

Transforming future weapons technology for UK MOD

The DRAGONFIRE consortium has developed and delivered a
Laser Directed Energy Weapon concept demonstrator to UK MOD

Concept Demonstration Programme (CDP)

Executive summary

QinetiQ is proud to be part of UK DRAGONFIRE, a consortium that has worked together to achieve a significant step change in the UK's high energy laser weapon systems capability. In delivering this laser concept demonstrator programme, Team DRAGONFIRE has provided the basis for laser weapon system technology-driven operational advantage for UK MOD.

The programme has matured the key technologies for a high energy defensive laser weapon system, enabling the engagement of representative targets on UK MOD test ranges. The development and testing of the DRAGONFIRE Laser Directed Energy Weapons (LDEW) system has provided a body of evidence for the UK MOD's capability development investment decisions, alongside developing UK industrial capability and know-how. UK MOD is now initiating the next round of technology and capability development, in which the DRAGONFIRE consortium companies expect to play a key role.



QinetiQ is a proud partner of the UK DRAGONFIRE consortium as it continues to keep the UK at the forefront of advanced laser weapon technology. Collaborating closely with UK MOD and our industry partners, QinetiQ is committed to applying our technologies for UK LDEW capability development in response to current and future threats in the maritime, land and air domains.

Will Blamey, Chief Executive QinetiQ, UK Defence



Our solution

QinetiQ's participation in the project has been to provide the high-power laser technology for the system and, using our testing and evaluation (T&E) expertise, to conduct system trials on ranges that we operate for UK MOD under the Long Term Partnering Agreement (LTPA). We are the only UK company to successfully develop and safely operate high energy laser sources in the UK.

Our coherent beam-combining technology offers a laser system that can deliver substantial benefit over other beam combining technologies. Using our design for a coherently combined fibre laser and the associated phase control system, we have developed precision laser source technology that can direct the laser output with extreme accuracy, achieving an enhanced power density on a target at range, in the presence of turbulence.

Outcomes and benefits

Beam combining is a technology that is able to achieve enhanced power densities at target, reducing defeat times and increasing engagement range. The QinetiQ solution for high-power laser sources has a scalable architecture that supports performance levels suitable for maritime, land and air use.

The DRAGONFIRE consortium has successfully enabled our MOD customer to achieve their goals for the programme.

UK DRAGONFIRE is a collaborative consortium, led by MBDA with QinetiQ and Leonardo, which has brought together the best of UK industry expertise to deliver the highly challenging and complex Laser CDP. GKN, Arke, BAE Systems and Marshall ADG are among the organisations providing specialist capability.

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