D7.4: Third Report on Dissemination: Report on Task 7.1 (Year 3)

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http://transcriptorium.eu/

Executive Summary

This document reports the dissemination activities for the tranScriptorium project during the third reporting period of the project.

Contents

1 Introduction

The main goal of WP7 is to bring the scientific and technological results of the TRANSCRIP-TORIUM project to the attention of our stakeholder communities in many different sciences and research fields. In this deliverable we provide an overview of all dissemination activities carried out to this effect during the third year of the project.

In deliverable D7.1 we identified the project's stakeholders in more detail. The dissemination activities defined in that deliverable went on the second year and were reported in deliverable D7.2. During third year we went on addressing the dissemination activities to these identified audiences. A summary of these stakeholders is included in Section 2. Then follows a record of our specific dissemination actions carried out during the M25-M36 period.

2 Dissemination strategy

Dissemination activities were defined in deliverable D7.1 and consolidated in deliverable D7.2. and they addressed three main target audiences: i) the scientific community, ii) the content provider community; iii) a third group, the general public, was identified during the course of the project. In this section we review the stakeholders within these categories that were defined in those deliverables.

2.1 Main target audiences

2.1.1 Scientific community

Within the scientific community, results from the TRANSCRIPTORIUM project were defined as being of interest to other research groups in the fields of Crowdsourcing, Digital Humanities, Computational Linguistics, Handwritten Text Recognition, Image Processing, Document Image Analysis and Pattern Recognition.

A list of events in these areas which we considered important to attend was enumerated in the deliverables D7.1 and D7.2. For the third year, a list of key events was specified and a concrete programme decided upon the partners agreeing to collaborate to enable participation in these events. From this discussion, the following scientific events held in 2015 were concretely identified as the most relevant:

- **IbPRIA:** *Iberian Conference on Pattern Recognition and Image Analysis* is a relevant conference for Pattern Recognition in general. TRANSCRIPTORIUM was present in this event.

- **ICDAR:** *International Conference on Document Analysis and Recognition* is an outstanding international forum for researchers and practitioners at all levels of experience for identifying, encouraging and exchanging ideas on the state-of-the-art in document analysis, understanding, retrieval, and performance evaluation, including various forms of multimedia documents.

- **HIP:** *International Workshop on Historical Document Imaging and Processing* is workshop that in the last years has become very relevant for historical documents processing. It is usally held with the ICDAR.

In addition, a series of relevant international journals were identified that use to disseminate the kind of research that is carried out in TRANSCRIPTORIUM:

- *IEEE Trans. on Pattern Analysis and Machine Intelligence*

- *IEEE Trans. on Audio, Speech and Language Processing*

- *Pattern Recognition*

- *Pattern Recognition Letters*

- *International Journal of Document Analysis and Recognition*

- *Computational Linguistics*

- *Computer, Speech and Language*

- *Neurocomputing*

Some articles have been submitted and accepted by these journals, while other are undergoing the review process.

2.1.2   Content providers community and content holder companies

In this section we considered dissemination as a method to encourage the future exploitation of tranScriptorium tools, for which we identified potential end users and companies interested in the final results of the project. The dissemination activities performed for these targeted communities were held by using mainly the Transkribus tool [1] and the TSX tool [2], developed in the project. Both tools integrate the techniques studied and developed in the tranScriptorium project.

The clearest application of the tranScriptorium project to the content providers community is the automated transcription of historical handwritten documents. So, the main target group for dissemination and exploitation efforts are archives, libraries and other cultural heritage institutions and associations.

One of the most efficient ways to reach this community is to apply to give talks at their national and international meetings. Some of these meetings are:

- **DHd-Tagung** This event is oriented to German-speaking people.

- **Digital Heritage.** This event takes place every year and gathers visitors (a few thousands) worldwide.

Another way of reaching this community is to make direct contact with relevant institutions (archives, libraries, and so on), and tranScriptorium took some actions along this line as we describe in Section 3.

Another interesting community to reach are developers of research infrastructure portals (in which the HTR technology could be implemented). In this case, it is necessary to contact them directly and to introduce them the technology and the results in a face-to-face meeting. Some of these portals, which were identified and contacted by tranScriptorium along the third year, were:

- **Europeana.** Multi-lingual online collection of millions of digitised items from European museums, libraries, archives and multi-media collections.

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[1] https://transkribus.eu/Transkribus/
[2] http://www.transcribe-bentham.da.ulcc.ac.uk/TSX/

- **TEL.** The European Library.

- **BL Labs.** The British Library Labs.

- **DARIAH.** European Holocaust Research Infrastructure.

- IMPACT Centre of Competence.

TRANSCRIPTORIUM has kept in contact with most of the centres named above and many others as is descried in Section 3.

2.1.3 Society

In addition to the above-mentioned dissemination activities, the consortium undertook a number of activities designed to make public the results of the project. These included:

- **Website.** A dedicated project site which serves as a central repository for all reports and documentation on TRANSCRIPTORIUM.

- Public dissemination through the social networks.

- Publication of news in the media.

2.2 Internal dissemination

Internal dissemination was also identified as a key factor for ensuring that all partners are kept abreast of recent developments across all seven work packages. As indicated in the Description of Work, meetings have been held twice this year for this purpose. Meanwhile, day-to-day communication is achieved primarily using online communication channels, such as email and Skype. The project website and the wiki have been also used as a platform for data and information exchange among partners.

3 Dissemination Activities

In this section we give a comprehensive overview of all dissemination activities carried out in the TRANSCRIPTORIUM project during the M25-M36 period.

3.1 Dissemination material

3.1.1 Project documentation

In accordance with that agreed as part of the grant agreement, project documentation was developed in collaboration with all partners. A project leaflet[3] was used for disseminating the TRANSCRIPTORIUM tools and results. This leaflet was used to disseminate the TRANSCRIPTORIUM results in several events like the "International Conference on Document Analysis and Recognition (ICDAR)" and the "Digital Heritage" conference which was held in Granada (Spain) from 28th of September to 2nd of October 2015. It was also disseminated through several institutions like the "Biblioteca Nacional de España".

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[3]http://transcriptorium.eu/wp-content/uploads/2014/12/leafletTS.pdf

3.1.2   Project website and other online material

The project website[4] is our main public dissemination tool and is easily accessible. The website presents general project information, the consortium description, scientific publications performed during the project, news about the project and public deliverables.

It also includes several prototypes and demonstrations for the technology[5] which visitors to the website can try in order to understand the research that is being developed in TRAN-SCRIPTORIUM. Moreover, the website has included this year links to the tools developed in TRANSCRIPTORIUM like Transkribus and TSX. In addition, some of the datasets which are being used in the project (for example, see Section 3.2.2) can be downloaded through the project web site.

Website access statistics have been monitored throughout the year. Table 1 reports the statistics for the third year of project.

Table 1: TRANSCRIPTORIUM website access statistics

Number of visits (total)	7,868
Number of unique visitors	5,256
Number of page views	22,302
Average time on site (sec)	154

Table 2 shows from which countries the website has been accessed. It can clearly be seen that TRANSCRIPTORIUM website has attracted a significant number of visits originating from countries far beyond those in which the original project consortium partners are based.

Table 2: TRANSCRIPTORIUM website access statistics per country

Country	**Number of visits**	**% of visits**
Spain	1,220	15.5
United Kingdom	1,051	13.4
Germany	934	11.9
Austria	673	8.6
United States	550	7.0
Netherlands	410	5.2
France	319	4.1
Brazil	238	3.0
Greece	207	2.6
India	188	2.4

TRANSCRIPTORIUM also has profiles on the main online networks, namely, Facebook[6] and Twitter[7].

3.1.3   Prototypes, tools and databases

Several prototypes can be accessed through the TRANSCRIPTORIUM web page. These prototypes show the developments both for interactive transcription and for key word spotting.

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[4]http://transcriptorium.eu
[5]http://transcriptorium.eu/demonstrations/
[6]https://www.facebook.com/tranScriptorium
[7]https://twitter.com/tranScriptorium

The techniques and methods developed in TRANSCRIPTORIUM are integrated into two tools that currently can be accessed for downloading through the TRANSCRIPTORIUM web page:

- Transkribus: this is a java-based tool that includes all the necessary funcionalities to perform the transcription of a collection. It can be downloaded for free and currently there are more than $2,700$ registered users.

- TSX: this web-based platform for crowdsourcing HTR that has access to the HTR server that is used in Transkribus. This platform is being used for transcribing the Bentham collection. The platform has had more than $3,500$ individual visitors from March, 20th 2015. Table 3 shows from which countries the website has been accessed.

Table 3: TSX website access statistics per country

Country	% of visits
United States	28.3
United Kingdom	12.2
China	4.2
Spain	3.3
Japan	2.9
Austria	2.7
Russia	2.7
Germany	2.5

In addition, some of the datasets which are being used in the project can be downloaded through the project web site. These databases have been prepared to allow other researchers to reproduce the experiments which are being carried out in the project and to carry out their own further research activities. The distribution policy for each database depends on the copyright status of each collection.

3.2 Publications and other research dissemination activities

3.2.1 Publication of research results

TRANSCRIPTORIUM has put great deal of emphasis into disseminating its research activity through the usual channels such as international conferences and journals. This is arguably the most effective channel of dissemination.

The following lists give an overview of all papers and communications done by TRANSCRIPTORIUM partners in 2015 (some accepted contributions for 2016 are also included).

Conferences and Workshops

1. N. C. A.P. Giotis G. Sfikas and B. Gatos, *Shape-based word spotting in handwritten document images,* in 13th international conference on document analysis and recognition (ICDAR 2015), 2015.

2. D. Martín-Albo, R. Plamondon, and V. Enrique, *Improving sigma-lognormal parameter extraction,* in 13th international conference on document analysis and recognition (ICDAR 2015), 2015.

3. D. Martín-Albo, V. Romero, and E. Vidal, *Escritoire: a multi-touch desk with e-pen intput for capture, management and multimodal interactive transcription of handwritten dcouments,* in 7th iberian conference on pattern recognition and image analysis (IbPRIA), Santiago de Compostela (Spain), 2015.

4. R. McNicholl and T. Miles-Board, *TranScriptorium: computer-aided, crowd-sourced transcription of handwritten text (for repositories),* in 10th international conference on open repositories (OR2015), 2015.

5. G. Mühlberger, *Digitale Editionen und Verfahren der automatisierten Handschriftenerkennung. Möglichkeiten und Grenzen,* in Editionen und kulturwissenschaftliche Projekte in der virtuellen Forschungsumgebung - Chancen und Herausforderungen. 22. Jahrestagung der ITUG vom 7. bis 9., Weimar (Germany), Oct. 2015.

6. J. Puigcerver, A. H. Toselli, and E. Vidal, *A new smoothing method for lexicon-based handwritten text keyword spotting,* in 7th iberian conference on pattern recognition and image analysis (IbPRIA), Santiago de Compostela (Spain), 2015.

7. J. Puigcerver, A. H. Toselli, and E. Vidal, *Probabilistic interpretation and improvements to the hmm-filler for handwritten keyword spotting,* in 13th international conference on document analysis and recognition (ICDAR), 2015.

8. J. Puigcerver, A. H. Toselli, and E. Vidal, *ICDAR 2015 competition on keyword spotting for handwritten text documents,* in 13th international conference on document analysis and recognition (ICDAR), 2015, pp. 1176-1180.

9. V. Romero, J. A. Sánchez, V. Bosch, K. Depuydt, and J. de Does, *Influence of text line segmentation in handwritten text recognition,* in 13th international conference on document analysis and recognition (ICDAR), 2015.

10. V. Romero, A. H. Toselli, J. A. Sánchez, and E. Vidal, *Handwriting Transcription and Keyword Spotting in Historical Daily Records Documents,* in 12th international workshop onx Document Analysis Systems (DAS), accepted, 2016.

11. J. A. Sánchez, A. H. Toselli, V. Romero, and E. Vidal, *ICDAR 2015 competition HTRtS: handwritten text recognition on the tranScriptorium dataset,* in 13th international conference on document analysis and recognition (ICDAR), 2015.

12. L. G. N. Stamatopoulos and B. Gatos, *Goal-oriented performance evaluation methodology for page segmentation techniques,* in 13th international conference on document analysis and recognition (ICDAR), 2015.

13. D. K. J. Tanha J. de Does and J. A. Sánchez, *Crossing the lines: making optimal use of context in line-based handwritten text recognition,* in 13th international conference on document analysis and recognition (ICDAR), 2015.

14. A. H. Toselli, V. Romero, and E. Vidal, *Word-graph based applications for handwriting dcouments: impact of word-graph size on their performances,* in 7th Iberian conference on pattern recognition and image analysis (IbPRIA), Santiago de Compostela (Spain), 2015.

15. A. H. Toselli, J. Puigcerver, and E. Vidal, *Context-aware lattice based filler approach for key word spotting in handwritten documents,* in 13th international conference on document analysis and recognition (ICDAR), 2015.

16. A. H. Toselli and E. Vidal, *Handwritten text recognition results on the Bentham collection with improved classical n-gram-HMM methods,* in International workshop on historical document imaging and processing (HIP), 2015.

17. E. Vidal, A. H. Toselli, and J. Puigcerver, *High performance query-by-example keyword spotting using query-by-string techniques,* in 13th international conference on document analysis and recognition (ICDAR), 2015.

18. M. Villegas, V. Romero, and J. A. Sánchez, *On the modification of binarization algorithms to retain grayscale information for handwritten text recognition,* in 7th iberian conference on pattern recognition and image analysis (IbPRIA), Santiago de Compostela (Spain): Springer, 2015, vol. 9117.

19. M. Villegas, J. A. Sánchez, and E. Vidal, *Optical modelling and language modelling trade-off for handwritten text recognition,* in 13th international conference on document analysis and recognition (ICDAR), IEEE Computer Society, 2015.

20. K. Zagoris, I. Patrikakis, and B. Gatos, *A Framework for Efficient Transcription of Historical Documents using Keyword Sppoting,* in International workshop on historical document imaging and processing (HIP), 2015.

Publications in journals

1. F. Álvaro, F. Cruz, J. A. Sánchez, O. Ramos, and J. M. Benedí, *Structure Detection and Segmentation of Documents Using 2D Stochastic Context-Free Grammars*, Neurocomputing, 150, Part A, pp. 147–154, 2015.

2. V. Christlein, M. Diem, F. Kleber, G. Mühlberger, V. Schwägerl-Melchior, E. van Gelder, and A. Maier, *Automatic Writer Identification in Historical Documents: A Case Study.* Zeitschrift Für Digitale Geisteswissenschaften, 2(2), 2016.

Given talks   During the third year, tranScriptorium partners were invited to give several talks in organisations external to the project:

1. M. Terras. *Handwritten Text Recognition meets the Crowd: Transcribe Bentham and tranScriptorium.* Manuscripts and Digital Humanities colloquium. April 2015. University of Leiden, The Netherlands.

2. G. Mühlberger, P. Kahle, S. Colutto, T. Causer, A.H. Toselli *Automatisierte Erkennung handschriftlicher Dokumente für Geisteswissenschaftler, Archive und Bibliotheken.* Austrian Centre for Digital Humanities. June 2015. Viena (Austria).

3. G. Mühlberger, P. Kahle, S. Colutto, E. Vidal, J.A. Sánchez. *Interactive Handwritten Text Recognition and Indexing of Historical Documents: the tranScriptorium project*[8]. UCL Centre for Digital Humanities. London (UK). June 2015.

4. G. Mühlberger, *Als der Computer lernte, historische Handschriften zu lesen. Vorstellung der Forschungsplattform TRANSKRIBUS*, in Deutscher Archivtag, Karlsruhe (Germany), Sept. 2015

5. G. Mühlberger, *Recognition and Enrichment of Archival Documents ? the READ Project. e-Infrastructure for Humanities Scholars, Archives, Computer Scientists and the Public*, In Workshop Automated Handwritten Text Recognition Transkribus and the "Resolutions of the Dutch States-General.", The Hague (The Netherlands), Nov. 2015.

6. *Transkribus. An Open Platform for the Recognition of Printed and Handwritten Text*, in Digitizing German-language cultural heritage from Eastern Europe, Regensburg (Germany), April 2015.

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[8]http://www.ucl.ac.uk/dh/events/archive/the-transcriptorium-project

7. G. Mühlberger, T. Causer and R. McNicholl, *Transcription made simple - for experts and volunteers*, in Conference: The Hague, Technology, Software, Standards for the Digital Scholarly Edition (Dixit Convention 2015), The Hague (The Netherlands), Sept. 2015.

8. G. Mühlberger, S. Colutto, and P. Kahle, *TRANSKRIBUS. A recognition and transcription platform*, in eCodicology. Machines and Manuscripts 2015, 2nd International Pattern Recognition and Analysis of Historical Documents, Karlsruhe (Germany), Feb. 2015.

9. T. Causer, *Crowdsourcing for Humanities Researchers* workshop, Centre of Research in the Arts, Social Sciences and Humanities, University of Cambridge, 20 Jan. 2015.

10. T. Causer and P. Schofield, *Transcribe Bentham and TSX*, presented at the LIBER Early European Books Library Advisory Board and Proquest, UCL, June 2015.

11. T. Causer, *Transcribe Bentham and TSX*, presentation at the Wellcome Collection, Sep. 2015.

12. T. Causer, *Transcribe Bentham and TSX*, presentation at the MicroPasts conference, UCL, Sep. 2015[9].

13. V. Romero, *tranScriptoirum*, presentation at Digital Heritage 2015, Córdoba (Spain), Sep. 2015[10]

3.2.2 Conferences and Contests organised by tranScriptorium members

TRANSCRIPTORIUM members were involved in the organization of conferences and contests along 2015 very relevant related to the project research.

- ICDAR 2015 competition HTRtS: handwritten text recognition on the tranScriptorium dataset[11].
  This was the second competition organized by the UPVLC partner. The main goal in this contest was to promote the research in HTR. The Bentham dataset was used in the contest. Nine research groups were registered in the contest.

- ICDAR 2015 competition on keyword spotting for handwritten text documents[12].
  This competition was organized by the UPVLC partner. The main goal in this competition was to research on KWS. Some data from the Bentham dataset was used in the contest.

3.3   Seminars organised by tranScriptorium members

1. G. Mühlberger, P. Kahle, S. Colutto, J.A. Sánchez. *Von Daten zu Erkenntnissen: Digitale Geisteswissenschaften als Mittler zwischen Information und Interpretation*[13]. DHd-Tagung 2015. February 2015. Graz (Austria). More than 35 people attended to this event, including heads of departments, archives and humanities scholars.

2. M. Terras. *Handwritten Text Recognition meets the Crowd: Transcribe Bentham and tranScriptorium.* Manuscripts and Digital Humanities colloquium. April 2015. University of Leiden, The Netherlands.

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[9] https://www.youtube.com/watch?v=lSjcUQqqTdc
[10] http://www.digitalheritage2015.org/portfolio/transcriptorium/
[11] http://transcriptorium.eu/~htrcontest/
[12] http://transcriptorium.eu/~icdar15kws/
[13] http://www.conftool.pro/dhd2015/index.php?page=browseSessions&form_session=8& presentations=show

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3. G. Mühlberger, P. Kahle, S. Colutto, T. Causer, A.H. Toselli *Automatisierte Erkennung handschriftlicher Dokumente fr̈ Geisteswissenschaftler, Archive und Bibliotheken*[14]. Austrian Centre for Digital Humanities. June 2015. Viena (Austria).

4. V. Romero, J. De Does, G. Mühlberger. *Workshop on Automated Handwritten Text Recognition, Transkribus and the "Resolutions of the Dutch States-General"*[15]. November 2015. Huygens ING, The Hague, The Netherlands.

3.4   Dissemination for content providers

Several talks were given by tranScriptorium partners at different events targeted at content providers:

- J.A. Sánchez, E. Vidal, G. Mühlberger, T. Causer, P. Schofield. British Library.

- J.A. Sánchez, E. Vidal, G. Mühlberger. National Archives.

Several public and private institutions made contact directly with the tranScriptorium project members asking about the possibility of future collaborations. Collaboration with the two named centres/institutions in the following list have generated some results, while converstations are ongoing with the other centres/institutions:

1. "Biblioteca Nacional de España" (BNE) contacted with UPVLC partner related to tranScriptorium.
   As a result of this contact, an agreement was signed between BNE and UPVLC for transcribing a Spanish collection. The "Plantas" dataset was transcribed in the frameword of this agreement in which also Universidad Complutense de Madrid participated.

2. The Listening Experience Database project (LED)[16] made contact by email.

3. Real Academia Española de la Lengua[17] made contact at the DATeCH 14 workshop. They tried to define a funded collaboration, but finally it doesn't sucess.

4. Integrated Digitized Biocollections: NSF funded project (USA)[18]

5. The Royal Botanic Garden Edinburgh[19] made contact by email.

6. University of Bristol[20] made contact by email.

7. Europeana[21].

8. University of St Andrews[22].

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[14]http://www.oeaw.ac.at/acdh/en/node/250
[15]https://www.huygens.knaw.nl/workshop-automated-handwritten-text-recognition-transkribus-and-the-resolutions
[16]http://www.open.ac.uk/Arts/LED
[17]http://www.rae.es/
[18]https://www.idigbio.org/
[19]http://synthesys3.myspecies.info/
[20]http://www.bristol.ac.uk/rit
[21]http://www.europeana.eu/portal/
[22]http://digitisingscotland.cs.st-andrews.ac.uk/

3.5 Contacts and dissemination at industrial companies

Some private companies made contact with tranScriptorium partners. The following list shows the list of companies which asked for a face-to-face meeting, and the tranScriptorium project members who gave a presentation:

1. A2iA: `http:/www.a2ia.com`.

   They contacted for a possible collaboration. HIMANIS project with UPVLC.

2. Qidenus: `http://www.qidenus.com/`.

   G. Mühlberger, E. Vidal, J.A. Sánchez presented tranScriptorium. Pilot project with UPVLC.

3. Athento: `http://www.athento.com/`.

   E. Vidal, J.A. Sánchez presented tranScriptorium. Pilot project with UPVLC.

4. AMD: `http://www.amdigital.co.uk/`.

   G. Mühlberger, E. Vidal, J.A. Sánchez presented tranScriptorium at Adam Mathew Digital. Pilot project with UPVLC and UIBK in preparation.

5. P. Schofield and T. Causer, *TSX*, presentation to representatives of IBM, Centre for Digital Humanities roundtable, UCL, Oct. 2015.

3.6 In the media

Along 2015, tranScriptorium reached out the media specially when Transkribus was launched. The following list shows some news:

1. Die Presse:

   `http://diepresse.com/home/science/4808895/Computer-liest-Kurrentschrift`

2. Heise:

   `http://www.heise.de/ix/meldung/EU-Projekt-Computer-entziffern-Handschriften-2790595.html`

3. Orf.at:

   `http://tirol.orf.at/news/stories/2728187/`

4. Damals:

   `http://www.damals.de/de/8/Software-entziffert-historische-Handschriften.html?aid=191659&cp=2&action=showDetails`

5. Ad Hoc News:

   `http://www.ad-hoc-news.de/die-software-transkribus-entschluesselt-historische-handschriften--/de/News/45613179`

6. Unser Tirol:

   `http://www.unsertirol24.com/2015/10/21/omas-briefe-alte-schriften-endlich-lesen-koennen/`

4 Conclusion

To summarise, our dissemination activities during this second year of the project have largely been about consolidating and generating interest in the technologies being developed. Two main groups of stakeholders have been targeted. First, the scientific community, to generate interest in the innovative techniques being developed; and second, industry, with a view to paving the way for future exploitation. Actions have also been directed at the general public.