



## Synthesis

### Overview

Synthesis is a core information system for **administration**, **documentation** and **promotion of cultural assets**. The system has a generic, flexible documentation process model, and a web-based user interface that is specially designed for describing knowledge for the administration / scientific use of cultural assets, addressing curators and administrative staff of cultural institutions. Synthesis is a multilingual system, supporting documentation in Greek, English, French, Italian, Arabic, Swedish, Dutch and data exchange with other systems in xml/RDF format.

The image displays several screenshots of the Synthesis web interface. The top-left screenshot shows a multilingual page for 'ANNA KOMNENE' with content in Greek, English, and Arabic. The top-right screenshot shows a page titled 'Exploring the Byzantine world' with sections for 'Cultural Treasures', 'Thematic Essays', and 'Educational Activities'. The bottom-left screenshot shows the 'Cultural Information Management System' interface with a sidebar menu and a main content area. The bottom-right screenshot is a diagram titled 'Architecture of Synthesis' showing the system's components and data flow.

**Architecture of Synthesis**

The diagram illustrates the system's architecture. It features a central 'Internet' hub connected to multiple 'Web User Interfaces' for various organizations (Organization A, B, LA, Z, A). These interfaces interact with a 'Multicultural Scientific database' which includes a 'web server' and a 'database management server'. The database also feeds into 'Entities Public documents' which are accessible to 'Organization A', 'Organization B', and 'Organization N'. The system is supported by 'System components' and is developed by 'CCI-ISL, ICS-FORTH'.

### Target Applications

Synthesis Core can be used in applications for multilingual documentation, management and promotion of cultural and natural assets such as museum objects, monuments, historic buildings, archaeological sites, "natura" areas, tourist products and attractions etc. It can be used to create, edit, maintain and manage presentations, stories, documentaries, reports and essays for educational, informative, promotional and scientific purposes. Additionally, it allows for potential connections to sources or references to objects, people, organizations, historical and social events, scientific observations and essays. Finally, it can incorporate and present multimedia content (video, 3D drawings, photos, etc.) and specialized glossaries.

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## Description

The system exploits **XML** technology, **multi layered** architectures, **open source** software, and **international standards** and provides remarkable capabilities concerning data organization, documentation process, system architecture and system functions. The data are semantically organized in xml documents and is fully compatible with ISO 21127. SYNTHESIS supports documentation for museum objects, monuments, open sites and settlements, multimedia objects (photos, designs, studies, etc.), bibliography, evidence, persons, organizations, departments, places, materials, and events. Also, it supports storytelling by providing the appropriate forms and structures for writing essays, documentaries, games, video, podcast, etc. for cultural assets, addressing educational and tourism objectives. The architecture of the system is a 3-tier architecture, which allows the application logic, the data and the user interface to be separated and ensures open architecture, expandability, adaptability and flexibility. The general idea is that the data is stored in xml documents in a central database and the users through the internet can use the functions of the system according to their type and permissions they have.

The **main parts** of the system are:

- (1) Database Server Tier, implemented in e-xist (<http://exist.sourceforge.net/>) - a native xml database. The e-xist is an open source software.
- (2) Application tier implementation is based in Web service technology (<http://www.w3.org/2002/ws/>).
- (3) Client Tier is the user interface component built on internet browser, on java (<http://java.sun.com/>).

The system SYNTHESIS **has been used in** the following organizations:

- European Center for Byzantine and Post Byzantine Monuments, Thessaloniki (<http://139.91.183.29/annakom/>) ([www.exploringbyzantium.gr](http://www.exploringbyzantium.gr))
- Foundation of Mountain Sinai, Athens
- Former municipal of Leykis, located in Siteia (<http://www.medieval-etia-pafos.gr/etiaSite/Page?page=Index>)
- Västerbottens museum, Umea, Sweden
- Province of Noord-Brabant in Netherlands
- 13th Ephorate of Prehistoric and Classical Antiquities, Heraklion, Crete ([http://139.91.183.3:8080/synthesis\\_13eba/Login](http://139.91.183.3:8080/synthesis_13eba/Login))

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## Additional Information

### Economic Exploitation

Synthesis Core 2.0 is provided under open source license. Income is provided by the customizations typically required for installations.

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