PROJECT SNAPSHOT

CATAPULT
Compound Semiconductor Applications

18 MONTH PROJECT

6 JOBS CREATED

ROBUST PACKAGE DESIGN

SNORQL

Space-certified Nonlinear Optical Rugged Quantum Lasers

Partners:
Covesion, CSA Catapult, RAL Space – STFC

CSA CATAPULT ROLE

ROBUST PACKAGE DESIGN | ASSEMBLY | HARSH ENVIRONMENT VALIDATION

The Catapult is developing industry-ready robust and reliable packaged Quantum components to accelerate Quantum R&D.

Aim: The project aims to produce a ruggedized, packaged high power wavelength converter used in Rubidium based Quantum technology systems for applications such as ultra-precise atomic clocks and gravity sensing. The frequency doubling material from Covesion, Periodically Poled Lithium Niobate (PPLN), will be packaged by the CSA Catapult and put through a rigorous harsh environment test regime to verify its reliability, before being integrated into an atomic trap by RAL Space to prove its application readiness.

- The Catapult will provide resilient optical design and advanced integration techniques to build a rugged package. The processes and experience will also benefit the advanced packaging of future compound semiconductors
- Net return of £1m in the first year, scaling to £6m over 5 years (25% market share)
- Environmental testing including temperature cycling, humidity exposure, shock and vibration will be carried out at CSA Catapult's Innovation Centre

PROJECT BENEFITS

Packaged wavelength converter could support Quantum systems in atomic timing and gravity sensing

Successful delivery would create the first UK/EU supply chain of a >1 W rugged product for space applications

Transition towards commoditisation of Quantum enabling components