate presentation of research results. In the framework of task 4, WP7 will analyse existing higher education curricula and deliver a report.

Zenodo zenodo.org/collection/user-dcc-rdm-training-materials is a series that enables sharing, preserving and publishing multidisciplinary research results in form of data and publications that are not part of the existing institutional or subject-based repositories of the research communities. All research outputs from all fields of science are welcome. Types of files range from books and book sections to images, software and interactive materials such as lessons. Zenodo was launched within the EU funded OpenAIREPlus project



ADHO - The Alliance of Digital Humanities Organizations is not really an inventory of training materials. However, the website offers a collection of “resources” which includes a detailed list of relevant summer schools in the field of Digital Humanities.

Open Educational Resource Platform <https://www.oercommons.org/groups/dariah/229/> offers training material in various research areas. In the ‘DARIAH-Group’ a huge number of either self-generated learning and teaching materials or external open licensed material in the field of Digital Humanities for higher education has been collected. The group is an effort from DARIAH-DE. Training material is divided into the categories:

- Computational Linguistics,
- Digital Humanities (general),
- Digital Libraries and Databases,
- Semantic Technologies,
- Software Engineering,
- Technical Applications, and
- Technical basics.

DARIAH Teach <http://dariah.eu/teach/> began in January 2015. Currently there is no content available via the website regarding its training outputs. However, in the near future it will become a valuable resource for open-source, high quality, multilingual teaching materials for Digital Humanities. Led by Maynooth University, DARIAH Teach aims to strengthen and foster innovative teaching and learning practices among the members of DARIAH.

2.4.2. International Digital Humanities Training Network

The network of institutions offering training internationally is growing. Currently, the following training opportunities are available:

- Digital Humanities Summer Institute, University of Victoria (Canada)
 - Internationally, the University of Victoria in British Columbia, Canada offers a summer school: <http://www.dhsi.org/> to researchers from the Arts, Humanities, Library, and Archives communities as well as independent scholars and participants from areas beyond.
- European Summer University in Digital Humanities, University of Leipzig (Germany)



- The University of Leipzig currently offers a two-week summer school in Digital Humanities (http://www.culingtec.uni-leipzig.de/ESU_C_T/node/481) for researchers working in arts and humanities, library sciences, social sciences, engineering and computer sciences. However, up to 2015, little has been covered in terms of Research Infrastructures. The format of the Summer School is that in week one the students cover generic areas of Digital Humanities methods, and then in week two they specialise.
- Digital.Humanities@Oxford Summer School, University of Oxford (GB)
 - The University of Oxford also runs a summer school which offers training to anyone with an interest in the Digital Humanities, including academics at all career stages, students, project managers, and people who work in IT, libraries, and cultural heritage. Typically, this summer school is only one week in duration (<http://digital.humanities.ox.ac.uk/dhoxss/>). This is aimed at academics and project managers at all stages who might be interested in digital humanities within their own research.
- HILT: Humanities Intensive Learning & Teaching, University of Maryland (USA)
 - The University of Maryland offers an intensive 4-day residential course in a range of different topics each year. Participants register for the course and select specialities from the list on offer in that particular year's schedule. The courses are open to both students and non-students who wish to upskill. <http://www.dhtraining.org/hilt/>
- EDIROM Summer School, University of Paderborn (Germany)
 - The EDIROM school at the University of Paderborn is held annually each September. It is aimed at different levels of researchers interested in conceptual and technical issues of digital editing work. <http://ess.uni-paderborn.de/>
- Digital Humanities Institute – Beirut
 - The Digital Humanities Institute, run by the American University of Beirut, is held annually and takes suggestions of topics for courses to cover from participants at the previous year's event. Topics covered have included: TEI-XML for RTL languages, Digital Mapping, Python for Humanists, Digital Pedagogy, Arabic NLP, Computational Approaches to Arabic Corpora, Introduction to Visualization for the Digital Humanities, Creating Digital Scholarly Editions, Building and Analysing a



Text Corpus, Digital Cultural Heritage Management and Digital Project Management. <https://dhibeirut.wordpress.com/>

- Institut für Dokumentologie und Editorik - Cologne
 - The Institut für Dokumentologie und Editorik in Cologne runs an annual programme of spring and summer schools. The overall programme tends to the needs of researchers at all levels of expertise in digital humanities, however, only one level is focussed on in any one year, with the courses usually being aimed at beginners, with occasion years dedicated to intermediate or subject specific groups. <http://www.i-d-e.de/aktivitaeten/schools/>
- Women Writers Project – Northeastern University
 - The Women Writers Project offers seminars and workshops as an introduction to scholarly text encoding for students, librarians and academics in the humanities. They cover a rotating range of topics, including basic and intermediate TEI encoding, customisation and other topics in digital humanities.
 - <http://www.wwp.northeastern.edu/outreach/seminars/>

2.4.3. Opportunistic Summer Schools

Another form of training comes through less regular, occasional or once-off Summer Schools that are produced as a means to meet a particular acute need in a topic area. If a need for training proves to be much more universal, a more regular event may be devised or absorbed into a larger summer school. Previous once-off summer schools that were organised to meet needs of the community opportunistically have included:

- DH Summer School Switzerland
 - A summer school offered in 2013 at the University of Bern (<http://www.dhsummerschool.ch/>) offering workshops in text editing and analysis, tools-specific session (Gephi), and critical approaches in DH.
- Cendari
 - CENDARI offered three summer schools over the course of the project. The first was held in 2013 in Florence, and looked into historical sources and transitional approaches to European History (<http://project.efg1914.eu/registration-for-cendari-summer-school-2013-open/>). In 2014, the summer school focussed on First World War studies, and was held in Berlin (<http://www.hsozkult.de/event/id/termine->



[24364](https://www.hastac.org/opportunities/call-applications-cendari-summer-school-2015)). In 2015, the Summer School was held in Prague, aimed at early-career historians and other scholars in Medieval Studies (<https://www.hastac.org/opportunities/call-applications-cendari-summer-school-2015>)

- DiXIt
 - The DiXIT projects also runs opportunistic courses as part of its programme. Some of the courses it has offered can be found here: <http://dixit.uni-koeln.de/programme/additional-events/>
- Metadata to Linked Data
 - A five day summer school held in 2011 in Dublin co-hosted by the Digital Humanities Observatory and Trinity College Dublin as part of a joint Irish Research Council for the Humanities and Social Sciences and COST training school. The school was aimed at researchers from a variety of disciplines within the Humanities and Computer Science (<http://www.dho.ie.webhosting.heanet.ie/node/9365>).

2.4.4. Training Projects in Development

In addition to these mature programmes and resources, we also found that there were quite a few projects in the developmental stages which could have a positive impact on the availability of training for research infrastructure users.

The most relevant of these is the **DARIAH Teach** project (as mentioned above), which runs from 2015-2017. An initiative of DARIAH VCC2 Research and Education, DARIAH Teach is developing an open-access modular portal for teaching/training materials in the digital humanities. This platform may be an appropriate and sustainable way to deliver PARTHENOS training materials as well, and we will be working closely with this project to explore this possibility.

The second project with which we are in contact with is **RITrain**. RITrain's mission is to improve and professionalize the training of managerial and leadership staff in research infrastructures (RIs). They have committed to developing a flexible, modular executive master's degree for RI managers and leaders, including executive directors of RIs, heads of finance and administration, heads of HR and communication. As such, their work is of great interest to PARTHENOS WP 7, and we have made contact with them to seek out modalities for possible future cooperation. Through RITrain, we may be able to seek accreditation opportunities (a possible motivating factor for participants) for PARTHENOS modules (to be investigated as RITrain matures).



The final project on our radar is **EDISON**, which seeks to coordinate the establishment of a new profession of Data Scientist for European Research and Industry. The alignment between EDISON's goals and PARTHENOS' is far less strong than with the previous two projects named, however, so our current relationship is to monitor their development

2.5. Consultation with other WPs of the PARTHENOS project

Given that every research infrastructure project seems to include an element of training on it's own new developments and innovations, PARTHENOS could not ignore this as an element to include in its training plan. The vast majority of these developments will not be far enough progressed enough by the release date of this initial plan to be fully described here. An initial consultation was carried out as a part of the development of this plan, however, the results of which are described as part of the plan in section 5 below.

2.6. Workshop, WP 7 (February 2016)

As a final element in the process, a two-day workshop was held in Dublin, on 15th and 16th February. The agenda of this meeting consisted of first, a review of the inputs listed above as well as information from members of the DARIAH Teach project. The discussion then moved on to a review of the key concepts and issues that we should account for in developing a training plan, which included:

- audiences,
- communities,
- functions (awareness building vs capacity building),
- modalities of sharing with other projects/platforms,
- desired end result for the deliverable,
- career stages of researchers.

On Day Two of this meeting, following a thorough analysis of the implications of the data presented on Day One, the participants divided into two groups. Group One looked at the potential needs of researchers, and Group Two looked at the potential needs of all other audience types. Each group was asked to identify the following, based on their respective audience types:

- Identify what is (most) important (to that audience)
- Identify what can be shared between audiences
- Identify how we work with other projects (DARIAH Teach, RI Train, Edison)



- Identify what we will create, and in what formats (syllabus, videos, workshops, on-line guidance etc.),

In the afternoon, taking the results of the morning brainstorming session into consideration, the group reconvened and discussed the development of the guidelines that form the plan described in this report.

3. Overarching principles guiding the training plan

A key discovery of the user requirements work that underpins this plan (described above) was that infrastructure projects, by and large, give only moderate thought to the development of their training programmes. This is not to say that they do not consider their user, only that user requirements are gathered to underpin the development of technical components or data federation activities, training requirements are then derived directly from what the project has developed. Users need new tools and environments, and as a result need to know how to work within the environments being offered by the project. This is all too often where training starts and ends.

None of this is to say that the PARTHENOS training components will not also seek to support the specific work of the other cluster work packages. Given the need for this work to progress sufficiently before training can be built to support it, however, these developments will be framed only in the second version of this plan, to be developed after project month 24. Indicative descriptions of where we currently foresee these developments are given in section 5 below. The opportunity of a research infrastructure cluster allows us to take a more detached view of the needs of all our users, on a macro scale, with a number of implications for this plan. This introduces one of the first guiding principles underlying this training plan:

1. The PARTHENOS Training Plan is targeted at users of digital humanities research infrastructure

This may seem an obvious fundamental concept, but it has far-reaching implications for the work of the project. The PARTHENOS training plan will resist the almost inevitable temptation to try and address all training needs within the wider digital humanities community. This is too broad a scope, and the focus of a number of other initiatives. Our key responsibility is to expand the access and uptake of infrastructures such as our partner projects have developed, and it is to this focus that we must attend in order to be effective.



2. The PARTHENOS Training Plan will address two levels of user need: the ‘need to know about’ (awareness raising) and the ‘need to know how to do’ (skills building).

In discussing the barriers to wider uptake and exploitation of research infrastructures, the WP7 team converged on the conclusion that awareness of what infrastructures are and do is a significant barrier to their wider use. This training plan will, therefore, extend its sphere of activities to interface not only with the efforts of the project development teams to assist future users to adopt their tools and services, but also with the project dissemination team so as to offer potential users a greater insight into not just what they might do with and through an infrastructure, but also why they might seek out an infrastructure in the first place.

3. Although PARTHENOS is a research infrastructure project, we must conceive of our training interventions as relevant far more broadly than to researchers only.

Because of their scale and integrative missions, research infrastructures do not operate in a strictly binary system, in which they receive requirements from researchers and serve them with data, platforms and tools. The wider ecosystems implicated in this relationship is of critical importance: at the research infrastructure end, technical staff and software building blocks enter and impact on the system, and the central role of cultural heritage institutions as the owners of much primary research data cannot be underestimated. This wider field of vision is reflected in our definition of audiences, described in section 4 below.

4. Given the resource restrictions within the project, PARTHENOS will focus on asynchronous delivery, ‘train the trainers’ approaches and partnerships with other projects and initiatives to attain maximum impact.

4. Audiences for PARTHENOS Training

As the description in Section 2 has demonstrated, the PARTHENOS initial training plan has been shaped by both internal project concerns and knowledge and a thorough assessment of relevant external material. The development of the audiences for the training programme has followed a similar trajectory.

One of the starting points for this discussion was the analysis of project domain coverage developed within WP2, which resulted in the following four categories:



- a. Studies of the Past
- b. Language-related Studies
- c. Heritage & Applied Disciplines
- d. Social Sciences (this category was later queried and largely removed from consideration)

While useful, this domain-based perspective creates both potentially unhelpful divisions and complexity (given that we are seeing training as starting at the level of awareness) as well as an almost exclusive focus on researchers as our training audience. For this reason, our second iteration of training audiences drew instead on the work of the DigCurv project, a Leonardo da Vinci funded project to develop a curriculum to support greater fluency with issues of digital curation. Applying that project's concept of actor-based 'lenses,' we adopted a new approach to defining audiences and cohorts for training, as follows:

- a. Researchers
- b. Content specialists in CHIs
- c. Technical developers/Computer Scientists
- d. Managers of institutions and projects

This conceptualisation served to inform the development of WP2's user requirements for training and skills development. The list was revisited at the time of the WP7 training plan workshop, however, at which time a further realignment was applied. This realignment allowed us to characterise our potential training cohorts more accurately for both the kinds of interests and roles they would have, but also for the application they might make of further fluency with research infrastructures. The current categories are discussed in turn below.

4.1.1. Researcher Practitioner

'Researchers' in this context are researchers working within the humanities and cultural heritage disciplines (and, to a certain extent and dependent on definitions, in the social sciences). The scope of PARTHENOS covers those working in History, Language-based subjects (linguistics, language studies) and Cultural Heritage subjects (Information management, archival studies, etc.).

The career stage of the researcher may impact on the type of training they require, due to the manner in which they interact with the community, and how much professional risk they are open



to. An early stage researcher (e.g. at undergraduate or postgraduate level) may need to be made aware of the issues around digital humanities and the types of work that can be done using such methodologies. However, at a later point (Early to Transitional stage), the type of interaction would need to be more intense to allow for a much richer understanding of the subject matter, but may in fact be more conservative to accommodate the need to embed and advance professionally. This may also be the case for researchers who are well established within their field, but want to develop their repertoire with new techniques for analysis, although these can also be the least risk averse communities, given that they are in more senior positions and may have established their professional autonomy, a fact that may or may not be accompanied by a methodological conservatism. These established researchers will invariably also have other time commitments such as lecturing, developing proposals for funding calls, preparing conference papers, senior administrative roles and leading research teams, etc., which may not limit their interest, but will alter the most appropriate mode of contact for them.

4.1.2. Cultural Heritage Practitioner

Although they might not be the primary audience for a research infrastructure, collaboration with cultural heritage institutions is an essential component for the success of any such endeavour. For this reason, training endeavours to increase the level of comfort with and acceptance of infrastructural approaches within traditional memory institutions are a key component of a training programme designed to build overall robustness and reuse of infrastructural initiatives.

4.1.3. Developers and Technicians as Practitioner

Infrastructure practitioners widely report a long process of enculturation that must occur when working with technical developers new to their field. Yet the field has drawn increasing interest over the past decade, and certainly the requirement for sensitised and informed developers will continue to grow.

For this reason, it is perhaps necessary for technicians and developers to undertake training to develop and understanding of the motivations and techniques within the humanities community, and to develop a bespoke skill set for gathering and translating humanities researcher requirements.



4.1.4. The Executive Level: Management and Policy Makers

One of the most forward-looking aspects of the DigCurv model was the definition of a specific set of information needs among what they referred to as the ‘Managers’ lens, a cohort that could also be called the ‘decision makers’. This is the group of people who could also be the highest level of academic, running large research groups and needing to make decisions about investment in infrastructural developments (or not). They could also be the Directors of CHIs, or policy makers within government or research agencies determining if and how to make long-term commitments to preservation and Research Infrastructures. This group of people don’t need a detailed understanding of the topics in question - they rely on their practitioners, technicians and researchers for that - but they do need to have enough of an understanding of the added value and impact to be able to make a decision. Though their needs may seem superficial, however, their potential impact on the development of potential research infrastructure is potentially great, and they therefore merit particular attention in this plan.

5. The PARTHENOS Training Plan (Phase 1 and 2)

In addition to redefining the audiences for the PARTHENOS Training Plan, the WP7 workshop in February 2016 also developed an initial set of topics to approach through the development of training modules, available for delivery either face-to-face or asynchronously. These initial topics mapped on to the user groups defined at that same workshop.

Many of the needs that we need to address are universal among audience types. For example, information about data management in general is relevant to all parties. The level of detail to which that information is taken is reliant more on the needs and presumed background knowledge of the audience grouping.

One might expect that those working in Cultural Heritage are already familiar with the notions of cataloguing and metadata; likewise developers and technicians. However, decision and policy makers and many groups of researchers would not be as familiar and would therefore need more explanation on this topic.

5.1. Focus Areas for Training, Phase 1

5.1.1. “Infrastructure 101”

Target audience: Policy and decision makers; novice researchers; novice cultural heritage practitioners



This module will be the first to develop, to meet a pronounced awareness need with regards to knowing what research infrastructures can do to promote and support humanities research. The basic module will be constructed around the statement:

“Research Infrastructures bring together diverse resources and make them usable and available for the long term in order to conduct research (either individually or collaboratively) and share the results of that research”

It will introduce in lay person’s language the essential concepts underpinning a research infrastructure, including what it is and does for research. It will also cover some of the key enablers for infrastructural development under the rubric of two key concepts: interoperability (to cover issues related to the federation of heterogeneous data, including metadata, standards and ontologies) and sustainability (to cover the data lifecycle, best practices in data management, making information discoverable, and Intellectual Property Rights and licensing). It will be structured according to learning objectives and small units of text and video, with additional sources referred to for further information.

5.1.2. Sharing Data With and Through Research Infrastructures

Target audience: cultural heritage practitioners; research infrastructure users and managers

This module will build upon the DARIAH project “Open History” and its outcomes to build further pathways for the exchange of knowledge and data between research infrastructures and traditional cultural heritage institutions. It will cover the issues of data exchange from both the research infrastructure and the cultural heritage institutional perspective, and as such will cover such aspects as the implementation of standards and protocols for data sharing as well as appropriate licensing and the complex questions of provenance and appropriate use.

5.1.3. Humanistic Knowledge Creation and Research Processes

Target audience: developers currently or hoping to work in the development of humanities research infrastructures



The digital humanities training landscape is currently well supplied with opportunities for humanists to acquaint themselves with the methodologies of the developer or computer scientists. The opposite, however, is not true, and no concomitant opportunities exist (to the knowledge of the WP7 team, at least) for the development of an understanding of the modes and basis for humanities knowledge creation. This basic introduction to what is very often relegated to the category of ‘tacit knowledge’ by its practitioners will be aimed to bring together the epistemic communities required to create technical infrastructure on a more even ground, reducing the current friction in the development process.

5.1.4. Sustainability for Research Infrastructures

Target audience: Managers of digital projects (research or cultural heritage based) with a broad or proto-infrastructure reach

This unit will build upon the two most advanced areas of development within the PARTHENOS project cluster, as of the end of that project’s first year. This unit will be pitched at a more advanced level than the preceding three, and will support project leaders looking to draw upon the vast experience of the PARTHENOS cluster in the development and embedding of digital projects. In particular, it will cover three issues:

- Disseminating and communicating the development and outcomes of a large-scale research resource, in particular to non-peer audiences (drawing in particular on PARTHENOS WP 8)
- Recruiting user input and validation at the initial phase of project development and as a continuing process throughout its lifecycle (drawing in particular on PARTHENOS WP 2)
- Defining and delivering on sustainability of a digital project beyond its funded period (drawing on the work of CENDARI/DARIAH in this respect)

5.2. Indicative Phase 2 Training Topics

The requirements and outputs of the specific PARTHENOS work packages will be integrated into the training plan as follows:

WP 2 (User Requirements) and **WP 8 (Dissemination)** both provide support work within the project, and will not have any user-facing end results per se. That said, both of these activity streams represent a wealth of knowledge that could be of great value to future project leaders. For



this reason, the work of these teams will be integrated into the phase 1 module “Sustainability for Research Infrastructures.”

WP 4 (Standardization) is involved in developing a significant number of public-facing awareness and skill building deliverables already, including the informational comic, the ‘Standards Survival Kit’ and the ‘Standards Helpdesk.’ WP7 will seek for the next iteration of the plan to find ways of promoting, integrating and extending this work.

WP 3 (Common policies and implementation strategies) is still very much at a scoping phase at the time of the writing of this initial plan, but the content of this WP represents a field of knowledge where training interventions would clearly be of benefit. A modality for moving this forward will be explored further in project months 13-24.

WP 5 (Interoperability and semantics) and **WP 6 (Services and Tools)** each have a specific set of six categories of technical training needs defined, which they will seek to meet for an immediate user group. These categories include: CIDOC-CRM, Infrastructure Operation, Resource Registry, 3M and X3ML, D-Net and Resources Discovery Tools. Given the specialist nature of these tools and approaches, WP7 will not necessarily be able to provide this training themselves, but will seek to attend or capture the training provided by these WPs and find ways of extending its reach.

6. Modalities, timelines and milestones for the delivery of the training plan

6.1. Modes of Delivery

As mentioned above, the PARTHENOS training programme was never envisioned to be all encompassing, either in terms of digital humanities requirements, nor in terms of a fully-fledged training programme. As such, we will concentrate on deriving maximum value from creating frameworks for curricula, asynchronously available baseline modules and ‘train the trainers’ opportunities (largely delivered in cooperation with other projects and networks).

The following instruments will shape our approach to the provision of training:



Partnering: We are already in contact with a number of projects and initiatives that will contribute to our ability to provide a recognisable and sustainable programme. We will look toward DARIAH Teach and RITrain to provide opportunities for us to deliver asynchronous modules alongside similar content. We will also work with existing summer schools (such as the ESU Leipzig, where we will offer a 1-week module combining the material from the 4 proposed phase 1 modules) and organisations with a long term commitment to the provision of training (such as LIBER, with whom we are investigating co-hosting a training event for cultural heritage professionals in 2017). In the final phase of the project we will also harness the internal networks of our partners to further test and extend our models (e.g. by integrating our materials into the under- and postgraduate curriculum of Kings College London).

Printed materials: For some awareness-raising requirements, only a small amount of text delivered in a memorable format will be required. In these cases (such as would be required for basic knowledge being conveyed to policy and decision makers), we would hope to be able to use short informational brochures as an effective tool.

Structured modules and curricula: For a somewhat more in depth requirement, we will develop on-line modules with a structure specific to more formalised learning. These framework modules (for individual use, or for use by instructors as a basis for their own curricula) will include (as appropriate): learning outcomes, short video illustrations, text, assessment, examples / case studies, references and resources for further study

6.2. Timelines and Milestones

The four phase 1 modules will be developed over the course of project months 12-24, roughly according to the following time step:

1. INFRA 101: available as a **full asynchronous module** and as a **one-day face-to-face training curriculum** for July 2016. It will also be developed as an **informational brochure** (e.g. for a policy/decision maker audience) to be available for April 2017.
2. Sharing Data: available as a **one-day face-to-face training curriculum** for July 2016, and as an **asynchronous module** for December 2016.
3. Humanistic Knowledge: available as a **one-day face-to-face training curriculum** for July 2016, and as an **asynchronous module** for April 2017.



4. Sustainability: available as a **one-day face-to-face training curriculum** for July 2016, and as an **asynchronous module** for April 2017.

The precise content and timeline for the phase 2 modules will be developed from May 2017 and issued as an update to this Training Plan.

7. Evaluation methods

Task 2.4 aims to review the training plan developed by Task 7.1 and its initial implementation by Task 7.2. The review process of the first draft of the training plan will be carried out by Task 2.4 members based on the suggestions made in the first version of PARTHENOS Deliverable 2.1.

The Parthenos Description of Work recommends making use of existing Summer and Winter Schools for the process of implementing and testing courses and training material. The Digital Humanities Summer School in Leipzig in 2017 will enable the opportunity for PARTHENOS to apply parts of the training plan. Before and during the Summer School in Leipzig a survey will be passed to all attendees asking for their background, experiences, expectations and evaluation of the training offerings regarding their content and implementation (printed materials, combination of virtual meetings and face-to-face sessions etc.)

Surveys pre- and post delivery of training will give qualitative information on the user's expectations and their delivery.

In addition, there will be close cooperation with WP8 to distribute the training plan as well as printed materials via the Parthenos website, Twitter and other online outlets. The analysis of website traffic, clicks, downloads as well as the rate of requested printed materials will give information on the quantitative relevance.

