

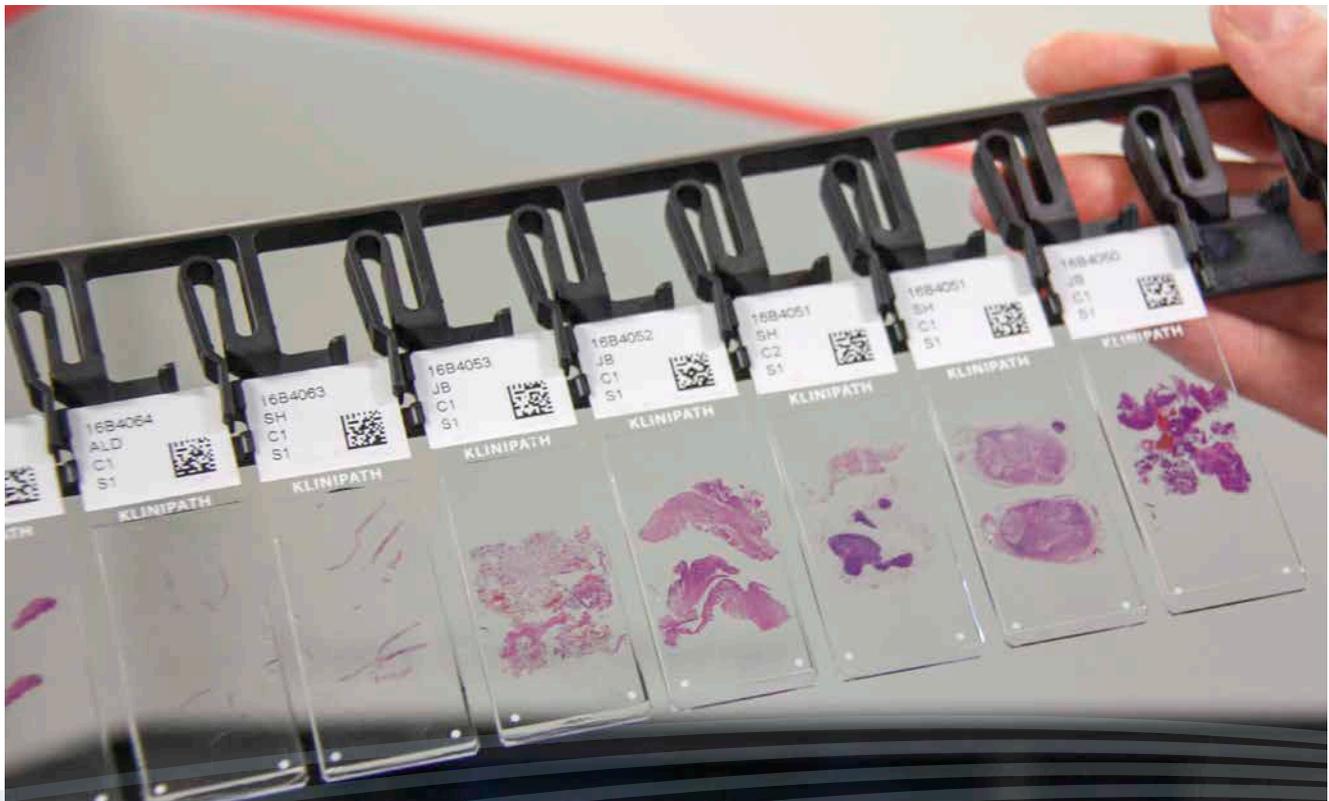
AZ Sint-Jan AV Brugge-Oostende, Belgium

Embracing digital pathology, future-oriented pathology lab reaches beyond its hospital walls

MIPS' LIS DaVinci supports AZ Sint-Jan AV Brugge-Oostende with remote image access, reporting, traceability and collaboration tools

INTERVIEWEE » Dr. Ivo Van den Berghe, Director of the Anatomical Pathology laboratory

“I’m convinced that digital pathology is the future of pathology,” explains Dr. Ivo Van den Berghe, director of the Anatomical Pathology laboratory at AZ Sint-Jan AV Brugge-Oostende, Campus Brugge, in Belgium. “It creates so many exciting possibilities for remote consultancy, digital platforms for centralisation of rare diseases, digital interpretation of immunohistochemistry, etc.” MIPS is supporting the laboratory to make those possibilities a reality, with the LIS DaVinci laboratory information system. LIS DaVinci is the product of years of intensive cooperation between pathologists and IT professionals, so it combines the tools pathologists need with ease of use and performance – including an integrated digital pathology module.





A TRADITION OF INNOVATION

The Anatomical Pathology laboratory of 950-bed AZ Sint-Jan AV Brugge-Oostende, Campus Brugge, has always been future-oriented and innovative. It was the first pathology laboratory in Belgium to introduce integrated, on-site robot screening of pap smears, and it was also the first pathology laboratory in the country to obtain ISO 15189 accreditation. It is currently developing next generation sequencing (NGS), together with the haematology unit of the Clinical Biology department.

The laboratory, with four pathologists handling some 17,000 biopsies each year, is also moving forward with digital pathology. “In classical pathology, the pathologist has to view slides on a microscope. But with digital pathology, the slides are instead scanned with a high-resolution scanner, allowing the pathologist to view the images of the slides on a screen. And that’s not all: with just a click, the images can be made accessible to a colleague anywhere in the world. This also enables pathologists to read images and report from any location, to set up international consultancy platforms and networks for diagnosis of rare tumours, and more.”

But to access the benefits, AZ Sint-Jan AV Brugge-Oostende needed an LIS that supports digital pathology. The hospital began looking for an LIS that would meet all the specific requirements of the pathology laboratory, including digital pathology. It found its answer in MIPS’ LIS DaVinci.

Changing a LIS in a pathology department and implementing a digital platform is impossible without the cooperation of the hospital’s director, medical board, IT department and technical department. We were fortunate that all these parties believed in this project and its future-oriented importance for patients and hospital alike.

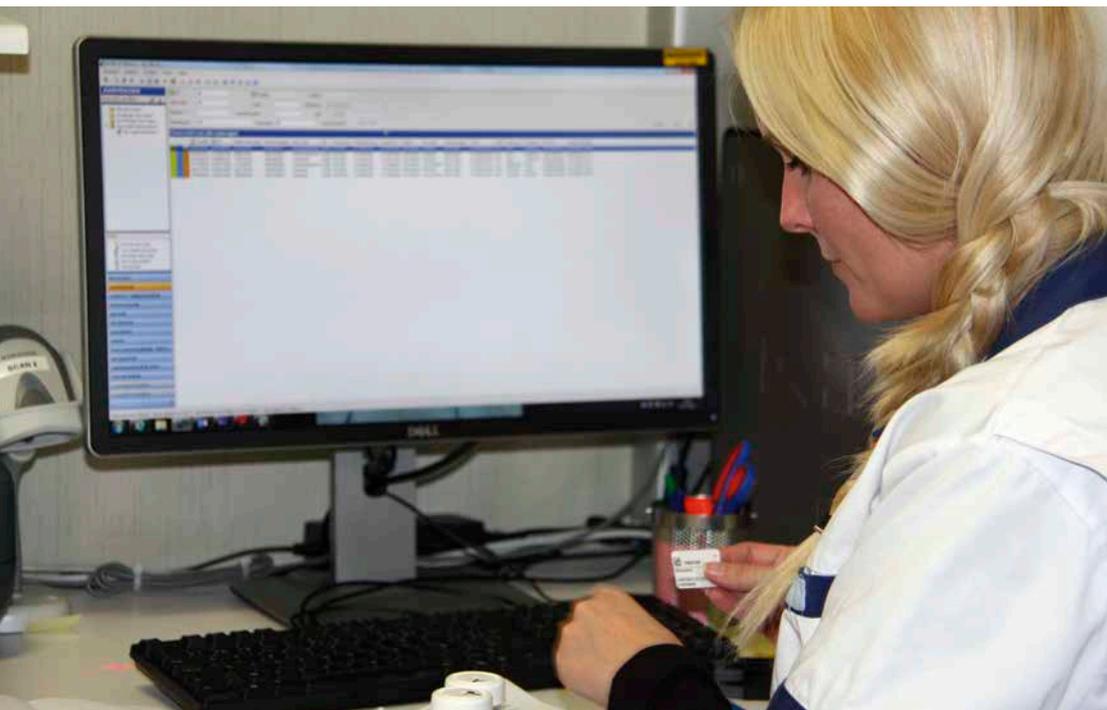
DEDICATED TO PATHOLOGY NEEDS

Clinical biology and pathology laboratories share certain needs, including a reliable, easy to use LIS that offers traceability of samples during all stages of the laboratory process. Increasingly strict accreditation conditions for ISO 15189 place stringent demands for traceability. And over time, laboratories have seen an increase in the types of procedures to be performed, resulting in greater complexity for processing.

On the other hand, Dr. Van den Berghe highlights: “A pathology laboratory is fundamentally different from a clinical laboratory in some specific ways. When you run a blood test, you put the blood sample in a machine and the results you get are themselves the report. In a pathology laboratory, we work in a different way. As in radiology, we have to dictate a report for each biopsy or cytology case. So our LIS must support this, with a reporting function and voice recognition, to start with.”

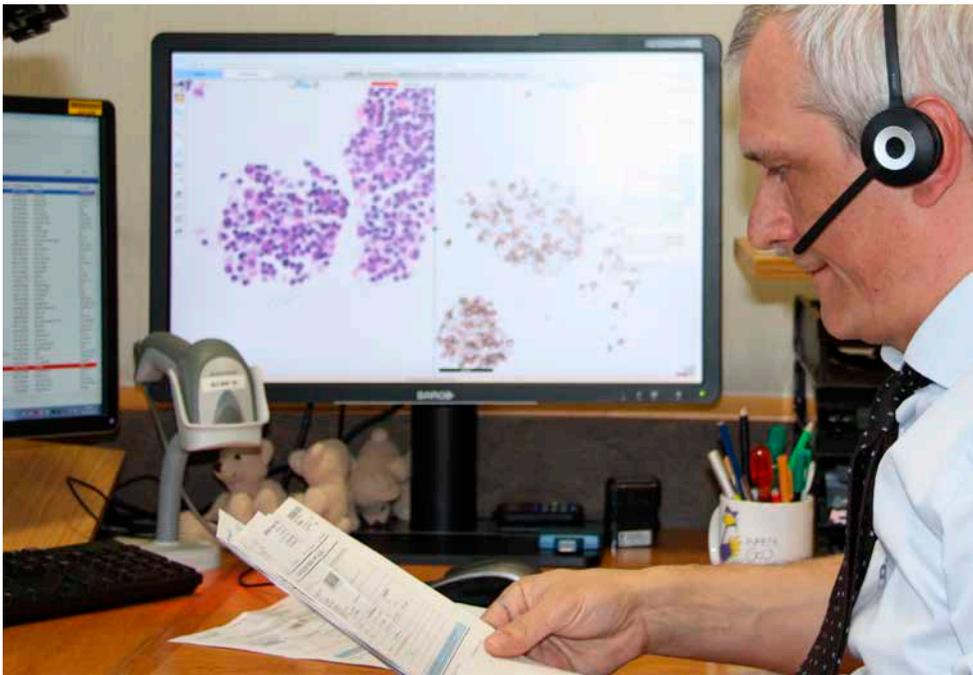
LIS DaVinci provides AZ Sint-Jan AV Brugge-Oostende with a smooth, efficient and connected workflow. It combines traceability, quality control and interconnectivity with standardised interfaces and functionality, for maximum user-friendliness combined with high performance.

“Our pathologists appreciate the reporting functionality: we simply dictate our findings in LIS DaVinci, and the dictation is converted to a written report by the voice recognition



Digital pathology module

- Control of slide identification and workflow traceability by LIS DaVinci
- Easy track and tracing of slides, even special stains and immunohistochemistry slides
- Remote access to images so the pathologist is no longer bound to a microscope, gaining flexibility and enhanced availability of competence
- Easy sharing of slides at multidisciplinary consults, in and outside the hospital
- Enhanced collaboration with colleagues abroad and support for setting up international networks for peer review, second opinions and expert panels.



LIS DaVinci

- Easy sample identification with barcodes
- On-demand printing of slides and unique identification of each slide and each stain
- Full traceability of all actions, status changes and movements of samples in the laboratory
- Digital dictation and/or interactive speech recognition with an inbuilt, Word-like text editor
- Reporting templates with dynamic fields automatically filled in favouring standardised and synoptic reporting
- Statistics on the laboratory's activity and workflow mapping

“I’m convinced that digital pathology is the future of pathology. It creates so many exciting possibilities for remote reporting, for collaboration, etc.” Dr. Ivo Van den Berghe

module. With our previous LIS, reporting was more complex. But with LIS DaVinci, we can easily access a report, make changes and validate it: in fact, it’s like working in Word, so it feels very familiar.”

DIGITAL PATHOLOGY SUPPORTS ENHANCED PATIENT CARE

For digital pathology, too, LIS DaVinci offered the laboratory a big step forward. “Using digital pathology, we can work from any location with a virtual desktop integration (VDI),” says Ivo Van den Berghe. “Just like in the hospital, we review images, report our findings and validate reports; we can be consulted anywhere in the world from any computer that has access to internet in any hospital. Right now, our colleague Pascale De Paepe is at the Mayo Clinic, in the USA, for two weeks, for extra training on kidney biopsies. She can log in, view our cases and work on reports from abroad. We can even view slides on mobile devices such as iPads and smart phones.”

Accessing slides digitally also supports multi-disciplinary consultations, such as tumour boards. “While discussing our patients at a consult, we can



Benefits of LIS DaVinci

- LIS DaVinci offers simple and transparent interfaces, and provides process control, detailed traceability and practical tools for quality management.
- LIS DaVinci supports digital pathology workflows, with remote access and collaboration, image track & trace, whole slide image-viewing without a microscope from the LIS, and automatic integration of digital image analysis results into reports.
- The LIS DaVinci digital dictation module creates a link between digital dictation and the results to be integrated in the final report. Scanning the barcode automatically links the dictation to the correct patient file, providing traceability all the way up to delivery of the final report.
- The Leonardo platform links laboratories across an international network for secure information exchange. Patient and caregiver IDs, analysis results and even information for billing of services are shared across sites using the Leonardo platform, while no decryptable information identifying the patient is transmitted.

easily call up the images on the screen. Before it just wasn't possible: you can't take all the glass slides to be discussed with you to such meetings," explains Dr. Van den Berghe. He also highlights that working digitally helps the laboratory eliminate potential errors. "The slides have barcodes directly linked to the correct patient. When you report, you scan a barcode and the software selects the correct digital image of the slide. There is no risk of reporting on the wrong sample, so it offers a big advantage for security and efficiency. All of this means digital pathology is also good for the patient's safety."

A SMOOTHER, MORE TRACEABLE WORKFLOW

While implementing LIS DaVinci and digital pathology meant big changes for the laboratory and its staff, any rough spots were soon smoothed out. "Our collaboration with MIPS, and the training they provided, was excellent. We only needed a half-day training to get going. There is so much rich functionality in LIS DaVinci, though, that we are continuing to learn as we go. So we organised an additional training once we were comfortable using the LIS. There were a few initial hiccups in the implementation, but these were sorted out."

Laboratory technician Anne-Laure Descamps explains: "Tracking and barcoding of specimens is much better. And we don't have to manually print labels, anymore either. The exams are now attributed to the correct pathologist automatically. Before, we had to sort the slides per pathologist, now we can immediately archive them – which saves a lot of time!"

She adds, "All the steps in the workflow seem better connected, and everything seems easier to trace, from the moment the sample is received and the order registered, to the staining of the slide, ... There is much more automation and fewer manual tasks, so it's much faster and eliminates possible errors. And the traceability has important repercussions for patient safety, and for our ISO 15189 compliance."

THE CONNECTED LABORATORY

"We are working with Philips and are setting up a digital platform with some other hospitals, including Massachusetts General hospital and the Brigham and Women's Hospital (both affiliated with Harvard Medical School, Boston). In Europe, we will expand our network with the University of Edinburgh (Scotland) and another facility in Florence (Italy), to set up an international network that will enable us to collaborate on rare tumours.

And, with the successful implementation of LIS DaVinci, the hospital and laboratory are already looking forward to extending the reach of the digital pathology collaboration. Ivo Van den Berghe concludes: "Digital pathology is just now starting to catch on, so we are already preparing to implement MIPS' Leonardo platform – a cloud-based collaboration platform that allows the secure exchange of information across sites and between colleagues. This will help ensure we are well set up to enjoy the full potential of digital pathology, as more and more hospitals adopt it." •

