



## Client

Well-known US-based vendor of automotive electronics, multimedia and related systems

## Industry

Automotive

## Business Challenge

One of the largest manufacturers of automotive devices was looking for a partner to jointly develop a universal car infotainment and multimedia system that would include telephony, internet communications, onboard navigation and interactive speech control as a platform for a number of high-end vehicle manufacturers.

Significant business requirements included:

- Work as one of the software vendors, collaborating with several other companies delivering various software and hardware components
- Fully reliable vehicle graded solution
- Must be looking as a top class infotainment system
- International co-operation with solution vendors and product teams across the different companies
- MOST-based devices communication
- Parallel software and hardware development with later integration

## Solution

In order to address the client's requirements, Luxoft team implemented the following solutions:

### Software to Hardware Integration

Luxoft's software team participated in hardware design, drivers and low level services development, integration and software to hardware validation. Several iteration of hardware debugging and system-level testing were implemented and performed for the full system reliability.

### System Design

High-level framework/skeleton was designed and implemented allowing to encapsulate all applications functionality and unify control/data flows across the software components.

## Technology Utilized:

- Voice Control (input and output)
- GSM/CDMA
- Internet over GPRS
- GPS (Cobra, Sirf III) & DR navigation
- C/C++ (Metrowerks CodeWarrior)
- Embedded Electronic (FreeScale ECU, vehicle-graded peripheria)



## Third-Party Components Integration

External components for GPS navigation, speech control and telephony were integrated and adjusted to the in-vehicle usage, application framework and target hardware. Automated test suite was implemented to validate the performance of the third-party components in the target system.

## Application Logic Implementation

Multiple applications for general system behavior logic were implemented by Luxoft team, including telephony communications (handsfree and mobile Internet), navigation, TV and emergency calling. Inter-application interaction was designed, implemented and validated, covering a number of usage scenarios.



## Benefits

Luxoft provided a complex solution covering almost all areas of in-vehicle infotainment and communication, working in co-operation with several other software and hardware vendors and delivering high quality solutions for further integration.

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