

AltiVec™ Center of Excellence

Motorola Global Software Group (GSG)

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AltiVec™ Center of Excellence Overview

- **Motorola's Global Software Group (GSG) is pleased to announce the formation of the AltiVec Center of Excellence.**
 - Developed in partnership with the Networking and Computing Systems Group (NCSG) of Motorola Semiconductor
 - Purpose: Help networking and telecom system designers take full advantage of AltiVec™ vector processing technology, a key feature of Motorola's high-performance G4 processors

AltiVec™ Center of Excellence : What We Provide

- **We enhance our customers' value-added capabilities through software innovation.**
- **We provide leadership in:**
 - Software engineering practices
 - Software quality assurance and metrics
 - Best-in-class software/systems products
 - Software product development methodologies
- **We provide premier software services to support the entire software life cycle.**

Summary of Qualifications: GSG Russia

- **Five years experience in behavioral modeling and verification of Motorola hardware**
 - PowerPC™ cores (5xx, 8xx, 6xx, 7xx, 74xx, e500)
 - PowerPC chipsets and integrated processors (8xx, 82xx, 85xx)
 - Motorola DSP-based chips and components (56xxx)
 - Microprocessors and microcontrollers (HC05-12, MCORE, ARM®)
- **Knowledge of processor architecture and microarchitecture**
 - Superscalar issues
 - Instruction timing
 - Optimization
 - AltiVec™ instruction set
- **Five years experience in DSP development**
 - Knowledge of DSP theory
 - Fourier
 - Wavelet
 - FIR and IIR filters
 - ADC and DAC
 - Speech signals compression and Sigma-Delta modulators
- **Deep knowledge of ASM and C for the PowerPC ISA and DSP**

GSG Russia Value Proposition

- **Key role in creating the Altivec™ Center of Excellence**
 - Well established competencies in:
 - Modeling and simulation of Motorola processors (behavior/protocol models, tools and system integration, pre-silicon/post-silicon verification)
 - Real-time embedded software (RTOS, network management and communication, drivers, tools)
 - DSP programming
 - Well established software engineering process (CMM Level 5)
- **High quality/cost ratio**
- **Skilled engineers available now**
- **In addition to Altivec library development, we offer:**
 - Assistance in developing an integrated environment for simulating and benchmarking developed library code
 - Fully restructured environment including models of different accuracy levels
 - Integration of existing components and tools
 - Other R&D activities related to PowerPC™ processor simulation

GSG Russia Engineering Skill Set

- **System engineering expertise**
 - System architecture/system concept development
 - System-level requirements gathering
 - Analysis for reliability, availability and performance
 - Standards groups participation
- **Developers**
 - High-level and low-level design development
 - C/C++, ASM under UNIX® and Windows NT® operating systems
 - Domain knowledge: RTOS/ modeling and simulation of Motorola ICs
- **Test engineers**
 - MSC/SDL and other tools for automated test suites
 - Subsystem/system tests development/execution
 - Focus on test automation/automatic analysis of test results

DSP Experience

- **DSP “programming model” expertise**
 - Coding on Assembler and C level
 - **Motorola 56K (560xx, 563xx, 566xx)**
 - **Testing of I.200 & I.250 cellular platforms**
 - **Familiar with StarCore® SC-140 architecture**
 - Knowledge of signal processing algorithms
 - University education
 - Training courses in Motorola
 - **DFT, FFT, FIR, IIR, etc.**
- **DSP performance optimization experience**
- **Practical DSP programming skills**
 - Audio codecs, soft modems, filtering, spectrum processing

PowerPC™ Architecture Experience

- **Deep knowledge of the PowerPC™ ISA “programming model”**
 - G1-G5 core generations
 - Coding on Assembler and C level
 - **Sample applications**
 - **Core and environment testing and verification**
- **Knowledge of PowerPC architecture and microarchitecture**
 - G2-G4 core generations
- **Usage, integration and development of the PowerPC instruction set architecture (ISA) models**
 - G1-G3 core generations
 - Models with instruction and cycle approximate accuracy

PowerPC™ Architecture Experience – Cont.

- **Experience in working with RTL & gate-level PowerPC ISA models**
 - G2-G4 generations
 - Debugger integration with RTL models
 - Starter kit development (hardware/software environments for startup code development)
 - Running & debugging software on RTL models
- **Knowledge of PowerPC processor environments**
 - Bus protocols for G2-G5 cores
 - Chipsets & integrated chips ... (MPC82xx, MPC85xx)
- **Development tools**
 - Verilog/VHDL, C/C++ systems
 - Third-party tools usage and integration
 - Motorola tools (models, simulators, debuggers)

Contact Information

To learn more about accessing the AltiVec™ Center of Excellence, contact:

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