



YOU STEER. WE ACCELERATE.

Navigation Expertise

Introduction

Luxoft provides innovative solutions to OEMs, tier one suppliers and related auto manufacturing companies. Our focus is on software intensive technologies including communications, infotainment, in-car access to online services, messaging and social networking, wireless communications and multimedia – everything that puts your company on the cutting edge of today's automotive technology.

With over 250 industry professionals; our team has deep domain experience as well as strong expertise in real-time and embedded applications development, system engineering, automotive specific interfaces, wireless communications and cellular networking. We serve as your strategic development partner, using our software power to drive automotive innovations and customize solutions to minimize your effort, expense and time to market.

Experience Overview

Navigation

We provide reliable navigation solutions including on-board or external GPS device integration, data processing, NMEA-level manipulations and multiple map processing operations such as rendering, optimization and validation. Align with the traditional technologies, we develop on the edge solutions like online and interactive navigation to provide the partners with features bringing them to tomorrow.

Hardware integration:

- Drivers development
- Connection protocols implementation
- NMEA parsing and generation
- Hardware verification
- System level validation

3D objects modeling and mapping:

- 3D modelling of individual buildings
- Satellite pictures mapping
- 3D maps creation
- Rendering and conversion
- Runtime visualization

Maps conversion and processing:

- Algorithms development
- Experience with industry leading formats and vendors (NAVTEQ, TeleAtlas, etc.)
- Tools development
- System level optimization
- Quality assurance and verification



"On-the-road" verification:

- Satellite maps validation (including 3D)
- Device behaviors validation
- GPS fix and derivative calculations precision verification
- Casual analysis and debugging

Entire GPS-equipped products development

- Telematics
- GPS enabled handsfree



Verification and Automation

Lab testing

- Windows GUI .NET application for simulation and testing messages flow between GM UHP HW, Radio headunit HW (via CAN bus, ODI protocol), GPS module and mobile phone (via Bluetooth)
- Automatic Component and CPPUnit tests for existing components for different HW/SW platforms
- Framework preparation for the full functional HMI tests
- Test Sequence Editor for test code generation
- Set of tools for map compiler configuring, control and results verification

Road testing

- Navigation quality and accuracy (track precision, fix precision, speed measurement accuracy, NMEA-streaming errors detection)
- Satellite maps precision (Objects positioning, 3D coordinates)
- In-vehicle signal reception quality (GPS, Bluetooth, WiFi, GSM)
- In-vehicle audio configuring and tuning for the wide class of vehicle (from compact to van)



Map data testing

- Test framework to validate maps conversion process
- Product and database tests to verify output map data
- OSGi-compliant automated Java map conversion & testing system
- Eclipse RCP-based 2D / 3D map view and qualification framework

Quality Assurance

Experience in multi-site distributed, product line oriented development:

- Progress monitoring and reporting
- Risks/Issues tracking and escalation
- Dependences resolving
- Communication and on-site support

Quantitative approach of monitoring:

- Tickets progress statistics
- Tickets statistics by priorities
- Tasks statistics in LUXProject/MS Project
- Performce data: performance & effectiveness

Well-established test process

- Independent test team
- CCB-based defect priorities management
- Test cycles planning
- Deep Defect Tracking System utilization
- Bug fix results verification



Generic Team Profile

- Average years in the industry: 5+
- Operating systems:
 - Real Time / Automotive:
 - OSEK, RTXC, Green Hills, VxWorks, QNX
 - General Purpose
 - Windows CE, Embedded Linux
- Programming Languages:
 - C, C++, Assemblers, Java
- Hardware:
 - Microcontrollers:
 - FreeScale, ARM, Intel, Microchip PIC
 - Chipsets:
 - Flash memory (Intel, AMD)
 - GPS SiRF II/III, Cobra
 - MOST (OASIS) controllers
 - External UART, CAN and USB chips solutions
 - Audio CODECs (TI, Analog Devices)
 - CSR Bluetooth (BC02, BC04, BC05)
 - Vehicle-specific Interfaces:
 - CAN, MOST, D2B, GMLAN
 - General Purpose Interfaces:
 - SPI, I2C, I2S, UART, USB, IRDA, JTAG
 - Networking:
 - TCP/IP, Sockets, Bluetooth (CSR), WiFi



We Do:

- Team work in multicultural communities
- Deep knowledge QA processes
- In-vehicle testing of various devices and technologies
- Experience in CMMI 5 / SPICE-A graded corporations
- Multisite team work
- Experience in HW design and verification
- System architecture and design experience
- Complex system issues analysis and development experience
- Fluent technical English
- Travel readiness
- Industry trends vision
- Project/Program leadership experience available
- Virtualization technologies (VMWare)



We Can:

- Automotive navigation telephony and multimedia processing
- GPS hardware, algorithms and data preparation
- Audio/Video codecs
- Echo cancellation
- Noise reduction
- Voice Recognition (integration, testing, productizing and configuration)
- VoIP
- Re-sampling
- FPGA-based multimedia processing acceleration

End Customer Experience:

- OnStar, Motorola, Continental, GM, Ford, Volvo, Toyota, BMW, Daimler, Volkswagen/Audi, Chery

About Luxoft

At Luxoft, we strive to be your partner. While you focus on what you do best, we bring in our in-depth expertise and best-of-breed practices to reduce costs and accelerate time to market for your products and services. Ultimately, Luxoft helps its clients maximize ROI, gain a competitive market advantage, and achieve true success.

Luxoft: Services Firm with Engineering DNA

With a culture of engineering excellence, partner mentality, extensive vertical knowledge, efficient execution and worldwide delivery, Luxoft has emerged as a global leader in high-end application development and product engineering services. Luxoft currently employs over 3 500 leading engineers in Russia, Ukraine, Romania, Canada, UK and Vietnam. By partnering with Luxoft, you put your trust in a service provider of choice for such world leaders as Alcatel Lucent, Avaya, Areva/Alstom, Atmel, Boeing, Harman, IBM, Sabre and more.

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