



**Celebrating 40 Years
of MetaSystems**

1986-2026

and 10 Years of MetaSystems Probes



HONORING OUR PAST SHAPING OUR FUTURE

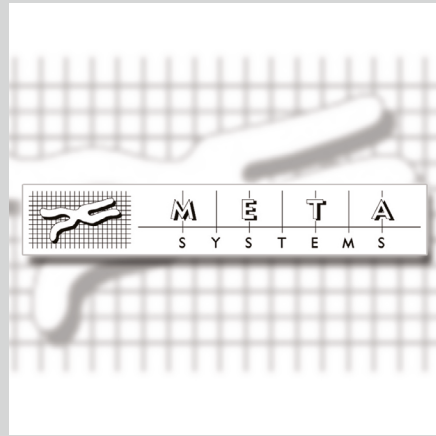
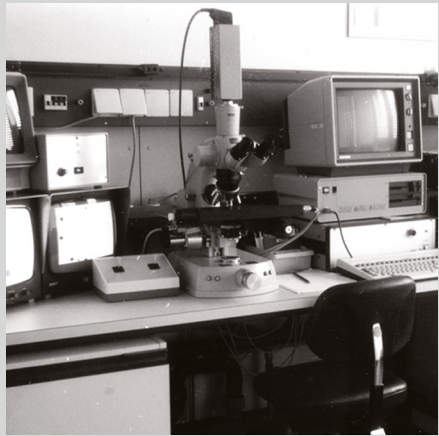
Forty years ago, MetaSystems was founded with a clear vision: to develop innovative imaging solutions that help laboratories generate reliable and reproducible results. What began as a small technology company has grown into a global organization serving customers in more than 100 countries.

Throughout these four decades, our journey has been shaped by scientific curiosity, technological innovation, and a commitment to supporting laboratories around the world. From our early developments in automated microscopy to today's AI-powered workflows, we have continuously worked to transform complex laboratory processes into efficient and standardized solutions.

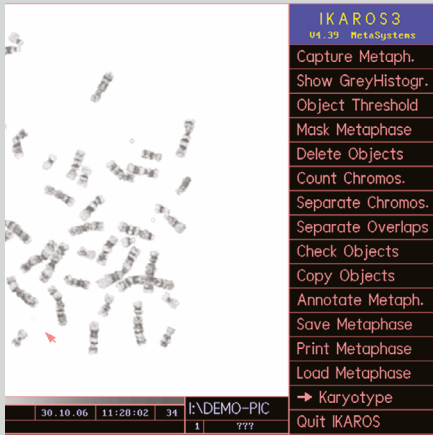
None of this would have been possible without the dedication of our employees, the trust of our customers, and the support of our distributors and partners worldwide. We are deeply grateful to everyone who has contributed to our success and helped shape the company we are today.

As we look ahead, we remain committed to innovation, quality, and long-term independence. Together with our global teams, partners, and customers, we will continue developing technologies that advance diagnostics, research, and laboratory automation for years to come.

Kind regards,
The MetaSystems Team



OUR HISTORY



1986–1990 | Where It All Began

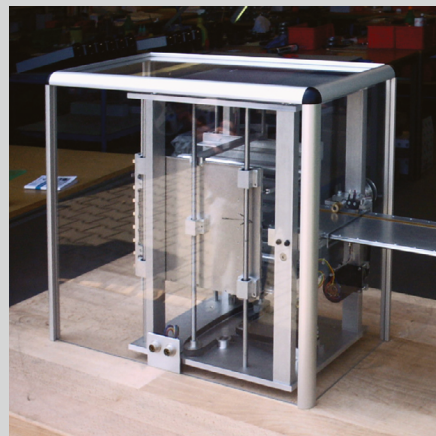
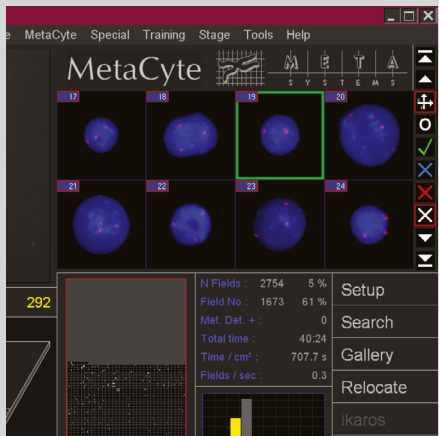
MetaSystems' origins lie in 1986, when Cold War concerns over nuclear risks drove demand for better radiation-dose and biodosimetry tools. Near Heidelberg, a small team developed Metafer, automating metaphase finding, dicentric detection, and digital microscopy—quickly transforming cytogenetics and radiation biology. The company emerged from Heidelberg University's Institute of Physics and was shaped by its strong scientific, curiosity-driven environment.

1991–1997 | Pushing Boundaries

As Metafer spread to more labs, its impact on clinical cytogenetics—especially karyotyping—became clear. In 1991, MetaSystems expanded with Ikaros for automated karyograms and Isis for advanced FISH imaging, bringing its technology into hospitals and research centers worldwide. Over time, Ikaros took over Isis' functions and evolved into a key platform. With growing use in biodosimetry, cytogenetics, and toxicology, MetaSystems refined its solutions to meet real lab needs.

1998–2005 | The Global Stage

By the late 1990s, MetaSystems had expanded well beyond Germany, with installations across Europe and projects worldwide. To support this growth, it built the MetaSystems Family—a global partner network—and opened offices in Boston and Hong Kong, and later Bangalore, Milan, Taizhou, Buenos Aires, and Tokyo. The first Distributor Meeting in 2002 united this community, reflecting a core belief: strong relationships drive great technology—known as the MetaSystems Spirit.



2006–2012 | Building for Scale

As laboratory workloads grew, automation became essential. MetaSystems introduced the SlideFeeder, enabling Metafer to process up to 80 slides automatically and run 24/7—a milestone for high-throughput microscopy. During the same period, the company strengthened its role in molecular cytogenetics. Early work in multicolor FISH led to the creation of the XL probes, a successful line of locus-specific FISH probes adopted worldwide.

2013–2018 | Seamless Labs

As labs became more digital and interconnected, MetaSystems broadened its business focus from imaging to data and image management. Neon, launched in 2017, transformed lab-wide workflows by uniting images, patient data, and metadata in a single platform. That same year, MetaSystems founded MetaSystems Probes, which quickly evolved into a leading manufacturer of high-quality FISH probes for diagnostics and research.

2019–2025 | Deep Learning Emerges

With the rise of AI, MetaSystems integrated Deep Neural Networks (DNNs) into its imaging workflows. In 2021, it secured a U.S. patent for AI-based chromosome analysis, now part of Ikaros for faster, more accurate karyograms. DNNs also power forensic sperm detection and support numerous R&D projects focused on advanced image processing and automation. Nearly four decades on, MetaSystems continues delivering cutting-edge lab imaging solutions.



METASYSTEMS TODAY

As MetaSystems expanded from a small pioneering company into a global organization, the ambition to preserve its core mission over the long term became increasingly important. Growth brought new markets, new technologies, and new responsibilities—but also the need for a stable framework that ensures continuity beyond individual business cycles.

The MetaSystems Foundation

To safeguard this long-term perspective, the *MetaSystems Stiftung* was established as a charitable foundation that now sits above MetaSystems and MetaSystems Probes. This structure ensures that the operational companies remain focused on their core purpose: advancing microscope imaging, automation, and laboratory workflows.

By separating ownership from short-term commercial interests, the foundation provides a governance model designed for stability, independence, and strategic consistency. It allows the organization to evolve technologically while remaining anchored in its founding principles.

Independence and Long-Term Stability

A central role of the *MetaSystems Stiftung* is to secure the independence of the group. Free from external shareholder pressure, MetaSystems can pursue developments that prioritize scientific value, product quality, and long-term customer benefit over short-term financial cycles.

This independence is a key enabler for sustained innovation. It ensures that strategic decisions remain aligned with the company's scientific and technological mission, even as markets, regulations, and technologies continue to evolve.

A Future Built on Responsibility

Placing the company in the hands of a non-profit foundation ensures that the journey begun in 1986 continues with clarity of purpose. It creates a structure in which innovation, responsibility, and long-term thinking are permanently aligned.



CUSTOMIZATION PACKAGES

Our Customization Packages offer the service to help tailor workflows to the specific needs of individual labs. By utilizing our advanced imaging software and incorporating state-of-the-art machine learning and deep learning techniques, we offer the service to implement a workflow based on insights gained from previous installations and the expertise of our application specialists. In this process, we provide expert support to customize and optimize Metafer platform functionality, ensuring it aligns with the unique requirements of each lab. Once established, users can implement these workflows and ensure that both the processes and final results are appropriately validated to meet their specific needs.

Microbiology

The Metafer Platform Software supports efficient microbiology workflows by enabling sample digitization and expert on-screen evaluation. Custom DNNs can further enhance image analysis and support more informed decision-making.

Cytogenetics

With nearly 40 years of experience in digital microscopy, MetaSystems provides tailored solutions for modern cytogenetics labs. Scalable multi-user systems improve data and image management and support standardized workflows. The latest Ikaros versions integrate Deep Neural Networks (DNNs) to reduce segmentation errors, minimize manual corrections, and accelerate metaphase analysis.

Forensics

Many forensic laboratories face significant backlogs in cases of sexual violence, largely driven by the time-intensive nature of manual microscopy for sperm detection in evidence samples. The Metafer Platform Software helps by enabling the setup of automated sperm detection workflows based on Deep Neural Networks (DNN), improving efficiency and supporting faster case processing.

Toxicology

The Metafer Platform Software automates microscope-based workflows in genetic toxicology laboratories, reducing evaluation time while improving standardization, reproducibility, and compliance with GLP standards and OECD guidelines.

Biological Dosimetry

Rapid response to radiation accidents requires efficient retrospective dose assessment. The Metafer Platform Software supports automated biodosimetry workflows, enabling faster evaluations, improved standardization, and collaboration across laboratories and international networks.

Digital Pathology

Metafer's capability to integrate advanced scanning solutions through its comprehensive toolbox for slide digitization, examination, and collaborative processing allows users to effectively streamline routine pathology workflows. Laboratories worldwide have seamlessly combined and managed varying magnifications and contrast techniques within a single, Metafer-based imaging workflow.

Cytology

A blood differential count classifies white blood cells to support diagnosis of cancers, infections, and inflammation. Flow cytometry may miss subtle morphological changes, while manual microscopy is time-consuming. The Extended Blood Cell Detection customization package uses Deep Neural Networks (DNN) to enable automated, high-resolution leukocyte classification in blood samples.



THE METASYSTEMS FAMILY

Innovation Through Partnership

For forty years, MetaSystems has grown through close collaboration with customers, researchers, and partners around the world. Many of our innovations began with a conversation in a laboratory, a specific customer requirement, or a scientific challenge that called for a new approach. By listening carefully to users and working together to develop practical solutions, we have transformed ideas into technologies that support diagnostics, research, and laboratory automation worldwide. Long-term partnerships built on trust, expertise, and a shared commitment to scientific progress continue to shape the way we innovate today.

A Global Enterprise

What began as a small company in Germany has evolved into a global organization with offices across Europe, North America, Latin America, and Asia, supported by an extensive international distributor network. While our teams work across different countries, cultures, and time zones, they are united by a common purpose: helping laboratories achieve reliable, efficient, and reproducible results. This global collaboration enables us to combine local expertise with worldwide knowledge, creating a strong foundation for serving customers wherever they are.

Ready for Tomorrow

As we look ahead, MetaSystems remains committed to advancing laboratory workflows through innovation. Artificial intelligence, digital workflows, and increasing automation are opening new possibilities for image analysis, data management, and decision support. At the same time, emerging challenges in diagnostics and research continue to inspire new developments across our application areas. Guided by the same spirit that has driven us for four decades, we will continue to invest in technologies that empower laboratories and improve scientific outcomes. The establishment of the *MetaSystems Stiftung* further strengthens this long-term vision by ensuring continuity, independence, and sustainable growth for future generations. Together with our employees, customers, distributors, and partners, we look forward to shaping the next chapter of the MetaSystems story.

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The described functions refer to the following software versions: Ikaros 7.0 | Metafer 4.4

CE (MDD) MetaSystems software and system products are classified as in vitro diagnostic medical devices (IVD) in the European Union in accordance with the Regulation (EU) 2017/746 or Directive 98/79/EC, respectively, and carry the CE label unless otherwise indicated. Use all MetaSystems IVD products only within the scope of their intended purpose.

MetaSystems products are used in many countries worldwide. Depending on the regulations of the respective country or region, some products may not be used for clinical diagnostics.

Some hardware components supplied by other manufacturers are not included in MetaSystems IVD products and are therefore not IVD medical devices.

MetaSystems software provides, among other functions, features to assist users with image processing. These include, but are not limited to, the use of machine and deep learning algorithms for pattern recognition. The output generated in this process should be regarded as preliminary suggestions and, in any case, mandatorily requires review and assessment by trained experts.

MetaSystems offers **Customization Packages** for application workflows that have been successfully implemented for customer labs using standard Metafer platform functionality. It is expected that they can be implemented for other customer labs using similar workflows and slide preparation procedures. If a Customization Package is purchased, MetaSystems product specialists will - based on their experience from other similar application cases - support the customer lab in adapting the Metafer software configuration to their needs. The performance of the solution will depend on the quality of the customer slides and the expertise of the users. MetaSystems cannot specify or guarantee any performance parameters. The validation of the solution for clinical use is the sole responsibility of the customer lab.

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