

## Nominee: Jaguar Land Rover

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### **Nomination title: Keysource delivers Modular Data Centre for Jaguar Land Rover in under 17 weeks.**

Jaguar Land Rover, the UK's largest automotive manufacturing business, identified the need for a new data centre to support its recently completed automated Engine Manufacturing Centre (EMC), where a new engine is built every 39 seconds. Keysource, a leading data centre engineering specialist, was appointed because of the company's proven industry expertise.

Designed and delivered in under 17 weeks the solution met and exceeded all of Jaguar Land Rovers objectives. As well as enabling the solution to be delivered within a very short time frame, by manufacturing the shell and cooling systems offsite Keysource were able to minimise risk and disruption within a highly critical facility.

Availability, resilience and efficiency were key, and by deploying a modular design with a bespoke cooling solution, we were able to ensure industry leading efficiency with a PUE of 1.13, whilst being able to support mixed densities up to 30kW per rack. Backed up by 2N cooling and power, the facility is concurrently maintainable which ensures the availability of the data centre whilst also allowing the facility to be scaled as needed with zero downtime to the EMC.

#### **Our Solution**

After fully understanding of Jaguar Land Rover's business and technical requirements, Keysource proposed a flexible, modular deployment solution that could be delivered within tight timeframes and at the lowest capital expenditure. It would also deliver high levels of efficiency and resilience to support Jaguar Land Rover's specific IT infrastructure.

Keysource's modular design solution meant that the bulk of the production and preparation for the data centre was completed off site, which significantly reduced costs and construction time. Typically a project of this nature would take at least 12 months from initial brief through design to project completion. However by delivering an end-to-end solution backed up by Keysource's expertise in modular data centre deployments, this was reduced to just 17 weeks for the full project including design and delivery.

The design needed to underpin Jaguar Land Rover's aim of being carbon neutral by 2020, facilitate any future growth, support a range of mixed density equipment, and meet Jaguar Land Rovers global PUE threshold of 1.7 (in the UK Keysource have delivered an industry leading PUE of 1.13). High levels of availability, resilience and security were also required as any issues would directly affect Jaguar Land Rover's manufacturing capability at the EMC. The project needed to be delivered in tight timeframe on an existing construction site and meet a fixed budget.

#### **Highly Efficient**

Keysource's modular design also included efficiency measures that sets it apart and embraces the ASHRAE room temperature limits of 18 – 27o. To achieve this the design incorporates a 'flooded room approach' utilising an indirect air-to-air cooling solution. The total cooling requirement is met by the integrated free cooling adiabatic system, which eradicates the need for traditional power-intensive mechanical cooling.

To realise the capital cost ambitions of the project the raised floor was removed during the design stage, which provided the additional benefits of reducing the power consumption of the supply fans compared to an under floor strategy. Keysource's in-house CFD modelling capabilities were used to develop a bespoke cold air delivery chamber, improving the airflow distribution within the room and providing additional rack space.

#### Performance and Flexibility

By integrating a leading edge cooling solution into the design, the facility is able to support mixed densities, up to 30kW per rack, anywhere in the facility with a PUE of 1.13.

One of the key requirements for Jaguar Land Rover was the data centre must have the flexibility to expand in the future as required. The modular construction and infrastructure solution delivered allows for expansion of the power and cooling to match requirements as more IT is deployed.

#### Why nominee should win

By proposing and deploying a modular solution, which was fabricated off site, Keysource was able to deliver:

- A high quality solution that was designed and delivered with minimum risk and disruption to a live critical site.
- A solution that allows Jaguar Land Rover to scale the data centre with zero interruption to the live IT.
- A bespoke cooling solution utilising our flooded room approach which ensures a PUE of 1.13
- Delivery from concept to hand over within just 17 weeks!