

# Automotive 48-volt technology

## Close to reality: the series launch of the 48-volt power system

### NEW EXECUTIVE REPORT

Produced in association with SAE International

Consumers continue to demand more and more electrical and electronic devices in their vehicles. The introduction of 48-volt technology enables traditionally parasitic applications that run off the engine to be replaced with electrically driven systems, resulting in improvements in performance and efficiency. In addition, sufficient excess capacity would be available to introduce new high-powered features and functions.

The automotive industry has therefore proposed 48-volt power or dual voltage 12-volt/48-volt architecture to replace or extend respectively the traditional 12-volt power net in the near term.

#### Fresh, unbiased insight from ABOUT Automotive and SAE International

In the first of a series of reports produced jointly by ABOUT Automotive and SAE International, this comprehensive Executive Report analyses the key engineering challenges, and assesses the strategies that the key players are beginning to adopt.

#### Report coverage

**Chapter one** provides a comprehensive history of **automotive power supply systems**, charting the development of electrical systems, via the promise of 42-volts to the eventual switch to 48-volt technology.

**Chapter two** analyses the **transition from 12-volt/48-volt architecture to 48-volt technology**, and includes an assessment of the impact of regulations, as well as the engineering challenges involved with meeting future power requirements.

**Chapter three** looks at **48-volt standards (LV148), regulations and geographic trends**, and includes an assessment of markets as diverse as Europe, North America, Japan, China and South Korea.

**Chapter four** analyses how **48-volt electrification will enable vehicle efficiency**, and includes an overview on manufacturing cost implications.

**Chapter five** provides an authoritative assessment of **48-volt mild hybrid applications and developments**, including coverage of the turbocharger, electric supercharger, enhanced stop-start application, energy recovery/boost system, electrified rear axle, active suspension, transmission and HVAC module sectors.

**Chapter six** covers **48-volt battery and super capacitor developments**, and includes a technology overview as well as a more detailed look at Absorbent Glass Mat (AGM) battery technology, and Ultracapacitors/Electrochemical double layer capacitors (EDLCs).

**Chapter seven** analyses the **major factors that are delaying 48-volt roll out**, including an analytical assessment of the challenges and concerns facing the industry.

**Chapter eight** profiles the **48-volt market leaders and their 48-volt projects**, and includes coverage of JAC/Ricardo, Bosch,

Audi, Hyundai, Valeo, Continental Corporation, Controlled Power Technologies (CPT) and Aeristech.

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