

# Automotive Electronics

## Car audio system development for a US based Automotive OEM

<b>Executive Summary</b> <p>A leading OEM in the US is developing an audio system for its cars and was looking for a strategic partner to develop the same. The project involved extensive interaction with the customer at their US based facility with some components developed offshore at India. Wipro was able to complete the same within the project deadline with cost savings. The system is in production now.</p>	<b>Engagement Metrics</b> <ul style="list-style-type: none"><li>• Contract Value: US\$ 2.5 million</li><li>• Duration: 104 weeks</li><li>• Global delivery: 80%</li><li>• Share of work done in India: 20%</li></ul>
<b>Client</b> <p>The client is an US based automotive OEM with more than 170 technical, manufacturing, sales and service facilities located in 24 countries &amp; turnover of 17 billion USD in 2005.</p>	<b>Key Achievements / Deliverables</b> <ul style="list-style-type: none"><li>• Customized solution</li><li>• Faster development time</li><li>• Support at client side to work closely with customer team</li><li>• Cost savings</li></ul>
<b>Business Issue(s) Addressed</b> <p>The client is developing a Car audio head unit product which interacts with other components in the vehicle over a multimedia network protocol. It includes a HMI running on a LCD display. The audio features supported in the product include tuner, analog &amp; digital radios, CD player (MP3, WMA) and 6 disc CD changer.</p> <b>How Wipro Helped</b> <p>Wipro was involved in the software design &amp; development of application, network protocol and driver modules.</p> <p>Wipro developed a test harness to test the different components of the product independently on PC based system. The purpose was to test software components while hardware development goes on parallel.</p> <p>Wipro was also involved the validation of the product.</p> <p>Tools Used: Embedded Software development tools(compilers, debuggers, code checkers), Design tools(Matlab Stateflow, Altia), network protocol analyzers</p> <p>Methodology Adopted: UML design</p>	<b>Contact Information</b> <ul style="list-style-type: none"><li>• Sachin Mulay</li></ul> <p>Group Manager – Strategic Marketing</p> <ul style="list-style-type: none"><li>• Sachin.mulay@wipro.com</li><li>• www.wipro.com/pes</li></ul>
<b>Company Profile</b> <p><b>Wipro’ Product Engineering Solutions</b> (PES) group works with leading technology companies across their product life cycle value chain of product design → development → testing → sustenance and support. The PES group is 13,500+ engineers strong, and provides engineering services to companies across domains like Telecom, Computing Systems, Storage, Semiconductor, Automotive Electronics, Consumer Electronics, Industrial Automation, Printing &amp; Imaging, Aerospace, Satellite, Software Products and Medical Devices.</p> <p><b>Wipro is the world’s largest independent R&amp;D services provider</b></p>	