

# PROJECT SNAPSHOT



2  
PARTNERS



10  
JOBS CREATED



9 MONTH  
PROJECT



## CoolSync

Design For Manufacturing (DFM) principles applied to Liquid Cooled Unit (LCU) of Power Rectifier using GaN technology

Partners:  
Supply Design, CSA Catapult

## CSA CATAPULT ROLE

MODELLING | SIMULATION | THERMAL PACKAGING | DESIGN



CoolSync will create a manufacturing method solution that includes an optimised cooling structure. It will increase long-term reliability, power density and will allow for an increase in active device switching speed that facilitates the use of GaN FETS by allowing smaller magnetic components.

**Aim:** The project aims to create a manufacturing method that co-locates the gate drivers and associated active switching devices of a synchronous output rectifier stage, currently used in an existing high efficiency/high power density Power Supply design.

- The manufacturing solution will create a part that includes an optimised cooling structure for use in a liquid-cooled power system in order to improve cooling of the active switching devices increasing long-term reliability
- It will create a common cost-effective part that can be sourced through the supply chain and can be scaled for adaption to various power levels
- It will allow an increase to the power density by moving away from devices that are packaged for use on thermal heatsinks and using low loss power devices with smaller footprints and shorter thermal paths

## PROJECT BENEFITS



Enabling increased economic activity in the UK through cost-optimisation of rectifier product for data centres, high-end industrial and aerospace



Safeguarding new jobs in the UK plus increase the demand for skills in this sector which will drive education programs for training in the PEMD markets



Fulfilling government organisations' ambitions to create new markets and to have stronger UK sovereign supply chain