



## VALORISATION PROJECT

### TIC-SIGHT

Transnational Belgium & INSIGHT. Valorisation of the collections.



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## FINAL REPORT

**PROMOTORS:** Christophe Verbruggen (Ghent University)  
Xavier Rousseaux (Université catholique de Louvain)  
Karel Velle (State Archives of Belgium)  
Seth van Hooland (Université libre de Bruxelles)  
Nico Randeraad (Maastricht University)  
Mike Kestemont (University of Antwerp)  
Eva Coudyzer (Royal Museums of Art and History) (until 30.9.2019)  
Els Angenon (Royal Museums of Art and History) (from 1.10.2019)  
Ellen Van Keer (Royal Museums of Fine Arts of Belgium)





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WTCIII  
Simon Bolivarlaan 30 Boulevard Simon Bolivar  
B-1000 Brussels  
Belgium  
Tel: +32 (0)2 238 34 11  
<http://www.belspo.be>  
<http://www.belspo.be/brain-be>

Contact person: Georges JAMART  
Tel: +32 (0)2 238 36 90

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## 1. SUMMARY

The BELSPO-funded valorisation project *TIC-SIGHT: Transnational Belgium and INSIGHT – Valorisation of Collections* brought together two BRAIN-BE projects. Firstly, [TIC-Belgium](#) a collaborative digital humanities project focusing on transnational intellectual cooperation (TIC) in the long nineteenth century, in particular on transnational connections in the field of social reform. TIC-Belgium **collected data** on ~ 1,600 international congresses, ~ 5,500 (inter)national organisations, ~ 23,000 publications and ~ 23,000 persons and a **large corpus of primary sources** (~ 1,200 documents with 500,000 pages). Secondly, [INSIGHT](#) a project focusing on the **application of Artificial Intelligence** to enrich the descriptive metadata of the collections from two museum clusters in Brussels: Royal Museums of Fine Arts of Belgium and Royal Museums of Art and History.

The overall aim of the *TIC-SIGHT* project was to combine the expertise and outreach capacity of the TIC-Belgium and INSIGHT consortia in order to undertake additional valorisation actions to **extend the outreach, uptake and use** of the (meta)data, full-text resources and digitised objects from these collections through the use of innovative approaches, international standards and collaborations.

The aim of this final report is to document TIC-SIGHT's activities and achievements. Following an executive *summary*, *section 2* outlines the initial objectives and valorisation focus for TIC-SIGHT with *section 3* providing an overview of the project's external collaborations. In *section 4*, the key products generated by the project are described, including the implementation approaches used. *Section 5* highlights the project's impact based on the added value of the outcomes for the core stakeholder groups. Finally, *section 6*, details the measures that the project consortium has taken to maintain the established collaborations beyond the lifetime of the project.

## 2. INITIAL OBJECTIVES AND VALORISATION FOCUS

The overall aim of the *TIC-SIGHT* project was to undertake additional valorisation actions to **extend the outreach, uptake and use** of the collections and data from the TIC-Belgium and INSIGHT projects.

More specifically, the three major objectives of the TIC-SIGHT project were:

- 1) Make the **unique collection of historical primary sources, metadata and thematically tagged** (1,200 documents, mostly conference proceedings > 500,000 pages) **IIIF accessible** in order to make the corpus available for a wider audience of scholars who will be able to explore and query them thoroughly. In addition to this, we will collaborate with the INSIGHT team and open up the [KMGK collection](#) via IIIF.
- 2) **Improve the dataflow** between TIC's work environment, a nodegoat-driven relational database, and the Linked Open Data environment ANANSI, a Linked Open Data publishing platform, in a **semi-automated** way in order to open all the data on reformers, conferences and international organisations for external scholars in a more user-friendly and durable way.
- 3) Creation of two **online exhibitions** on TIC's public website in order to promote the use of the TIC dataset and to disseminate the project findings and prototype INSIGHT's "photobox". Both **interactive exhibitions** will be built around the maps, graphs and other visualisations made by the researchers connected to the project but also in external collaboration with the *Union of International Associations*.

### 3. OVERVIEW EXTERNAL COLLABORATION(S)

From the outset, a number of **external collaborations** were foreseen in the TIC-SIGHT project. These included: a) **TIC INTERNATIONAL** (Maastricht University, University of Ghent, University of Lausanne, Northumbria University, University of Mainz/Leibniz Institute for European History, Écoles des Haute Etude et Sciences Sociales, Université catholique de Louvain and Université Laval). This international research group 'Transnational dynamics of social reform, 1840-1940' consists of researchers from seven countries aims at opening new perspectives on the history of social reform and reform activism between the mid 19th and mid 20th century, b) **DARIAH-BE**- as a Founding Member of DARIAH-EU, the aim of DARIAH-BE is to offer a sustainable portfolio of services enabling digital scholarship in the arts and humanities in Belgium. The scientific and technical activities of DARIAH in Belgium are coordinated by three consortia: DARIAH in Flanders (DARIAH-VL), DARIAH in Federation Wallonia-Brussels (DARIAH-FWB) and Federal Scientific Institutions in DARIAH (DARIAH-FED) and c) the **Union of International Associations** (UIA) is a research institute and documentation centre, based in Brussels. Non-profit, apolitical, independent, and non-governmental in nature, the UIA has been a pioneer in the research, monitoring and provision of information on international organizations, international associations and their global challenges since 1907. The UIA has consultative status with ECOSOC and associate status with UNESCO.

Examples of **external collaboration activities** with TIC INTERNATIONAL, DARIAH-BE and the Union of International Associations (UIA) within the framework of the TIC-SIGHT project include: the [launch of the book: Laqua, D., Van Acker, W., & Verbruggen, C. \(Eds.\). \(2019\). \*International organizations and global civil society : histories of the union of international associations\*](#) in Brussels on 4 April 2019, the research for which has been made possible due to the opening up of the TIC-Belgium corpus and dataset. The DH Benelux 2019 pre-conference workshop on [Standardisation Survival for Medieval Studies: a hands-on International Image Interoperability Framework \(IIIF\) workshop](#) on 11<sup>th</sup> September 2019, at the DH Benelux 2019 Conference in Liège, organised by DARIAH-BE in collaboration with DARIAH-FR and DARIAH-AT, brought together colleagues from Belgian Federal Scientific Institutions, including State Archives of Belgium and the KBR – Royal Library of Belgium to explore how to implement IIIF with digitised cultural heritage collections.

Furthermore, TIC-SIGHT actively contributed to a number of international data standards related community events and communities including: a) **International Image Interoperability Framework (IIIF) Community** such as [Beyond Madoc: Development of a IIIF-based digital corpus management and text analysis platform](#), presentation at the International Image Interoperability Framework (IIIF), Göttingen, 24<sup>th</sup> – 28<sup>th</sup> June 2019; [Annotation and Transcription with the Madoc project](#), presentation at IIIF-Friday, 20<sup>th</sup> November 2020 and [IIIF Tools and Services Panel](#), Practical IIIF Webinar Series, 11<sup>th</sup> June 2021, b) **Linked Open Data**: TIC-SIGHT colleagues were invited to participate in the CLARIAH-NL Linked Open Data Interest Group ([IG-LOD](#)); co-organised the [Ghent University Wikidata and Wikibase Workshop: developing a Wikibase instance, 3 - 5 July 2019](#) and are scheduled to organise the [Linked Pasts VII Symposium](#) in December 2021 and c) **Research Data Management**: contribution to the new [DARIAH-EU Working Group on Research Data Management](#) and close liaison with [SODHA](#), the federal Belgian data archive for social sciences and the digital humanities. These activities were undertaken in collaboration with colleagues from several Belgian Scientific Institutions including State Archives of Belgium, KBR – Royal Library of Belgium, Royal Museums of Fine Arts of Belgium, Royal Museums of Art and History and the Royal Institute for Cultural Heritage.



#### 4. GENERATED PRODUCTS AND IMPLEMENTED APPROACHES

As outlined in *section 2*, the key objectives of the TIC-SIGHT project were to: 1) make the **unique collections IIF accessible**, 2) **improve semi-automated dataflow** and 3) creation of two **online exhibitions**. An overview of the outcomes of each of these tasks are outlined below:

**IIF-accessible collections and corpora:** By the end of the TIC-Belgium project, the research team had collected data on ~ 1,600 international congresses, ~ 5,500 (inter)national organisations, ~ 23,000 publications and ~ 23,000 persons and a large corpus of primary sources (~ 1,200 documents with 500,000 pages). Within the TIC-SIGHT project, the aim was to increase the accessibility of this unique corpus using the International Image Interoperability Framework (IIIF). IIIF is an open framework and standardised method to publish image-based resources, to be viewed, cited and annotated by any IIIF-compatible image-viewing application. Notwithstanding some limitations (for example its - by definition - focus on images), it is the most advanced and widely supported framework that allows researchers to build corpora across institutional borders and collections. The aim therefore was to bring together this valuable and until now dispersed corpus and make it accessible via IIIF.

By the end of the TIC-SIGHT project, this collection is accessible on request, downloadable and full text searchable via [Shared Canvas](#). Shared Canvas is a IIIF-enabled service provided by Ghent University Library for heritage institutions, museums and libraries that want to make their images widely available in a controlled and standardized manner. It is powered by the institutional repository system Librecat. In addition, the collection has been used to test the new **IIIF corpus Management Platform (CMP)** that has been co-developed by DARIAH-BE/CLARIAH-VL. The platform, now named [Madoc](#), incorporates a range of open-source services, technologies, and recommendations including IIIF, W3C Web Annotation Data model and related protocols, and linked open data. The availability of this corpus via the IIIF-enabled platform Madoc has significantly increased the ease in which researchers can engage with these materials, including enriching them with scientific annotations.

**Linked Open Data (LOD) Dataflow:** Even though part of the TIC-Belgium data had already been successfully published in Anansi and linked to other datasets, in TIC-SIGHT we opted for a different LOD platform with more possibilities: <https://druid.datalegend.net/CLARIAH-VL/TIC-Collaborative>. [Druid](#) is a scalable triplestore by [Triply](#) based on the HDT (header dictionary triples) technology. The platform was also developed in the context of CLARIAH-NL and is currently maintained by the [International Institute for Social History \(IISH\)](#) and Triply, a CLARIAH spin off company. In terms of content, the IISH is an obvious partner for making the TIC-dataset available for further use or integration with other datasets. To allow additional verification and processing of the data, the data was exported from Nodegoat as CSV files and converted to a Turtle file to be uploaded in Druid using a custom Python script using rdflib (<https://github.com/RDFLib/rdflib>). Congresses, congress series, organisations, publications and places were mapped to the classes Event, EventSeries, Organization, CreativeWork and City of the [schema.org](#) vocabulary. Tags were mapped to SKOS Concept (<http://www.w3.org/2004/02/skos/core#Concept>) and linked to entities using Dublin Core Metadata Initiative (DCMI) Metadata Terms Subject property (<http://purl.org/dc/terms/subject>).

**Open Science Dataset and Data Paper:** A key outcome of the TIC-SIGHT project is an innovative data paper which has been accepted for publication in early 2022 in the [Journal of Open Humanities Data](#). The data paper entitled “*Social reform international congresses and organizations (1846-1914): from*

*sources to data*” was co-created by the interdisciplinary TIC-SIGHT team Christophe Verbruggen, Florian Deroo, Hans Blomme, Thomas D’haeninck, Amandine Thiry, Lisa van Diem, Jan Vandersmissen, Eline Mestdagh, Bo Billiet, Judith Wolff, Sally Chambers, Pieterjan De Potter, Julie Carlier, Carmen Van Praet, Chris Leonards and Nico Randraad from Ghent University (Ghent Centre for Digital Humanities, Department of History and Department of Conflict and Development Studies), Université catholique de Louvain (Centre d’histoire du droit et de la justice), the European University Institute, Italy and the Department of History, Faculty of Arts & Social Sciences, Maastricht University. Alongside the data paper, the **open science dataset** has been published in the International Institute of Social History (IISH), Amsterdam [IISH Data Collection: Christophe Verbruggen \(2021\) "TIC-Collaborative"](#), <https://hdl.handle.net/10622/R9IHT4>, IISH Data Collection. This ensures that data will remain findable, accessible, interoperable and reusable (FAIR).

**Online exhibition:** As an illustration of the potential of the data, the TIC-SIGHT team staged an [online exhibition](#) on social reformers powered by Omeka-S. The [interactive exhibition](#) has been built around the maps, graphs and other visualisations made by the researchers connected to the project in collaboration with our Belgian partners [Amsab Institute for Social History](#) and [Liberas](#). The exhibition makes use of the entire IIF and Linked Open Data ecosystem. Via iFrames, the exhibition also refers to visualizations in Tableau and a public interface including [sample graphs](#) in the project’s Nodegoat installation that will remain open to new research in the coming years.

**Prototyping IIF with the collections of the Royal Museums of Art and History:** In addition to opening up the TIC-Belgium corpus via IIF, through collaboration with the INSIGHT project team, a secondary aim of the TIC-SIGHT project was to open up the collections of the [Royal Museums of Art and History](#) via IIF. Following the launch of the beta version of the [IIF Corpus Management Platform \(MADOC\)](#) in September 2020, it was agreed that MADOC would be a suitable platform to prototype the use of IIF at the Royal Museums of Art and History (RMAH). To do this, the [RMAH’s collection of masterpieces](#), comprising of approximately 100 unique objects, which are representative of RMAH’s collections as a whole. For this, the TIC-SIGHT project team exported the metadata of these objects, along with the related digitised images, from the RMAH’s collection databases in [LIDO XML](#) format. The technical team based at GhentCDH then transformed the metadata and digital objects to IIF, which were then uploaded into MADOC to create a test [online exhibition](#). Due to the global Covid-19 pandemic, it was no longer feasible to prototype the “photobox” within the Royal Museums of Fine Arts. Due to the success of the IIF-prototyping with RMAH’s collections, it was therefore agreed with partners to undertake a similar experiment to prototype the use of IIF with the Royal Museums of Fine Arts collections instead.

## 5. IMPACT AND ADDED VALUE OF THE VALORISATION ACTION

The aim of the TIC-SIGHT project was to use the valorisation actions described above to reach out to the three specific stakeholder groups: a) **policy-makers**, b) a **wider user community of researchers** and c) **society at large**. Through the activities and achievements of the project, the aim was to increase the value for each stakeholder group based on their needs.

The results of these specific impact measures, per stakeholder group ,are outlined below:



<b>Policy-makers / Federal Science Policy</b>
<b>Impact Target:</b> at least three FSI are seriously considering the implementation of IIF in their organisation
<b>Valorisation Action:</b> Stimulating uptake of IIF in the Federal Scientific Institutions (FSI)
<b>Impact Achieved:</b> <ul style="list-style-type: none"> <li>• Federal Scientific Institutions were well represented at the TIC-SIGHT IIF-related activities</li> <li>• 5 of the Federal Scientific Institutions (State Archives of Belgium, KBR – Royal Library of Belgium, Royal Museums of Fine Arts of Belgium, Royal Museums of Art and History and the Royal Institute for Cultural Heritage) who participated in TIC-SIGHT IIF-related activities have already started, or are seriously considering, the implementation of IIF in their organisation</li> <li>• A further BRAIN-BE project proposal related to the sustainable implementation of IIF, led by the Royal Museums of Art and History, was submitted (further details are provided below).</li> </ul>
<b>Wider community of researchers</b>
<b>Impact Target:</b> increased (inter)national interest in using TIC’s extensive dataset and unique corpus of primary sources
<b>Valorisation Action:</b> <i>IIF-accessible TIC Corpus / TIC’s data published in a LOD-platform</i>
<b>Impact Achieved:</b> <ul style="list-style-type: none"> <li>• TIC Corpus is available as a IIF-corpus via <a href="#">Shared Canvas</a></li> <li>• TIC Data has been published as <a href="#">Linked Open Data</a></li> <li>• TIC Data has been published as <a href="#">FAIR Open Science Dataset</a></li> <li>• The TIC Corpus and Dataset have been accepted for publication in early 2022 in the <a href="#">Journal of Open Humanities Data</a>.</li> </ul>
<b>Society at Large</b>
<b>Impact Target:</b> increased (inter)national interest in TIC-SIGHT by cultural heritage institutions
<b>Valorisation Action:</b> public humanities valorisation via online exhibitions
<b>Impact Achieved:</b> <ul style="list-style-type: none"> <li>• TIC Corpus has been valorised by an <a href="#">online exhibition</a></li> <li>• IIF has been prototyped at the RMAH with their <a href="#">Masterpieces collection</a></li> <li>• RMFAB is interested in prototyping their collections with IIF</li> </ul>

A direct result of the TIC-SIGHT project, as mentioned above, was the submission of a further BRAIN-BE project proposal related to the sustainable implementation of IIF, led by the Royal Museums of Art and History in June 2020. One of the core aims of the proposal, **CUNE-IIF-ORM: Towards an Internationally Image Interoperable Corpus of Cuneiform Tablets** is to sustainably integrate the International Image Interoperability Framework (IIF) into the RMAH’s data infrastructure by implementing a sustainable IIF publication workflow. Despite receiving a high score in the evaluation, CUNE-IIF-ORM did not initially receive funding.

However, in Summer 2021, a special funding scheme, *Action d’impulsion Art et Documentation*, was established by BELSPO. [CUNE-IIF-ORM was one of five projects selected for funding](#).

## 6. MEASURES TO MAINTAIN THE COLLABORATION(S)

While the overall aim of the TIC-SIGHT project was to undertake additional valorisation actions to **extend the outreach, uptake and use** of the (meta)data, full-text resources and digitised objects from the TIC-Belgium and INSIGHT projects, through the use of innovative approaches, international standards and collaborations, the sustainable embedding of these collaboration is something that has been considered from the outset.

Firstly, the valorisation activities have been undertaken both in the framework of existing, long-term research collaborations, such as TIC-INTERNATIONAL and the Union of International Associations (UIA). Secondly, further efforts have been made to embed the activities of the project consortium into international data standards communities, such as a) International Image Interoperability Framework (IIIF), b) Linked Open Data and c) Research Data Management. Finally, European Research Infrastructures, such as DARIAH and CLARIN and the European Open Science Cloud (EOSC) are becoming increasingly important for data-driven research at the intersection of digital cultural heritage and digital humanities. TIC-SIGHT has taken care to strategically position its activities at this intersection. For example, the recent launch of BELSPO's [ESFRI-FED Programme](#) is important for future developments in this area, as is the ongoing development of research infrastructural services such as [MADOC](#), the IIIF Corpus Management and Semantic Annotation platform – which has been used extensively in TIC-SIGHT and [SODHA](#), the federal Belgian data archive for social sciences and the digital humanities.

With already one follow-up project (CUNE-IIIF-ORM) successfully funded, this will already significantly contribute to maintaining the collaborations initiated within TIC-SIGHT. However, it is the sustainable embedding of such activities, such as the implementation of a IIIF publication workflow in Federal Scientific Institutions, as will be the case with the CUNE-IIIF-ORM project, so that they become 'business as usual', is where the true sustainability of such initiatives lies.