Swedish SME offers AI-powered no-code microscopy platform for automated digital slide imaging and analysis

Summary

Profile type
Technology offer

Company's country
Sweden

POD reference
TOSE20250528004

Profile status
PUBLISHED

Type of partnership
Investment agreement
Research and development cooperation agreement
Commercial agreement with technical assistance

Targeted countries
• World

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Term of validity
28 May 2025
28 May 2026

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28 May 2025

General Information

Short summary

A Swedish SME offers a customizable platform combining a whole slide imager and a no-code AI application for microscopy and image analysis. The system enables local or remote digitization and automation of image workflows, ideal for settings ranging from advanced laboratories to remote field use. The company seeks technical or research partners across healthcare, environmental, veterinary and industrial sectors to co-develop use cases and implement the solution.

Full description

The SME provides a powerful platform for automation of microscopy and/or image analysis workflows that is highly customisable, affordable and robust. It consists of a custom designed whole slide imager (WSI), an image/AI application and data management tools.

The whole slide imager reads standard microscope slides, or custom designed assays within the same footprint. It has integrated AI-processing for on-device image analysis and a fixed magnification of about 100x (10x objective + 10x eyepiece where 1 pixel is about 1 micron), suitable for a wide range of applications. Scan parameters are customisable, and it can capture z-stacks to ensure suitable focus on thick samples, use top or back lighting, and save any desired number of images for every field of view. Internal storage of 1TB provides capacity for 1000 scans while direct cloud integration allows online backups and remote data management. It was originally designed as a

screening tool for population monitoring of tropical diseases in low infrastructure settings where stool, urine and blood samples were used to detect biomarkers of different parasite species. It can run on battery (usb powerbanks) and does not require internet.

The image/AI application can be used to train custom AI-models without any coding skills. It provides the necessary tools for browsing, labelling and verifying image data as well as pipelines to train, validate and deploy AI-models. It works smoothly with the WSI to which users can deploy AI-models for fully automated workflows on device but can also handle images from other sources to create image analysis workflows.
The platform has an API that facilitates integration to other systems, for result visualisation, electronic notebook integration etc.

Example process to create an automated microscopy workflow for a new sample type on the WSI:
1. Optimize scan parameters to the sample characteristics and ensure image output is sufficient to identify objects/areas of interest.
2. Collect an initial data set by scanning samples or use an existing data set.
3. Manual labelling of the initial data set where experts label the objects or segments of interest in the collected images.
4. The labelled data is used to train an AI-model.
5. The AI-model is automatically validated within the application to let the user understand performance and potential bias.
6. The AI-model is used to extract more detections from additional data that are verified by experts to expand the total data set.
Step 4-6 can be iterated until desired performance of the AI-model is reached.
7. The ai-model(s) is deployed to the WSI and a workflow for the specific sample type is created consisting of the scan procedure + the image processing.
8. The automated workflow is now ready to be used, load a slide into the WSI, initiate the scan and enjoy automated digitalisation and image analysis. Once validated it can be distributed to multiple devices to increase throughput or enable decentralised analysis without the need for expertise at every location.
Note that the steps 2-6 can be applied when creating a workflow for general image analysis using images that are captured with other devices than the WSI. Then the deployment (step 7) is done to your production environment which could be a cloud, mobile or PC application.
The platform has been used in successful clinical trials in three countries, where a semi-automated workflow outperformed manual microscopy (WHO Reference method) in testing for intestinal parasites in stool samples.

Although the current validation is from healthcare-related applications, the platform is designed as a general-purpose solution. Additional potential applications being in the field of material science, environmental testing, veterinary medicine or other industries where microscopy or image analysis is used routinely.

Advantages and innovations

The main advantage of the platform is the ability to easily automate a complete workflow, including image collection, AI-analysis, and to run it locally on a device. This saves time and costs compared to manual workflows and has also been proven to increase the quality of the results for multiple applications. The ease of use and customisability opens possibilities for almost everyone to build their own workflow without coding skills or deep understanding of AI.
Most other automated microscopy solutions combine a slide scanner without AI-capabilities with a cloud-based AI solution adding dependencies to multiple suppliers, costs for cloud computing and data transfers and additional complexity to the workflow.

Technical specification or expertise sought

Stage of development

Available for demonstration

Sustainable Development goals

- **Goal 17: Partnerships to achieve the Goal**
- **Goal 9: Industry, Innovation and Infrastructure**
- **Goal 3: Good Health and Well-being**
- **Goal 4: Quality Education**

IPR Status

IPR applied but not yet granted

IPR Notes

N/A

Partner Sought

Expected role of the partner

The company is looking to collaborate with a diverse range of partners that can benefit from AI-powered microscopy and automated image analysis as a technology provider and expert consultant. Ideal partners include companies, research institutions, and NGOs who rely on precise and automated image interpretation across various fields. In healthcare, for example, pathology labs, clinical trial networks, and public health organizations can leverage the solution to streamline workflows and enhance the quality of analyses in settings ranging from centralized labs to remote, low-infrastructure locations. Beyond healthcare, industries such as environmental testing, material science, agriculture, and veterinary medicine stand to gain from the platform's ability to automate workflows, optimize slide-reading processes, and decentralize expertise. Partners involved in routine imaging, quality control, or field

diagnostics—where cost-efficiency, speed, and adaptability are paramount—will find the integrated, no-code solution a game changer for modernizing their operational processes.

The partner is expected to actively collaborate by providing domain-specific expertise and real-world feedback to tailor and optimize the automated workflow. This includes piloting the platform in operational environments, fine-tuning parameters and AI-model training procedures to match the unique characteristics of their sample types, and integrating the digital solution with existing systems. In addition, partners will serve as early adopters and subject matter experts who help to validate the results and suggest improvements based on practical experience. Their role extends to co-developing industry-specific use cases—whether in healthcare, environmental testing, material science, or other sectors—thus ensuring that the platform not only meets performance expectations but also drives greater cost-efficiency, consistent analysis, and decentralization of expertise across diverse applications.

Type of partnership

Investment agreement

Research and development cooperation agreement

Commercial agreement with technical assistance

Type and size of the partner

- **SME 50 - 249**
- **SME <=10**
- **Big company**
- **R&D Institution**
- **SME 11-49**
- **University**
- **Other**

Dissemination

Technology keywords

- **01003003 - Artificial Intelligence (AI)**
- **01003012 - Imaging, Image Processing, Pattern Recognition**
- **01004001 - Applications for Health**
- **01003024 - Cloud Technologies**
- **01003006 - Computer Software**

Market keywords

- **09005 - Agriculture, Forestry, Fishing, Animal Husbandry & Related Products**
- **05009003 - Animal health**
- **05002005 - Other medical imaging**
- **08003007 - Other industrial equipment and machinery**
- **08002005 - Machine vision software and systems**

Targeted countries

- **World**

Sector groups involved

Media

PDF documents

20250505_Technology offering_EEN.pdf

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