

CASE STUDY

Delivering scientific impact through software

Helping NLM translate breakthrough optics into intuitive, accessible imaging tools



The challenge

Northern Light Microscopy (NLM) is pioneering accessible advanced microscopy using micro-optic technology to make high-resolution imaging faster, more compact, and significantly more affordable. But to unlock its commercial potential, NLM needed more than hardware innovation – they needed a software partner who could rapidly develop a robust minimal viable product (MVP) that made advanced microscopy accessible to non-specialist users without compromising scientific rigour.

The solution

Firefinch delivered a fit-for-purpose MVP designed to bridge the gap between NLM's cutting-edge optics and the everyday needs of its users. Working in short iterative sprints, the Firefinch team:

- Developed a user-friendly Windows desktop app to streamline complex imaging workflows
- Built a hardware abstraction layer to seamlessly interface with NLM's proprietary system and Hamamatsu cameras
- Created a full-featured simulated instrument, enabling software development and testing decoupled from hardware dependencies
- Designed intuitive imaging workflows, from basic fluorescence capture to advanced 2D SIM, with full OME-TIFF support

By embedding scientific fluency, strong project governance, and a highly consultative approach, Firefinch helped NLM create a system ready for beta trials, future iterations, and commercial growth.

Results



ON-TIME, IN-SCOPE MVP DELIVERY

With added functionality despite tight timeframes



STREAMLINED & INTUITIVE UI

Empowering non-specialists to operate a complex optical system



SIMULATED TESTING ENVIRONMENT

Accelerating hardware-software co-development

About Northern Light Microscopy

NLM, a spin-out from the University of Strathclyde, is transforming access to high-performance imaging with the Advanced Modular Imaging System (AMIS). Designed as an affordable, compact alternative to traditional super-resolution platforms, AMIS combines cutting-edge technology with user-friendly design to deliver high-resolution, structured illumination microscopy – without the complexity or prohibitive cost. By levelling the playing field, AMIS empowers life science labs and biotech companies of all sizes to unlock the power of advanced microscopy and accelerate the discoveries of tomorrow.

“The Firefinch team went above and beyond to understand our requirements and were amazing to work with – they completed the project within the agreed schedule, budget and even exceeded the initial scope of work. We would wholeheartedly recommend working with Firefinch.”

Peter Tinning

CEO, NORTHERN LIGHT MICROSCOPY

Our approach

SCOPED FOR SCALE

Defined a focused MVP with a clear path to full production

SCIENTIFIC INSIGHT

Aligned key technical decisions with scientific goals and user needs

DESIGNED FOR USABILITY

Built workflows and interfaces for real-world, non-specialist use

DELIVERED ITERATIVELY

Agile cycles for rapid feedback and continuous improvement

SIMULATED FOR SPEED

Enabled rigorous testing without relying on physical hardware

BUILT FOR COLLABORATION

Transparent communication for alignment and progress

About Firefinch

Firefinch is your trusted software team for the life sciences – offering flexible, expert-led development that bridges scientific innovation and commercial execution. With deep domain knowledge and a consultative approach, we help clients avoid costly missteps, get to market faster, and build software that scales.

Let's work on your success together.

Get in touch

Ready to turn your research into a real-world product?

Offering the strategic insight and technical expertise to help you move faster, avoid costly mistakes, and build with confidence.

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 Firefinch Software