When a consortium of European companies decided to apply for a Horizon 2020 grant to develop more powerful laser technology for manufacturing, it chose Class 4 Laser Professionals, based in Lyss, Switzerland, to join them. Not only had they built a reputation for specialised lasers, their C4L Systems division had a track record in developing special systems to fit the particular requirements of its customers. “Class 4 Laser is an expert in cutting, welding and micro-drilling such challenging materials as fine metals, crystals and ceramics,” explains Enda McCague, the company’s Application Engineer. Class 4 Laser is at the centre of several HIPERDIAS work packages and leads systems development. “For now, we are looking to upscale what the watch industry already does but at higher quality and faster speeds,” says McCague. “We already see future applications in such heavy industries as oil and gas and in medical technology.”

“Euresearch’s help in navigating the different options was invaluable.”

Support from Euresearch
HIPERDIAS is Class 4 Laser’s second Horizon 2020 project, so they have some insights to offer other companies interested in applying – notably, start with Euresearch. “Euresearch’s help in navigating the different options was invaluable,” says McCague. “There is a broad range of different funding schemes your project may be suitable for. Euresearch gave us advice about the different options open to Swiss companies and the chances of success. They organised information and networking events and held workshops about writing project proposals. It would have taken us weeks to figure that all out by ourselves!”

Benefits of Horizon 2020
Based on Class 4 Laser’s experience, McCague sees clear benefits in joining an EU project. “If you can find a project aligned with your own strategic goals, your R&D will in effect be subsidised. Also, for a small company, a Horizon 2020 project is an enormous validation because it comes with requirements that prove your standards of excellence. People starting their careers find it more attractive if a company is involved in a European project. In fact, that’s what brought me to Class 4 Laser! Finally, by joining a project, you automatically tap into the networks of your partners.”

The Horizon 2020 project “HIPERDIAS” (High throughput laser processing of diamond and silicon) aims to take ultra-short pulse laser technology in manufacturing to a higher level. Targeting synthetic diamond and fine metals, HIPERDIAS will demonstrate that such materials can be processed with high precision and greater efficiency at lower cost on the factory floor. A Swiss company, Class 4 Laser Professionals AG, is a key member of the HIPERDIAS consortium.
“A Horizon 2020 project is an enormous validation because it comes with requirements that prove your standards of excellence.”

Enda McCague
Application Engineer, Class 4 Laser Professionals

**CONTENT SUMMARY**

The main objective of HIPERDIAS is to demonstrate high-throughput manufacturing using a high-power, high-repetition rate sub-1ps laser system. The project will improve processing quality and speeds for targeted materials by taking proven concepts (e.g., key innovations in laser amplification, processing and beam delivery) out of the laboratory and into real industrial settings. The project focuses on the 3D structuring of silicon, precision processing of synthetic diamond and the fine cutting of metals.

**FACTS AND FIGURES**

- **Project Name**
  HIPERDIAS (High throughput laser processing of diamond and silicon)
- **Research Area**
  Food and pharmaceutical technologies
- **Organisations**
  University of Stuttgart, (Coordinator) and 9 partners
- **Start Date – End Date**
  01.02.2016 – 31.07.2019
- **Duration**
  42 months
- **Project Cost**
  €4.44 million
- **Project Funding**
  €4.44 million
- **Programme**
  Horizon 2020 Industrial Leadership: Leadership in Enabling and Industrial Technologies (LEIT) – Information and Communication Technologies (ICT)

**More Information**

www.hiperdias.eu

**Euresearch** is an information and advisory service on the European Research and Innovation Framework Programmes. It has offices in all the Swiss regions and a Network Office in Bern. Euresearch is a non-profit association supported by the Swiss federal government.