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Registry of Orphan Works Management System

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¹ OJ L 79, 24.3.2005, p. 1.

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Executive Summary

The objective of the D 6.2 *Registry of Orphan Works Management System* within the ARROW project is to set up a registry containing information about works that are considered orphan at the end of the processes and elaborations along the ARROW workflow (Registry of Orphan Works), and make them publicly searchable, thus enabling public information on works which have been declared to be orphan, among other things, to enhance the possibility for rightholders (individually or through collective representative organisation or agent) to claim their rights in order to decrease as much as possible the number of orphan works.

At the present time, the definition of the legal framework concerning Orphan Works is still in progress and operative solutions are under discussion in many European countries. The approach to the design and set up of the ROW within the ARROW framework, shall necessarily consider this situation, therefore the ROW specifications described in this document can serve as a prototype either for the set up of interoperable National ROWs or of a ROW centralised infrastructure for the management of Orphan Works, or both, depending on solutions envisaged for Orphan Works and Orphan Works management at country level.

This document starts providing an overview of the ARROW system and recalls the main features of the Rights Information Infrastructure (§ 3) and of the ARROW Work Registry (§ 4) in order to clarify the interaction among all the components in the ARROW system that allow ARROW to support both the set up of a centralised infrastructure for the ROW and the set up and integration of National ROWs. Moving from this background information, this document then focuses on the necessary specifications for the set up of a Registry of Orphan Works and its functions (§ 5).

Starting from the criteria for the identification of the works that shall feed the ROW (§ 5.1) the specifications describe functions and actions (§ 5.2) that specific categories of users (actors) will be able to perform on the ROW, according to specific purposes (search, claiming, management) and details the roles that can be played by each actor interacting with the ROW (§ 5.3) as well as the relation between functions and roles (§ 5.4). The definition of roles and functions at the most granular level possible, ensures the scalability of the model to emerging actors, according to the solutions for managing Orphan Works adopted in each national legal framework

Following, specifications for ROW design and functions are described in detail (§ 5.6, § 5.7, § 5.8) in order to enable the implementation of a centralised infrastructure interoperable with National ROWs according to the ROW models supported in the framework of the ARROW system (§ 5.5).

Functions are grouped into “core functions”, “additional functions” and “System evolution” in order to enable a step by step implementation that takes into account emerging requirements, according to the evolution of the scenario, if any (§ 6):

- ROW Alpha release, in progress and scheduled to be finalised for the end of October. Building on the current ARROW system, it includes the implementation of core functions that correspond to clear and agreed requirements among the stakeholders.
- ROW Beta release scheduled to be finalised for the end of the project. It includes the additional functions that the ROW should provide. Further requirements analysis for these additional functions has to be performed and finalised before the end of the previous phase.
- Finally, once the ROW Beta release is deployed and tested, further enhancements of the system are foreseen, according to the progress in the definition of the legal framework and the requirements emerging at national level (“System evolution”).

In § 5.9 the design of the ROW data model is described, while in § 7 use cases are shown in order to explain ROW Alpha release functionalities.

The present document will be progressively updated and released at the end of the project, by enriching the specifications and the use cases that will be foreseen for the Beta release, adding the software components and more detailed results gained from the possible evolutions of legal framework concerning Orphan Works as well as implementations during the duration of the project.

1) Introduction

The objective of the D 6.2 *Registry of Orphan Works Management System* within the ARROW project is to set up a registry containing information about works that are considered orphan at the end of the processes and elaborations along the ARROW workflow (Registry of Orphan Works), and make them publicly searchable, thus enabling public information on works which have been declared to be orphan, among other things, to enhance the possibility for rightholders (individually or through collective representative organisation or agent) to claim their rights in order to decrease as much as possible the number of orphan works.

The starting point for the design of a Registry of Orphan Works within the ARROW system has been provided by the HLG Final Report on Digital Preservation, Orphan Works and Out of Print Works, including also recommendations and key principles for rights clearance centres and databases for orphan works². In addition, in order to define the ROW requirements, the different stakeholders communities represented in the ARROW consortium and in the countries piloting the system have been consulted, in particular that of Collective Management Organisations and Reproduction Rights Organisations, identified, by the HLG, as natural candidates in the current situation to run Orphan Works databases and Rights Clearing Centres. Furthermore, it has been considered that, at the present time, the definition of the legal framework concerning Orphan Works is still in progress and operative solutions are under discussion in many European countries, as described in the deliverables pertaining the Work Package on Legal framework and business model³.

Hence, the chosen approach takes into consideration the open-ended situation and is intended to be as neutral as possible to the evolution of the European and national legal frameworks concerning Orphan Works as well as to operative solutions and business models that could emerge at national level. The technical specifications for the implementation of the ARROW ROW, resulting from the requirements gathered so far, are presented in the current document, along with background information for ROW design and interaction among components in the ARROW system.

² The Final Report on Digital Preservation, Orphan Works and Out of Print Works is available at http://ec.europa.eu/information_society/activities/digital_libraries/doc/hleg/reports/copyright/copyright_sub_group_final_report_26508-clean171.pdf

³ see D3.1 *Report on legal framework, Edition 1*, D3.2.1 *Guidelines for the Definition of Orphan Works*; D3.2.2. *Evaluation of compliance of ARROW workflow with the HLG guidelines on diligent search*; D3.3.2 *Correspondence of ARROW infrastructure with emerging clearing centres and the needs of their users*; D3.5 *Report on legal framework, Edition 2*, available for downloading in the Resources area of the ARROW website (www.arrow-net.eu)

2) The ARROW System

The ARROW System is a comprehensive service to support any diligent search model adopted by libraries, by facilitating the identification of rightholders (authors/publishers) and the identification of the rights status of works with particular concern to orphan and out-of-print works.

ARROW System is made up of the following components, that will be described in the following sections:

- The Rights Information Infrastructure (RII)
- The ARROW Work Registry (AWR)
- The Registry of Orphan Works (ROW).

The results and the information collected during the RII workflow form the basis for the AWR and therefore for the ROW which is a subset of the above mentioned AWR as described in the following paragraphs.

3) The Rights Information Infrastructure

The Rights Information Infrastructure (RII) is at the heart of the ARROW system⁴.

The RII is the backbone and the engine that enables ARROW to query and retrieve information from a multiplicity of data providers, in multiple formats, to make the formats interoperable, to process this information and take decisions on the successive elaboration and finally to exchange information according to a planned workflow. Building on the RII, the ARROW System receives a request for permission to digitise and use a manifestation of a work (for instance a book) from a library and after querying the data providers included in the workflow and elaborating the gathered results, provides information on the work rights status. The initial library request is performed at manifestation level⁵, whereas the response at the end of the workflow is provided at work level. This means that the initial request passes through stages of identification and matching, work and

⁴ More details and terms on ARROW RII are provided in D6.1 *Rights Information Infrastructure*

⁵ To be more precise the initial library request refers to a “resource”, where the term resource identifies an instance of a manifestation, for example a particular copy of a printed edition of a book. For more information about terms used in ARROW, see D4.3.2 *ANNEX II ARROW Glossary of terms* available for downloading in the Resources area of the ARROW website (www.arrow-net.eu)

manifestation clustering and the identification of related works and manifestations; each process adds a piece of relevant information towards the identification of the rights status of the work.

To simplify the complexity of the system, the workflow can be divided into three main processes corresponding to the three domains involved, each made up of further processes that contribute to the output. Each process is supported by a well defined set of ARROW messages⁶.

The **first main process** takes place in the library domain and involves The European Library (TEL) as main actor and the Virtual International Authority File (VIAF) as source for authors information (supported by messages M2 and M4). The output of this process is:

- the work to which the original library manifestation belongs
- a list of manifestations that share the same work with the original library manifestation
- any other related work and the list of respective manifestations
- a set of authoritative information for each author and other contributor of each work, including preferred and alternative forms of their names, their dates of birth and death, their nationality⁷
- the copyright status of each work: whether the work is in the public domain or copyrighted or whether this information cannot be certainly asserted⁸

The **second main process** takes place in the Books in Print domain and involves BIP organisations or databases in each of the countries included in the ARROW system and adds further information to the output obtained from the previous process in the library domain (supported by message M6).

Output of this process is:

- a list of additional manifestations belonging to the work and related works
- the in print/out of print status and the commercial availability of each manifestation belonging to the work and related works

⁶ For a detailed description of ARROW message suite, see D4.3.2 *Specification for metadata messaging formats* available for downloading in the Resources area of the ARROW website (www.arrow-net.eu)

⁷ This information is retrieved from the Virtual Authority File initiative (VIAF), considered as the most authoritative source of information of this kind

⁸ As the copyright status of the work is deduced algorithmically by ARROW from the information available about dates of birth and death of authors and other rightholders of the work (retrieved from VIAF), there might be cases where those information are missing or do not ensure enough reliability. Those cases produce an “Unspecified” copyright status

- the Publishing Status of each work: whether the work is currently active (in print) or currently not active (out of print) or whether this information cannot be certainly asserted⁹

The **third main process** takes place in the Reproduction Rights Organisation domain and involves RROs organisations or databases in each of the countries included in the ARROW system and adds further information to the output obtained from the previous **process** in the library and BIP domains (supported by message M7). Output of this **process** is:

- a set of information provided by the RRO concerning licensing conditions and reasons supporting the decisions
- the Orphan Status of the work: whether the work is to be considered probably orphan as their rightholders cannot be identified or traced, or not orphan or whether this information cannot be certainly asserted¹⁰

As a result of the above mentioned three processes, at the end of the ARROW workflow, the following pieces of information have been retrieved in the message exchange:

- Work information
- Manifestation information
- Relation between each manifestation and the work they belong to
- Relation between works
- Authors and other contributors information
- Relation between each identified author and the work they have contributed to
- Relation between each piece of information (work, manifestation, author) and the reference source that provided that information (TEL, VIAF, BIPs, RROs)

⁹ As the Publishing status of the work is deduced algorithmically by ARROW from the information available about in print, out of print status and commercial availability at manifestation level (retrieved by BIPs), there might be cases where those information are missing or do not ensure enough reliability. Those cases produce an “Uncertain” publishing status

¹⁰ As the orphan status can be determined only as a result of a diligent search, according to the HLG principles, there might be cases where the search done via ARROW is considered insufficient and needs to be further carried out. Those cases produce an “Unspecified” orphan status.

- A set of so called ARROW Assertions on each work: Copyright Status, Publishing Status and Orphan Status

The initial library request, including the permission request, the information gathered and inferred during the TEL and BIP processes and the RRO answer, are stored in the RII repository.

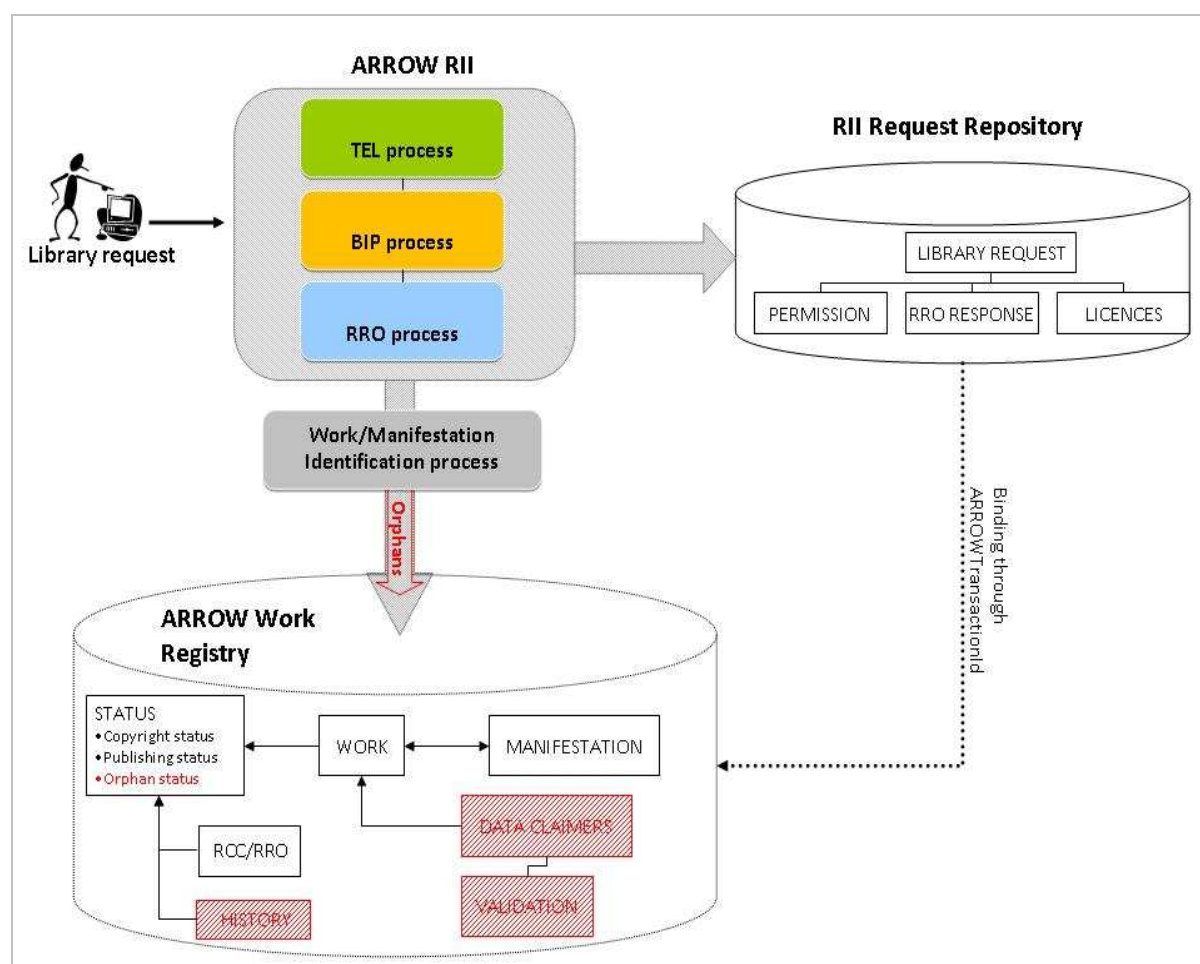
ARROW Work Registry (AWR) stores and maintains all these pieces of information for every request processed by ARROW.

The Registry of Orphan Works (ROW) is based on a subset of the AWR, respecting specific criteria, that will be made publicly available to specific categories of users for specific purposes.

4) The ARROW Work Registry

The ARROW System starting point is the workflow of the Rights Information Infrastructure (RII), where each search submitted consists in a transaction, that is a set of message exchanges gathering and processing information from different data sources (TEL, VIAF, BIPs, RROs), grouped under the same ARROWTransactionID and stored in the RII repository. As described later in this document, these transactions are fundamental for the ROW history. The unique and persistent identifier assigned by ARROW to each RII transaction (ARROWTransactionID) also bounds the RII repository and the ARROW Work Registry.

The figure below provides an high level overview of the AWR and its relation with the RII.



The ARROW RII has been simplified representing three subsequent processes:

- the TEL process in which ARROW exchanges and elaborates the information coming from TEL through the messages M2 and M4,

- the BIP process in which the data coming from TEL are further elaborated and enriched with the information gathered by the BIP through the message M6,
- the RRO process that sends to the RRO the library request enriched by all the data at work and manifestation level collected and processed by the previous data sources through the message M7Q and gather the RRO response in the message M7R.

In synthesis at the end of the ARROW workflow, and hence of these three processes, the RII comes out with two different outputs: the first one constitutes the bases for the RII repository, while the second one those for the AWR:

- ARROW system stores in the RII repository the following information: the initial library request, the permission required, the information gathered and inferred during the TEL and BIP processes and contained in the message M7Q, the RRO answer (M7R).
- When the ARROW system proceeds with the construction of the M7Q it also initialises the Work/Manifestation Identification process responsible to identify uniquely for each request coming from the library the underlying work and manifestation metadata. This process has been better detailed in the following section. Once this process is completed the ARROW system proceeds with the storage of these information on the ARROW Work Registry.

The use of standard (where available) and unique identifiers to identify manifestations, works, authors and other contributors and their reference source within RII transactions is the basis for the set up of the AWR, its update over time and the relation-tracking among the entities in the AWR.

The ARROW Work Registry (AWR) stores all the relevant pieces of information collected by the RII workflow in a structured way that allows the retrieval and use of those information in the framework of ARROW services:

- Work metadata
- Manifestation metadata
- Authors and other contributors metadata
- A set of so called ARROW Assertions on each work: Copyright status, Publishing Status and Orphan Status

- Reference source (TEL, VIAF, BIPs, RROs) of work metadata, manifestation metadata, authors and contributors metadata

The ARROW Work Registry (AWR) and its the data model was inspired by the ISTC metadata for works in order to guarantee the interoperability with the services provided by the ISTC international agency for ISTC registrations.

Here it is worth to recall the principles for the identification of relevant entities within the AWR, as they are the necessary background to illustrate the ROW structure and functions, being the ROW a subset of the AWR.

4.1) Identifiers

This section describes the principle of the identification of the relevant AWR entities. In order to univocally identify such entities the introduction of ARROW identifiers was necessary, for the following reasons:

- ARROW has been designed to retrieve data from multiple data sources, therefore the same entity can be provided to ARROW by more that one source. The identifiers used by each data source for the same entity may not be the same, especially when a standard identifier is not available
- For some of the AWR relevant entities, standard identifiers are not yet in place or their adoption is still underway.

The use of ARROW identifiers within the system allows to maintain the relation among the different entities with a single identification framework, keeping also the association with the identification schemes used by external data sources and at the same time being interoperable through the use of standard identifiers whenever available.

ARROWTransactionId

A unique and persistent identifier assigned by ARROW to each RII transaction, i.e. to each request processed by ARROW; once assigned, the ARROWTransactionId is mandatory in all messages exchanges triggered by a library request. Storage of the ARROWTransactionId in the AWR allows to trace and group all the message exchanges performed within a specific transaction and link to the RII repository. As the primary key for querying and tracking each instance of ARROW workflow; ARROWTransactionIdis are also fundamental for the ROW history.

ARROWResourceId

A unique and persistent identifier assigned by ARROW to the record originally submitted by the library, identifying the manifestation (resource) the library wishes to digitise and use. The ARROWResourceId is correlated with one or more identifiers assigned to that resource by the requesting Library (ex. library's control number) as well as with any standard identifier (ISBN) available for that resource.

ARROWManifestationId

A unique and persistent identifier assigned by ARROW to each manifestation retrieved in the workflow, in addition to any other identifier available for the manifestation.

Actually the ARROW workflow may obtain the same manifestation from different sources (TEL or BIP). Each provided manifestation may already have one or more identifiers such as a proprietary identifier of the data provider or an ISBN when available. The ARROWManifestationId will be associated with all these identifiers as well as with the set of manifestation metadata. If the same manifestation is provided from more sources the ARROWManifestationId keeps the association to both sets of metadata.

ARROWWorkId

A unique and persistent identifier assigned by ARROW to each work in addition to any other identifier available for the work. In the current ARROW workflow, a first work identification is performed by TEL to support the clustering process. TEL assigns each identified work with a unique TELWorkId. Once ARROW receives work information from TEL, ARROW assigns its own ARROWWorkID, in addition to the TELWorkID. This allows ARROW to persistently identify works regardless the reference source of the information, ensuring the system scalability. The ARROWWorkID is also used to establish during each elaboration of the RII workflow if the work is new or if it already exists in the AWR.

Reference Sources and Record Sources Identifiers

Each data provider interconnected within the ARROW RII is identified with a Reference Source Identifier, i.e. an identifier for the source of information or authority files against which a matching, clustering or searching operation is performed in ARROW workflow. Each record exchanged within the ARROW RII is associated to a Record Source Identifier, which identify the source or organisation

that provided that record. The Reference Source Identifiers and Record Source Identifiers are essential to the compliance of ARROW workflow to HLG guidelines for diligent search, as it contributes to the documentation of the search process that ARROW performed.

4.2) Work/Manifestation Identification process

All works requested for digitisation should be checked against the AWR to confirm whether this is a new request or a previously requested work.

In case of new request, the ARROW workflow proceeds according to the following steps:

- The system generates a new ARROWWorkId and associate it to the TELWorkId
- Work metadata are inserted in the AWR
- For each manifestation related to the work, ARROW verifies if such manifestation is already present in the repository or not and, if the manifestation is not present, a new ARROWManifestationId is generated and associated to it. Manifestation metadata are inserted in the registry.

In case of a work already existing in the AWR, the system retrieves the date of the latest transaction and, according to the period in which the results of a request done in the past shall be considered still valid, the ARROW workflow can either end and return the results obtained previously (still valid results) or proceed (no longer valid results) according to the following steps:

- Existing work metadata are replaced
- Existing manifestation associated to the work
 - If the manifestation is provided by the same data provider its metadata will be completely replaced
 - If the same manifestation is provided by a different data provider it is added in the registry which also take trace of the data provider in question.
- New manifestations associated to the work are added
- “Missing manifestations”: if the incoming work contains less manifestations that the existing manifestations in the AWR these “missing manifestations” will be removed and maintained only in the history.

As the picture of a work at any point in time should be considered the most accurate to date, the previous work and manifestation metadata are maintained in the history.

The set of ARROW Assertions on each work (Copyright status, Publishing Status and Orphan Status) will be added and updated accordingly.

The works stored in the AWR that at any point in time have a Orphan status marked as “ProbablyOrphan” constitute the ARROW ROW. In the figure at page 12 this concept has been underlined in the workflow by using a “red arrow”. It’s worth to underline that the ROW is not only a subset of the AWR but it extends the entity relations defined for the AWR introducing new relations in the data model necessary to guarantee the consistency of the ROW with the HLG guidelines. The logic view of these extensions have been represented in the figure with red boxes such as: History, Claimers data, Validation. A more detailed description of the ROW data model has been provided in § 5.9.

5) Registry of Orphan Works –ROW

From the above sections can be inferred that the implementation of the Rights Information Infrastructure, and in particular the ARROW Work Registry (AWR), constitutes the fundament for the Registry of Orphan Works (ROW). The ROW core database in other words can be seen as a view of the AWR, result of the RII workflow. The design and set up of the ROW hence strongly depends on the AWR design. Each library request instances a new ARROW workflow. The RII workflow stores all the responses obtained from the data providers as well as extracts and stores all the necessary metadata about works and related manifestations to be stored in the AWR as explained in the above section. Being the ROW a subset of the AWR, the ROW starts ‘empty’ and gets populated by digitisation requests being processed through the ARROW system in an automatic way in the case the output of the RII process indicates that the work can be an orphan.

Since the ARROW System runs at European level and the RII elaborates requests from different European countries, ARROW is designed from the beginning to support both the set up of a centralised infrastructure for the ROW and the set up and integration of other Orphan work databases on country bases (National ROWs). Under this perspective ROW functionalities are designed to consider country specific requirements to enable system scalability and interoperability with National ROWs (see §5.5 ROW models supported in ARROW).

5.1) Feeding of the ROW - Orphan Criteria

In compliance with the HLG guidelines for the definition of orphan works¹¹, a work in ARROW is considered to be orphan if its rightholders can not be identified or, if identified, it is not possible to locate them.

Moreover it has to be considered that an Orphan work is a work protected by copyright but the current owner is unknown or untraceable by diligent search, therefore works in the public domain are in principle not relevant for the scope of the ROW.

Establishing if a work is orphan or not is not a simple and straightforward task but is the result of a diligent search for the rightholders, according to a procedure and methodology compliant with the principles contained in the HLG guidelines on diligent search. Such diligent search is supported by

¹¹ see D3.2.1 *Guidelines for the Definition of Orphan Works*, available for downloading in the Resource area of the ARROW website (www.arrow-net.eu)

the ARROW Rights Information Infrastructure (RII) that enables to search distributed sources of information to find out the rights status of a work and its rightholders¹².

As mentioned above, at the end of the RII workflow, each work is associated with a set of ARROW assertions on the work rights status: Copyright Status, Publishing Status and Orphan Status. The works that have a Orphan Status marked as “ProbablyOrphan” feed the ROW.

The following table is an outline of the possible combinations of the ARROW assertions on the work rights status that lead to the inclusion of a specific work into the ROW.

Copyright Status	Publishing Status	Orphan Status	Inclusion in the ROW
arrow:Copyright	ARROW:CurrentlyActive	ARROW:ProbablyOrphan ARROW:NotOrphan ARROW:Unspecified	YES NO NO
arrow:InPublicDomain	ARROW:CurrentlyActive	Not relevant	NO
ARROW:Unspecified	ARROW:CurrentlyActive	ARROW:ProbablyOrphan ARROW:NotOrphan ARROW:Unspecified	YES NO NO
arrow:Copyright	ARROW:NotCurrentlyActive	ARROW:ProbablyOrphan ARROW:NotOrphan ARROW:Unspecified	YES NO NO
arrow:InPublicDomain	ARROW:NotCurrentlyActive	Not relevant	NO
ARROW:Unspecified	ARROW:NotCurrentlyActive	ARROW:ProbablyOrphan ARROW:NotOrphan ARROW:Unspecified	YES NO NO
arrow:Copyright	ARROW:Uncertain	ARROW:ProbablyOrphan ARROW:NotOrphan ARROW:Unspecified	YES NO NO
arrow:InPublicDomain	ARROW:Uncertain	Not relevant	NO
ARROW:Unspecified	ARROW:Uncertain	ARROW:ProbablyOrphan ARROW:NotOrphan ARROW:Unspecified	YES NO NO

The above outline of the possible combinations of the ARROW assertions reflects the current status of the discussion on Orphan Works, considering a work Orphan when none of the rightholders is known or traceable.

¹² Compliance of the ARROW workflow to the HLG guidelines on diligent search has been documented in *D3.2.2 Evaluation of compliance of the ARROW workflow with the agreed HLG guidelines on diligent search* available for downloading in the Resources area of the ARROW website (www.arrow-net.eu)

However, it is clear that the concept of “being orphan” might be more complex, when considering that for a work only some of the rightholders can be not known or traceable while others are perfectly known. A typical example is a book with photos or other illustrations where the writer is known and the illustrator not.

The complexity might increase yet again when considering that for a work the owner of a specific right might be unknown, while for other rights the owners are perfectly known. A typical example is a book for which it is unclear who is the owner of the digital rights.

Enough flexibility will be left to the ARROW system to be able to include in the ROW also the two above mentioned categories of works, however, in absence of a formal definition of “Orphan Works” under this perspective, either at European or at national level, no specific implementations are foreseen at this stage to address this issue.

Finally, it’s worth noting that a work can be declared “ProbablyOrphan” in ARROW independently from the possibility of licensing that work, because the latter depends on the legal framework in a country and does not affect the “being orphan” of the work.

To sum up, the ROW will be fed according to the following criteria:

- Works with Orphan Status = arrow:ProbablyOrphan will be part of the ROW, as diligent search has been completed
- Works with Orphan Status = arrow:NotOrphan will not be part of the ROW
- Works with Orphan Status = arrow:Unspecified will not be part of the ROW, as their status has not been cleared yet.

5.2) Functional requirements - “Shall lists”

Functional requirements are the functions and actions that specific categories of users will be able to perform on the ROW, according to specific purposes, ie. to make the public information on Orphan Works publicly searchable and enhance the possibility for rightholders to declare their rights, thus reducing the number of Orphan Works.

Search functions:

- “search and browse” works

- “search and browse” manifestations

Claiming Request functions:

- claiming of rightownership (claiming request)

Functions for the Management of ROW:

- browsing of claiming requests
- management of claiming requests: approval or refusal of claiming requests
- updates of the work rights status and maintenance of the work rights status history
- browsing of work history
- notification of updates of the work rights status

5.3) Actors & Roles

Based on the above functional requirements, the following actors and their roles and use cases can be foreseen, also taking into account possible evolution of the European and national legal framework. ROW shall be designed to be scalable to emerging actors in ARROW scenario. The actors here identified are to be interpreted as “Roles” that can be played by different organisations in the ARROW environment, regardless who will actually play each of the roles. From the design and technical point of view, it is therefore necessary to define roles at the most granular level possible, to allow the system to be neutral to the solutions for managing Orphan Works that will be adopted in each national legal framework. Under this perspective, it might be possible that one single organisation plays two or more roles, thus embodying two or more actors. This approach is also neutral to the model for managing Orphan Works adopted (Centralised infrastructure or National ROWs).

Actors & Roles:

- End Users – The end users have the possibility to search and browse the ROW
 - any Internet user
 - any interested organisation (including libraries, publishers and authors associations, collecting societies)

- Claimers – The claimers have the possibility to search and browse the ROW and claim for rightholdership and to be notified of the approval or refusal of the claiming request and change of the Orphan status
 - Authors and other contributors and their heirs (single person)
 - Institutions such as libraries and foundations, acting as rightholders
 - Publishers
 - Literary agent (on behalf of one or more persons)
 - Collective management organisations/RRO
 - Authors Collective management organisations
 - Publishers Collective management organisations¹³

In the last four cases, when someone is claiming on behalf of a rightholder, the Claimer is not the rightholder themselves.

- ROW Manager – an authorized entity responsible to manage a ROW on a country basis. The ROW Manager have the possibility to search and browse the ROW, browse the work history, browse the claiming requests and is entitled to approve or reject the pending claiming requests of the claimers, and change the Orphan Status of the work, following an approved claiming request. The validation process of the claiming request is outside the scope of the present document, being it entirely between the ROW manager and the organisation in charge of validation.
 - In the current ARROW workflow Collective management organisations such as RROs are candidate to act as ROW Manager
 - Any other authorised entity that will be appointed in each country legal framework
- Diligent Search Agency – an authorized entity that according to each country legal framework is appointed to do the diligent search, or endorses as “diligent” a search done by a user, and to declare that a work is orphan. The Diligent Search Agency have the possibility

¹³ List can be updated in future

to search and browse the ROW, browse the work history, declare that a work is orphan and change the Orphan Status of the work, following a diligent search

- In the current ARROW workflow Collective management organisations/RROs practically act as Diligent Search Agency if they declare that a work is “ProbablyOrphan”
- Any other authorised entity (libraries and other public bodies) that will be appointed in each country legal framework
- Rights Clearing Centres for Orphan Works - an authorized entity that according to each country legal framework is appointed to issue a license for an orphan work¹⁴. The Clearing Centres have the possibility to receive a notification from the ROW whenever the Orphan Status of a licensed work changes
 - Any authorised entity (including RROs) that will be appointed in each country legal framework. Not existing yet.

It is foreseen that, according to each country legal framework, actors like ROW Manager and Rights Clearing Centres can operate at country level and their specific interaction with the ROW is limited to the works within their jurisdiction. At the moment in ARROW “works within a jurisdiction” are defined as works declared orphan by the RRO in the same country of the ROW Manager and Rights Clearing Centres. In case it is needed, a specific ROW Manager and Rights Clearing Centres can be associated to more than one jurisdictions.

¹⁴ see also D.3.3.2 Correspondence of ARROW infrastructure with emerging clearing centres and the need of their users.

5.4) Functions & Actors matrix

	End Users	Claimers (rightholders)	Claimers (on behalf of rightholders)	ROW manager	Diligent Search Agency	Rights Clearing Centre
Declare that a work is Orphan					X	
Search works (simple search)	X	X	X	X	X	X
Search works (bulk search)			X			
Search manifestations (simple search)	X	X	X	X	X	X
Search manifestations (bulk search)			X			
Browse works	X	X	X	X	X	X
Browse manifestations	X	X	X	X	X	X
Claim ownership		X	X			
Browse claiming requests				X		
Assess claiming request (approve/refuse)				X		
Update work rights status				X	X	
Browse work history				X	X	
Receive notification of claiming request assessment result		X	X			
Receive notification of updated rights status		X	X	X	X	X
Issue licenses on Orphan works						X

5.5) ROW models supported in ARROW

As mentioned previously, the ARROW system has been designed to support different models for the management of Orphan Works, in the first instance the set up of a centralised infrastructure and the set up of interoperable National ROWs. As described in §5.1 Feeding the ROW, the information gathered along the workflow by the RII, is the basis for the initial feeding and updates of the centralised ROW and in case of the National ROWs.

In both cases it is fundamental to make the public information on Orphan Works publicly searchable and enhance the possibility for rightholders to declare their rights, thus reducing the number of Orphan Works. As described in §5.2 Functional Requirements, to fulfil the purpose the following functions are envisaged:

- Search functions
- Claiming request functions
- Functions for the Management of ROW (management of claiming request and history)

To maximise the European impact of the ROW, a central index for searching will be built to allow any user to search on the whole corpus orphan works in Europe from a single access point. (For more information on the search function, see §5.5 ROW Search Function)

Once the central index for search will be in place, rightholders will be able to search for a work and declare their rights. The claiming request function will be implemented at centralised level on Orphan Works managed in the centralised ROW. In case a Orphan Works are managed by other systems (as National ROWs) and they have their own claiming service, appropriate redirection mechanisms will be implemented from the central layer for searching to the national service. (For more information on the search function, see §4.6. Claiming Request).

Function for the Management of the ROW – assessment of claiming requests (approve/refuse), update of the work rights status, access to work history – will be implemented at centralised level for claiming requests on Orphan Works managed in the centralised ROW. In case a Orphan Works are managed by other systems (as National ROWs) and they have their own management functions, mechanisms to ensure the update of the work status in the central layer for search shall be provided. (For more information on the search function, see §5.8 Management of ROW)

The following figure represents how the different model supported in ARROW can coexist in a single framework built on the ARROW workflow and RII. In the following figure, RROs are assumed to play the role of the ROW Manager and maintain national ROWs.

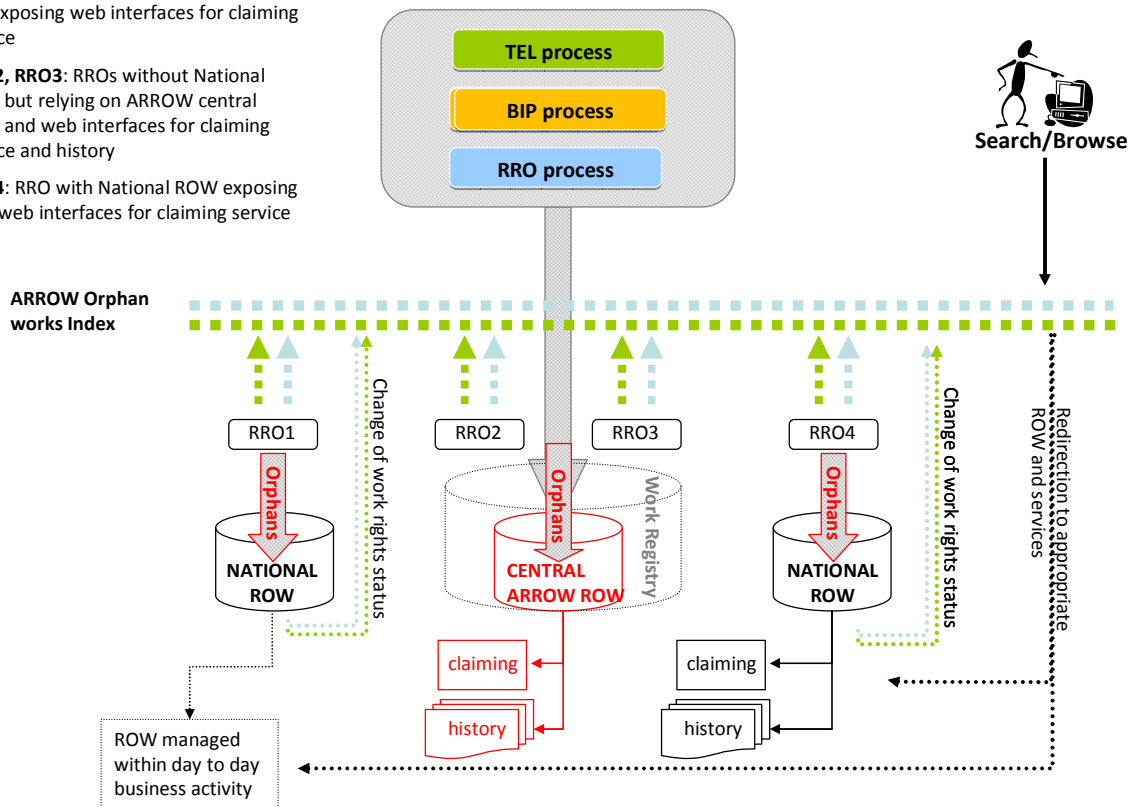
MODELS LEGENDA

RRO1: RRO with Orphan Work database not exposing web interfaces for claiming service

RRO2, RRO3: RROs without National ROW but relying on ARROW central ROW and web interfaces for claiming service and history

RRO4: RRO with National ROW exposing own web interfaces for claiming service

ROW models allowed in ARROW



5.6) ROW Search function

A central index for the search of Orphan Works will be built and made publicly accessible online to any end user. This search layer will be based on public information on works that at any point in time have Orphan Status marked as “ProbablyOrphan”. As described in §4.2 Work/manifestation identification process, this information is collected by the RII workflow, stored in the ARROW Work Registry (AWR) and updated over time whenever the work Orphan Status changes.

ARROW will provide the appropriate interfaces to enable the search process and the display of results.

5.6.1) Search criteria

The search is intended to be performed at both work and manifestation metadata.

Works can be searchable by the following metadata:

- Title
- Contributor(s)
- Language of Text
- ISTC (in the future when ISTC will be assigned to works)
- ISNI (in the future when ISNI will be in place)

To search at manifestation level it is necessary at least to add one of the following metadata:

- ISBN
- Publisher
- Imprint
- Country Of Publication

Search modes

Initially the system shall allow end users to perform single searches. According to different user needs that may arise during the ROW evolution the implementation of bulk searches is foreseen.

5.6.2) Single Searches

Applicable to all searchable metadata. If more than one search criteria field is filled the search results shall only display results that satisfy all of the criteria.

- 1) In case the end user fills in only work metadata the search will be performed at work level
- 2) In case the end user fills in work metadata and at least one manifestation metadata then the search will be performed at manifestation metadata.

In the first case a list of works matching the required criteria is first displayed. From each of them is possible to browse the manifestations that belong to the work.

In the second case a list of manifestations is first displayed. From each of them is possible to browse the related work (See Browse ROW use case)

In the future it may be useful to allow users to specify the type of display: “list works” or “list manifestations”.

5.6.3) Bulk Searches

In a later phase, when the ROW will have considerable content, bulk searches shall be provided. Such search is intended for B2B use. The access to bulk searches will no longer be freely accessible to any user but an authentication shall be required. The bulk search may be performed in one of the following parameters:

- List of ISBNs
- list of ISTCs
- Country Of Publication
- Publisher/ISNI
- Author/ISNI

The format of the output of the bulk searches will be defined according to users requirements.

5.7) Claiming Request

The claiming request process enables Claimers to declare rights on Orphan Works. Upon authentication¹⁵, the ARROW System will provide the necessary tools for enabling claimers to declare their rights following a search on the central index for search and for collecting the claiming information or provide a redirection to the appropriate national service.

Once a claimer identifies an Orphan Work in central index for search and decides to make the claim, the system shall assign an ID to the claimer and correctly identify the country of the claiming management and consequently, either redirect to the appropriate national service or:

- provides to the claimer a form containing fields relevant to this country claiming process

¹⁵ More information on ARROW authentication system can be found in D6.1 *Rights Information Infrastructure*

- stores the claiming data in ARROW¹⁶
- sends the necessary claiming information to the relevant RRO.

As for the claiming service provided by the centralised infrastructure, this may serve to enable claimers to declare rights on Orphan Works within different jurisdictions and managed by different ROW managers, therefore the information collected in the claiming request may vary according to the national scenario, and this information will be treated according to data protection legislation¹⁷.

A minimum set of data common to all participating countries as well as a generic set of data (superset) to satisfy the requirements of the participating countries will be agreed.

Follows a first sets of data that can be part of the claiming information.

Claimer data (provided once when accessing for the first time the ARROW authentication system):

- claimer contact information
 - contact name
 - company name (if relevant)
 - e-mail address
 - telephone number
 - country
- type on claiming request
 - “I claim to be the rightholder”
 - “I claim on behalf of the rightholder”
- type of claimer

¹⁶ The information security management system of CINECA, used by ARROW, is compliant to ISO 27001. The system is constantly maintained and improved, and is audited annually by a certification body (RINA). CINECA’s certificate, in the latest version, is always available online: http://www.cineca.it/files/ISO_27001.pdf

¹⁷ More information on ARROW approach to data protection and privacy issues can be found in the Addendum to D3.1 *Report on Legal Framework*.

- Authors and other contributors and their heirs (single person); Institutions such as libraries and foundations, acting as rightholders; Publishers; (if “I claim to be the rightholder”)
- Literary agent (on behalf of one or more persons); Collective management organisations/RRO; Authors Collective management organisations; Publishers Collective management organisations (if “I claim on behalf of the rightholder”)

Rightholder data, to be filled only in case the claimer is not the rightholder but acts on behalf of the rightholder (to be provided and associated to each work claimed)

- rightholder information (contributor name or publisher name)
- role of rightholder with respect to the work (author, translator, illustrator, etc.)

As for the ROW claiming service built on National ROWs, they will be implemented directly by National ROWs according to their own requirements and shall provide mechanisms to notify to the ARROW central ROW the necessary information related to the approval of a claiming request.

In this case, where the claiming is under the jurisdiction of a country that has its own claiming service, the ARROW system will redirect the claimer to the appropriate national service and will not gather the claimer/rightholder data as they will be provided afterwards by the national ROW as mentioned in the previous paragraph.

5.8) Management of ROW

The ARROW System will provide the necessary tools for enabling the ROW Manager to collect claiming requests and successively assess them (accept or refuse the claim) on the centralised infrastructure. The ARROW system will provide the necessary interfaces in order to let the ROW Manager communicate the assessment. In the current model, ARROW is neutral to the process and methodology adopted by the ROW manager to assess the validity of the claiming, even in case the ROW Manager requires the involvement of an external validation agency.

The ARROW System will as well provide the necessary tools for accessing the history of works, maintained on the centralised infrastructure, as illustrated in §4.2 Work/manifestation Identification process.

As for the ROW management tools built on National ROWs, they will be implemented directly by National ROWs according to their own requirements and mechanisms to notify to the ARROW central ROW the change of Orphan Status following the approval of a claiming request shall be defined in agreement with ARROW.

5.8.1) Claiming management

Managing the claiming requests is the responsibility of the organisation playing the role of the ROW Manager, according to its jurisdiction¹⁸, therefore in the centralised infrastructure more than one ROW managers (Country ROW Manager) could operate using the back office management tools to:

- Browse the pending claiming requests
- Approve or refuse the claiming requests
- Browse the archive of the accepted and refused requests

During the management of the claiming, the claiming request may be in one of the following status:

- Pending – the claimer has performed a rights declaration but the ROW Manager has not yet considered it
- Under elaboration – the ROW Manager has started elaborating the request and is performing all the necessary assessments
- Accepted – the ROW Manager assessed that the claiming request is correct
- Refused – the ROW Manager assessed that the claiming request is not acceptable

After a claiming evaluation the ROW Manager shall enter in the system the result of such evaluation (Accepted/Refused and the refusal reason). Any intermediate elaboration that the ROW Manager performed in order to reach such conclusion (Accepted/Refused) will not be stored in the Centralized ROW.

In case the **claiming request is refused** by the ROW Manager:

- The Claimer will be notified of the assessment result

¹⁸ Works within a Jurisdiction are defined as works that have been declared orphan by the RRO of the same country of the ROW Manager

In case the **claiming request is accepted** by the ROW Manager:

- The Claimer will be notified of the assessment result
- The Orphan status of the work changes in the AWR from “ProbablyOrphan” to “NotOrphan”
- The work will no longer be searchable by the Arrow central index.
- The reference source of the “ProbablyOrphan” status of the work will be notified of the assessment result
- Claimers and Rightholders data along with the ID of the associated work are communicated to the reference source of the “ProbablyOrphan” status of the work, and to the Rights Clearing Centre, if exists
- Rightholder data are associated to the work
- Work information about authors and contributors will be updated accordingly (in case the rightholder found is an author or other contributor)

It is worth noticing that, the use of identifiers in the AWR would enable further developments of the claiming process as for example the possibility that all works listed as Orphan for a Rightsholder(s) are removed from all the ROWs when a claim on one of the works is approved and a Rightsholder is identified.

5.8.2) ROW History

ROW history is the functionality that allows a country ROW manage operating on the centralised infrastructure, to see for a selected work:

- the current situation of the selected work: the work rights status, the reference sources of the work rights status¹⁹, the work metadata as well as the current set of manifestations associated to it
- How the work metadata changed over time
- How the work status changed over time and the reference sources of this information

¹⁹ Any change of status that is not output of a new RII transaction and therefore not linked to a ARROWTransactionID assigned by the front end, needs to be assigned with its own Transaction ID and linked to the ARROWWorkID.

- How the list of the manifestations associated to a work changed over time

This functionality is a key element of the ROW, as according to the HLG guidelines on diligent search on orphan works, once a diligent search is conducted it is necessary to gather evidence that the search has been done, documenting also the sources of information consulted during the search.

In order to document all the processes in the ARROW workflow and the results obtained, ARROW implements mechanisms to store information, including records of the searches performed along the whole workflow and their sources. History is designed to provide evidence of all previous diligent searches conducted for a work and the main changes occurred over time, in terms of:

- Work rights status (Publishing Status, Copyright Status, Orphan Status)
- Work and related Manifestation as well as the associated metadata.

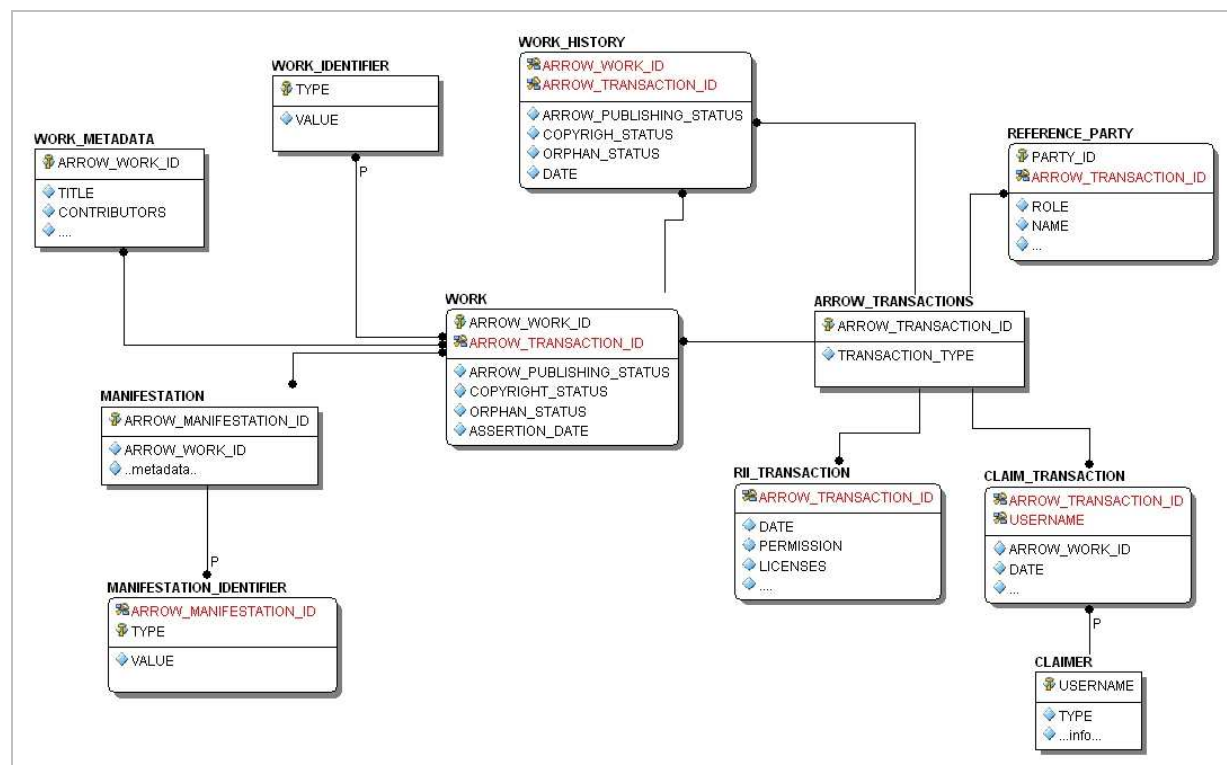
This is possible thanks to the use of unique identifiers to identify and track works and transactions involving the work. In fact, each ARROWWorkId (in the future each ISTC) is associated to one or more ARROWTransactionId that univocally identifies a search process along the whole ARROW workflow. Keeping this relation enables an easy retrieval and display of all the results obtained in the different steps of the workflow, for each transaction (search) associated to the work. Once the work is selected by the user, it may be possible to see all the responses obtained by different data providers by exploiting the ARROWTransactionId.

Beside the RII transactions, the history shall maintain also evidence of changes in the work rights status (from “ProbablyOrphan” to “NotOrphan”) triggered by the claiming process or in the future by an external diligent searches: these changes of status need to be assigned with their own TransactionId, linked to the ARROWWorkID and stored and made accessible in the history.

Maintenance of the history will be feasible only for the works and the corresponding clustered manifestations included in the ROW through a RII transaction. Regarding orphan works possibly provided in the future from external sources, an analysis of how and what data can be exchanged between the ARROW central ROW and other sources will be needed according to the evolution of the European scenario.

5.9) ROW Data Model

The following figure represents a logic view of some of the possible relations considered in designing the ROW, according to the requirements for the ROW gathered so far and can be extended with additional entities and relation if necessary.



A brief description of the model is provided starting from the **WORK** entity which is the ROW main one. This entity contains an **ARROW_WORK_ID** which uniquely identifies it in the AWR. Each work is also related to a list of identifiers of the same work (**WORK_IDENTIFIER** entity). Such list will initially contain the **TELWorkId** and may further contain the **ISTC** assigned to the work. Other attributes of the **WORK** entity are the **PublishingStatus**, **CopyrightStatus**, **OrphanStatus**. They correspond to the last work status values obtained for that work as a consequence of an **ARROW** transaction. Such transaction is modeled by the **ARROW_TRANSACTIONS** entity and the relation between them is enabled by the **ARROW_TRANSACTION_Id**.

Work status and metadata may change due to different workflows such as: **RII** workflow handling library requests or claiming workflow on orphan works upon validation of in charge organizations. In order to express this scenario the **ARROW_TRANSACTIONS** entity is designed as a generalization of a **RII** transaction or claim transaction by the means of the **TRANSACTION_TYPE** attribute. This choice

allows to scale to further workflows that may be added to the ARROW system influencing the above work data.

REFERENCE_PARTY entity models the role of the different organisations playing a role in the ARROW system, related both to the RII and to the ROW. For example it contains the necessary information for identifying an RRO or a BIP as well as a ROW Manager. A relation between the ARROW_TRANSACTION entity and the REFERENCE_PARTY entity exists since the ARROW System always needs to know which is the responsible organization for the transaction. For example the RRO declaring work status data (RII_TRANSACTION) or confirming claiming data (CLAIM_TRANSACTION).

In order to maintain the work history, the WORK_HISTORY entity is provided. This entity contains an ARROW_WORK_ID, the work status information, the ARROW_TRANSACTION_ID and a DATE. Each time an ARROW_TRANSACTION is performed, this entity is enriched with the previous work information (the ones represented by the WORK entity). The WORK entity itself is updated with the most recent information. There is obviously a relation between the WORK entity and the WORK_HISTORY entity that enables to trace the changes that a work has undergone in time. The WORK_HISTORY also maintains the ARROW_TRANSACTION_ID which is a very important attribute that enables to retrieve the workflow (and relative details) that dictated such change. The DATE attribute traces the date in which a particular work change was performed.

The CLAIMER entity models the necessary information for identifying and describing claimers.

CLAIM_TRANSACTION entity, uniquely identifies a claiming ARROW transaction. The relation between these two entities is necessary to trace different claims performed by a claimer as well as to link the its data with the claimed work.

RII_TRANSACTION entity models the RII part²⁰.

²⁰ For more information on RII_TRANSACTION entity model, see D6.1 *Rights Information Infrastructure*

6) Implementation workplan for the ROW centralised infrastructure

The functionalities offered by the ROW System may be extended with “additional features”, following the implementation of “core functions” in the ROW Alpha release foreseen for the end of October. Such “additional features” will be further analysed and reviewed during the Alpha release and implemented for the ROW Beta release foreseen for the end of the project. Finally, once the ROW Beta release is deployed and tested, further enhancements of the system are foreseen, according to the progress in the definition of the legal framework and the requirements emerging at national level (“System evolution”).

The following workplan provides an overview of the implementations necessary for each release of the AWR/ROW system.

	ROW Alpha release by end October 2010	ROW Beta release by end February 2011	System evolution
AWR/ROW setup			
AWR/ROW entities relations	X		
Management of entities identifiers	X		
AWR/ROW feeding			
Integration between RII and AWR/ROW	X		
ROW feeding via claiming on central infrastructure (in charge to national ROW manager)		X	
Roles management			
End users	X		
Claimers	X		
Row manager		X	
Diligent search agency			X
Rights Clearing Centre			X
Search functions			
Search works (simple search)	X		
Search works (bulk search)		X	

Search manifestations (simple search)	X	
Search manifestations (bulk search)		X
Browse works	X	
Browse manifestations	X	
Claiming Request functions		
Ownership claiming request form	X	
Ownership claiming request redirection to national service	X	
View status of own claiming requests		X
Functions for the management of ROW		
Browse pending claiming requests		X
Assess claiming request (approve/refuse)		X
Notification of claiming request assessment result to claimer		X
Browse the archive of accepted and refused claiming requests		X
Browse work history		X
Integration of new players in the system		
Analysis of the new players and interoperability requirements		X
Include in the process future external national ROWs		X
Bidirectional data exchange between the Arrow ROW centralised infrastructure and National ROWs		X
Include in the process future external Diligent Search Agencies		X
Include in the process future external Rights Clearing Centres		X

7) Use cases

Use Case: Search ROW
ID: UC1
Actors: End users, Claimer (rightholder), Claimer (on behalf of rightholder), ROW manager, Diligent search agency, RCC
Preconditions:
<p>Events sequence:</p> <p>The use case starts when the actor selects the functionality “Orphan works search engine”</p> <ol style="list-style-type: none"> 1. It will be possible to search an orphan work following different search criteria. Work search through the following fields: Title, Contributor(s), Language of text, ISTC and ISNI (these last two will not be displayed only upon implementation). Manifestation Search adding further fields like: ISBN, Publisher, Imprint, Country of publication. It will be possible to search a manifestation providing the only ISBN fields. 2. The same function will be used to perform bulk search by uploading a list of ISBNs. 3. The system processes the request and shows the results. If only the work fields have been typed, a list of works matching the required criteria is displayed. If at least one field at metadata level or the ISBN has been typed, a list of manifestations is displayed. From each of them is possible to browse the related work (See Browse ROW use case)
Post conditions:

Use Case: Browse ROW
ID: UC2
Actors: End users, Claimer (rightholder), Claimer (on behalf of rightholder), ROW manager, Diligent search agency, RCC
Preconditions: The actor identified the work or manifestation in the previous use case or selected a work from the work claiming pending list.
<p>Events sequence:</p> <p>The use case can have different starting points.</p> <ul style="list-style-type: none"> • If the actor is an end user or a rightholder or a claimer, the use case starts after a first search has been performed. The system provides the list of work or manifestations depending on the fields queried in the search. For each work a list of the corresponding manifestations can be displayed. On the other hand for each provided manifestation it's possible to view the data of the related work. • If the actor is a ROW manager, or a Diligent search agency or a RCC and they are examining the work claiming pending list, the use case starts when they select a work from that list. In this case the system displays the list of the manifestations related to the selected work.
Post conditions:

Use Case: Claiming
ID: UC3
Actors: Claimer (rightholder), Claimer (on behalf of rightholder)
Preconditions: The claimer identified the work in the ROW and received previously the credential to access the claiming form.
<p>Events sequence:</p> <ol style="list-style-type: none"> 1. The claimer chooses the OW. The claiming is performed at work level using the search/browse functionalities described in the previous use cases. 2. The claimer can start the claiming process for the ownership by accessing the claiming service if correctly authenticated. 3. The system retrieves the contact information and nationality of the RRO that previously defined the work as probably orphan. 4. The system provides to the claimer a form containing fields relevant to this country claiming process. The information required are the following: claimer contact information, type on claiming request, type of claimer, Rightholder data if the claimer is not the rightholder but acts on behalf of the rightholder. 5. The system validates and stores the claiming data in Arrow. 6. The system sends the necessary claiming information (claimer/rightholder data, ARROWworkID) to the relevant RRO. 7. The Arrow system provides an acknowledge message to the claimer. 8. If the ROW claiming service builds on National ROWs, the ARROW system will redirect the claimer directly to the appropriate national ROW without providing the claiming form and without storing the claiming data in Arrow, hence skipping the steps 4-7.
Postconditions:

Conclusions

In the current scenario the definition of the legal framework concerning Orphan Works is still in progress and operative solutions are under discussion in many European countries. Likewise, though the HLG provided recommended some key principles for the set up and management of databases of Orphan Works and of related Rights Clearing Centres, as well as for the definition of an orphan works and of a diligent search procedure, there is still a certain degree of uncertainty with regards to the actors practically involved and their role: for example, who will manage the database, who will issue licenses, who will ensure that a search is “diligent”.

Collective Management Organisations, such as RROs have been identified by the HLG as the natural candidates to take over all or some of these roles.

In addition, with regards to the possible models for the management of Orphan Works that can emerge in the European scenario some assumption can be made:

- some countries might go in the direction of a ROW centralised infrastructure, providing ad hoc common interfaces and back office tools for the management of Orphan Works on a country basis, though exploiting economies of scale as far as set up and technical implementations are concerned
- some countries might go in the direction of setting up National ROWs, including localised ad hoc interfaces and back office tools modelled to be interoperable among them and with a ROW centralised infrastructure
- some other countries might go in the direction of managing Orphan Works within the existing practices of local RRO day to day business.

No matter what model will be adopted, the chosen approach for the design and implementation of the ROW within the ARROW project, described in this document, is flexible enough to ensure a high interoperability level and a genuine European solution. In particular the ARROW central index for searches will ensure that users can start their search for an Orphan Work from a single access point, and be redirected to the appropriate service (centrally or national) whenever specific functions are required. Likewise, the decision taken to define roles at the most granular level possible, allows the system to be neutral to the solutions that will be adopted in each national legal framework. Under this perspective, it might be possible that one single organisation plays two or more roles, thus

embodying two or more actors, as well as reassigning roles to different actors, whenever the evolution of the scenario requires it.

Evolutions in the European and national legal framework on Orphan Works as well as emerging operative solutions will be constantly monitored and the above mentioned assumption checked over time, to be compliant with any new situations and requirements. The present document will be therefore accordingly updated, by enriching the specifications and the use cases, adding the software components and more detailed results gained from the possible evolutions of legal framework concerning Orphan Works as well as implementations during the duration of the project.