

# Koha: open source library system

a decisive step for the collaboration between Greek Academic libraries

George Katsamakis (Librarian, Dataly Tech)



# Greek University Libraries' efforts to establish collaborative library systems

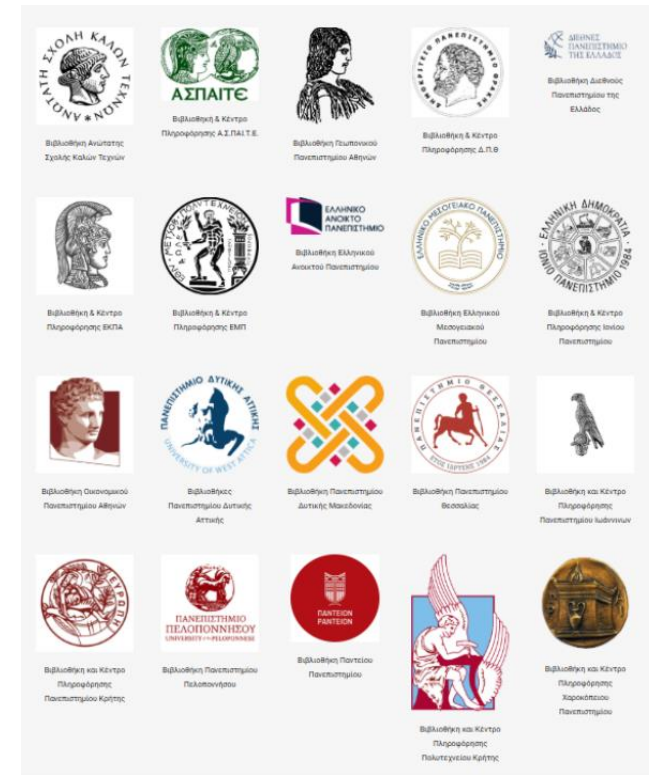
- 1997-2015: Hellenic Academic Libraries Union Catalogue (ΣKEAB)[“We are consolidating the bibliographic records”]: Different records from different ILS systems are converted, standardized, and matched (Sierra, Aleph, Advance).
- 2015-2025: ILSaS/Mitos[“We catalog and manage using a shared infrastructure”]: unified and common system for all library tasks(Sierra)
- 2025- : ILSaS+ [“a new, innovative digital library support environment”]: one system, collaborative catalog, separate management of library tasks (Koha, Urungi, Matomo, VuFind)

# ILSaS+ :quantitative data

## Numbers

- more than 500.000 users
- 385 librarians
- 3.2 million volumes
- 1.7 million bibliographic records
- 20 Universities, 82 affiliated branches
- more than 400,000 loans per Year
- 2 external vendors (Dataly Tech, Bib Libre)

## Universities participating



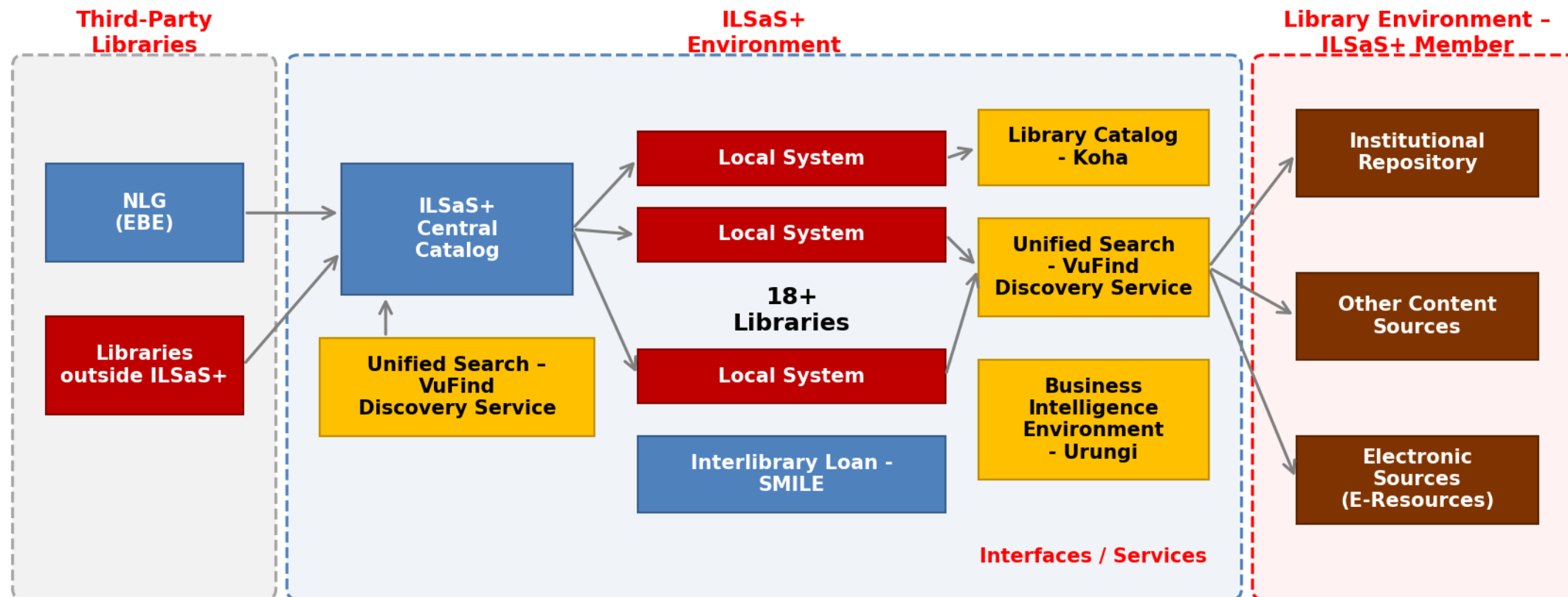
# Why +?

## Needs and Requirements

- need for a new, innovative digital environment to support libraries
- need for low acquisition and maintenance costs
- **higher degree of freedom/ autonomy for member libraries**
- **maintaining of the capability for collaborative, centralized cataloging**
- one computing infrastructure site rather than on-site facilities
- implementation of new, innovative features and services

## Choises

- collaborative cataloging
- common use of open-source software
- digital content discovery service for all members
- business intelligence for libraries – reports automation and analytics



## ILSaS+ Architecture

# Transition - Stages

## Numbers

- |                                                                                             |                                                                                      |                   |
|---------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|-------------------|
| • Phase 1: Data extraction, uploading, library checks, feedback, requirements specification |   | • 2024, April-May |
| • New migration, bug fixes, requirements review                                             |   | • 2024, June      |
| • Finalization of test migrations, final adjustments, preparation for the final migration   |  | • 2024, October   |
| • Final migration, start of production operation                                            |                                                                                      | • 2024, October   |

# ILSaS+: one infrastructure, many connected systems

- Central Catalogue (collaborative cataloging model involving member libraries)
- Local system (each member library has access to a system for managing its local collection and uses it to communicate with the Central Catalogue through the synchronization mechanism for data exchange)
- Unified Navigation-Search (simultaneous search of sources that support the OAI-PMH communication protocol, catalogue + repositories)
- Business Intelligence Environment (reports on various aspects of library operations)
- Systematic collection, analysis, and utilization of the data generated by the ILSaS+ libraries through the KOHA and VUfind systems



# From old systems to Koha— data : migration

## Methodology

- Data extraction & analysis (issues: duplicate, conflicting, incomplete, invalid data)
- Definition of requirements
- Data transformation, cleaning, and normalization (automated bulk corrections, manual individual corrections)
- Data migration to Koha (5 test data migrations and incremental improvements)
- Submission of the migration for review by the libraries
- Feedback from the review
- Final migration



|               |                                                                              |
|---------------|------------------------------------------------------------------------------|
| ΑΠΡΩΥΜΑ ΑΔΩΤΥ |                                                                              |
| 003:          | Has been marked as a non-repeating field.                                    |
| 007:          | Length appears to be invalid. Reported length is: 13. Expected length: 6144. |
| 024-md2:      | Invalid data (1) Indicator can only be 0123478.                              |
| 035:          | Subfield cannot be defined in this field.                                    |
| 035:          | Subfield cannot be defined in this field.                                    |
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| 035:          | Subfield cannot be defined in this field.                                    |
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| 035:          | Subfield cannot be defined in this field.                                    |
| 035-md1:      | Invalid data (9) Indicator should be undefined.                              |
| 035-md2:      | Invalid data (4) Indicator should be undefined.                              |
| 037-md1:      | Invalid data (0) Indicator should be undefined.                              |
| 037-md2:      | Invalid data (0) Indicator should be undefined.                              |
| 040:          | Subfield cannot repeat.                                                      |
| 040:          | Subfield cannot repeat.                                                      |
| 040-md2:      | Invalid data (0) Indicator should be undefined.                              |
| 040:          | Has been marked as a non-repeating field.                                    |
| 045:          | Subfield cannot be defined in this field.                                    |
| 045-md1:      | Invalid data (2) Indicator can only be 001.                                  |
| 045-md2:      | Invalid data (2) Indicator can only be 07.                                   |
| 045-md2:      | Invalid data (9) Indicator can only be 07.                                   |
| 045:          | Has been marked as a non-repeating field.                                    |
| 050:          | Subfield cannot be defined in this field.                                    |
| 050-md2:      | Invalid data (1) Indicator can only be 04.                                   |
| 060-md2:      | Invalid data (1) Indicator can only be 04.                                   |
| 082:          | Subfield cannot repeat.                                                      |
| 082:          | Subfield cannot repeat.                                                      |
| 082-md1:      | Invalid data (1) Indicator can only be 01.                                   |
| 082-md1:      | Invalid data (4) Indicator can only be 01.                                   |
| 082-md2:      | Invalid data (7) Indicator can only be 01.                                   |
| 082-md2:      | Invalid data (1) Indicator can only be 004.                                  |
| 082-md2:      | Invalid data (2) Indicator can only be 004.                                  |
| 082-md2:      | Invalid data (3) Indicator can only be 004.                                  |

| Sierra Item 945 | Content         | Koha Item 952 | Questions and information for migration                         |
|-----------------|-----------------|---------------|-----------------------------------------------------------------|
| 2 a+b           | Item-CallNumber | 0             | If 5a and 5b: connect both data to koha 5050a                   |
| 3               | Copy Number     | 1             |                                                                 |
| 4               | Barcode         | 1             |                                                                 |
| 5               | Item Agency     | A             | Home Library                                                    |
| 6               | Location        | B             | Current Library                                                 |
| 7               | Location        | B             | Current Library                                                 |
| 8               | Location        | B             | Current Library                                                 |
| 9               | Item Code 2     |               | Withdrawn Status: do values mapping: see sierra_9450a_code2 tab |
| 10              | Item Code 1     |               |                                                                 |
| 11              | Item Message    | Internal note | Internal                                                        |
| 12              | Item Message    | Internal note | Internal                                                        |
| 13              | Item Status     | 0             | See tab sierra_9450a_status                                     |
| 14              | Item Type       | X             | See tab sierra_9450a_itemtype                                   |
| 15              | Item Type       | X             | See tab sierra_9450a_itemtype                                   |
| 16              | Total Checkouts | 1             | unsorted-checkouts                                              |
| 17              | Item Date       | 1             | unsorted-checkouts                                              |
| 18              | Total Renewals  | 1             | unsorted-checkouts                                              |
| 19              | Last New Cit    | 1             | unsorted-checkouts                                              |
| 20              | Number          | 1             | unsorted-checkouts                                              |
| 21              | Created Date    | 1             | unsorted-checkouts                                              |
| 22              | 2 Item Code 1   | 1             | unsorted-checkouts                                              |
| 23              | Message         | 1             | unsorted-checkouts                                              |
| 24              | Volume          | 1             | unsorted-checkouts                                              |
| 25              | 2               | 1             | unsorted-checkouts                                              |
| 26              | 1               | 1             | unsorted-checkouts                                              |
| 27              | 1               | 1             | unsorted-checkouts                                              |
| 28              | 1               | 1             | unsorted-checkouts                                              |
| 29              | Barcode         | 1             | unsorted-checkouts                                              |
| 30              | Internal Note   | AT2016194B    | unsorted-checkouts                                              |
| 31              | Internal Note   | TIO 76,30     | unsorted-checkouts                                              |

## ΑΝΩΤΑΤΗ ΣΧΟΛΗ ΚΑΛΩΝ ΤΕΧΝΩΝ

### 1. Βασικά Στοιχεία Βιβλιοθήκης

| Αρ. Βιβλιοθήκης | Όνομα Βιβλιοθήκης | Όνομα Βιβλιοθήκης (ΕΤΕΚ) | Φορέας            | Email             | Βιβλιοθήκη        |
|-----------------|-------------------|--------------------------|-------------------|-------------------|-------------------|
| 1               | Αρ. Βιβλιοθήκης   | Όνομα Βιβλιοθήκης        | Όνομα Βιβλιοθήκης | Όνομα Βιβλιοθήκης | Όνομα Βιβλιοθήκης |

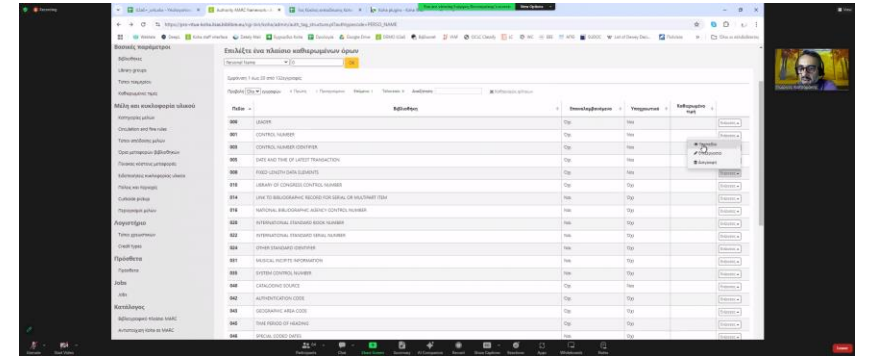
### 2. Χρήστες και Πληθυσμός

| Αρ. Βιβλιοθήκης | Όνομα Βιβλιοθήκης | Όνομα Βιβλιοθήκης (ΕΤΕΚ) | Φορέας            | Email             | Βιβλιοθήκη        |
|-----------------|-------------------|--------------------------|-------------------|-------------------|-------------------|
| 1               | Αρ. Βιβλιοθήκης   | Όνομα Βιβλιοθήκης        | Όνομα Βιβλιοθήκης | Όνομα Βιβλιοθήκης | Όνομα Βιβλιοθήκης |

# Staff training: the main challenge

## Principles-decisions

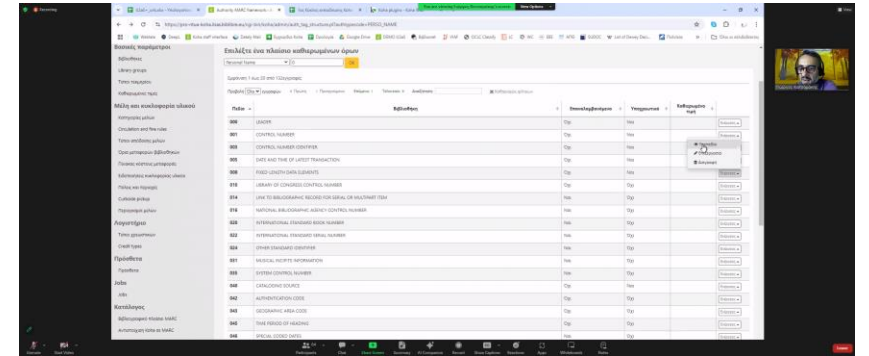
- Focus on user needs
- Empowerment through participation
- Gradual familiarization (familiarization with the new work environment, use of Koha management tools, different user levels - a differentiated approach, basic configuration knowledge for each library's system librarians)
- Learning by doing
- Planning with modern tools + asynchronous training
- Translation of the Koha manual into greek
- Detailed user guides for the additional tools (Matomo: monitoring and analyzing service traffic, Urungi: generating statistical reports, VuFind: Unified search and display of content for the final user)
- Video tutorials (all training sessions recorded on video)



# Staff training: the main challenge

Some numbers...

- introductory training (39 hours, Dataly Tech-Bib Libre) on July and September 2024
- Phase 1 of training (300 hours, Dataly Tech) on October and November 2024
- Phase 2 of training (100 hours, Dataly Tech) on March and April 2025)
- Extra training (University of Crete, Athens School of Fine Arts, troubleshooting), 137 hours, Dataly Tech-Bib Libre)

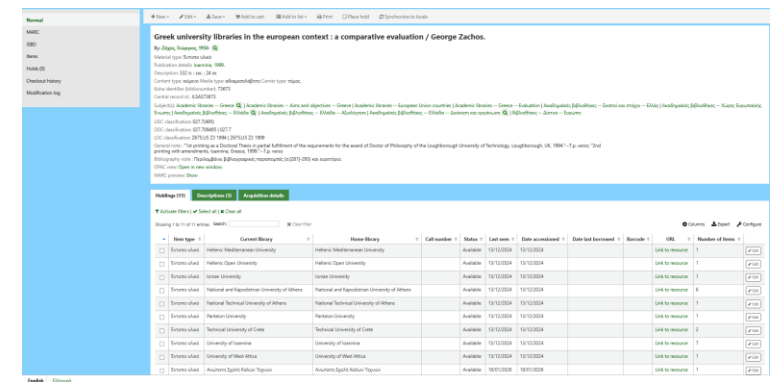
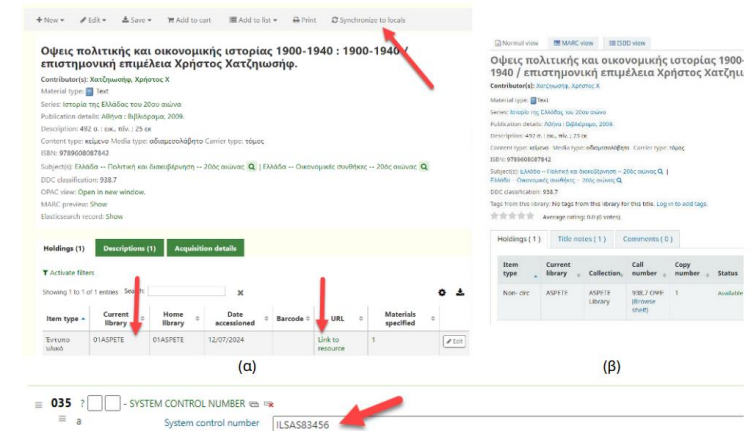


# Central Catalogue, local systems - synchronization

The synchronization mechanism between local catalogs and the Central Catalog, as well as the reverse process, are key elements of the structure of the new ILSaS+ environment and perhaps its most significant innovation, since this functionality is being implemented in **Koha** systems for the **first** time.

The synchronization mechanism allows member libraries to perform the following basic functions:

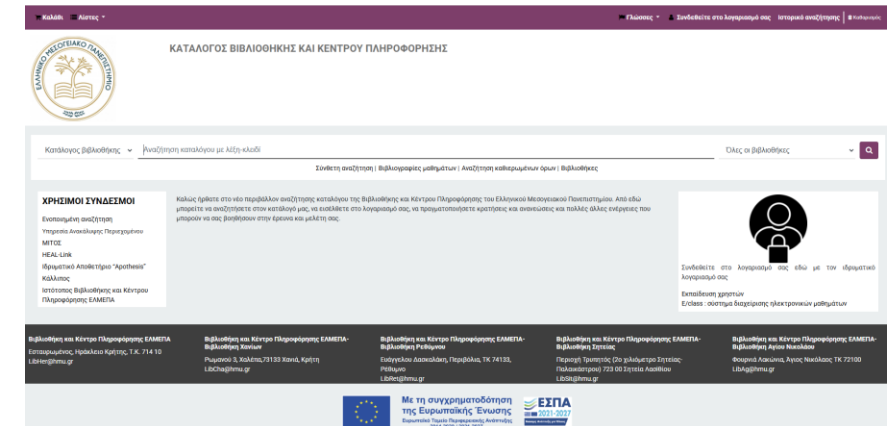
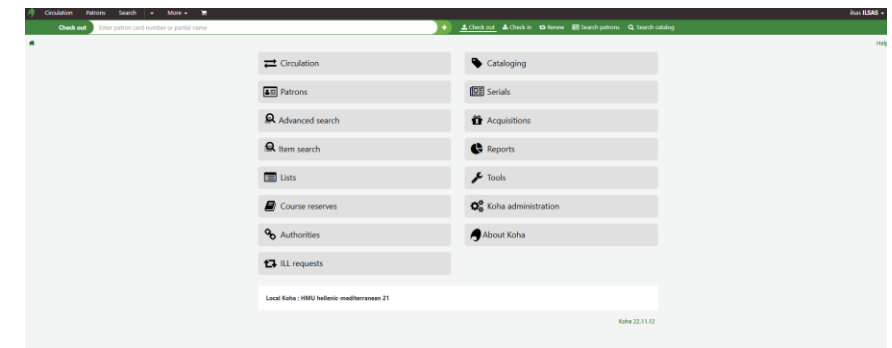
- add a new record to their local catalog by registering a copy in the corresponding record in the Central Catalog;
- increase or decrease the number of copies they have in their local system, with automatic updating of the Central Catalog
- unlink a local record from its corresponding entry in the Central Catalog, and
- add a new record to the Central Catalog (provided they have the necessary permissions), register a copy (or multiple copies) for their library, and automatically create a record in their local system.
- \*At this point, it should be noted that similar functionality is provided for the synchronization of the authorities



# Central Catalogue, local systems - synchronization

Any local Koha system has all the individual modules:

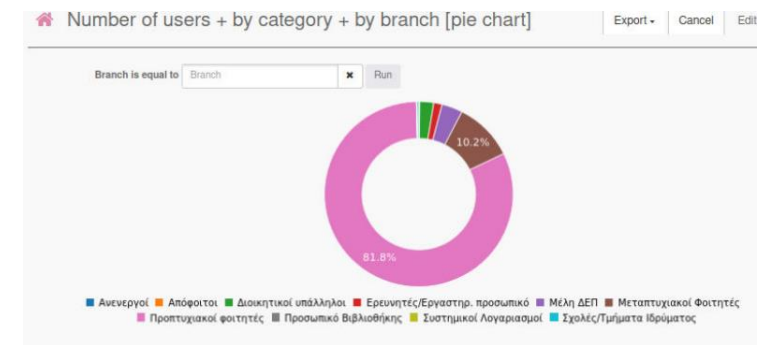
- Cataloging
- Authorities
- Search catalogue (advance, item)
- Patrons
- Circulation
- Course reserves
- Serials
- Acquisitions
- ILL requests
- Reports
- Lists etc



# Reports of library operations

In order to support decision-making at the library management level, an essential feature offered by the ILSaS+ environment is the open-source business intelligence software Urungi11.

This tool extracts data from the local Koha system and generates a series of real-time reports on various aspects of library operations.



Reports Create new report

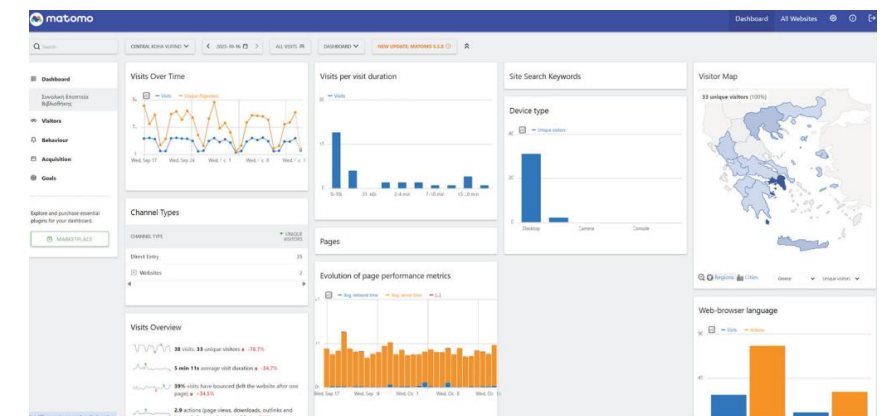
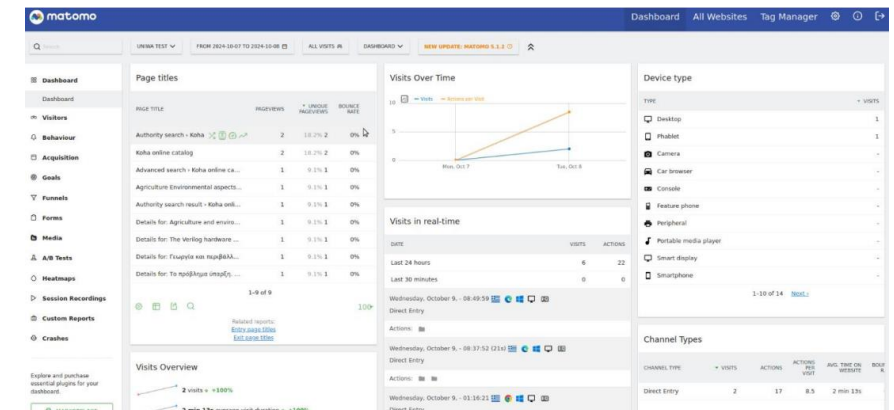
| Name                                                                 | Layer                           | Author   | Created on   |                                                             |
|----------------------------------------------------------------------|---------------------------------|----------|--------------|-------------------------------------------------------------|
| All active users (their subscription expiration date has not passed) | Patrons                         | ibibline | Mar 26, 2025 | <span>⏮</span> <span>⏪</span> <span>⏩</span> <span>⏭</span> |
| All items that are overdue in the last month (returned or not)       | Overdues_last_month             | ibibline | Mar 26, 2025 | <span>⏮</span> <span>⏪</span> <span>⏩</span> <span>⏭</span> |
| Teacher students                                                     | Patrons                         | ibibline | Oct 9, 2025  | <span>⏮</span> <span>⏪</span> <span>⏩</span> <span>⏭</span> |
| Books cataloged by a specific library                                | Action_logs                     | ibibline | Mar 26, 2025 | <span>⏮</span> <span>⏪</span> <span>⏩</span> <span>⏭</span> |
| Books that have not been returned for more than 6 months             | Circulation (current checkouts) | ibibline | Mar 26, 2025 | <span>⏮</span> <span>⏪</span> <span>⏩</span> <span>⏭</span> |
| Checkouts since the migration                                        | Statistics                      | ibibline | Mar 26, 2025 | <span>⏮</span> <span>⏪</span> <span>⏩</span> <span>⏭</span> |
| Documents cataloged in the last month                                | Catalog Mar21                   | ibibline | Mar 26, 2025 | <span>⏮</span> <span>⏪</span> <span>⏩</span> <span>⏭</span> |
| Fines of the Last Month (paid or not)                                | Accountlines                    | ibibline | Mar 26, 2025 | <span>⏮</span> <span>⏪</span> <span>⏩</span> <span>⏭</span> |
| Items added to the catalog in the last month (Last month)            | Catalog Mar21                   | ibibline | Mar 26, 2025 | <span>⏮</span> <span>⏪</span> <span>⏩</span> <span>⏭</span> |
| List of books currently on loan                                      | Circulation (current checkouts) | ibibline | Mar 26, 2025 | <span>⏮</span> <span>⏪</span> <span>⏩</span> <span>⏭</span> |

Print | Download | 1 | 2 | 3 | 4 | Next | Last

# Collection, analysis, and utilization of the data generated by the ILSaS+: Matomo

For monitoring web traffic by recording detailed data (data analytics), we use Matomo software. Among the strengths of this software are the following:

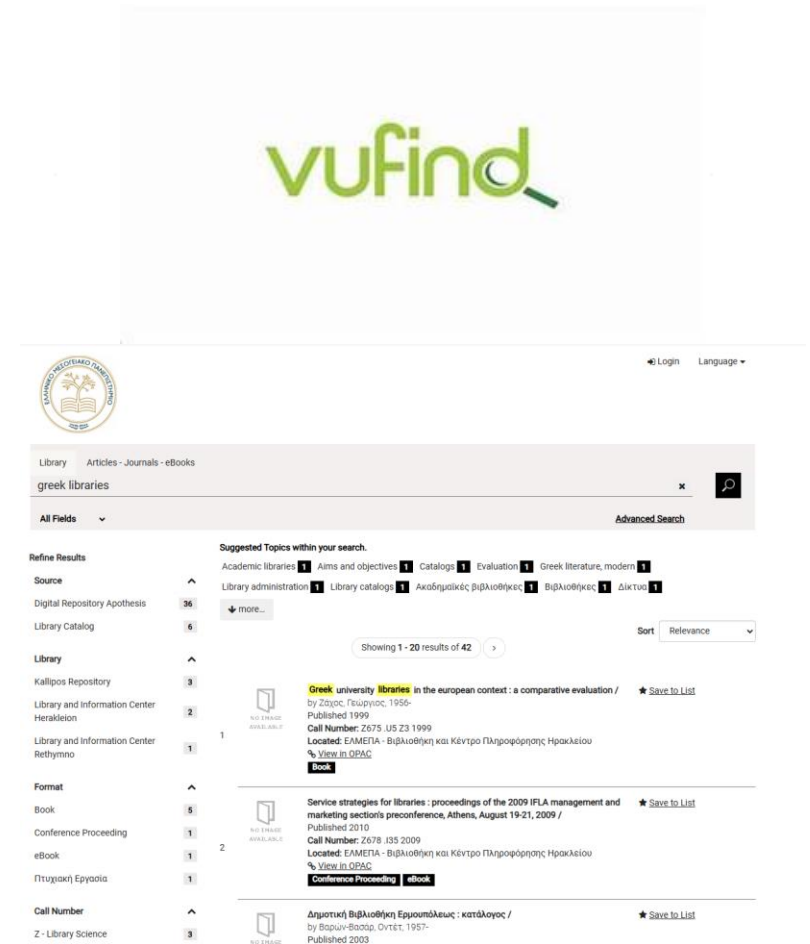
- full ownership of the data and assurance of compliance with privacy regulations such as the GDPR
- high accuracy in the statistics provided
- flexibility in configuration and the ability to expand, given that it is open-source software
- the provision of advanced capabilities at a low cost



# Unified navigation-search: VuFind

## Integration with Koha

- Integration with Institutional Repositories
- Integration with third-party systems, such as EDS
- Customization of the user interface (UI)
- Dynamic creation of navigation facets





## Integrated Library System as a Service+

The challenge now is to use the tools of our collaboration to strike a balance between collective work—which will conserve resources and multiply results—and the necessary and desirable autonomy of each university institution and library.