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January 2010 marked the beginning of the Europeana Regia project, which will digitise 874 rare and precious manuscripts from the Middle Ages and the Renaissance, with the collaboration of five major libraries located in four countries and the support of the European Commission. The project is expected to run for thirty months (January 2010 to June 2012) and will draw together three collections of royal manuscripts that are currently dispersed and which represent European cultural activity at three distinct periods in history: the Biblioteca Carolina (8th and 9th centuries), the Library of Charles V and Family (14th century) and the Library of the Aragonese Kings of Naples (15th and 16th centuries). These manuscripts will be fully accessible on the websites of the partner libraries and will also be included in Europeana.

The principal objective of Europeana Regia is to reconstruct, in the form of a virtual library, the most important European royal collections of documents from the Middle Ages to the Renaissance. This project will provide a means for researchers and the general public to access these rare and precious documents, through platforms such as Gallica, Belgica, Manuscripta Mediaevalia and Europeana, by 2012.

Managed by the Bibliothèque nationale de France, Paris (BnF), Europeana Regia unites five European libraries as consortium partners - the Bayerische Staatsbibliothek, Munich (BSB), the Universitat de València Biblioteca Històrica (BHUV), the Herzog August Bibliothek Wolfenbüttel (HAB) and the Koninklijke Bibliotheek van België – Bibliothèque royale de Belgique, Bruxelles (KBR) - and concerns almost nine hundred manuscripts that are representative of the political, cultural and artistic history of Europe.

This project focuses on three sets of manuscripts which are currently dispersed among different member States: Carolingian manuscripts, the manuscripts of the library at the Louvre in the time of Charles V and Charles VI, and the library of the Aragonese Kings of Naples. In addition, the project covers a number of complementary actions, such as the definition of procedures to be followed by the partner libraries (digitisation, organisation of metadata, multilingualism), the compilation of metadata through cataloguing and indexation, and the digitisation process itself.

The partners chose to focus on these historical, and even mythical, manuscript collections from the Middle Ages and the Renaissance, because:

- they are representative of a time when a common European culture was not a dream, or an objective, but a reality – at least among the “intellectual” and the powerful people;
- they contain many masterworks, from a time when “painting was in books”, as said French famous scholar François Avril;
- they have been studied, at least partly, and detailed research metadata are already available for some of them;
- their gathering on Europeana would allow to reconstitute broken collections (for the libraries of Charles V and Aragon kings of Naples), to make new links with other similar collections, and to show the circulation of knowledge and art through Europe (for every theme, but specifically the Carolingian manuscripts).
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1 Introduction

This publication presents the project “Europeana Regia” in all aspects: the partner libraries involved, the manuscript collections to be reconstructed, the manuscripts to be digitised, the users expectations experienced, and the techniques applied. Not all parts of this description are of equal interest for all readers. While experts in manuscript studies may already know the partner libraries and something about manuscripts and specialties of those and therefore may wish to skip the respective descriptions, more general interested users might wonder what manuscripts are all about or what special treatment they might deserve. On the other hand experts might be interested in details concerning the project and technical aspects such as manuscript cataloguing and delivery of data to portals, which may not be as interesting for the more general audience.

In order to address these diverse interests, the first two chapters on the libraries, and the collections are targeted primarily at the more general audience. The first half of the third chapter, dealing with manuscripts as historical sources, including a basic introduction into manuscript studies and medieval manuscripts. The second half of this chapter may be of equal interest for all readers: There will be explained which type of information is presented at what portal and which are the circumstances and specialties of use. The last chapters then go into detail concerning the project, manuscript cataloguing and encoding of the information. Users expectations as recognised in a survey which has been carried out in the course of the project will be at the end of this volume. Regarding the chapter 6 « Technical aspects », this report gives a general overview. Further information about metadata for manuscripts and digitising manuscripts is available in the two Europeana Regia reports “Vademecum for librarians” and “State of the art in image processing» which will be published soon.

Europeana Regia is one of the largest projects in the field of the digitization of manuscripts or early printed material: 874 manuscripts, i.e. 307,000 images, will be digitized. The results of this collaborative project performed by five partners in four countries will be fully available via Europeana as well as the Europeana Regia website established by the BnF (www.europeanaregia.eu). Several additional partners (the British Library, Biblioteca nazionale di Napoli, E-codices, digital library for manuscripts of Switzerland) will contribute additional material in the future and other institutions may follow.
2 The libraries

2.1 Bibliothèque nationale de France, Paris (BnF)

2.1.1 The BnF

The National Library of France (BnF) is the heir to the royal collections which had been assembled since the end of the Middle Ages. The first institution in France to be made responsible for administering legal deposit from 1537 on, it is the largest library in France and one of the major libraries in the world.

The library’s collections amount to a total of 14 million books, which grow by about 150,000 volumes each year, mainly through acquisitions and legal deposit. Besides printed books, its collections include several million manuscripts, maps, prints and engravings, photos, musical scores, coins, medals, recordings, videos and multimedia documents, objects, objets d’art, theatrical sets and costumes. These collections are spread between 14 departments for specialised or thematic collections and are made available to the public (mainly composed of researchers) in reading rooms at the François-Mitterrand site in the 13th district of Paris and at the historic Richelieu site (17th century) in Paris’ 2nd district.

Gallica, the BnF digital library, offers reproductions of more than 1 million documents in text, image or recorded formats for consultation.

The BnF mission is to collect, archive and preserve books, as well as see to research and the diffusion of its collections, most notably through exhibitions organised for the general public, either on its premises or online. The collections preserved at the Manuscripts Department, located in the Richelieu site, are encyclopaedic: “chansons de geste” (epic poems), Arthurian novels, romance languages, oriental literature, religions of East and West, ancient history, history of science, literary manuscripts, including those of Pascal, Diderot, Apollinaire, Proust, Colette, Sartre, etc. The “cabinet des titres” (cabinet of titles) along with the armorials are the main resources in genealogy research.

The library’s collections are organised into holdings and special collections

- based on language: Greek, Latin, French and other European languages, Arabic, Coptic, Ethiopian, Hebrew, Persian, Turkish, languages of the Near and Middle East, Chinese, Japanese, Tibetan, Sanskrit, languages of India, Vietnamese, etc.
- or according to their content: Scholars and Bibliophiles, Scholars’ Collections, Library Archives, Genealogical Collections, French Provinces, Masonic Holdings, etc.

The manuscript collections include a large number of ancient copies, unica, scientific texts, decorated and painted manuscripts as well as manuscripts in varying shapes and fabricated from a variety of support materials (woodcuts, prints...).

Today, the department is particularly concerned about collecting, classifying and making available to the public the personal archives of French writers.

In collaboration with other institutions, several projects to digitise manuscripts have begun: Optima (Flaubert’s, Proust’s and Valéry’s manuscripts) with ITEM (Institute of Modern Texts and Manuscripts) and supported by the National Research Agency, the French manuscripts of the Roman de la Rose in conjunction with the Mellon Foundation, etc.

2.1.2 Further contributing libraries and institutions

The BnF is responsible for all French contributions to the project and has concluded specific contracts with the following institutions:

The Bibliothèque municipale de Lyon has already digitised its Carolingian manuscripts, and will make the corresponding digital images available for integration in the project.
2.2 Bayerische Staatsbibliothek, München (BSB)

The Bayerische Staatsbibliothek is one of the most important European general libraries and ranks among the best research libraries on an international scale. It forms Germany’s virtual national library together with the Staatsbibliothek zu Berlin and the Deutsche Nationalbibliothek in Frankfurt and Leipzig. The Bayerische Staatsbibliothek is also the central state library and repository library of the Free State of Bavaria. With almost 10 million books, about 50,000 current periodicals in printed or electronic form and more than 90,000 manuscripts, the Bayerische Staatsbibliothek is one of the prime national and international addresses for researchers, students and all those seeking information.

The library’s unique collection profile is characterised by extremely precious manuscripts, rare printed books and comprehensive special collections from thousands of years of cultural heritage. But at the same time, the library rises to the challenges of the future. As an innovative force in the field of digital services, the Bayerische Staatsbibliothek is continually enhancing its digital and Internet-based services, through mass digitisation of its collections and the development of innovative digitisation technologies. The “Munich Digitisation Centre”, established in 1997 as a national competence centre, “Virtual Subject Libraries”, the “Bavarian Regional Library Online”, the “Centre for Electronic Publishing in the Humanities” and the Public-Private Partnership with Google are examples of the active role of the Bayerische Staatsbibliothek in managing the transition to digital, network-based information services for research and study.

The collection of Western manuscripts of the period from the 6th century to the 20th century currently comprises approximately 37,000 codices, among them approx. 17,000 in Latin, 10,700 in German, 1,000 in French, 940 in Italian, 650 in Greek, 145 in Spanish and Portuguese as well as 100 in Slavic languages. A great number of these manuscripts were taken over from the dissolved Bavarian monasteries, among which was the Freising Cathedral library. The Freising holdings (bearing the shelfmarks Clm 6201-6787) are extremely rich in manuscripts of the eighth and ninth centuries, 72 of which contain decorative elements, mainly initials. The exceptional Freising collection, which has come down to us almost completely, puts art historians in the rare position to study the development of the ornamentation of initials in a single scriptorium during the Carolingian period.

The library is deeply committed to digitizing its unique and extremely rare holdings. To this end, several digitisation projects are being conducted. These projects are first and foremost concerned with early printing, mainly from the fifteenth and sixteenth centuries: the block books (full-page copies printed from wooden blocks) preserved in the BSB and other Bavarian collections, the library’s 9,900 incunabula and the more than 40,000 printed books from the sixteenth century that are described in the VD16 (National Retrospective Bibliography for German 16th century printed books). While these projects are funded by the Deutsche Forschungsgemeinschaft (DFG, German Research Foundation), the Public-Private Partnership with Google will enable the library to digitize more than 1,000,000 books published before 1900. As regards the manuscript collection, a large portion of the illustrated “Codices iconographici” as well as an increasing number of manuscripts from convents has been digitised within the DFG framework so far. Most of the other digital images that are available online have been produced in minor projects or “on demand”.

The origin of the Library goes back to the donation, in 1785, of the books belonging to Francisco Pérez Bayer. Other professors offered their own collections to enlarge the university “bookstore”, which was inaugurated in 1788 under the rectorship of Vicente Blasco. Unfortunately, most of this original collection was lost in the Spanish War of Independence (1808-1814). However, during the 19th century the library received several donations from professors and Valencian scholars, who bequeathed their private collections to it. According to the intellectual interests of donors, the collections were focused on literature associated with Valencia, as well as works of law and science.

During the 19th century, after the Mendizabal Disentailment Laws, the Library increased its collections significantly with the arrival of books from the secularised monasteries from the region of Valencia. Among them was the Monastery of “San Miguel de los Reyes”, with the very rich library of the kings of Naples, founded by Alfonso the Magnanimous and legated by Fernando of Aragon, Duke of Calabria. Some of these masterpieces will be a special target for digitization within the Europeana Regia project.

Besides the manuscripts, other important collections include incunabula, which, although not very numerous, include several unique copies, and printed books from 16th to 18th century, among them samples from the most important printing shops in Europe. The collection of 19th century printed books includes works of importance to the evolution of science.

The University Library was, during and after the Spanish Civil War, a depository for the books requisitioned from institutions and private individuals, which constitute a highly useful collection for the study of social history and graphic arts at that time. It is worth mentioning the collection of Valencian posters about the Spanish Civil War.

At present, the Library maintains a policy of acquisitions focused on ancient works printed in Valencia and written by Valencian authors.

The Historic Library of the University of Valencia is still located in its original building at La Nau St. (C / Universitat, 2, 46003, Valencia), which has been completely restored. Due to its holdings, the “Histórica” is one of the most important libraries in Valencia.

The library collaborates regularly in the organisation of exhibitions, providing its holdings for institutional events, locally, nationally and internationally.
More than 300 years ago, the Herzog August Library was already celebrated as the eighth wonder of the world. In 1666, at the time of Duke August's death, it was one of the most famous baronial book collections and, in view of the number of prints, arguably the largest library worldwide; the collection of medieval manuscripts was amongst the most important ones in Europe.

Today, the Herzog August Library is one of the oldest libraries still intact, preserving the cultural memory in the research field of European cultural history of the mediaeval and early modern periods. "One thing that is so special about our library is that it is full of activity, it is being used," points out Dr. Helwig Schmidt-Glintzer, director of the Herzog August Library. The Wolfenbüttel library provides the setting for a number of scientific events, in addition to a diverse cultural programme, which includes a series of events such as the "Wolfenbütteler Gespräche" (Wolfenbüttel Talks) on issues of religion in civil society.

This also includes conferences, workshop discussions and guest seminars on a wide range of topics. "The promotion of young researchers is important to us," says Prof. Dr. Helwig Schmidt-Glintzer. With the aid of grants, which are internationally announced, numerous young researchers from all over the world come to Wolfenbüttel in order to study the sources of their research interests. Special exhibitions make the comprehensive holdings, which have many treasures on offer, including the Gospels of Henry the Lion, accessible to a wide audience.

The Herzog August Library already represented the epitome of sciences and the mirror of the academic universe for Leibniz, who, like Lessing, worked as a librarian in Wolfenbüttel. Lessing’s drama Nathan the Wise, postulating religious tolerance and humanity, was written during his time in Wolfenbüttel.
2.5 Koninklijke Bibliotheek van België – Bibliothèque royale de Belgique, Bruxelles (KBR)

Founded by the young Belgian state in 1837, the Royal Library was opened to the public in 1839. Its history really started, however, with a collection of 900 manuscripts assembled in the 15th century by the dukes of Burgundy, who during that period ruled the Low Countries.

The Royal Library of Belgium comprises several historical libraries, including those of the Burgundian dukes (enlarged in the 16th century by the Spanish King Philip II), the religious orders abolished in the late 18th century, private collectors like Charles Van Hulthem (1764-1832), and the collection of the city of Brussels.

As the former palace of Charles of Lorraine, in which the Burgundian library had been installed since the end of the 18th century, had become unsuitable - mainly because of a lack of space - it had been decided, even before the Second World War, to construct new buildings. This was carried out on the Mont des Arts. The new library, dedicated to the memory of King Albert I, was inaugurated in 1969.

Since 1966, the library has administered the Belgian legal deposit system and national bibliography. Playing the role of a general conservatory of the national heritage, it presently holds some 5 million printed books, 35,000 manuscripts (including circa 270 codices of the Burgundian library), 200,000 maps, 700,000 prints, 10,000 drawings and 120,000 coins and medals. As the central scientific library, it is its task to acquire, to catalogue and to provide for consultation, scientific information, especially in the field of humanities, and to direct the researcher towards the most complete and recent scientific documentation.

Within the scope of Europeana Regia, the Royal Library of Belgium will digitise 30 Carolingian manuscripts and 8 codices from the library of the French King Charles V, which will also be included in Belgica, the virtual library of the institution, launched in 2009.
3 The manuscript collections

How had the collections been chosen for digitisation in the project Europeana Regia? The partners chose to focus on historical, and even mythical, manuscript collections from the Middle Ages and the Renaissance, because:

- they are representative of a time when a common European culture was not a dream, or an objective, but a reality – at least among the “intellectual” and the powerful people;
- they contain many masterworks, from a time when “painting was in books”, as said French famous scholar François Avril;
- they have been studied, at least partly, and detailed research metadata are already available for some of them;
- their gathering on Europeana would allow to reconstitute broken collections (for the libraries of Charles V and Aragon kings of Naples), to make new links with other similar collections, and to show the circulation of knowledge and art through Europe (for every theme, but specifically the Carolingian manuscripts).

The precise quantity of Mediaeval and Renaissance manuscripts that are still preserved in Europe and in the World, both in public and private collections is uncertain. The number should be more than 600,000 but less than 800,000. But only a part of them are illuminated, and of any interest for a general audience: the main part are text manuscripts like collections of preaches, proverbs, commentaries on Biblical texts. And there are only five collections that are shared among several European countries:

- Carolingian manuscripts, because they were copied and illuminated in a time when Europe was a united Empire – the manuscripts digitised in Europeana Regia represent around 50% of the total amount of Carolingian manuscripts preserved in Europe.
- The Louvre Library of King Charles V, because it was sold during the Hundred Years War, and then spread between several collectors such as the Duke of Bedford – the relevant manuscripts digitised in Europeana Regia represent 80% of the total amount of Charles V’s manuscripts that are still preserved in the World.
- The library of Aragon Kings of Naples, because a part was kept by the Aragon dynasty and sent back to Spain, another part remained in Italy, and the remaining was transferred to France, from where some items circulated to Great Britain and Germany – the relevant manuscripts digitised in Europeana Regia represent 70% of the total amount of Aragon Kings of Naples’ manuscripts that are still preserved in Europe.
- The Corviniana, Hungarian King Matthias Corvinus’ library, had been collected from about 1460 on. The library might have contained 3.000 codices at the end of Corvinus’ life, of which around 650 survived. This collection has begun to be digitised already: BSB, HAB, KBR and BnF participated to the Corviniana project which aims at the virtual reconstruction of the library. (http://www.corvina.oszk.hu/)
- The Library of Burgundy which, due to wars and many border changes, is now split between Brussels, Paris, Vienna, Madrid, Besançon, London. As another project is to be applied by the Royal Library of Belgium, it has not been taken into consideration to include this collection in the project Europeana Regia.

The other royal collections of mediaeval manuscripts are preserved in one (or sometimes two) libraries, and can’t be considered as the heart of a collaborative project of several European institutions.
3.1 Bibliotheca Carolina - Royal Manucripts from the Carolingian Era

The Bibliotheca Carolina a collection of masterworks from the main abbeys and bishop schools of the Carolingian Empire (8th-9th centuries), including Reichenau, Saint-Denis, Corbie, Reims, Saint-Amand, Freising, Wissembourg. The manuscripts show the intellectual and artistic activity of these centres of religious life, ecclesiastical and imperial power, and their numerous exchanges of texts and patterns.

The Carolingian manuscripts owned by the Bibliothèque nationale de France form one of the richest collections in the world. The nearly 1100 manuscripts from the 8th and 9th centuries and 400 from the 10th century were made in many different centres throughout the realm.

The history of the collection is tied to that of the Royal Library. The manuscripts belonging to the Carolingian rulers were never passed on to their descendants, and were thus not part of the first royal library founded by Charles V, which was housed in the Louvre. The story changes starting in the 16th century: at that time, ancient manuscripts began to draw the attention of scholars, who collected them for their own use or for deposit in the king's library.

During the French Wars of Religion, a number of religious institutions were destroyed and their collections sold. Many of their treasures entered the king's library either directly or as donations from private collections. Further acquisitions of Carolingian manuscripts were made in the following centuries, notably that of the collection of Jean-Baptiste Colbert in 1732, which was particularly rich in books from this period. It was the French Revolution, however, that provided the BnF with the greatest number of manuscripts, confiscated from religious institutions. During the First Empire, manuscripts continued to be seized in the border provinces and abroad. Towards the mid 19th century, this remarkable collection of ancient manuscripts provided a cornerstone for the new Museum of the Monarchy, founded by Louis Napoleon Bonaparte in 1852. Charlemagne's Evangelia (BnF NAL 1203), which had been presented to Napoleon I in 1811 at the birth of his son, was exhibited next to the Psalter and First Bible of Charles the Bald.

The Revolution also brought an influx of prestigious ancient manuscripts to several municipal libraries, such as that at Reims, which received collections from the cathedral library and other religious institutions in the vicinity, and Valenciennes, where a large number of manuscripts from the royal abbey Saint-Amand-en-Pevèle are located. Several other European libraries house collections of manuscripts from major Carolingian religious and intellectual centres, such as the Bayerische Staatsbibliothek in Munich, which holds the collections from Freising and Regensburg in Bavaria. Similarly, the Herzog August Bibliothek in Wolfenbüttel houses a very important and homogeneous collection of manuscripts from Wissembourg Abbey in Alsace.

The manuscripts selected for digitisation within the Europeana Regia project will bring together coherent groups of manuscripts of similar origin in a virtual setting, regardless of where they are housed today.
3.2 Library Charles V. and family - paradigm for princely libraries reconstructed

The Library of King Charles V is the most outstanding royal collection of illuminated manuscripts from the 14th century, which was, thanks to the circulation of copies, at the heart of aristocratic culture in France, England, Flanders, and Burgundy. « … Est biau tresor a un roy avoir grant multitude de livres. » So ends the debate at the court of Charles V of France, reported in 1378, which argues for the need of a royal library replete with books both old and new, for “books are a rampart against tyranny”.

The library assembled by Charles V and lodged in the Falconry Tower at the Louvre was more than a fabulous collection of books (over 900 volumes in 1380) put at the disposal of the king and his counsellors. It was quite extraordinary for its time in having nearly 2500 texts in French, thus illustrating the promotion of French as the language of learning and government. The library was a sign of royal authority, a prerogative of the king of France, and was, in this sense, already a State library. The frontispiece of the French translation of John of Salisbury’s Policraticus, where the wise king is seated before a revolving bookstand, is emblematic of this authority (BNF MSS Français 24287, f. 2).

The king had smaller libraries in his residences at the Hôtel Saint-Pol, Melun, Saint-Germain and especially at Vincennes, where the most precious books were kept, some fifty exquisite psalters, books of hours and paraliturgical texts.

Two sources allow us to picture the library of Charles V in the fourteenth century:
- a series of six inventories written in 1380, 1411, 1413 and 1424, which give information on the topographical organisation of the library, its contents and the market value of the books
- at least 120 manuscripts (the number is not definitive) have been identified in thirty institutions around the world, of which 69 are in the BnF, 7 in other French libraries and 44 in libraries outside of France. Many of these have been studied by Leopold Delisle (Recherches sur la Librairie de Charles V, Paris 1907, 2 volumes), by François Avril (La Librairie de Charles V, exhibition at the National Library of France, 1968), as well as other scholars.

The library began to deteriorate bit by bit after it was inherited by Charles VI in 1380. It was eventually sold to the Duke of Bedford, then regent of France, for next to nothing. The Duke had the library transferred to Rouen and, upon his death in 1435, the collection was sent to London where it was broken up.

Modern technology will allow for the virtual reconstruction of the first French royal library, based on information in the 1380 inventory.

Three manuscripts are already fully accessible on the internet:
- the French version of the Miroir des dames by Durand de Champagne, dedicated to Jeanne de Navarre, wife of Philip le Bel: manuscript Corpus Christi College 324, Cambridge
- the Miracles de Notre-Dame by Gautier de Coincy, painted by Pucelle for Jeanne de Bourgogne, wife of Philip VI de Valois: manuscript NAF 24541, BNF
- one volume of Saint Augustine’s Cité de Dieu, translated by Raoul de Presles: manuscript Typ 201, Houghton Library of Harvard

Nearly 80% of this prestigious library will be reconstructed by the Europeana Regia project through the digitisation and scientific cataloguing of 76 manuscripts in French libraries, 10 manuscripts in the Royal Library of Belgium and 12 manuscripts in the British Library in London.

The library of Charles V became a model for royal and aristocratic libraries in the 15th century, as will be illustrated by a digitised selection of some sixty manuscripts drawn mainly from the libraries of Louis d’Orléans and Jean, duc de Berry, both renowned bibliophiles who played significant roles in the management of royal affairs in the late 14th and early 15th centuries.
3.3 Library of the Aragonese Kings of Naples

The Library of the Aragon Kings of Naples is a stupendous collection and a unique concentration of masterworks of French, Venitian, Napolitan, Lombard, and Spanish illumination. It is the symbol, beyond political frontiers, of the cultural unity of Europe. The library assembled in the 15th century by the Aragonese kings of Naples is the third component of the Europeana Regia project. This project will allow for the virtual reconstruction of a collection that is literally scattered throughout Europe.

Today, the manuscripts are located in over a dozen institutions:
- in France: in the municipal libraries in Besançon, Grenoble, Louviers, Rouen; in the Société académique de l’Aveyron in Rodez; in the Château de Chantilly and, of course, in the Bibliothèque nationale de France
- elsewhere in Europe: in the Nationalbibliothek in Berlin, the University Libraries in Cambridge and in Leiden, the British Library, the Bayerische Staatsbibliothek in Munich, the Biblioteca Nazionale Vittorio Emanuele III in Naples, the Vatican Library and the Biblioteca Històrica de la Universitat de València in Spain.

This project provides an opportunity to update research on this collection (which started with the Biblioteca napoletana, written by Tammaro De Marinis forty years ago) and to make its texts and illumination better known.

Of the 800 manuscript and printed books from the Aragonese library which are currently housed in the Bibliothèque nationale de France, about 200 manuscripts have been selected for digitisation:
- the manuscripts bought by the cardinal Georges d’Amboise from King Federico of Aragon, which constitute a luxurious and coherent collection, both textually and artistically, and which are close to the works and sets that are preserved in the other institutions. Their full reproduction will allow for further study of their history.
- the manuscripts written in Spanish or Italian appropriated by Charles VIII of France. These are not as well known but just as important. Manuscripts that had not previously been identified as Neapolitan will be added. Representative of royal tastes, the collection includes books such as poetry anthologies and treatises on shoeing horses.

All the French holding institutions will be contributing to Europeana Regia: the municipal libraries in Louviers, Rouen, Grenoble and Besançon will digitise their manuscripts within the scope of the project, while the Château de Chantilly will contribute existing images. In Europe, the Biblioteca Històrica de la Universitat de València and the Bayerische Staatsbibliothek in Munich are currently participating. The Biblioteca Nazionale Vittorio Emanuele III in Naples may join the project at a later date.
4 The manuscripts

How have manuscripts been selected for inclusion in the project?
First of all, it has been the king’s choice to collect the manuscripts which then have been part of their libraries.
The kings needed or wanted to have certain texts in their libraries and thus ordered copies of these. As the
manuscripts were meant to be representative as well they were heavily decorated, at least for the French and
Aragonese kings.
One has to be aware that all transmission of texts in the Middle Ages until the age of print (this is the late 15th
century) took place in hand written form. The word “manuscript” alone means “handwritten” (lat. “manu
scriptum”). This has serious implications for the understanding of what a text is at all in these times. Texts were
not stable as we know it today from printed texts. To produce a manuscript, usually another manuscript had to
be copied. The process of copying did not produce a 1:1 copy, though, but the text itself was changed. The
texts could contain mistakes entered during copying, and the scribes often “interpreted” the text: They changed
it in multiple ways, by extraction, by combining the texts with other knowledge, or even by “correcting” the texts
according to their understanding.
The selection of manuscripts focussed on two aspects:
• Select as complete collections of manuscripts as possible, from the libraries in the scope of the project,
e.g. collections of Carolingian monasteries;
• Select as precious manuscripts as possible for they require and deserve special efforts that could be
organised best in a project such as Europeana Regia.

4.1 What should one know about a manuscript?

When dealing with medieval manuscripts, the most important things to know might be the very same as with
other -especially historical- materials only that the information might be difficult to gather:
• What exactly is the object one is dealing with?
• What is the content in the manuscript? Who are the authors of the texts contained?
• When has the manuscript been produced? And where? By whom?
• Who has owned the manuscripts? Who did read or use them?
• What do we know about the manuscript at all?
To these basic questions relate the seven basic categories which contain crucial information for the
understanding and interpretation of the manuscripts:

<table>
<thead>
<tr>
<th>Category / Question</th>
<th>Aspects in the description</th>
</tr>
</thead>
<tbody>
<tr>
<td>What is it?</td>
<td>Manuscript identifier</td>
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<tr>
<td></td>
<td>Physical description</td>
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<td>What is in it?</td>
<td>Summary title</td>
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<td>Textual languages</td>
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<td>Where and when has it been produced? Who has owned it?</td>
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<td>Who has contributed to it?</td>
<td>Statements of responsibility</td>
</tr>
<tr>
<td>What do we know at all about it?</td>
<td>Basic bibliography</td>
</tr>
</tbody>
</table>

4.1.1 What is it? → Identification

The identifier of the manuscript consists of at least 3 elements:
- the name of the place where the repository is located, that holds the manuscript;
- the name of the repository itself;
- the shelfmark (call number) of the manuscript.

Example:
Paris, BnF, Latin 5831
München, BSB, Clm 17011
In some cases, as in the Munich example, the shelfmark itself contains information about the other aspects as well: « Clm » is short for « Codices latini monacenses ». « Monacenses » on the other hand is the Latin form of « from Munich » which then is doubled information from the place name. In cases where the shelfmark itself is not the most important identifier used by the scholarly community or the interested public, other means for identification might be also applied. Most often this will be either a former shelfmark, a catalogue number, or a given name.

Example:
"Codex Arundel" → London, British Library, Arundel 263
"Book of Kells" → Dublin, Trinity College Library, MS A. I. (58)

Anyway, one has to be careful not to overstress this option: The “Codex Sinaiticus” for example is both well known as such and as well dispersed into pieces which are located in four different libraries. In a description of one of these pieces it would not at all be sufficient to give only the name of the codex but one would still have to tell the place where the piece is located in order to properly identify the object.

4.1.2 What is it? → Basic physical description

To get an idea about the manuscript, one need to know about the size of it, how voluminous it is, and of what materials it consists. Thus, the basic physical description covers the following aspects:
- support material(s),
- number of leaves,
- size of leaves.

The support material(s) lists the main materials written upon, normally taking the values parchment or paper or both.
The number of leaves gives the number of leaves that form the book block. The information can be as short as: 
Example:
25 foll.

The number of extra leaves in the front and back may be added, usually using Roman numbers.
Example:
III + 25 Bl.

The size of leaves is given with its height and width, seldom with even the thickness of the entire book. The measurements are usually in cm or mm.
Example:
29,5 × 20 cm.

The addition of another element for the physical form of the carrier, for example as a codex, roll, fragment, partial leaf, cutting, etc is still under discussion.

4.1.3 What is in it? → Summary title

For a long time in the history of cataloguing manuscripts the summary title has been the only information given about the contents of a manuscript. Thus, the summary title of the manuscript consists of one or both of the following elements:
- the title of the text(s) (which may be a supplied title)
- the author’s name(s)

Three different types of summary titles can be distinguished: the title which contains

1. a single text or kind of text

Examples:
Evangiles
Theolog. Sammelhandschrift
Breviarum romanum
2. a combination of an author’s name and the title of his work

Examples:
- S. Hieronymus, Epistolae
- S. Augustinus, De civitate Dei

3. multiple combinations of author’s names and the titles of their works.

Example:

4.1.4 What is in it? → Textual language

In some cases it might not be sufficient to know the title of a text or who the author has been, but one needs to know, where a text has been written or copied. Taking into consideration a text like the Bible, the summary title would be just “Biblia”. But to know whether the text is really a “normal” Latin text, or a vernacular copy in some regional dialect one is interested in, or maybe a multilingual, parallel edition could be of highest importance. In some cases, the cataloguer would note dialects already in the summary title, stating e.g. “Biblia (ndd.)”, meaning “a bible in lower middle German”.

Even if this were the case, today it is very useful to explicitly state which the textual language is, especially if different from Latin. The language information is given according to the language codes defined in the ISO standards ISO 639-2 and 639-3 in order to allow consistent indexing.

Example:
- cat → Catalan, Valencian
- frm → French, Middle (ca.1400-1600)
- goh → German, old high (ca.750-1050)
- gsw → Swiss German; Alemannic

4.1.5 Where and when has it been produced? → Basic historical description

The basic historical description consists mainly of the following elements:
- place of origin
- date of origin
- previous owners

The place of origin is the place where the manuscript was written. It is given as detailed as possible. If known, the scriptorium is mentioned. In other cases, a city, or region, or country is given.

Examples:
- Abbey of Saint-Germain-des-Prés (Paris)
- Florence
- Southern France

The date of origin describes the time when the manuscript was written. It is given as detailed as possible. If known, the year is mentioned. In other cases, a time span, or a terminus ante quem respectively terminus post quem are given. The terms “terminus ante quem” and “terminus post quem” refer to points in time before (=ante) respectively after (=post) something must have happened. In the case discussed here the act of producing the manuscript would be the event. If for example it is known that a certain manuscript has been written during the archbishopric of a certain person, the date when he took this position is the “terminus post quem”, while his death would be a “terminus ante quem”.

Information about the date of origin is stored not only in human language but as well in coded forms according to the standard ISO 8601 in order to allow consistent indexing.

Examples:
- 1472
- before 1500
- 9. Jh., erstes Viertel (=801-815)
4.1.6 Who has owned it? → Basic historical description

The history of the manuscript is not sufficiently described with dates and facts about the production of it. As books are meant to be and want to be read it is very interesting to notice where the book had lived during the centuries, who owned it, in order to estimate who read it or at least had the chance to read it. Identification of previous owners, others than the repository it hosts the manuscript at the moment, are very valuable. Thus, any information about persons and/or institutions as owners should be described. If previous ownership is expressed by the simple fact of former shelf-marks that belong to other institutions, these would serve the two purposes, to identify the manuscript and tell about the history concerning the owners.

4.1.7 Who has contributed to it? → Statements of responsibility

While the author(s) of the text(s) in the manuscript might have been dead since centuries when the manuscript was written, other persons may have contributed more directly to it. Especially copyists had huge influence on the manuscripts. Copyists usually did not only copy a text from another manuscript; they usually did not only write down what they had heard. Copyists produce errors, conscious and unconscious; they might not have learnt their Latin well enough and thought to emend the text. They might have read other texts and combined the two, meaning to enhance the text. They might extract from the text they want to copy in order to make it more understandable. Copyists are authors to a certain extent! While the text was written by one person (this is not meant literally, sometimes manuscripts had been produced by a whole scriptorium!), space on a page might have been left free to allow for another person to illuminate and decorate the page. As text offers a very different way of perception, decoration may add to this another level. Especially so called “historiated initials”, initials whose bodies are filled with images of persons or scenes, might give the reader other insights in the meaning of the text. At least images, especially those carried out in Gold, give an idea about the importance of the text or the book itself to the initiator. If the manuscript has been produced as a gift, the wealth of decoration shows the respect and appreciation of the donor for the recipient. Such other statements of responsibility, mainly for copyists and illuminators may be indicated when they are known.

Examples:
Copyist Cantes Bonagius de Cantinis (Paris, BnF, Latin 1767)
Winithar-Minuskel (St. Gall, Stiftsbibliothek, Cod. Sang. 2)
Illuminator Attavante (workshop of) (Paris, BnF, Latin 1767)

4.1.8 What do we know about it at all? → Basic bibliography

Who has done research on a manuscript? With what frequency or when for the last time have people published something about the manuscript? Which are the questions other people are interested in when they consult a certain manuscript? These and other questions might be answered with first bibliographical information. To the basic bibliographical description belong two distinct types of information:
- on the one hand information about the record description itself
- on the other hand the most important bibliographical items concerning the research on the manuscript.

Basic bibliographical information doesn’t exceed 3 items, describing the manuscript as a whole or very important aspects of its history or relevance.

Further bibliographical information is available in the academic description.

4.2 Structural metadata

Structural metadata offer additional possibilities to navigate in the manuscript. These include e.g. the concordance between pagination/foliation and image numbers, anchors to places where textual divisions, illuminations, or additions to the text are to be found. Usually, structural metadata are collected in or right after
the digitisation process. In the scope of the digitising of manuscripts for presentation in Europeana, only the concordance between pages and images is mandatory in order to relate the description to the images.

4.3 How can manuscript information be accessed?

Before the advent of online portals that make manuscripts available to users, readers, and scholars in digitised form, the written and printed catalogue have been the most important means to get access to manuscripts and the scripts. Still, a digitised manuscript is difficult to understand without further scholarly information. Hardly anyone wants to flip through hundreds of images of a manuscript in search for e.g. the one single word written in Old High German, in the middle of an text written entirely in Latin. Thus, the information about manuscripts, the catalogue information is still very valuable in order to make not only the manuscripts themselves accessible but also the mass of images.¹

Much efforts in the project Europeana Regia is directed into supplying scholarly and rich information on the manuscripts. For most manuscripts concerned printed catalogues have been turned into an electronic text and fed into the data formats as described below in chapter 6.2. Additionally, for most manuscripts existing information has been updated or -if the existing information has been to unsatisfactory or if no information has been available at all- new descriptions have been prepared. Where possible the use of norm data e.g. for personal names or place names has been applied in order to properly identify persons, institutions, etc. Along with the digitisation of the manuscripts, information about the images have been compiled. This type of information is called structural metadata.

Europeana Regia is not in itself a full cataloguing project, but it gives access to existing information and thus stimulates the creation of new academic data. The project is intended ultimately, as a part of Europeana, to use interoperable platforms and standards, such as XML formats for the description of manuscripts and illuminations (EAD or TEI), and OAI-PMH for the harvesting of data.

Making information and images available (according to parameters as outlined above) can be achieved via several publication paths and methods such as various webpages (local homepages, local project pages²), Portals, such as Europeana or the CERL Portal) or as lists distributed by means of RSS feeds³ or by means of the ‘web 2.0’, e.g. a Facebook page.⁴

In order to discuss at which portals information for Europeana Regia manuscripts are available and what special circumstances in use and data quality apply, we start from the Europeana site as the whole project has been funded only to supply images to Europeana. After that, the project’s webpage, europeanaregia.eu will be described, after that the local presentations and last but not least other portals where Europeana Regia manuscripts can and will appear.

4.3.1 Europeana

The initial goal of Europeana Regia is to provide content for Europeana, which aims to be the primary digital content portal in Europe. All manuscripts from the project will be delivered via TEL (cf 4.3.4) into Europeana and will be identified as a specific corpus. The metadata delivered to Europeana will be the same as in TEL: minimal metadata in the original language of the provider. Minimal metadata are the information that have been discussed in chapter 4.1.

At this point, Europeana offers a full multilingual interface in 28 languages, but all records are in one version, in the original language of the provider. Of course, if Europeana implements tools to host parallel linguistic versions of the same metadata, the Europeana Regia corpus will be ready to display its data in six languages as they will already be stored in the project website (www.europeanaregia.eu).

All manuscripts from the project can be found in Europeana by typing “Europeana Regia” (with double quotation marks) in the main search field or using this link: http://europeana.eu/portal/search.html?query=%22europeana+regia%22

¹ Therefore the first projects to put manuscript information online have been dealing with catalogues. Either the indices of manuscript catalogue volumes have been compiled (e.g. predecessor of Manuscripta Mediaevalia) or full descriptions or images of full descriptions as printed in catalogues.
² Cf. table 6: local presentations of manuscripts
³ http://gallica.bnf.fr/manuscrits.xml
⁴ cf. Images section within the Europeana regia page
The manuscripts found will be presented in a thumbnail view first. One thumbnail has been provided to Europeana during data delivery and is stored in the Europeana database. In the tabular overview the manuscript title, authors if present and the providing institution will be shown. In the case of Europeana Regia the provider to Europeana is always TEL as all data from the project is delivered this way. Only the data provider is the library that own the manuscripts.

A click on a thumbnail opens the more detailed and expanded view of the respective manuscript. The information categories visible in the first place are:

- title
- authors and contributors
- date of origin
- place of origin
- language
- data provider
- country of the institution
At the bottom of the list of information there is the option to show more information on the manuscript. Among the bits showing up clicking this link are subject terms, possibly further details on localising, dating, or relating the manuscript to other resources. E.g. the project context of Europeana Regia is listed only there.

Some of the information are linked themselves to a search function in other resources such as Wikipedia, Google or Worldcat. These search functions do not related to the types of information provided by the project but are an add-on service by Europeana.

At the very bottom of the page there is the link “View in original context” which leads to the local representation of the manuscript.

Seeing the information on the manuscript in Europeana it is important to realise that either not all information available at local manuscript databases is delivered to Europeana or at least it is not shown. Usually the full text of the description should be available to full text search of Europeana, even if the text itself doesn't show in the web presentation.

Second issue to be noticed are the few information categories available in this view sometimes filled with more than one value. For example the field date might be filled with many different value. These dates might be dates of the origin of the manuscript as well as the date of digitisation or the date of cataloguing the manuscript. The dates are not necessarily to be distinguished by their exact meaning.

The limited number of fields is due to the fact that Europeana strives to offer as many digital items as possible from an as wide range of materials as possible, covering textual materials as well as images, video, and sounds. In order to compile this wide range of materials one needs to identify common pieces of information about the objects. The well-known data format Dublin Core offers such categories, broad enough to allow for many materials to be describe with. And Dublin Core is the basis of data organisation of Europeana.

One thing Europeana is not capable to allow at the moment is to store more than one description per object. Neither descriptions in multiple languages nor descriptions from different authors can be offered to the users. Thus the full wealth of information about the Europeana Regia manuscripts has to be offered at another place. When at least offering the core information is translated into multiple languages these translations will be stored in the project website europeanaregia.eu.
The project website: europeanaregia.eu

The project website is available at the address http://www.europeanaregia.eu. The website, the public access to the metadata, the digitised manuscripts and the cultural and educational pages will be provided in several European languages: English, French, German, Catalan, Spanish (Castellano), Flemish.

The complete interface, editorial content and minimal metadata on manuscripts will be available in six languages: Catalan, English, Flemish, French, German and Spanish. It will be possible to switch from one language to another on each page (upper left corner of the page).

Although general information about the project, the libraries, and the historical manuscript collections are provided in at least six languages, the website will be dedicated mainly to presenting multilingual metadata, which will allow users who don’t speak all of the project languages to find some basic information about the manuscripts from the different participating libraries.
As the participating libraries are presented under the tab “Project Europeana Regia” and the collections are presented under tab “Historical collections”, first approach to manuscripts is given already there.

The Library of the Aragonese Kings of Naples

The library assembled in the 15th century by the Aragonese kings of Naples is the third component of the Europeana Regia project.

This project will allow for the virtual reconstruction of a collection that is literally scattered throughout Europe.

Today, the manuscripts are located in over a dozen institutions:

- in France: in the municipal libraries in Besançon, Grenoble, Rouen; in the Société académique de l’Aveyron in Rodez; in the Château de Chantilly and, of course, in the Bibliothèque nationale de France
- elsewhere in Europe: in the Nationalbibliothek in Berlin, the University Libraries in Cambridge and in Leiden, the British Library, the Bayerische Staatsbibliothek in Munich, the Biblioteca Nazionale Vittorio Emanuele III in Naples, the Vatican Library and the Biblioteca Historica de la Universidad de Valencia.

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All the French holding institutions will be contributing to Europeana Regia: the municipal libraries in Leuven, Rouen, Grenoble and Besançon will digitise their manuscripts within the scope of the project, while the Château de Chantilly will contribute existing images. In Europe, the Biblioteca Historica de la Universidad de Valencia and the Bayerische Staatsbibliothek in Munich are currently participating. The Biblioteca Nazionale Vittorio Emanuele III in Naples may join the project at a later date.

Library of the Aragonese Kings of Naples

The “manuscript” tab then will allow users to browse the corpus according to the following criteria:

- Collection (Carolingian, Charles V of France, Aragonese)
- Repository
- Period (century)
- Language
Each time the user selects something from the menu on the left, further choices are offered and first manuscripts displayed.
To all these pages applies the fact that only the core metadata will be translated into the several languages and this is done semi-automatically. Many of the aspects could be translated automatically, but some could not and those had to be translated manually.

Automatic translation was possible for:

- Date of origin
- Personal names, by provision of norm data
- Place of origin, by provision of norm data
- Material
- Illumination
- Language
- as well as all the category’s names.

Additionally, some aspects did not have to be translated such as the shelfmark, extent, dimensions, and bibliography.

In order to complete the description in each language, the database entry has to be copied manually into all languages. Due to this fact, there may be shown different numbers of manuscripts under each language. This reflects the progress in translating the descriptions and which will be completed in short time. The full, academic metadata will not be translated into the other languages but will be provided in the national language(s) of each participating library.

In a forthcoming version of the site it will also be possible to search by Title, Author, Shelfmark and Place of Origin.
In each manuscript record, there will be a link to the full academic metadata in the original language of the institution and a link to the full digital surrogate in the local digital library.

Where norm data has been applied, which is for personal and place names, a link will be presented to the norm data entry from which then the original norm data can be accessed.
TGN example for Saint-Omer

The website is run by a user-friendly Content Management System (Drupal) which allows any staff member to easily add or change content on the dynamic site.
4.3.3 Local presentations

Europeana Regia is presented in different European languages on the systems of the participating libraries. Each participating library will offer a complete digital surrogate of the manuscripts on its website. The local digital library is the only place where the manuscript will be accessible in full, with a complete set of technical metadata helping the final user to find his way through the digital object (such as page or folio numbers for example).

In most of the libraries, there is a direct link permits to present the Europeana Regia corpus; other libraries will create a special file for the project.

Access to the digital objects includes:
- Access via the digital library: the search criteria are based on the search fields in bibliographical records in Dublin Core format. A full text search can also be provided to the users when the text has been either ocrerised or manually entered.
- Access via the catalog: this kind of research can provide more search criteria as the used format (mainly MARC21, UNIMARC or INTERMARC) has more bibliographic fields and could also give access to the authority records.

<table>
<thead>
<tr>
<th>Library</th>
<th>Direct link to Europeana Regia Corpus</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bibliothèque nationale de France</td>
<td>Complete corpus : <a href="http://gallica.bnf.fr/Search?ArianeWireIndex=index&amp;p=1&amp;lang=FR&amp;q=RegiaCarol+OR+RegiaCharlesV+OR+RegiaAragon">http://gallica.bnf.fr/Search?ArianeWireIndex=index&amp;p=1&amp;lang=FR&amp;q=RegiaCarol+OR+RegiaCharlesV+OR+RegiaAragon</a></td>
</tr>
<tr>
<td></td>
<td>Carolingian manuscripts : <a href="http://gallica.bnf.fr/Search?ArianeWireIndex=index&amp;p=1&amp;lang=FR&amp;q=RegiaCarol">http://gallica.bnf.fr/Search?ArianeWireIndex=index&amp;p=1&amp;lang=FR&amp;q=RegiaCarol</a></td>
</tr>
<tr>
<td>Biblioteca Histórica de la Universitat de València</td>
<td><a href="http://roderic.uv.es/handle/10550/2407">http://roderic.uv.es/handle/10550/2407</a></td>
</tr>
<tr>
<td>Bibliothèque royale de Belgique</td>
<td>At this point there is not yet any direct link to the Europeana Regia Corpus on Belgica. Each manuscript has its own URL.</td>
</tr>
</tbody>
</table>
The BnF offers access to the digital library “Gallica” started in 1997 which contains today more than 1,500,000 digitized objects: more than 307,000 books, 812,000 volumes of journals, 21,300 maps, 11,600 manuscripts, 4380 sheets of music etc. Manuscripts in Gallica are accessible for free, with a zoom function that allows users to see images in full high-resolution. Middle resolution JPEG images or PDF can also be downloaded.

Associated with the BnF, some French libraries will provide access to their manuscripts via Gallica:
The municipal libraries of Amiens, Besançon, Bourges, Grenoble, Louviers, Reims, Rouen, Valenciennes and Lyon, the Society of Science, Arts and Literature of Aveyron in Rodez, and the Sainte Geneviève and Mazarine libraries in Paris.

The base address to access the Europeana Regia corpus in the local database is http://gallica.bnf.fr/Search?ArianeWireIndex=index&p=1&lang=FR&q=RegiaCarol+OR+RegiaCharlesV+OR+RegiaAragon

Clicking on “Informations détaillées” will show the core metadata on the manuscript.
Access to the manuscript will be possible with the links “Accéder au document” and “Feuilleter”. The digitised manuscript will open in the local viewer.

Zoom mode is possible by clicking the magnifier icon in the upper left corner.
The base address to access the Europeana Regia corpus in the local database is http://daten.digitale-sammlungen.de/~db/ausgaben/uni_ausgabe.html?recherche=ja&ordnung=sig&projekt=1263566068&l=en

Clicking the URN will open the OPACPlus with core information on the manuscript.

BSB, Clm 52
Clicking “Alle Titeldaten” in the tab of the lower box will show all information on the manuscript.

The option “Online lessen” will give access to the digitised manuscript.
Further information on the manuscript is available at the German national database “Manuscripta Mediaevalia. A link to this information is given in the OPAC under “Handschriftenkatalog”. Clicking this link will open the Manuscripta Mediaevalia website and list the catalogues, which –for the moment- are available mainly as digital images of the catalogue.

**Manuscripta mediaevalia**

**HIERBRAUER, Katharina:** Die vorkarolingischen und karolingischen Handschriften der Bayerischen Staatsbibliothek: Textband. - München: Fink, 1990

**Seite a63**

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**Clm 52**

Ps-Clemens Romanus, Recogniciones. Varia

Regensburg, 820-840

Abb. 225

3.3.3 Biblioteca Histórica de la Universitat de València

The base address to access the Europeana Regia corpus in the local database is http://roderic.uv.es/handle/10550/2407. Once the user arrives there, she will be provided with a list of digitised manuscripts.

Clicking one of the links will open a window with preview information about the manuscript, including both core metadata and a preview image.
Clicking the image will open another window and present the digitised manuscript in the manuscript viewer. 
**Digitised manuscript BHUV, Ms. 53, opened from Europeana**

Clicking the image will enlarge the view and allow users to browse through the digitised manuscript. **BHUV, Ms. 53, Single page opened**

Selecting the zoom mode allows for closer inspection of the manuscript. **BHUV, Ms. 53, Zoom modus**
A link to the “Catalogue” in the upper left corner will allow to see the manuscript information in yet another setting, this time the OPAC of the library. TROBES is the name of the University of Valencia Library Catalog in which all the library materials (books, journal, theses, maps, e-journals, databases, e-books...) are searchable and available online.

BHUV, Ms. 53, Catalogue view

Metadata can be accessed directly in the MARC format.

BHUV, Ms. 53, Catalogue view, MARC format
The base address to access the Europeana Regia corpus in the local database is http://www.hab.de/mss/. Once the user arrives there, she will be provided with a list of digitised manuscripts.

Clicking one of the links one gets to the main page for the manuscripts which presents the most accurate and up-to-date information together with bibliographical links to existing manuscript descriptions.
Clicking one of the links in the bibliography will take the user to the catalogue text accompanied by the digital facsimile. All descriptions can be accessed as the original XML format, provided by a link in the upper right corner.

Navigation in the digital facsimile is possible in the right frame. A click on “Faksimile in der WDB” leads the user to the presentation of the manuscript in the local digital library.

3.3.5 Bibliothèque royale de Belgique

For the moment, the manuscripts can be consulted thanks to an independent viewer, in the expectation of their integration into BELGICA, the digital library of the KBR.
4.3.4 Portals

At a regional or national level, some web portals will also give access to the Europeana Regia corpus.

3.4.1 The European Library (TEL)

The European Library is the aggregator for the project. TEL collects metadata from all participants and does a bunch delivery to the Europeana portal. The TEL portal will then present a complete set of all Europeana minimal records converted into a common format. It provides a basic and an advanced search with the following criteria: title, creator, subject, type, language. TEL will also create a special page to present the Europeana Regia corpus with a description and a set of images. Each record hosted in TEL will offer a direct link to the full surrogate in the local digital library.

3.4.2 CERL

CERL is the Consortium of European Research Libraries. In the search for an aggregator for Europeana Regia to Europeana, CERL had been an option. Nevertheless, in medium time some or all manuscript information compiled in the Europeana Regia project might end up in the CERL portal anyway. Not least because some of the project partners are partners for CERL and already deliver data. The CERL portal can be accessed at [http://cerl.epc.ub.uu.se/sportal](http://cerl.epc.ub.uu.se/sportal)
3.4.3 Manuscripta Mediaevalia

Manuscripta Mediaevalia is a nationwide German national portal that gives access to academic records in German about manuscripts held in German or German-speaking institutions. The website provides quite an extensive search engine and a direct link to the full digital surrogate on the local digital library. This portal will be the main repository for academic records of the Europeana Regia manuscripts for German institutions, while their local catalogue hosts minimal metadata.
5 User needs and expectations

The following target users have been identified for the project: students, scholars, and all those interested in medieval European culture. The project is considered to be especially relevant for:

- art historians,
- historians,
- the general public interested in European history in relation to other cultures, art, royalty, or fine books,
- local history or genealogy, in education, literature, and the survival of books over the centuries,
- university and secondary-school students of history, English, French, Italian, German, Latin, Theology, and the arts,
- creative industries,
- publishers of Art books,
- artists and designers, including electronic and web designers.

According to the information on user expectations, the main aspects of quality can be summarized in the following way:

- high optical quality of images,
- completeness of the data,
- faithfulness to the original,
- quality and reliability of metadata, here with an emphasis on working links.

Other user expectations are related to the integration and presentation of the images on the World Wide Web:

- search engine optimization,
- retrievability through metadata,
- unproblematic interaction with internet software,
- adequate display options in the viewers (e.g. two pages per screen, accessibility e.g. through scalability),
- open access,
- reusability…

5.1 Interest shown by the target audience of the Europeana Regia project

During the project, a qualitative study was conducted by the Bibliothèque nationale de France to determine and rank the expectations and needs of the current and potential users of medieval manuscripts on line. Focus groups were organized in three of the project’s partner libraries from May to November 2010: the Bibliothèque nationale de France, the Universitat de València Biblioteca Històrica (BHUV) and the Koninklijke Bibliotheek van België/Bibliothèque royale de Belgique (KBR). Each focus group was dedicated to one of the user categories primarily targeted in the project:

- researchers and scholars;
- History, Art and Applied Arts teachers in high schools;
- the “interested general public”, such as users of the digital library Gallica⁵.

The French part of the study was commissioned to the company OUROUK whose findings served as the basis for writing the final report⁶, with the addition of the results of the Belgian and Spanish studies, led by staff at the BHUV and KBR with their own specific methods. A total of sixty people were interviewed in three countries.

A project to digitise rare collections from around the world arouses keen interest with the researchers and teachers interviewed.

Easy access to a large collection of manuscripts, most of which are difficult to consult (because of their great value and their state of preservation), completely digitalised in high definition, makes Europeana Regia a

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⁵ http://gallica.bnf.fr
⁶ The French study was conducted in two stages: 1) eight initial interviews, face to face or by telephone (90 minutes on average) destined in particular to draw up a guide for leading the focus groups; 2) three focus groups filmed (150 minutes on average) with the following populations respectively: 7 researchers, 4 teachers, 10 representatives from the “interested general public”. 
“fascinating” project keenly awaited by researchers\(^8\) in particular. They highlight the importance of being able to virtually reconstitute a collection that is spread throughout different countries. They are interested both for research facilities (not to have to go from one library to the next) and for different “knowledge effects”: to be able to make comparisons on screen, to put manuscripts side by side, beyond institutionally and academically defined collections and fields. “We are often experts in a specific corpus. Here we have an opportunity to extend our view, to observe other perspectives”; “Research by images could help with comparisons, with new perspectives, difficult to do manually.”

For high school teachers, the digital mode allows various uses (in the classroom by the teacher or at home by the student) and encourages group projects which elicit ideas for discussion well beyond the classroom context: educational projects with teachers of other disciplines or even with other schools in different countries (“It can allow students of European classes in different countries to work together”). Educationally, a site like Europeana Regia helps students to look differently at Internet and its uses: “We can show the links that the Internet provides between analogical and digital.” “It’s quite funny to imagine high school kids looking at medieval manuscripts thanks to the Internet”. In return, the Internet emphasizes the notion of a common cultural heritage at European level: “This will enable us to get across the notion of a common cultural heritage, especially in European classes”.

The sample of “interested general public” chosen for the French study included people who visit exhibitions, museums and other cultural institutions more or less regularly and who enjoy beautiful books. The types of people were deliberately selected in socio-professional categories completely different from those of traditional users of the French national heritage trust \(^9\), with whom however they share the same level of higher education. This particular “interested general public” would only be interested in consulting medieval manuscripts (non translated at that) and illuminated manuscripts from time to time, most often through external events: an exhibition, a visit to an ancient library or research for a hobby, for example; some also said they wanted to help their children and grandchildren in their schoolwork and stimulate their curiosity in art and history. This mixed, volatile group is more difficult to attract and needs considerable mediation to “understand what it’s about”: “Who commissioned these manuscripts, why were they written, what are they about?”. The illuminated manuscripts and the research possibilities are a strong incentive for this target group: “This project reminds me of that wonderful exhibition [at the BnF] “Quand la peinture était dans les livres” [1993]. I think that high quality images are the main point of interest for a neophyte”; “What will people be able to understand if they don’t have the translation? What is the point of leafing through manuscripts if not for the pictures? Comments are essential”. They express the need not only to be able to understand what they see, but also to be able to move around within a space. We must explore a corpus as you would visit an exhibition or take a walk: “It should be approached like an exhibition: I must get the feeling that I will understand something, that I’m going to be drawn into a different world”; “if the site is well done, it should make us want to wander round, to look at a manuscript”.

Yet the initial telephone interviews with two municipal librarians show a specific category of general public, distinct from that interviewed directly in the study: an “enthusiastic general public”. These are mainly senior people, captivated by the manuscripts and the related disciplines (palaeography, codicology and medieval calligraphy and iconography), but it also includes bibliophiles, genealogists, amateur historians or local scholars, working for personal reasons on a place, a region, a person, etc. For these reasons this category would no doubt use the Europeana Regia website, and seems much closer to the profile of regular users of sites like Gallica\(^10\).

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\(^7\) Texts in inverted commas and italics correspond to verbatim reports collected during the interviews and focus groups.

\(^8\) The “researchers” focus group included seven researchers in the following disciplines: medieval history, history of texts (illuminated and liturgical manuscripts), art history and codicology.

\(^9\) The “interested general public” focus group included: 1 school librarian (aged 29), 2 business managers (53 and 55), 1 head of digital publications (58), 1 publisher (49), 1 graphic designer (39), 1 scriptwriter (59), 1 consultant (42), 1 student in communication (25), 1 writer (66).

\(^10\) Cf. OUROUK study: “Evaluation of the tests to provide protected works via the BnF Gallica 2 digital library”, Final report, March 2009: “Nearly 60% of regular users of Gallica declared an occupation that implied frequent or even considerable documentary research: professional and amateur researchers, doctoral students, students (36%); high school and university teachers (11%); journalists, writers, librarians, school librarians (11%).”
5.2 Details of the expectations

5.2.1 Scientific information: the researchers

The minimum requests from researchers focus on the traditional tools in library research: introductions to the corpus, catalogues and records. First of all, nothing must be removed from what can be obtained by library consultation: image quality and the quality of records etc. Must remain intact. As one researcher provocatively said: “À la rigueur, the website could stop at manuscript call numbers and high definition images (plus a few tools to look at them). The rest is mere luxury”.

More precisely, researchers are hoping for scientific introductions to the project and the corpus, but also for areas of research (the texts, illuminated manuscripts, writings, codicology, etc.), plus a bibliography. The library catalogues where the corpus documents originate must be consultable, in general and from a given document. Finally, the bibliographic and catalogue records should be as full as possible, giving details in particular of the incipit, the colophon and the ex-libris.

The great majority of researchers would like the librarians’ cards to be made available in image mode, as their transcriptions are too often marred by mistakes. One researcher would also like a version in “a format that can be used digitally”.

For the illuminated manuscripts, they request “a very high level of description for the images, using a thesaurus”, indicating 1) what is shown; 2) the context into which the illuminated manuscript is placed (exact place, environment, etc.); 3) its relation with the text. Spanish academics however see great difficulty in reaching a standard description here.

In addition to these minimum requirements, researchers are interested in any additional scientific information: scientific presentation of the project and the corpuses; a bibliography pertaining to each corpus and manuscript; a summary of the work done on each corpus and the manuscripts (origin and progression of the document in time and space, production centres and exchanges, manufacturing processes, etc.). This additional information could come from other resource sites, which would require careful examination of the interoperability and shared metadata with new partner sites (you have to “harvest and be harvestable”).

Finally, requests described as “ideal” emerged: a visual representation of the spatial organization of the manuscripts in the kings’ libraries concerned, at different periods; or perhaps a map of the production centres and their exchanges. These expectations express the wish for new viewpoints of the manuscripts and the hope of detecting hitherto unseen aspects: “The view map would bring to light a new historical awareness and would offer new avenues of research”. This implies that digitising is likely to produce specific knowledge effects.

5.2.2 Editorializing the content: teachers and interested general public

Two principal requests transpired to allow the “interested general public”, and the teachers and their students to gain a greater understanding of a corpus such as that proposed in Europeana Regia: general introductions and targeted projects.

First of all, it must “provide the keys for understanding”. In particular, considerable educational preparation is expected, especially introductions to the following notions: the manuscript as an object (different forms, how they were made); the periods covered; the scriptoria (implantation, organization, function); a king’s library (layout, composition, how books were acquired); calligraphy; illuminated manuscripts; authors (placed in a historical point of view to avoid anachronisms with the modern idea of an author); types of text; palaeography.

For the general introductions, teachers and the interested general public would like contents “with different levels of difficulty”: the first level should be short and simple, well illustrated, referring to a consultation of the manuscripts, to which could be added a more detailed text “for more information”, with bibliographies, webographies or filmographies. Teachers point out the risk of it being used exclusively for complex indexation, especially for the illustrations, which would prevent their being looked up by a public of neophytes who are notfamiliar with this vocabulary.

The educational aspect does not have to include a presentation of each manuscript. It could be restricted to pivotal works that are “representative and of greatest interest for the general public”. Two particular points of interest for a non-specialist public are highlighted: illustrations (“The possibility to search for illustrations is a marvellous tool that would allow us to make the students work on representations.”) and the material aspect of
the manuscripts (“The public is fascinated by the form of the manuscripts, where and how they were produced”). The public, and in particular the newly retired generation, is increasingly interested in paleography.

In addition to these general introductions, there is a need for “a variety of access points to the contents: traditional, original, or even amusing”. These different means must be visible on the home page, which should not merely inform but “call out”, “arouse our curiosity”, with considerable effort given to the “aesthetics” to be pleasing to the eye. The importance of these “gateways” stems from the observation that the general public and some high school teachers do not know what to look for a priori. So it is important to suggest programs, selections, points of view, etc. The teachers are all the more insistent on these points if the period is insufficiently or badly covered in the schools, especially in France11. Although a desire to “wander” from one manuscript to another is expressed, there is a fear of the unknown environment: “Browsing must be easy and well marked. We must get the impression of a finite ensemble, where we will not get lost”. The freehand, intuitive progression also requires a precise framework: progressing “on request” in developments, with access to additional information, etc.

Finally, there is a request for interactive or fun multimedia activities: virtual exhibitions (“a king’s library”, “how a manuscript is produced”, “how a book came about”); discovery programs (pertaining in particular, and especially in France, to the disciplines exploring new school curricula: “Art, creation and culture”; “Art, myth and religion”; “Art, the State and power”, etc.); analyses of images, or of pages of writing; brief video presentations of a subject by a researcher (calligraphy, palaeography, codicology, etc.); readings of extracts from manuscripts in the original language with the text at the same time.

More generally, the editorial approach must resonate with the current preoccupations of the target public: “The antique corpuses must be brought to life and must at any cost avoid remaining stuck in their own time warp. This can be done by demonstrating the links and continuity between the people living in that period and modern times.” “Common situations and issues must be shown as being connected to those of today.” These links must not be only in the mind, but also and especially in the flesh: “The relationship between the public and the documents must be affective.” “The copyists, authors and commissioners must be brought to life.” It is essential to remove the academic distance which emphasizes the serious, solemn nature of a period, in order to also get across the “trivial” nature.

5.2.3 Search methods in the corpus and presentation of the results

For the researchers, the multilingual nature of the corpus raises the problem of linguistic equivalences and the different spellings of proper nouns, which could require management of the authority lists. The search engine is therefore expected to suggest words and expressions as letters are typed (predictive typing) and when it is complete (other possible spellings).

Researchers would like to be able to search the incipit of the second and penultimate pages, the colophons and the ex-libris.

To access the list of available works, the following indexes were suggested:

- corpus (The Biblioteca Carolina, the Charles V Library, the Library of the Aragonese kings of Naples);
- archives (partner libraries);
- fields (Theology, Philosophy, science, literature…);
- names of people linked to their roles in relation to the manuscripts (commissioners, authors, translators, owners, etc.);
- names of works and themes;
- production centres of the manuscripts;
- periods (ordering, writing, translation, copy, acquisition) “Imagine I was in the Charles V library at such and such a time: what works would have been there?”;
- elements of the material aspect of the documents (with rule marks, with stitching marks, etc.).

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11 In 7th grade (history of art from the 9th to the 17th century, study of a text from the Middle Ages); in 10th grade (a text in French, the work and image in Plastic Arts, the medieval town as an option in Art History); in the Applied Arts section of 11th grade (from prehistory to the Industrial Revolution); and in the literature section in 12th grade (a work from antiquity or the Middle Ages). The new French school curricula for 2010-2011 also include a “history of books”, in the French lessons from 10th grade, and will offer “exploratory lessons” including some to encourage studying aspects of medieval culture.
The list of results must supply, at first sight and on one single page, enough information to allow for an intelligent choice: “A good list of results must allow you to find the documents that are likely to correspond to what we are looking for without clicking or tooltips”. The list on the Persée website is given as an example. In particular, the first page of the manuscript must be displayed in the list of results and you must be able to enlarge it without exiting the list. The complete bibliographic record of a document must be visible from the result, in a new window (rather than a different screen). Above all, researchers want to limit having to switch between the list of results, the bibliographic records and the actual document.

As we have seen, the high school teachers and the interested general public are keen on multiple entries to the texts and illuminated manuscripts, through indexes and selected themes for documents, inspired in particular by the curricula: “Examples for using the database should be provided”. Some examples of entries into the corpus using documentary themes were suggested: “royal authority”; “chivalry”; “bestiary”; “recipes”; “medicine”; “everyday objects”; “trades”; “architecture”; “fashions”; “jewellery”; “furniture”; “tools”; “school books”; “translated manuscripts”; “calligraphy”; “glosses and annotations”; “one letter”; and via indexes (those of the Illuminated manuscripts database in the French Culture Ministry are given as examples): “kings and queens”; “authors”; “types of texts”; “image themes”; “events”; “places”. A search engine would be used more for searching for illustrations (a character, an animal, or a place, etc.).

5.2.4 Viewing and manipulating documents

Standards for this are much higher and more precise in the researchers’ groups than in the other groups. They see this type of project as a means to avoid having to actually go to the libraries where the works being studied are held, but also as a means to see elements that in situ consultation would not allow. One important point for the researchers is that the pages must load very quickly (Google Books is given as an example). Navigation between the list of results and the documents, and also within each document, must be flexible and fluid: “Viewing a manuscript on screen must provide us with exactly the same opportunities as when we are actually holding it in our hands.”

More precisely, to view and manipulate pages of a manuscript, researchers ask:

- to have a choice between the different consultation modes: a continual flat plan (vertical like Google Books and horizontal); mosaic (with the possibility to increase the size of the thumbnails and therefore reduce the number per line); books to leaf through (mainly the interested general public, but not exclusively: “It’s fun the first time, but it soon becomes tedious”); tables of contents with marked supplements if any; direct access to a given page via the list of folios; marking of remarkable pages in the manuscript (requested by the teachers);
- a (very) high resolution for the images. Both to be able to see a close-up view to “observe with great accuracy the material aspect of the document we are looking at: the grain of the page, the ink, the folds, etc.” And to have very high quality images to incorporate into scientific articles.

Among the tools allowing visitors to view the pages as closely as possible, enlargement is considered “essential”: the first level of page enlargement must be fully contained in the screen view to see it as a whole; it must be possible to enlarge the whole page, which must be movable on the screen; the zoom must be gradual, preferably “guided by the user” and not by imposed increments; a magnifying glass must applicable wherever you want on the page.

Two other tools are listed as “desirable but not essential”:

- Scale and measurement: the scale of the document viewed, vertical and horizontal, permanently displayed, even when the image is enlarged; an electronic ruler to measure the distance between the two elements on a given page;
- contrast and luminosity: to be able to work on the contrasts and the luminosity of an image (cf. The now standard tools for touching up photographs); colour filters available (a Wood’s lamp) which show parts that are difficult to read or which are even invisible to the naked eye.

12 http://www.persee.fr
13 http://www.enluminures.culture.fr/
Finally, three tools were mentioned by French researchers only:

- functions to correct undulations and rounded pages, as offered by certain scanners;
- 360° rotation of the page to make it easier to read glosses and annotations;
- tools to facilitate comparisons and perspectives: placing side by side different pages of one work, or even from different works; transcription and translation of the texts should be presented for a selection of works and placed opposite the original text; the possibility to open two works on the same screen; creation of a mosaic of pages selected by the user.

Most of these tools to view and manipulate pages are considered relevant to observe the manuscript as an object. Added to that, the material aspect of the manuscript must be formally and accurately described with (numerous) photographs taken by specialists in the field (“Only book-binding specialists know what needs to be photographed and how. Photographers should be provided with expert guidance.”). A 3D view of the manuscripts, with the possibility to rotate them in all directions and a permanently visible scale, would also be of real interest.

5.2.5 Peripheral tools and collaborative sections

Four peripheral tools and services were mentioned in the interviews:

- A personal storage space for results: whatever the public, this means storing and consulting the search hits in a personal area (a “basket”), while the session is open (interested general public) or for a longer time (researchers and high school teachers). Additional tools for annotating or bookmarking, etc., were not mentioned;

- tools for exporting data: downloading (PDF format) a whole manuscript (low definition) and pages (low and high definitions), and exporting lists of results and records (CSV, XML, EndNote, or even PDF);

- tools for indicating or sharing: the principle of permalinks and exportable labels is considered useful to integrate resources into a digital workspace, wiki, blog, or personal website. The standard “Bookmark and share” tools found in social network sites were mentioned by a respondent in the “interested general public” group;

- high definition printing of pages on request and the possibility to purchase Facsimiles at a reasonable price.

For the collaborative sections, researchers and high school teachers were asked if they would be willing to participate in adding to the site contents. Answers from the researchers depended somewhat on their country of origin. The French researchers would be willing to point out a bibliographic or webographic reference or a mistake in a record, pass on an off-print, etc., on condition, however, that “it is very simple, fluid and quick”. For example, a button on every page to call up a pop up form (cf. The “Notify a problem” link in Persée, with the possibility of attaching a document). The Spanish researchers and university professors are more open to working in collaboration, and mentioned in particular the possibility of making their students take part in adding to the contents, under the supervision of the experts: “The collaboration must be centralized. All the contributions to the website should be approved by the researchers in charge of the project”.

The high school teachers would be interested in the idea of contributing and see it taking two forms: passing on worksheets, or even teaching sessions they have prepared in relation to a document or a theme; and passing on work done by their students (“it would be very stimulating and encouraging for the students to be able to show their contributions to a site such as this”). They recommend that the teaching resources available should be indexed according to the relevant school levels (elementary school, junior high school, high school). It could all be put together in a specific blog: “It is useful to have access to both the Europeana Regia corpus and the related educational works.”

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14 Permanent URL type link to reach a given document.
15 Tools allowing you to add a page to your favorites and share it in your networks.
5.3 Conclusions

The study has confirmed the considerable interest of researchers and academics in this project, but has also pointed out their demanding standards. Compared to the existing offer on other sites, their requests are less concerned with new functionalities than on how well the tools perform, the speed of access and how exhaustive the information would be. All of these requests are based on their regular frequentation of other sites referred to positively or negatively during the discussions (Persée, e-codices\textsuperscript{16}, Gallica, etc.). Researchers are accustomed to working on the web and can therefore choose and compare what is on offer in the field of online manuscripts.

For History, Art and Applied Arts teachers in high schools, the project is seen as an excellent potential teaching aid, but it would require suggestions for courses, themed presentations, selections (remarkable pages) and a considerable effort to provide mediation (translated passages, reading in the original language, video conferences by specialists, analyses of pages). It is important to encourage them to browse around, in and through a pre-marked space. A few key works could be presented in great detail, perhaps interactively, and the rest of the digitized corpus could be part of a more general approach. The idea of being able to add value to the site, particularly by publishing work done by their students, was very attractive.

Interest in the project is less marked in the “interested general public”, who would only consult medieval manuscripts and illuminated manuscripts from time to time, often motivated by family or cultural events. The illustrations are the main attraction for this public. However, because this category is mixed and volatile, it would not be relevant to offer them a specific section, as the proposal made to teachers should also be appropriate for them. Within the interested general public, however, there is one category very interested in the project, already identified among the users of cultural or online libraries (for example Gallica): a population of seniors, fascinated by the process of how manuscripts are produced, calligraphy, palaeography, etc.

\textsuperscript{16} http://www.e-codices.unifr.ch
6 Technical aspects

The project is not based upon the development of a specific solution. It makes use of interoperable platforms and standards, such as XML formats for the description of manuscripts and illuminations, and OAI-PMH for the harvesting of data.

6.1 Metadata

Manuscript description has a long tradition. Since centuries scholars and librarians have described the contents, the physical appearance, and the history of manuscripts in order to allow for scholars and interested users to find in the manuscript collections the texts or for some other reasons such as ownership creation processes and the like the manuscripts they were interested in. Cataloguing rules and habits have been consolidated and laid down in cataloguing rules such as:


Cataloguing guidelines define what information should be collected about a manuscript. Encoding schemes on the other hand define how to encode these information collected. In the scope of the project, the following encoding schemes and standards have been examined:

- Encoded Archival Description (EAD)
- MAchine-Readable Cataloguing, Concise Format for Bibliographic Data (MARC)
- Text Encoding Initiative (TEI)

Until recently these catalogues were meant to be published in print in the first place. Converting them to digital versions means to store them in formats such as EAD, MARC, or TEI. Often the original descriptions have to be adapted to fit properly into the electronic formats. Even if newly generated, born-digitally prepared, and meant to be stored in databases and published in the internet in the first place, the formats may have its special needs to store the information about the manuscripts.

Europeana Regia is the result of the collaboration between five important European libraries which apply varied rules of description and use different encoding metadata formats (TEI, EAD, MARC 21). Several elements of common metadata have been defined, in order to allow an integrated search in manuscript collections of Europeana Regia. These metadata are considered as minimal description (core metadata of Europeana Regia) relevant for basic search by the users.

Academic metadata, i.e. full scholarly manuscript descriptions for academic users, have been enlisted in the frame of the project. However, important variations still exist due to the history of each collection, differences in metadata encoding formats and description process among the partners.

Core metadata for manuscript description have been defined to identify and describe the manuscripts. Cf. chapter 4.1
6.2 Digitising manuscripts

The Recommended Quality Parameters, which have been agreed upon in Europeana Regia, are the following:

- The digitization of manuscripts from the original should always be in colour. Nevertheless, digitization in black and white are only be recommended for mass digitization of manuscripts from black and white microfilms.
- A minimum resolution of 400 dpi is recommended. For images already in existence, a resolution of 300 dpi may be sufficient. In justified cases (e.g. for small details such as watermarks or for large formats), a resolution up to 600 dpi may be required.
- Digitization should include metrical and colour targets (depending on the choice of the digital library, these charts and targets may not be displayed for the general audience but are stored in the system and can be furnished if requested by professional users).
- The use of colour management software (ICC profiles) is recommended.
- The books must be digitized entirely, including front and back covers, fly-leaves and empty leaves. If feasible (i.e. if conservational aspects or format are not obstacles), the spine and the edges should be included.
- Watermarks are digitized in separate files.
- Thumbnails.

Parameters for the display of digital images include:
Conversion of the TIFF files into JPEG/PDF for web display.
Viewer: Often viewers are already in use in institutions. In addition, different viewers or devices may be used to display individual manuscripts (e.g. turning the pages).
Definition of an image (which is not necessarily the first image) to be presented in Europeana Regia – one definition may be the first written page.
Thumbnails
7 Bibliography


• ENRICH ODD. http://tei.oucs.ox.ac.uk/ENRICH/Deliverables/ENRICH_D_3_1_TEI-spec.pdf


• TEI Consortium, eds. TEI P5: Guidelines for Electronic Text Encoding and Interchange. TEI Consortium.
### 8 Glossary

<table>
<thead>
<tr>
<th>Label</th>
<th>Meaning</th>
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<tr>
<td>BNE</td>
<td>Biblioteca Nacional de España</td>
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<tr>
<td>CERL</td>
<td>Consortium of European Research Libraries. <a href="http://cerl.epc.ub.uu.se/sportal">http://cerl.epc.ub.uu.se/sportal</a></td>
</tr>
<tr>
<td>EAD</td>
<td>Encoded Archival Description. <a href="http://www.loc.gov/ead/">http://www.loc.gov/ead/</a></td>
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<tr>
<td>ENRICH</td>
<td>European Networking Resources and Information concerning Cultural Heritage. ENRICH was a project funded under eContent+ programme. <a href="http://enrich.manuscriptorium.com">http://enrich.manuscriptorium.com</a></td>
</tr>
<tr>
<td>e-codices</td>
<td>e-codices. Virtual Manuscript Library of Switzerland. 2005-. <a href="http://www.e-codices.unifr.ch">http://www.e-codices.unifr.ch</a></td>
</tr>
<tr>
<td>GND</td>
<td>Gemeinsame NormDatei. A joint controlled vocabulary, maintained by the German national library. It incorporates three, former separate authority files: Personennamendatei (PND), Schlagwortnormdatei (SWD), and Gemeinsame Körperschaftsdatei (GKD). <a href="http://www.d-nb.de/standardisierung/normdateien/gnd.htm">http://www.d-nb.de/standardisierung/normdateien/gnd.htm</a></td>
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<tr>
<td>IconClass</td>
<td>Iconclass is a classification system designed for art and iconography, maintained by the Netherlands Institute for Art History. <a href="http://www.iconclass.nl">http://www.iconclass.nl</a> [IconClass browser: <a href="http://www.iconclass.org">http://www.iconclass.org</a>]</td>
</tr>
<tr>
<td>LCSH</td>
<td>Library of Congress Subject Headings. <a href="http://id.loc.gov/authorities/">http://id.loc.gov/authorities/</a></td>
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<tr>
<td>MAB</td>
<td>Maschinelles Austauschformat für Bibliotheken</td>
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<tr>
<td>MM</td>
<td>Manuscripta Mediaevalia. <a href="http://www.manuscriptamediaevalia.de">http://www.manuscriptamediaevalia.de</a></td>
</tr>
<tr>
<td>MARC</td>
<td>Machine-Readable Cataloguing, Concise Format for Bibliographic Data (MARC21) <a href="http://www.loc.gov/marc/">http://www.loc.gov/marc/</a></td>
</tr>
<tr>
<td>PURL</td>
<td>Permanent Unified Resource Locator</td>
</tr>
<tr>
<td>Label</td>
<td>Meaning</td>
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<tr>
<td>-------</td>
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<td>TGM</td>
<td>Thesaurus of Graphic Materials. <a href="http://id.loc.gov/vocabulary/graphicMaterials">http://id.loc.gov/vocabulary/graphicMaterials</a></td>
</tr>
<tr>
<td>TGN</td>
<td>Getty Thesaurus of Geographical Names, a structured vocabulary of geographic places maintained by the Getty Vocabulary Program. <a href="http://www.getty.edu/research/tools/vocabularies/tgn/index.html">http://www.getty.edu/research/tools/vocabularies/tgn/index.html</a></td>
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<tr>
<td>VIAF</td>
<td>Virtual International Authority File. <a href="http://viaf.org">http://viaf.org</a></td>
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