

The First Programmable Silicon Photonic Switch Built for AI

The Challenge – Photonic IC Bottleneck

Global data traffic and compute demand from AI, IoT, autonomous systems, and 5G/6G are growing faster than current electronic hardware can support. Silicon photonics offers a promising path forward, but today's photonic integrated circuits (PICs) face two major obstacles: (1) their design process is slow and costly, typically requiring multiple tape-out cycles over 2–3 years at a total cost of up to €5m per chip, and (2) once deployed, their rigid architectures cannot be updated or reconfigured, forcing expensive replacements when requirements evolve.

The Solution – iPronics ONE

iPronics, a spinoff of the Universitat Politècnica de València, has developed the first programmable photonic device to overcome the photonic IC bottleneck. Project EXCITE will enable users to simulate and refine Application Specific Photonic Integrated Circuit (ASPIC) designs prior to tape-out, reducing development time by 90% and costs by 95%.



The Funding

Neon Innovation first started working with iPronics to access funding through the prestigious EIC Transition programme, securing a €2.5m grant for the INSPIRE project. This funding allowed iPronics to develop their programmable photonics platform, before returning to the Neon team to deliver their EIC Accelerator application. Neon won iPronics a further €2.5m grant for the EXCITE project, plus an incredible €15m in equity investment to propel their market entry and scale-up.

The Impact

Continued development will allow the iPronics team to unlock further operational benefits through self-optimising and self-healing circuitry. The team will optimise their prototype for scalable manufacturing and prepare it for mass-market entry in high demand datacom applications, unlocking a global market worth over €9.6bn, generating revenues of €247m over 4 years post-project and creating upwards of 500 highly skilled jobs.



48 months (total)



EIC Transition:

€2.5M Grant

EIC Accelerator:

€2.5M Grant

+ €15M Equity



iPronics
(ES)