



TRANSPORTATION ELECTRICAL SYSTEMS SERVICES



STATE OF THE MARKET

Traditionally, automotive electrical systems were manufactured to distribute power and signals to various components of a given vehicle. However, with the growing number of electrical components in modern vehicles, these products have evolved in terms of its functionality and technological prowess. In fact, advances made in this space have successfully disrupted how transportation electrical systems are designed and deployed.

As more and more mechanical and hydraulic systems are replaced by electronic circuits, electrical systems are becoming increasingly complex. From 200 connectors networked using approximately 200 meters of wiring in the last decade, contemporary vehicles now consist of over 1800 components coordinated using more than 2.5 kilometers of cable.¹ Original equipment manufacturers are therefore posed with a pair of interrelated challenges—to diminish and standardize the number of electrical or digital components integrated into a vehicle, while reducing architectural complexity to facilitate cost-optimized, scalable production.

SERVICE OFFERINGS

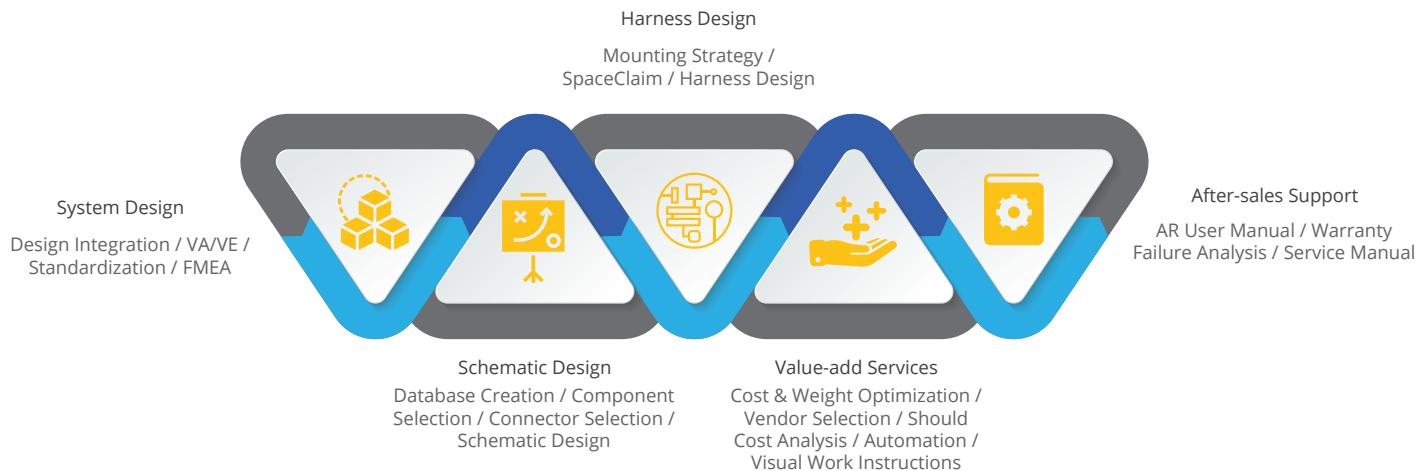
L&T Technology Services (LTTS) addresses the challenges of the rapidly evolving electrical systems market through a variety of services centered on product standardization, value engineering and analysis, and product and process optimization. By offshoring non-core engineering activities based on a proprietary resource allocation model and claiming ownership of subsystem designs, we enhance production scalability and cost-efficiency. LTTS' engineering services cover a wide spectrum of activities—from design integration, value analysis/value engineering (VA/VE), and component standardization to failure mode effects analysis (FMEA). We enable our partners to reduce development delays and time to market with our end-to-end schematic design, prototyping and testing services.

Additionally, we offer comprehensive aftersales support as well as harness design and value-added services by leveraging a diverse but rationalized vendor ecosystem.

Footnotes:

1. Vehicle Electrical Wiring Systems: A Global Market Review, http://www.just-auto.com/store/samples/aroq_wire_sample.pdf (accessed on 16 December, 2016)

THE ENTIRE SPECTRUM OF ELECTRICAL SYSTEM SERVICES



KEY DIFFERENTIATORS

- 16 years of experience in product development support, working with leading manufacturers
- Tear down, benchmarking and testing lab facilities
- Optimized project lifecycle and ability to save thousands of man-hours through automation
- Deep domain expertise in electrical system design, VA/VE and simulations

BENEFITS

- Reduce design issues at the prototype stage and build across geographies by leveraging our proprietary design workflow and process
- Achieve optimal function by minimizing product weight and cost through our VA/VE services
- Decrease product lifecycle by 2 to 3 months by streamlining your procurement and production process

CASES

 Developed an engine, chassis, alternator and cab harness to be installed in a specialty vehicle. Optimized clamping strategy, standardized and diminished the bill of material count by 5%, and reduced design time by 3 weeks.

 Integrated new features, incorporated schematic development and harness design for an upgraded version of CAB. Reduced design time by 25% and improved productivity by 10%.

 Developed vehicle electrical system design for a two-wheeler, and assumed end-to-end responsibility for electrical system design. Identified optimal routing path, mounting strategy, redesigned battery box design and assisted with vendor selection.

For more information visit us at www.lnttechservices.com

Reach us at info@lnttechservices.com



L&T Technology Services

About L&T Technology Services

L&T Technology Services Limited is a subsidiary of Larsen & Toubro Limited with a focus in the engineering services space, partnering with over 50 Fortune 500 companies. A leading pure-play Engineering, Research and Development services company, we offer design and development solutions through the entire product development chain, across various industries such as Industrial Products, Medical Devices, Transportation, Telecom & Hi-tech, and the Process Industry. We also offer solutions in the areas of Mechanical Engineering Services, Embedded Systems & Applications, Engineering Process Services, Product Lifecycle Management, Engineering Analytics, Power Electronics, Machine-to-Machine (M2M), and the Internet-of-Things (IoT).