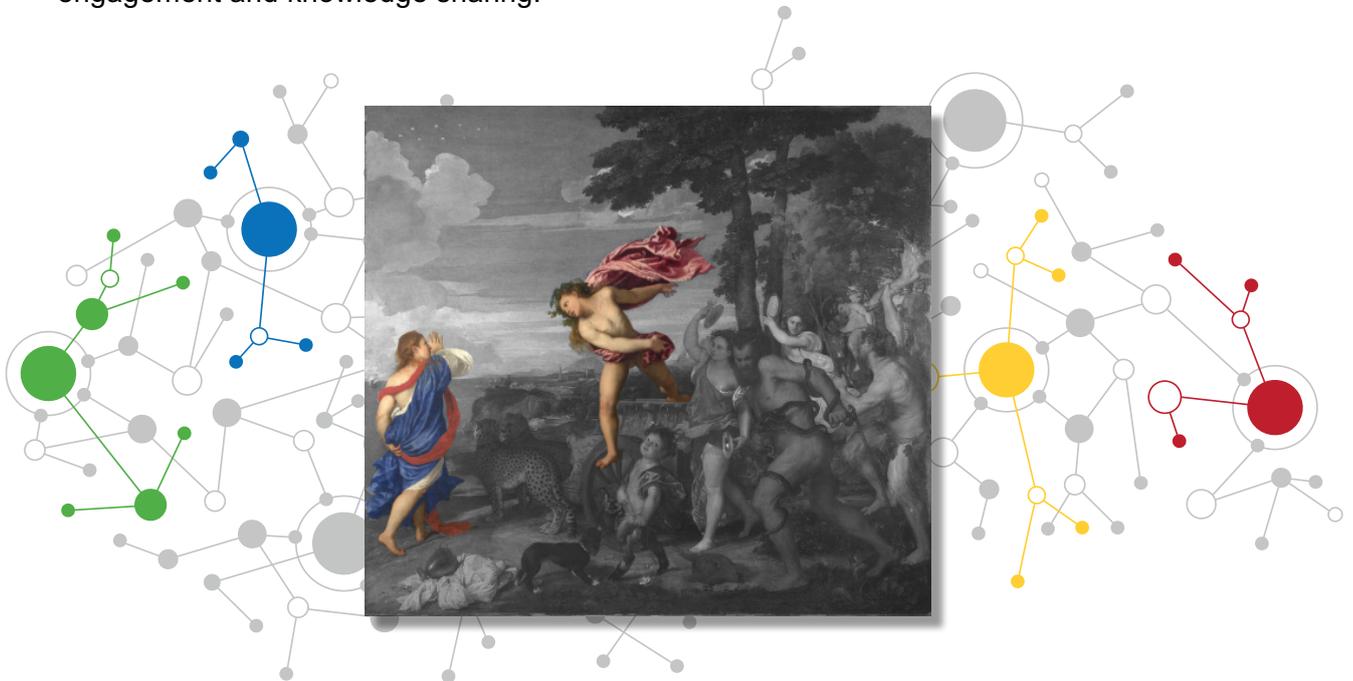




Engaging People, Art and Ideas

About Linked Canvas

LINKED CANVAS helps people to explore artworks and artefacts visually, conceptually and contextually. The solution is an implementation of Synptica's Open Annotation Semantic Indexing System (OASIS), which has been developed to help the cultural heritage community create engaging interactive content that will showcase individual artworks, collections and special exhibitions. How LINKED CANVAS works is as important as what it can do. LINKED CANVAS is built from the ground up using open data standards that enable content creators to maximize data portability and minimize vendor lock-in. The Linked Data architecture provides a framework for cross-institutional collaboration, community engagement and knowledge sharing.



Solution Features and Benefits

- **Engage with Diverse User Communities:** Reach a worldwide audience; connect with schools and higher education programs; support curators and conservators; engage with art historians, and academics.
- **Enrich Content:** Adopt and reuse Linked Open Data; curate in-house taxonomies and ontologies; annotate and index points of interest; provide guided tours with embedded or linked multimedia.
- **Collaborate with the Global Cultural Heritage Community:** using the Linked Data Platform; the Web Open Annotation Data Model; and the International Image Interoperability Framework.
- **Deploy and Scale Quickly:** Develop applications with speed and ease; publish to multiple platforms including SPARQL endpoints; scale up or down; host temporary exhibitions or permanent online galleries.

End-User Editorial Processes



Step 1: Image Management

Images, including high definition and ultra-high definition images, may be uploaded by the LINKED CANVAS image management tool. Images are stored using the new International Image Interoperability Framework (IIIF). Legacy image metadata can be ingested and combined with new metadata as part of the image cataloging process. IIIF enables images and points of interest to be accessed and annotated via HTTP. Leveraging IIIF's open data APIs, it is even possible to annotate and index externally-curated images (stored on third-party IIIF image servers) alongside internally-curated images.



Step 2: Ontology Management

Ontologies and controlled vocabularies underpin knowledge discovery and contextual analysis. LINKED CANVAS is a semantic web application that includes an integral suite of ontology and concept scheme management tools. These enable external Linked Open Data resources, such as Getty Vocabularies, Iconclass, Europeana, GeoNames, DBpedia and WIKIDATA, to be used alongside internally-developed ontologies and knowledge organization systems. Adopting and reusing Linked Open Data authorities not only speeds up development timelines and reduces project costs, it also creates a framework for further content enrichment and collaboration on a global scale.



Step 3: Image Annotation

Image annotation tools allow Points of Interest (POIs) to be highlighted, labeled and described. Each point of interest is assigned its own unique HTTP-URI, thereby supporting sub-image indexing and direct retrieval. The image annotation toolset supports several annotation methods. Rapid annotation techniques include using drop-pins to identify single coordinate points, or rectangles and circles to identify simple bound areas. Fine-tuned annotation techniques allow individual figurative details to be outlined and highlighted. All POIs allow for on-canvas captions and roll-over descriptions, as well as an innovative method called monochrome masking, which highlights each POI by masking the surrounding area with a monochrome filter.



Step 4: Semantic Indexing

While annotations add value to images, conceptually indexing those annotations using ontologies facilitates a quantum leap forward in knowledge discovery and contextual analysis. Images and points of interest within images can be indexed using predicates and controlled vocabulary concepts from an extensible set of ontologies and knowledge organization systems. These ontologies build connections between artworks, artists and associated cultural resources.



Step 5: Publication & Discovery

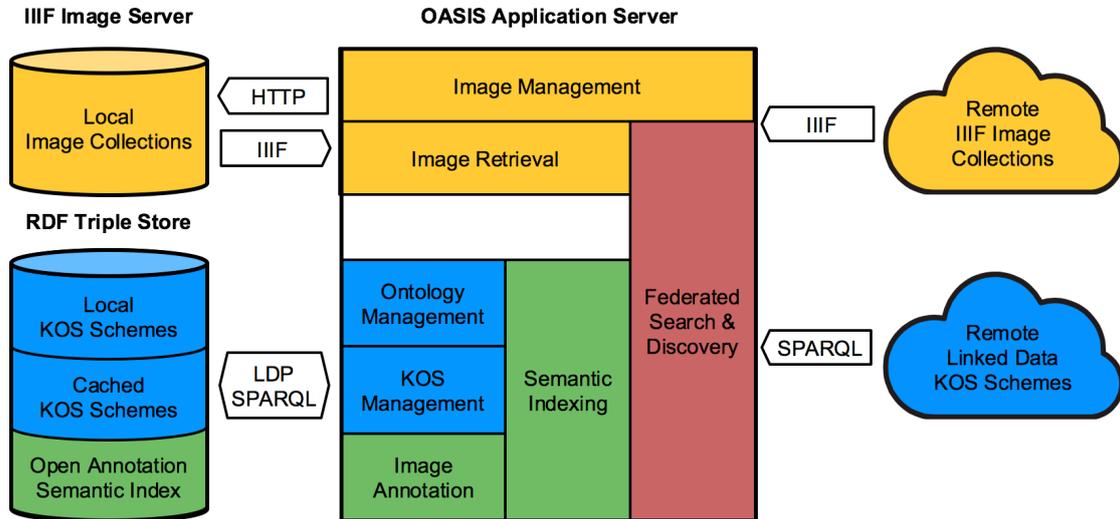
All data created inside Linked Canvas is stored as IIIF images or RDF triples. Using APIs, content can be published to existing websites and/or new applications. Content may optionally be published via a SPARQL endpoint. Alternatively, the tool can be used as a completely self-contained web authoring and web publication tool. This step includes components for:

- faceted search across an entire image collection;
- browsable image galleries of featured images;
- search inside individual images;
- on-canvas tooltips to describe specific visual details;
- arrangement of POIs spatially or narratively using POI hierarchies;
- query expansion and refinement using concept explorer and concept tag clouds;
- linking to related images based on ontological connections;
- instant pan and zoom from search results to highlighted visual features;
- pinch and swipe around images and watch the discovery panel dynamically update to describe the visual features and concepts currently in view;
- explore time-sequenced guided-tours including audio and video narration.

Technical Diagrams

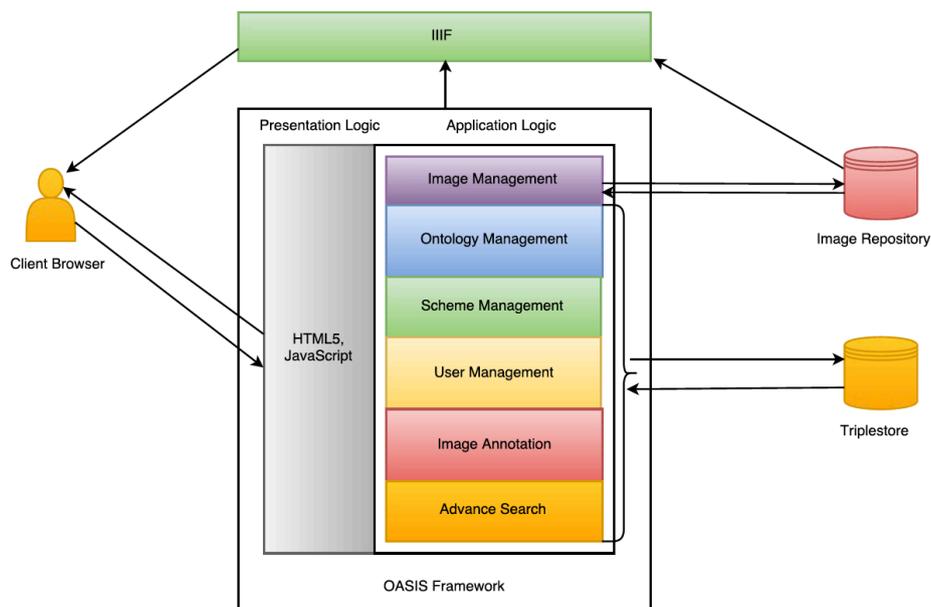
Following diagrams illustrate interoperability standards, system architecture and user functionality.

1. Open Data & Interoperability Standards



- KOS** Knowledge Organization System https://en.wikipedia.org/wiki/Knowledge_Organization_Systems
- IIF** International Image Interoperability Framework <http://iiif.io>
- LDP** Linked Data Platform <http://www.w3.org/TR/2015/REC-ldp-20150226/>
- OA** Web Open Annotation Data Model <http://www.openannotation.org/spec/core/>
- SPARQL** SPARQL Query Language for RDF <http://www.w3.org/TR/rdf-sparql-query/>

2. System Components



3. User Functionality



About Synptica

LINKED CANVAS is designed and developed by Synptica, a semantic technology company headquartered in Denver, Colorado. Since 1995 Synptica has been developing innovative software tools for organizing, indexing and classifying information, and for discovering knowledge. All our award-winning software products are built on a foundation of open standards and a commitment to client-led solutions and uncompromising customer service. Synptica provides enterprise-class software support to customers in North and South America, Europe and Asia.

Synptica solutions have attracted numerous industry awards including: the Knowledge Management World magazine *100 Companies that Matter in KM Award* in 2016, 2015, 2014 and 2012; the Knowledge Management World magazine *Trend setting Product of the Year Award* in 2015, 2012 and 2011; the Corporate America Software & Technology *Best Taxonomy Management Software Award* in 2015; and the Global Knowledge Management Congress *Knowledge Management Leadership Award* in 2016.