

## Promwad Innovation Company

is a professional developer of software for electronic devices and embedded systems. Since 2004, we've been helping our clients to create commercially successful products for global sales. Key areas of our developments:

1. Multimedia
2. Datacom and telecommunications
3. GPS/GLONASS
4. Automotive electronics

We also specialize in development of board support packages (BSP), Linux and Android distributions, application software.

Our official partners:



## Software Development for Electronic Devices

### ➔ Software for Multimedia Devices

**Specific features:** work with audio/video codecs; expertise in video/audio compression and multimedia content protection technologies; use of the latest software platforms for multimedia devices.

- Development, porting and localization of software and third-party program components for multimedia devices
- Integration of software components in a single product
- Working with leading vendors and platforms by Texas Instruments, ST, Marvell, Fujitsu and Samsung
- The implementation of user interfaces based on CSS3, JavaScript, HTML 5 and Adobe Flash technologies. Use of the Linux and Android operating systems

**Results:** ready-made firmware and user applications for set-top boxes (STB), media players, tablet PCs, 3D TV sets, e-book readers, video recorders, etc.

**Our experience:** developing software for STB, e-book readers and tablets.

**Demo project:** software development for an IPTV STB based on the STi7105 chip for SD/HD/FullHD video. Advantages: JavaScript API, SDK with a user manual.

### ➔ Embedded Software for Datacom and Telecom

**Specific features:** high network capacity requirements; quality of service (QoS) requirements.

- Development of software for network devices
- User interfaces design for managing network devices and infrastructure
- Use of RDP, Citrix ICA and VMware PCoIP protocols
- Support of SIP-clients, Firefox, multimedia players

**Results:** embedded software and user interfaces for routers, switches, hubs and other network devices.

**Our experience:** developing embedded software and user applications for thin clients, VoIP devices and mini servers.

**Demo projects:** software for a VoIP device based on the Blackfin BF527 processor for transmitting voice via IP networks. Supports FXS, FXO, Ethernet and USB ports; includes a transparent API for user-level applications.



ELECTRONIC  
PRODUCTS DESIGN

## Software Development Related Services

- **Board Support Package (BSP) Development:** a full BSP, including boot loaders (U-Boot, RedBoot); development of device drivers, protocol stacks, system interfaces and memory; creation of file system images; writing scripts for firmware and distribution assembly; development of power-on self-test sequence
- **Linux and Android Distributions for Target Platforms:** optimization and customization of distributions for specialized solutions; development of bootable live CDs for various purposes
- **Our development process based on** Linux and Android distributions for microprocessors of various architectures and industrial computers; RTAI and Xenomai Linux extensions for real-time systems

## Software Development for Electronic Devices

### → Embedded Software for GPS/GLONASS

**Specific features:** expertise in navigation technologies and practical application of navigation systems; modeling of navigation system signals.

- Integration of navigation modules into final product
- Development of software for navigation modules
- Numerical simulation and calculations for navigation systems
- Integration of navigation modules and antennas meeting electromagnetic compatibility requirements without compromising on the size of the device
- Development of system drivers for controlling the expanded functions of navigation modules: selection of navigation systems, a coordinate logging function, faster signal acquisition with the help of Assisted-GPS, software updating etc.
- Development of applications for time synchronization systems using PPS signals, which indicate very precisely the start of a second

**Results:** software for navigation devices and other electronics with GPS/GLONASS-based functionality.

**Our experience:** software development for the electronic compass, an onboard recording device, navigation devices for watercraft, time synchronization systems.

**Demo project:** a portable device for controlling and evaluating the technical condition of a vehicle, recording its route, conversations of the passengers and relaying all information wirelessly to controllers.

### → Embedded Software for Automotive Electronics

**Specific features:** harsh operating environment; increased reliability and fault tolerance requirements for software components.

- Development of embedded software in compliance with AUTOSAR and MISRA
- Application of special software testing methods to ensure maximum reliability
- Use of hardware platforms oriented towards application in automotive electronics: PowerPC, ARM and MIPS
- Our experts use specialized vehicle interfaces (OBD, CAN, FR, LIN, MOST, IDB1394); multimedia interfaces (LAN, MOST, Bluetooth, WiFi, USB, MMC); telematics modules (GPS/GLONASS, GSM/3G, FM DARC/KDGPS)

**Results:** a ready-made software platform for on-board computers, automotive multimedia systems, engine management systems, navigation systems, etc.

**Our experience:** developments for American and European car manufacturers.

**Demo project:** an embedded vehicle module for keeping record of travel time, controlling air conditioning systems, keeping personal address books, and play back audio files on USB storage devices and iPods. Implemented multi-language voice guidance navigation, radio and music player.

### → Related Services: Application Software Development

- Network and multimedia applications
- Graphic user interfaces for touch-sensing input devices and LCD displays
- Cross-platform clients for electronic equipment
- Web-oriented embedded applications for remote device management and object monitoring

**Development center in Moscow:** 68/16 Leningrad prospect, Russia  
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**Development center in Minsk:** office 903, 22 Olshevskogo str., Belarus  
**Tel.** +375 (17) 312 12 46  
**Email:** info@promwad.com **Website:** www.promwad.com



ELECTRONIC  
PRODUCTS DESIGN

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