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## EuropeanaConnect

### D4.4.2 – Public Domain Helper Tool

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## D4.4.2 – Public Domain Helper Tool

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Tested Europeana Public Domain Helper Tool and User Guides, Functional Specification Ready for Final Implementation in Europeana

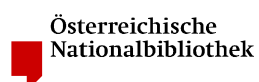
This deliverable is software.



co-funded by the European Union

The project is co-funded by the European Union, through the **eContentplus** programme

<http://ec.europa.eu/econtentplus>



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Description of software developed for Europeana within EuropeanaConnect

Link to software	<a href="http://www.outofcopyright.eu/">http://www.outofcopyright.eu/</a>
Login information	NA
Development environment	Eclipse / Google Web Toolkit
Programming language used	JAVA / Google Web Toolkit (Client side only)
Application server used	NA
Database requirements	NA
Operating system requirements	NA
Port requirements / default ports used	NA
Interface	Web service
Licensing conditions	GNU GPL licence v.2.0 / EUPL v.1.1 & CC-BY-SA (text)



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## Introduction

This document describes Deliverable 4.4.2. for EuropeanaConnect about the tested Europeana Public Domain Helper Tool with functional specification. This documents covers a description of functionality of this tool and describes the test process. This introduction covers the rationale of developing a public domain helper tool, how it relates to Europeana and its deployment environment and what kind of testing subjects are used.

## Public Domain Helper Tool

In order to make use of works of authorship or other content protected by copyright or related rights on the internet, either the user must obtain permission from the rightsholder(s) or the use must be in accordance with an exception or limitation established in national intellectual property law. However, for content where the rights have already expired, thereby releasing it into the public domain, the situation should, in theory, be much simpler: the content consumer has the right to make use of such subject matter without permission and with no copyright restrictions.

In practice, however, establishing the date at which a book, photograph, image of a cultural heritage object or other information product has passed into the public domain can often be difficult. This is especially true when attempting to determine the public domain status of content in multiple jurisdictions, as will often be necessary when making content available across Europe. Despite harmonizing attempts by the European Commission, relevant laws still vary between EU Member States, resulting in different terms of protection from country to country.

The Public Domain Helper Tool can answer the question of whether a certain work or other subject matter vested with copyright or neighbouring rights (related rights) has fallen into the public domain in a given jurisdiction. In order to determine the public domain status of a given piece of content, the Tool corresponding to the country in which the status of protection is sought should be used. The ultimate aim of the Public Domain Helper Tool is to help with the effort of identifying public domain material in order to make it available on- and off-line across Europe.

The Public Domain Helper Tool is intended to assist Europeana data providers with this problem through a simple interface between the user and the often complex set of national rules governing the term of protection. The issue is of significance for Europeana, as contributing organisations will be expected to clearly mark the material in their collection as being in the public domain, through the attachment of a Creative Commons Public Domain Mark, whenever possible.

The Public Domain Mark provides support for the policies expressed in Europeana's policy statement about the public domain: the public domain charter. Which states:

- Europeana, Europe's digital library, museum and archive, belongs to the public and must represent the public interest.
- The Public Domain is the material from which society derives knowledge and fashions new cultural works.
- Having a healthy and thriving Public Domain is essential to the social and economic well-being of society.
- Digitisation of Public Domain content does not create new rights over it: works that are in the Public Domain in analogue form continue to be in the Public Domain once they have been digitised.

## Implementation in Europeana

The Public Domain Helper Tool will not be integrated in Europeana. It has been decided by Europeana Office and EuropeanaConnect WP4 that the Public Domain Helper tool will remain an independent stand-alone tool. The outcome of the research proved that simultaneous automatic calculation on all European jurisdictions is extremely difficult. It does therefore over-complicate the automatic ingestion process of Europeana. Individual data providers can use the public domain calculator to check the status of their works, provide guidance for specialists and thus integrate the tool into their own metadata curation process. This has as a consequence that the tool should be easily reusable and should have minimum system requirements.

The remainder of this document describes the effort we took to make sure that the Public Domain Helper Tool will function properly as a stand-alone tool.

## Multiple levels of evaluation and testing

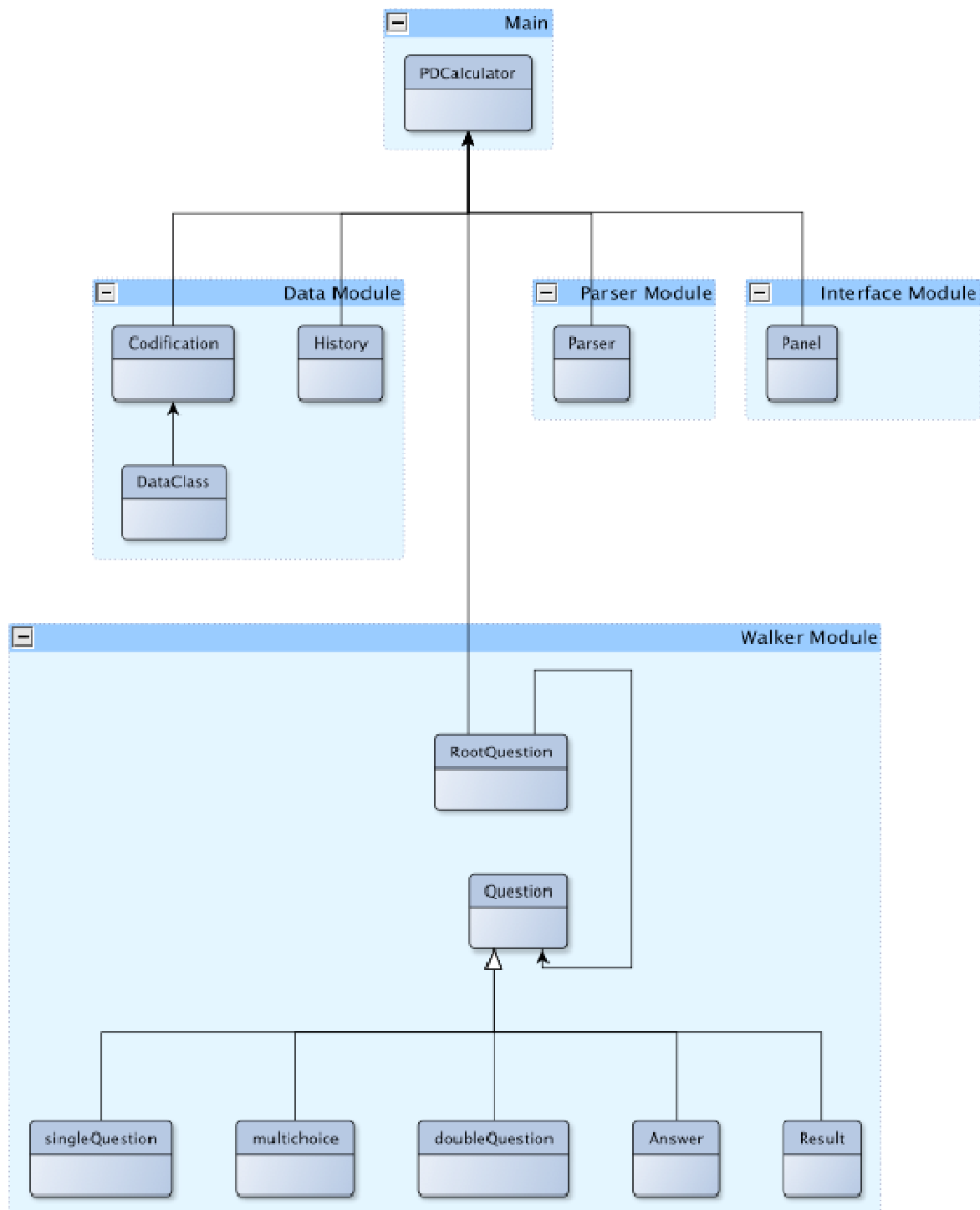
Evaluation and testing needs to be done on three levels:

- The software needs to be tested to ensure its workings.
- The data used by the software needs to be tested to ensure that no errors are made in their development.
- A public peer review process is set up to disseminate and test the Public Domain Helper Tool.

These levels ensure that the tool works, with the correct data and has no errors in its research. To discuss the first of these levels further, a short introduction to the architecture and functionality is written in the following section.

## Functional Specification

The Public Domain Helper Tool is software that dynamically processes nodes of an acyclic directed graph (flowchart). These flowcharts are represented in a custom structure XML file. The software presents the nodes of the graph and provides an interface that tests a given condition to determine which node needs to be presented next. The tool iterates through this XML document, matching answers given by the user through predefined structures and possible answers. This finally provides a statement that a given work is in the public domain or that rights still apply. See the image below for a (simplified) UML representation of the workings of this software.



### Public Domain Calculator – Modules

The software uses different modules to perform its function. Each module has a specific task.

#### Parser Module

This module reads the specially designed XML file format, transforms it into an internal object oriented format and give these objects back. The tree walker software

[http://outofcopyright.eu/software\\_architecture.html](http://outofcopyright.eu/software_architecture.html) forms the basis for the Europeana Public

Domain Helper Tool. It takes XML files and creates an acyclic directed graph. Calling for interface methods creates different types of calculators.

### **Walker Module**

This module represents the XML flowchart in an internal format: it is the product of the parser. It is a series of classes that also hold their own Graphical User Interface methods. The Graphical User interface needs to be seen as a separate module.

### **Interface Module**

Each node in the rooted tree belongs to a specific subclass. Each has different GUI presentation methods that deliver GWT classes.

### **Data Module**

As the rooted tree can have multiple questions that require the same information (i.e. what is the year of publication), this module keeps track of what information the system has already received. Preloading this module with information enables automatic calculation.

### **Programming Language and used Framework**

The Public Domain Helper Tool is written in Java using Google WebToolkit (GWT) conform guidelines of EuropeanaLabs. This enables simple adoption in other Java projects as well as easy deployment as a rich internet application.

This entire process is guided with extra information and disclaimers about the validity of the tool and other rights that might still be applicable, even when a work is in the public domain.

### **Quality assurance through unit testing and integration testing**

Each of the described modules is tested using unit testing. After each of these unit tests succeeds and integration test is performed to ensure good communication between these modules. Finally a High Level Code Review will be done in collaboration with the Austrian Institute of Technology.

All performed Unit tests can found on Europeana Labs.<sup>1</sup>

## **Testing and Evaluation Results**

This section described three levels of testing: code testing, data testing, and a public peer review process. Each of these testing phases is of importance to produce a solid infrastructure for public domain calculation.

### **Code Testing**

The first important part of testing this product is testing the quality of the code of the Public Domain Helper Tool. This is based on unit testing and integration testing to secure quality of code on multiple levels of abstraction as well as a high level code review. Each of these tests needs to be completed successfully before the developed software can be used in a production phase.

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<sup>1</sup> <http://europeanalabs.eu/browser/contrib/kennisland/PublicDomainHelperTool>



Unit Testing and Integration Testing are a continuous process that continue on while the software is refined and extended. All written tests are available on the open source repository of Europeana.

### **Unit Testing**

Unit testing is a method by which individual units of source code are tested to determine if they are fit for use. A unit is the smallest testable part of an application. In procedural programming a unit may be an individual function or procedure. Unit testing for the Public Domain Helper Tool will be done using JUnit in Eclipse. All JUnit test classes are included in Europeana Labs SVN repository.

### **Integration Testing**

Integration testing is the phase in software engineering in which individual software modules are combined and tested as a group. This has the same methodology as Unit Testing and occurs after unit testing has been successful.

### **System Testing**

Europeana decided that the Public Domain Calculator remains a stand-alone tool. This minimizes and simplifies system requirements for the Public Domain Calculator. The Calculator should work as long as JavaScript is available on a browser accessing the web server where the software is deployed. As this is the only requirement and an inherit product of using Google WebTool Kit a complete System Test is superfluous. By working in Google Web Toolkit any future integration into the Europeana environment can be made possible with little to no alterations in the code.

### **High Level Code Review**

After both Unit and Integration Testing have been done, a high-level code review will identify remaining flaws or errors. This means that a working, production-ready copy of the code will be investigated by a programmer who is unfamiliar with the code. This will be done between April and August 2011. After comments by this developer are processed the code is production ready.

### **Data Testing**

The data that the Public Domain Helper Tools uses also needs testing. Code review and unit testing will cover the technical aspects of the data. A peer review process covers the content of flowcharts. The peer-review process has already been partially described by Europeana Connect milestone 4.2.2 – Europeana Public Domain Helper Tool, stand-alone reference implementation and implementation guidelines (online reference). Key items of this milestone are repeated below.

IViR conducted research into the question of the duration of the protection of subject matter in which copyright or neighbouring rights subsist across Europe. The research thus effected ultimately resulted in the production of the current set of Public Domain Helper Tools, each tool corresponding to an examined jurisdiction. The full process for the creation of the Public Domain Helper Tool consisted of four basic steps, as detailed below.

#### **Step 1: Analysis of the Term Directive and Construction of Generic Flowcharts**

The first step involved the careful study of EU Directive 2006/116/EC on the term of protection of copyright and certain related rights (Term Directive). The Directive attempts the harmonisation of rules across the board of EU Member States (and states party to the Agreement on the European Economic Area) on the term of protection of copyright and neighbouring rights.

The general rule imposed by the Directive is 70 years after the death of the author for works of copyright and 50 years after the event setting the time running for neighbouring rights. Detailed

provisions govern other specificities, such as the protection of previously unpublished works, of anonymous or pseudonymous works or of collective works and works of joint authorship. The rules of the Directive were integrated by IViR into a Skeleton European Flowchart. Given the essential role that the Term Directive has played in shaping national laws on the duration of protection, the Skeleton Flowchart functioned as the prototype for the National Flowcharts.

Although the Directive does provide for both maximum and minimum harmonisation, the desired harmonising effect has not been entirely achieved and national idiosyncrasies thus survive into the post-harmonisation era. This has been either due to exceptions permitted by the Directive itself, such as those on critical and scientific publications or non-original photographs, or due to the way with which the rules prescribed by the Directive were incorporated into the pre-existing bodies of national legislation (for example, diverging treatment of government material, different approaches to the definition of the terms used in the Directive or national divergences on the duration of moral rights occur on the Member State level). Such national peculiarities necessitate separate flowcharts adjusted to the particular situation of each individual Member State.

### **Step 2: Questionnaire for National Experts**

In order to investigate national rules on the duration of protection in the six jurisdictions under examination, IViR identified the main issues left unharmonised by the Term Directive and on this basis composed a Questionnaire for National Experts. This was sent out to legal experts on copyright and related rights law in the examined countries.

### **Step 3: Construction of the National Flowcharts**

The evidence collected on the basis of the aforementioned Questionnaire served as the basis for the construction of the National Flowcharts. These were built around the framework of the skeleton Generic European Flowchart mentioned above, which implements the core provisions that are necessarily shared by all EU Member States in accordance with the provisions of the Term Directive, with adjustments so as to take into consideration national stamps of legislative originality.

### **Step 4: Implementation into Code**

In the final step, the National Flowcharts were translated into code by IViR's colleagues at Kennisland (KL), thus resulting in the creation of the current set of web-based Public Domain Helper Tools.

A full report of this research is available as Milestone 4.1.6 – Decision trees for 6 additional jurisdictions and their availability for Public Domain Helper Tool; Scope of legal certainty for Public Domain Helper Tool

### **Public Review Platform: OutofCopyright.eu**

Outofcopyright.eu, a public peer review platform for the Public Domain Helper Tool, gives all interested parties a chance to interact and comment on the software and its underlying flowcharts.

Outofcopyright.eu has the following functionality:

- An implementation of the Public Domain Helper Tool<sup>2</sup>,
- Instructions to install the software<sup>3</sup>,

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<sup>2</sup> See <http://www.outofcopyright.eu/calculator.html>

- Code architecture and standards<sup>4</sup>,
- Flowcharts and data files<sup>5</sup>,
- List of national experts (peer reviewers)<sup>6</sup>,
- Project information<sup>7</sup>,
- Feedback mechanisms<sup>8</sup>.

This website will be used as the main platform for the Public Domain Helper Tool instead of integrating the tool in the Europeana Ingestion Process. The tool can be used on this platform, downloaded, and its source code is available for integration in other projects. A brief summary of inner working and research documents are also available to enable people to build derivative or alternative calculators.

## Recommendation for future work

WP4 of EuropeanaConnect will deliver 30 flowcharts encoded for this Public Domain Helper Tool by October 2011. WP4 has taken it upon itself to develop a maintenance tool for this format and to describe thoroughly how this tool works. Europeana needs a structure where these flowcharts will remain healthy and maintained. This has not been arranged yet.

To make an impact with these flowcharts they will need to be embedded in other sites as well. These sites do not always use the same code base as Europeana. Making the tool available in other programming languages will increase adoption and range.

Further refinement to the data model behind the Public Domain Helper Tool will add its adoptability for third parties. Part of the public review process of this tool also includes a public discussion on this data model.

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<sup>3</sup> See [http://outofcopyright.eu/software\\_implementation\\_guide.html](http://outofcopyright.eu/software_implementation_guide.html)

<sup>4</sup> See [http://outofcopyright.eu/software\\_architecture.html](http://outofcopyright.eu/software_architecture.html) and [http://outofcopyright.eu/xml\\_data\\_format.html](http://outofcopyright.eu/xml_data_format.html)

<sup>5</sup> See <http://outofcopyright.eu/media.html>

<sup>6</sup> See [http://outofcopyright.eu/national\\_experts.html](http://outofcopyright.eu/national_experts.html)

<sup>7</sup> See [http://outofcopyright.eu/about\\_calculator.html](http://outofcopyright.eu/about_calculator.html)

<sup>8</sup> See <http://outofcopyright.eu/contact.html>