



THIN LIGHTWEIGHT CONTROL PANEL



DARE TO TRY

Jaguar Land Rover has created a thin and lightweight overhead control panel to reduce the weight and volume of electronics components in its cars.

THE CONTEXT



There is an excessive use of electronics in cars today. This has not only eaten up passenger room but has also put constraints on innovations in design.

THE INNOVATION



An existing Jaguar Land Rover (JLR) vehicle has over 70 computer units, which deliver over 175 features in keeping with customer demands. All these parts and their control systems take up a lot of space. The JLR team decided to redress the situation by creating a new state-of-the-art overhead control panel and employing new In Mould Structural Electronics (IMSE) to make the components thinner and lighter. The result was a 60% reduction in weight and a 250 cubic-cm increase in space. By uniquely packaging electronics into 3D objects, the team enabled designers to create new cutting-edge features that would not have been possible with the conventional rigid circuit boards used earlier.

KEY CHALLENGE



TO CREATE A NEW MANUFACTURING PROCESS FOR PRINTING ELECTRONICS ON 3D OBJECTS

The JLR team discovered that there was no existing Tier 1 or Tier 2 solution for printing electronics and creating a structural part of the fascia. So the team decided to move away from its traditional supplier and work with a start-up to create a cost-effective manufacturing process that uses off-the-shelf machines and parts, thus minimising the impact of bespoke costs in manufacturing and maintenance.

POTENTIAL IMPACT



Jaguar Land Rover's new control panel will help reduce carbon penalties by allowing the car to have a lighter electrical architecture besides empowering designers to incorporate new, state-of-the-art features. In the long run, it will also reduce the cost of replacing parts.

A-SURFACE FEATURES



ENERGY HARVESTING



SENSORS



ECUs & EDS

