



Auriga Expertise in Avionics & Transportation Domain

AURIGA has been one of the recognized world lead-ers in embedded systems development since 1990. The company's experience encompasses more than 17+ years of delivering high-class software development projects, including ones targeting avionics and transportation domain.

The software solutions developed by Auriga are successfully implemented and used by the world's leading players of the avionics & transport technologies market and Air traffic control systems used by many airports in Europe and USA. Auriga engineers are experienced in the development and certification of FWS, FCS, FMS, ACARS avionics systems, and have a deep knowledge in such standards as DO-178B, ARINC 653, and ARINC 429.

Auriga's recently acquired experience in developing Javabased application for transportation domain by developing Aggregated Reporting System (ARS) as a component of Information Control System for Tatarstan Republic Ministry of Transport Affairs (ICSTRMTA). ICSTRMTA is a unique distributed system developed to meet requirements and optimize business processes of all objects of passenger transportation infrastructure in Tatarstan Republic. ARS subsystem developed by Auriga consolidates all information flows of ICSTRMTA, synchronizes reference data for other objects of ICSTRMTA, and produces aggregated reports. ICSTRMTA positive implementation experience has aroused interest in other constituent entities of the Russian Federation.

Auriga provides the whole range of services in the avionics & transportation domain including:

- Software development, maintenance and support
- Software testing and QA
- Technology conversion (Re-engineering & porting)
- Technology consulting

Auriga also has a unique experience with the real-time operating system LynxOS-, one of the most widely used in aerospace and military applications. Since 1996, a dedicated engineering team at Auriga has worked for LynuxWorks on the development of LynxOS and BlueCat Linux distribution targeted for embedded applications. With its key technology focus on embedded solutions, Auriga brings additional value to its customers from the avionics and transportation domain by using the existing expertise in various OS internals, high availability architecture, and such widely-used standards as POSIX.

Project Samples

Auriga has created a number of platform level solutions for modern transportation systems according to DO-178B standard.

Development of Avionics Framework with ARINC 653 Functionality

Auriga engineers have participated in creation of a platform solution for avionics applications that included implementing ARINC 653 functionality and interface. The Auriga team performed development according to DO-178B standard and has participated in designing, coding, and testing tasks for this project.

Continued on the reverse side



Aggregated Reporting System Development and Maintenance

Auriga's team was solely responsible for the full life-cycle development and maintenance of the Aggregated Reporting System (ARS) as a component of Information Control System for Tatarstan Republic Ministry of Transport Affairs (ICSTRMTA). ARS is designed to collect, process, store and build reports upon data on passenger transportation, provided by local bus-terminals. Developed as a web-portal solution, the Reporting System is aimed to meet the unique needs of all ministry departments: it allows monitoring key characteristics of passenger transportation all over the republic and building all sorts of reports ever used in paper format beforehand or newly offered by Auriga's analysts. While designing and developing database for the ARS Auriga has also developed mechanisms for distributing quotas among bus-terminals and managing replication conflicts. Auriga's team has performed planning, analysis, design, implementation, and integration with components provided by other parties.

Technology Expertise

Auriga has extensive experience with various operating systems and processor architectures, as well as industrial platforms and avionics standards.

Industry-specific standards

- DO-178B
- ARINC 653
- ARINC 429

Operating systems

- Linux, uLinux (microLinux), embedded Linux
- LynxOS, VxWorks, OSE, pSOS, QNX
- Windows 95/98/NT/2000/XP/2003
- Windows NT/XP Embedded
- Windows CE
- SunOS, Solaris, HP-UX, AIX, Digital UNIX/Tru64
- UNIX, SCO UnixWare, SCO OpenServer

Processor architectures

- PowerPC
- ARM and XScale
- MIPS

- Intel x86
- SPARC, Ultrasparc III
- Super-H
- Alpha
- Intel i960

Network protocols and technologies

- IP, ARP, ICMP, UDP, TCP
- Ethernet, FibreChannel
- Proxy ARP
- SLIP, PPP
- IPsec
- NAT
- BOOTP, DHCP
- TFTP, FTP
- SSH, rsh, rlogin, telnet
- NFS, SMB
- SNMP
- IPMI, RMCP
- iSCSI
- HTTP
- SOAP
- SSL

Hardware platforms and technologies

- AdvancedTCA, AdvancedMC, MicroTCA, CompactTCA, CompactPCI
- PCI, PCI-X, VME,
- Switching fabrics (StarFabric, GigaBridge)
- IPMI, I2C
- SCSI, iSCSI,
- FibreChannel, Ethernet, ATM, T1/E1
- Single board computers, transparent and non-transparent bridges
- I2O