



Report on Preparing Europeana for IIF involvement  
Task Force

Appendix D: Implementation Examples  
D.2: University College Dublin

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## Appendix D.2: Implementation of IIF collections in Europeana – University College Dublin

### **Opening Doors to Interoperability and User Engagement: IIF at University College Dublin<sup>1</sup>**

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The Library at University College Dublin <<http://www.ucd.ie/library/>> has, for more than a decade, been creating digital content that is disseminated via UCD Digital Library <<https://digital.ucd.ie/>>. Since the majority of digital file assets consist of images – high-resolution TIFF images with lossless JPEG2000 and lower-resolution static JPEG derivatives – the emergence of the International Image Interoperability Framework immediately attracted our attention. It offered a common-sense approach to image interoperability that proposes to address technical and usability challenges that inhibit both service development and scholarly interaction with digital content.

UCD faced challenges typical with providers of digitised books, maps, and other cultural heritage information: use of older technologies for dissemination of deep-zooming images (dijatoka, whose OpenURL-based approach to interoperability lost lustre with the domination of approaches based on REST); challenges in delivering paged documents, including page turning and document navigation functionality, as well as associating OCR content with page images; a large-scale transcription project based on bespoke technologies; and more. IIF and its growing community of developers promised solutions for all of these issues, and as they have been delivered over the past five years, we've adopted them: IIF Image API (Loris), IIF Presentation, and IIF Search; IIF authentication is next on the development roadmap.

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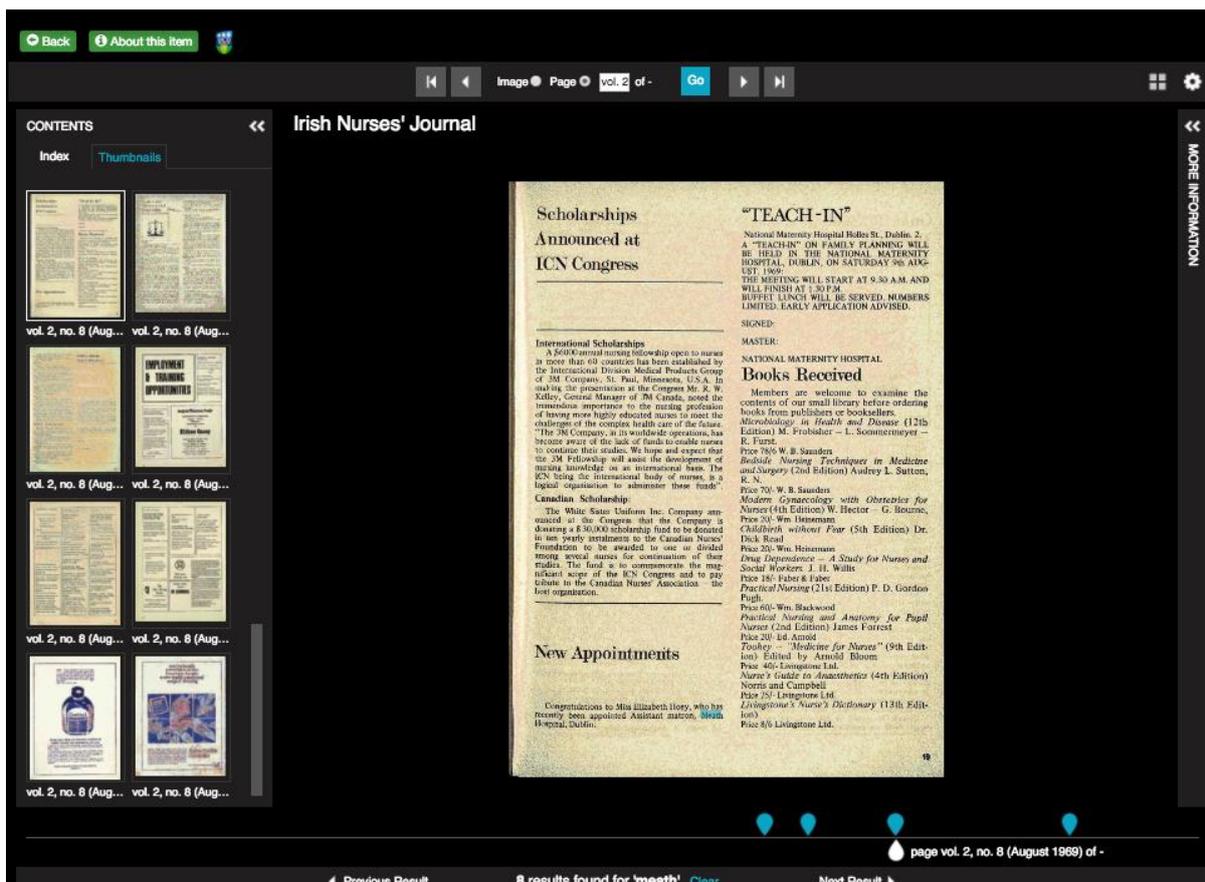


Figure 1. IIF search via UniversalViewer.

Exploiting the potential for interoperability offered by IIF is where we have set our sights for current and future development. In 2016, we seized an opportunity to work with Nuno Freire and Pierre Edouard-Barrault at Europeana to work on a case study of reporting our IIF content to Europeana. The project was experimental (also engaging the National Library of Wales), evaluating approaches and testing ideas. But it also has succeeded in a practical sense, delivering new content from UCD and its partner organisations in Ireland to Europeana. It has catalysed other improvements as well – including creation of a microservice to delivery EDM metadata via IIF manifests, and the upgrading of local sitemaps to use components of the *ResourceSync* <<http://www.openarchives.org/rs/toc>> framework. (We'll next be testing with Europeana an approach to reporting video content via sitemaps and the EDM microservice.)



The screenshot shows the Europeana Collections website interface. At the top, there is a navigation bar with 'OUR SITES' and 'LANGUAGE' options. Below the navigation bar, there is a breadcrumb trail: 'Return to Home / Results / Item'. The main content area features a large image of the Savoy Cinema auditorium, viewed from the left side of a balcony. The image is dark and atmospheric, showing the ornate architecture of the cinema. Below the image, there is a 'Media Metadata' section with the following information:

<b>Title</b>	<b>Savoy Cinema post completion : view of the auditorium from left side of balcony towards the screen</b>	<b>FIND OUT MORE</b> View at Irish Architectural Archive <a href="#">↗</a>
<b>Description</b>	Physical location: Irish Architectural Archive, 0085/057-23	<b>CAN I USE IT?</b> Limited Re-use <a href="#">CC BY-NC-SA</a> <a href="#">↗</a>

On the right side of the metadata section, there is a vertical 'FEEDBACK' button.

Figure 2. UCD content in Europeana via IIF.

Extending interoperability more aggressively to end-users is UCD Library's next major objective. UCD Library supports a major document transcription project in collaboration with *Fiontar* at Dublin City University <[https://www.dcu.ie/fiontar\\_scoilnagaeilge/gaeilge/index.shtml](https://www.dcu.ie/fiontar_scoilnagaeilge/gaeilge/index.shtml)>, hosted at <http://duchas.ie>. Underway for several years, it uses bespoke technologies for engaging end-users in document transcription, and has been extraordinarily successful in the degree of public engagement it has fostered.

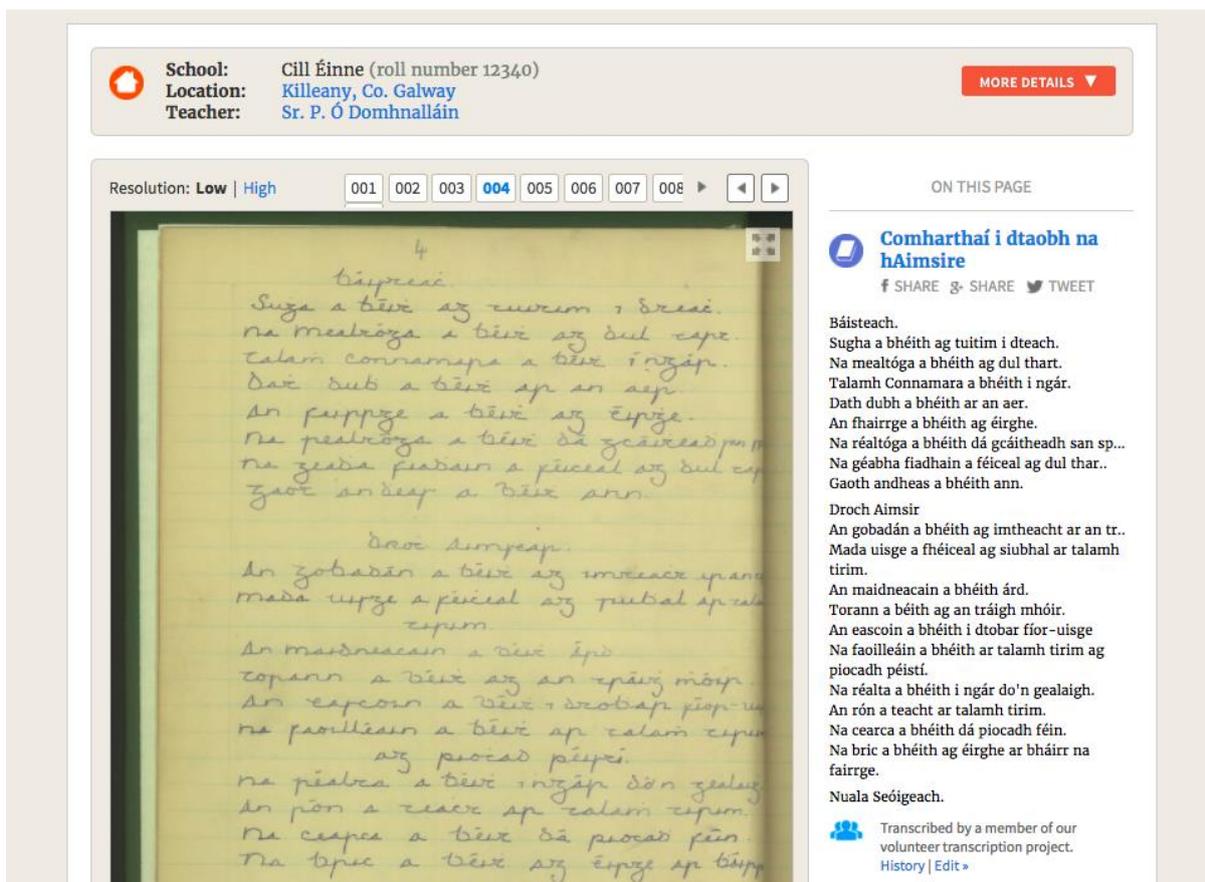


Figure 3. Screenshot from *duchas.ie* transcription site.

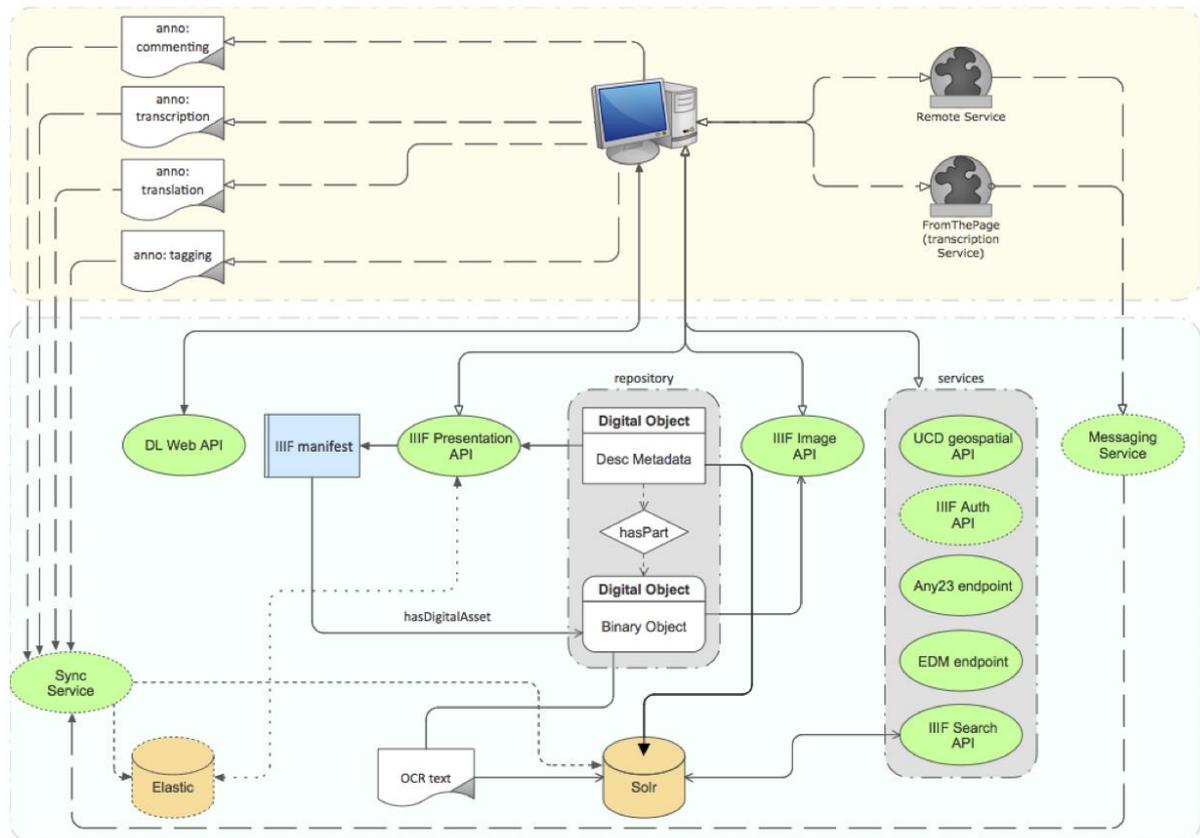
As we look toward the future, we see IIIF as a foundational technology in projects like this that expose our content to scholarly communities and the public at large. The integrated annotation capabilities of the *Mirador* image viewer will be invaluable in enabling annotation of more than 70,000 images from the *Irish National Folklore Collection*, due to come online in 2017. And as IIIF client capability becomes increasingly integrated with tools such as *Scribe*, *FromThePage*, or *Europeana's* transcription tools, we see vast potential for additional transcription projects that focus on structured textual documents, whether printed or manuscript.

IIIF does not come without its challenges. For library staff accustomed to working with the ubiquitous standards of the Library community, there is a learning curve that is partly specific to IIIF, but which more generally has to do with re-orienting one's thinking to Web standards, rather than library standards for interoperability. Data representation with JSON/JSON-LD is one dimension of this; understanding Web Annotations is another, which is crucial to understanding the general direction of web-based document transcription and annotation; and there are the complexities of web messaging and notifications that the IIIF community continues to grapple with.

The challenges also extend to how new technologies that are driven by IIIF and web standards integrate with infrastructures based on older library practices. In UCD's case, we digitise printed documents and capture OCR'd text in METS/ALTO format, indexed by Solr. Integrating the technologies supporting this approach with IIIF Search was a straightforward exercise. But what are the implications of deploying a Web Annotations-compliant



annotation store for data management and information retrieval, and especially for maintaining a coherent user experience? How to we make the old and the new work together harmoniously and sensibly?



.Figure 4. Imagining an evolved systems architecture at UCD Digital Library.

Five years ago, when we became aware of the concept of the International Image Interoperability Framework through Tom Cramer’s presentation at the Coalition for Networked information <<https://www.cni.org/topics/information-access-retrieval/international-image-interoperability-framework>>, we knew it had potential to be transformative. But as we look at our own work during the past two years and the development agenda for the near term, we at UCD can say that we simply did not anticipate the degree to which it would shape our overall agenda. As our technical infrastructure develops, we see it opening new doors not just to interoperability, but also to broader engagement with UCD’s academic community, its heritage repositories, our growing range of partners in the Irish cultural heritage community, and the public at large.