



Flexible laboratory management with EUROLabOffice

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INTRODUCTION

Efficient laboratory management software is the mainstay of a smoothly run diagnostic laboratory. One such software, EUROLabOffice, is designed to streamline daily laboratory routine in autoimmune diagnostics, infectious serology, allergology and molecular genetics. It incorporates different diagnostic techniques, as used by EUROIMMUN test systems, including the indirect immunofluorescence test (IIFT), ELISA, immunoblot and microarray. The software efficiently consolidates the laboratory analyses by organising workflow and documenting all data and processes. If required, it can be integrated seamlessly into existing laboratory information systems (LIS) in a middleware role.

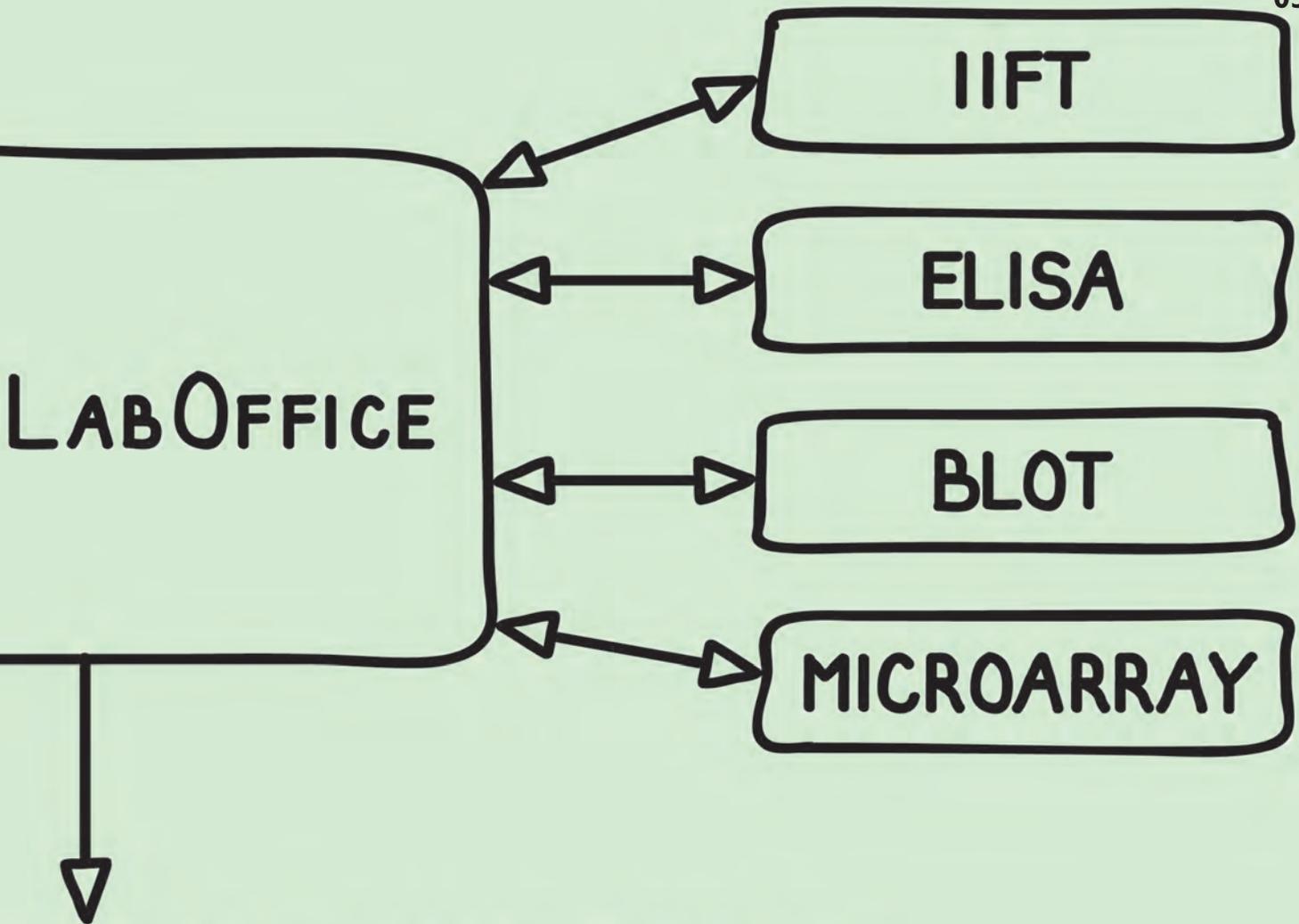
PREANALYTICS

EUROLabOffice's support in the laboratory begins with the planning of the day's work schedule. Patient data and analysis parameters are transferred automatically to the EUROLabOffice programme when

the software is connected to any standard laboratory or practice information system. Each patient specimen is allocated a barcode with a unique sample number.

To coordinate the day's work, the software generates a worklist and an optimised protocol for the tests required that day. The requested analyses are automatically assigned to the relevant workstations, and the assay strips and slide fields are compiled according to the test specifications. A cost-efficient use of materials is taken into account during generation of the worklist.

The software can be expanded to take into account individual allocation criteria with the auxiliary Scan Capture Module. This module provides optimal assignment of samples to multiple workstations according to the laboratory's specifications. Special functions include the generation of a list of missing samples and results from previous orders, so that, for example, sera can be incubated at a different dilution. These samples are then included in the day's analyses.



SAMPLE MANAGEMENT GENERATION OF PROTOCOLS PREPARATION OF FINAL REPORT

ANALYTICS

In the processing phase, the software guides the user through the individual steps, for example sample dilution and incubation, by means of well-structured protocols and intuitive graphics (see figure 1). Sample mix-ups are minimised thanks to the graphic navigation and paper-free work processes. EUROLabOffice can be connected bidirectionally to automated sample processing instruments to minimise manual work (see figure 2). Particularly recommended are the IF Sprinter and DAS API 6 for IIFT, the Analyzer I and I-2P for ELISA, the EUROBlotMaster for immunoblot and the liquid handling device EUROLabLiquidHandler. On request, the software can also be connected to a range of other sample processing devices.

EVALUATION

Recording and managing results from the analyses is effortless as well as paper-free with EUROLabOffice (see figure 3). Data are entered quickly and efficiently at the PC using simple shortcuts and

freely definable tailored text components (macros). All results are automatically archived along with the patient data and customer details.

Efficiency can be significantly boosted by combining EUROLabOffice with specially developed evaluation programmes.

IIFT images, in particular from anti-nuclear antibody (ANA) diagnostics, can be automatically recorded and interpreted using the EUROPattern suite. This system combines a highly specialised microscope with powerful pattern recognition software (see figure 4) to provide efficient computer-aided classification of IIFT results

Immunoblots can be evaluated automatically with the EUROLineScan programme. Using digitalised images of the incubated test strips, the software identifies and quantifies the positive bands quickly and accurately

The EUROArrayScan programme provides fully automated data analysis for DNA microarrays. Genotype results from a EUROArray slide with five samples are obtained in just 20 seconds.

Evaluation programmes such as these, complement the laboratory ►

management software and ensure smooth data analysis. And since all data, including IIFT and blot images, are saved and readily accessible, there is no need to store potentially infectious slides and blot strips for future reference.

DIAGNOSIS

For the diagnostic appraisal EUROLabOffice offers an unprecedented level of support through its comprehensive patient data management functions. The software consolidates the daily test results for each patient, facilitating the overall evaluation of the day's findings. Moreover, new results can be easily compared with the patient's archived history, including findings from previous investigations, enabling a reliable and well-founded diagnosis to be established.

A special feature of the software is the inclusion of different user levels for a hierarchical review of results, providing enhanced security. Assay results are checked for technical correctness by a laboratory technician, while final diagnostic reports can only be released by the laboratory doctor. After the results have been verified by the pathologist, the data can be exported into the LIS for generation of the patient reports.

FLEXIBLE CONFIGURABILITY

EUROLabOffice can be flexibly adapted to existing work processes and individual needs. It is fully compatible with a wide range of external devices used in the diagnostic laboratory. Moreover, its versatile architecture and optional expansion modules enable it to be quickly tailored to new developments or changed laboratory conditions. Auxiliary applications and services include an immunofluorescence positioning system (IF-PS) which provides real-time synchronisation of slide positions with the result entry form, and the Scan Capture Module for optimal allocation of samples to different work stations according to individual distribution criteria.

The software is also suitable for inter-practice laboratory organisation. It can be accessed simultaneously from several PC stations, and data can be exchanged quickly and conveniently between computer systems. EUROLabOffice is thus an ideal companion for joint practices and equipment-sharing facilities.

SUMMARY

EUROLabOffice software offers enormous benefits to busy diagnostic laboratories looking to maximise efficiency, reduce technician errors and standardise diagnostic analyses. Good laboratory organisation is, moreover, a cornerstone to meeting Quality Management targets in the laboratory. Its usefulness is confirmed by many satisfied users:

"Using the EUROLabOffice software, I can create protocols quickly and reliably. This helps immensely to simplify work processes and to save time", explains a medical technician from a laboratory in Germany.

A Medical Director of a private high-throughput laboratory summarises how the system fulfils his needs: *"For me it is crucial to have a software system which can handle different test methods such as IIFT, blot and ELISA, offers patient-specific documentation of results and images, ensures availability of these data at validation work stations and provides high reliability and plausibility of results. All this helps to increase efficiency and maintain high-quality performance in the laboratory".*

EUROLabOffice has thus helped these and many other laboratories worldwide to achieve greater productivity, reliability and accountability. With its broad range of applications and easy adaptability, it is a bedrock for the modern diagnostic laboratory. 

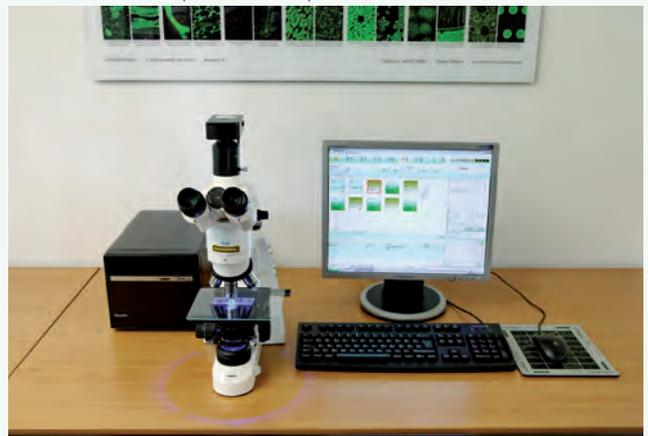
▼ **FIGURE 1:** Graphic guidance for sample dilution



▼ **FIGURE 2:** Connection to automated sample processors



▼ **FIGURE 3:** Paper-free compilation of results



▼ **FIGURE 4:** EUROPattern evaluation software

