



Dedalus

HEALTHCARE SYSTEMS GROUP

 **ATHENA**

**Supporting the
entire process
for Anatomical
Pathology**

www.dedalus.eu



The context

Cancer is one of the biggest diseases affecting modern society with significant personal, social and economic costs worldwide. An important role in the battle against cancer is fast-evolving diagnostics, specifically Anatomical Pathology.

This diagnostic is the key node of a much more complex process, whereby pathologists accurately qualify the cancer thus providing information for the most effective treatment.

The solution

The experience gained over two decades in healthcare IT has allowed the design of Athena; a solution aimed to support the Anatomical Pathology Laboratory.

Athena has been developed with a detailed eye to the discipline-specific and functional needs of pathologists and technicians to support them in their work through all phases of the diagnostic process.

Athena translates new technologies into a highly innovative solution able to support different workflow models, underpinned by a flexible architecture and the embedding of Dedalus' advanced integration middleware, X-Value. Athena offers pathologists, technicians and administrative staff a complete, effective and intuitive workflow management system.

Athena offers a modular approach to support the needs of an Anatomic Pathology Laboratory with the main Laboratory Information System (LIS) core platform handling the laboratory's workflow expanded by integration to external third party applications and several plug and play modules offering a complete solution.



The modules

BI4H ANAPATH

Dashboard to analyse the departmental workload and performance, relevant events and trends

ATHENA OEWEB

Management of orders and results dispatching

ATHENA TRACKING

Touch screen enabled in-lab management and activity tracking

ATHENA DIGITAL PATHOLOGY INTEGRATION

Management of 3rd party Digital Pathology application integrations

ATHENA SAMPLE STORAGE

Biological material archiving and storage using 2D barcode technology

Athena OEWEB

THE CONTEXT

The anatomic pathology process begins and ends outside of the department. Samples are taken in operating theatres and surgical clinics, where a large set of information about the tissue sample is collected for sending to the Anatomical Pathology department. At the end of the process, the Anatomical Pathology report is sent back to the clinician(s) involved in the patient's care.

THE NEEDS

With a variety of different sources where samples originate from, the information associated to the sample needs to be collected in a structured and normalised way, and once submitted, a clear view on the progress of the order tracked.

THE SOLUTION

The Athena Order Entry Web module provides an end-user portal for managing requests initiated outside of the laboratory, such as those from:

- Operating theatres
- Clinics
- Wards
- GPs
- Tertiary and/or private hospitals

OEWeb provides end-users with updates to their requests, including where it is in the lab workflow and the ability to view the final report once it has been signed off by the pathologist. Configuration of the module is straight forward, allowing it to inherit the settings from Athena, whilst also allowing local preferences to be set such as label and worklist layouts.



Athena Tracking

THE CONTEXT

Histology and cytology laboratories are characterised by an increasing focus on monitoring of the quality of their work. This interest has developed because of the highly manual process and the sensitivity of the diagnostic procedure to be managed with a higher risk of clinical error.

THE NEEDS

In order to avoid clinical errors and continuously improve quality, Anatomical Pathology Laboratories need to be able to track, in detail, each step of the process whilst also ensuring the steps are completed in full and in the correct sequence.

THE SOLUTION

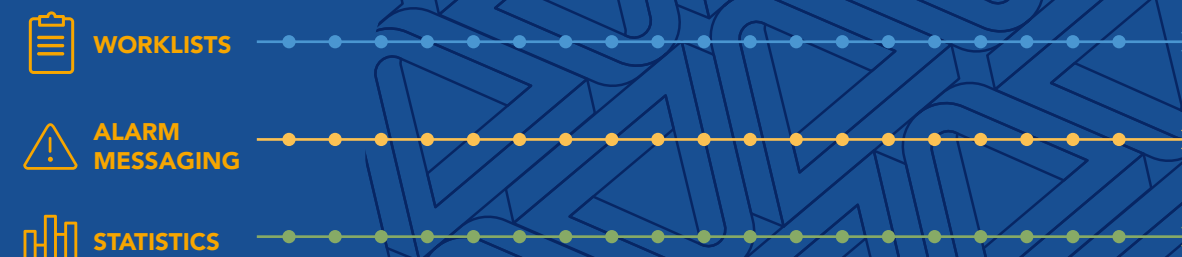
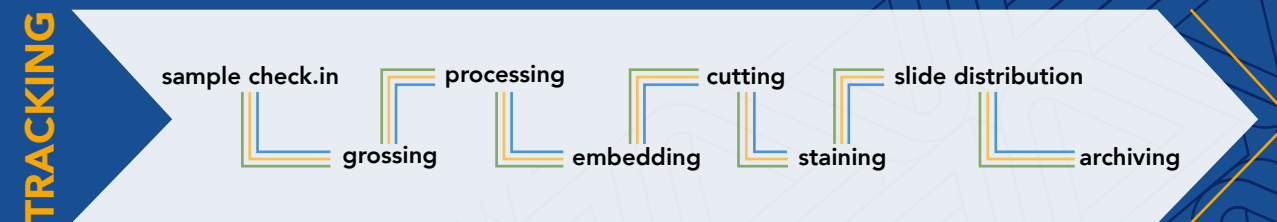
Athena Tracking has been specifically designed to provide a novel approach to address these issues through the provision of a series of specific, carefully built-in functions to facilitate the routine work of administrative and technical personnel, and pathologists. Athena introduces innovative functions which enhance the work cycle and brings laboratory management IT system closer to end users.

Athena Tracking can track biocassettes and slides for complete process control by monitoring times, users and tools used during each step of a task all through an intuitive user interface designed for use on touchscreens as well as barcode readers.

This approach maximises system usability and makes in-depth management of all laboratory operations possible, while guaranteeing an overview of all processes to maximise laboratory efficiency. With integration to all laboratory equipment possible, technicians can automate the tracking process of the activities performed whilst minimising the risk of errors and consequent loss of valuable information.

ATHENA Tracking is a powerful laboratory tool allowing:

- Single material tracking: ascertaining exactly where each processed object is in the “chain of responsibility” within the laboratory and its status at any given time
- Process optimisation: increase efficiency whilst minimising risk
- Accreditation and Quality Certification: track all operations automatically in real time



Athena Sample Storage

THE CONTEXT

Rapid evolution of research and technologies in medicine has led to a significant increase in the demand to manage organised collections of biological samples and associated data within an IT system.

THE NEEDS

- Definable hierarchical storage structures down to the levels of shelf, drawer and specific position
- Search function with patient, sample, location-specific filtering
- Logging in and out of materials
- Auditing of all operations performed within the solution
- Request management for second opinions of stored material

THE SOLUTION

Athena Sample Storage complies with reference standards and specific operating regulations to organise and coordinate a process for creating organisational collections, structured according to shared rules, all through an intuitive user interface.

It can manage and archive biological material in different storage media, including:

- Fresh materials in containers
- Test tubes containing liquids
- Blocks in paraffin
- Slides
- Residual material

This is all managed through the use of locally configurable linear or 2D labels generated by the solution.

The system can manage storage locations according to a customisable hierarchical structure organised by building, floor, room, shelf, drawer and position. The stored sample locations can also be displayed in a graphical form.

Access to system functions can be defined using role-based access and association of a role to a specific user, as well as authorisation to access samples based on the operating tasks and level of responsibility of the user.

To search for samples within the storage system, a suite of functions are provided that allow specific searching using any information entered within the system as search criteria.

All operations performed by system users are tracked in the centralised database, recording the name, time and type of task performed; all of which is made available to the system administrator.

Athena Digital Pathology Integration

THE CONTEXT

Technology is rapidly progressing with improvements in the functionality of scanners on one side and the use of diagnostic images on the other, leading to an increase in digitisation of anatomic pathology.

The concept of a “virtual slide” enables Anatomical Pathology departments to implement Hub & Spoke models of service, structured second opinion procedures, and to optimise technicians and pathologists workloads.

THE NEEDS

The digital revolution in anatomic pathology requires some specific needs:

- Support: supporting effective reporting
- Collaboration: access to a wide and specialised library of clinical images and data
- Integration: seamlessly integrating the Digital Pathology solutions within the LIS process

THE SOLUTION

The module fully supports all of the integration needs between the Athena Anatomical Pathology Laboratory Information System and external Digital Pathology applications. The user has immediate access to information on the next steps of the digitisation process.

Reporting allows access to the digital pathology viewer directly from the specific case in the Athena Anatomical Pathology LIS environment, ensuring access to all of the data and images is available.

Athena Digital Pathology Integration allows linking to all standard digital pathology applications currently in the market.

BI4H Anapath

THE CONTEXT

Modern laboratories aim is to utilise computerised tools to analyse data for potential trends with two main objectives: performance monitoring and evidence-based decision making.

THE NEEDS

An Anatomical Pathology department needs to be able to continuously monitor its own performance so that it can understand potential bottlenecks, personnel workloads and clinical trends.

THE SOLUTION

Athena’s activity dashboard module, BI4H Anapath, allows users to move from simple analytical data run by transactional systems, to having access to more complex information such as correlation and synthesis of trends - structured and represented in an easy-to-understand display.

The availability of such real-time data allows implementation of corrective actions and improvements, whilst supporting effective strategic decisions in the changing landscape of Anatomical Laboratories with other benefits such as:

- Improved operational performance
- Resource utilisation
- Risk reduction
- Cost reduction

Strengths

1



CONNECTIVITY

Integration to third party equipment and systems through the X-VALUE platform

2



COMPLETENESS

Functional coverage of all areas within an Anatomical Pathology laboratory

3



MODULARITY

Synergic growth based on operational needs

4



CONTROL

Complete tracking of all activities performed and simple recovery of laboratory information assets

5



FLEXIBILITY

Ease of use and adaptable to workflow requirements

6



NETWORKING

Native support to collaborative organisational models



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