

Application Engineering Services



Rapid Customization of Off-the-Shelf Hardware, Software and Firmware



Benefits

- Increase productivity by working with experts in Software Defined Radio (SDR) technology that have extensive experience working with government agencies and prime contractors
- Leverage off our in-depth knowledge base of *flexComm*™ systems to reduce your time to deployment and minimize development risks
- Focus on your core application development and integration by using Spectrum for foundational development support
- Increase your team's SCA capabilities when working with Spectrum Application Engineering Services – experts in SCA

Capabilities

- Software Communications Architecture (SCA)-compliant application development
- Wireless subsystem design and integration of commercial-off-the-shelf (COTS) and custom components such as RF front-ends based on program specific needs
- Algorithm development for wireless system application
- Application development for complex waveforms requiring low-latency, deterministic operation
- User interface/command and control development
- Ability to work on DoD and ITAR-controlled projects
- Porting waveforms to Spectrum product

Description

Spectrum's highly qualified Application Engineering Services (AES) team are experts in Software Defined Radio application and waveform development for systems supporting Software Communications Architecture (SCA). Building on a solid resume of experience working for the U.S. government and its prime contractors, AES will speed the development of software defined radio applications by customizing off-the-shelf hardware, software and firmware to customer specifications. AES can assist your team with algorithm development, integration and implementation to help reduce project schedules, mitigate development risk and reduce the resource burden for non-core activities.



Spectrum's AES team partners with your internal application development engineers to augment your development resources and support you in the following areas:

<p>Software Communications Architecture</p> <ul style="list-style-type: none"> • SCA Waveform porting • Hardware abstraction layer (HAL) • Operating Environment (OE) • Development and Analysis Tools 	<p>SDR Waveform Development</p> <ul style="list-style-type: none"> • Rapid-prototyping systems • Customization of waveforms • Development training • Application specific data flow examples • Wireless and wired networking
<p>Systems Engineering</p> <ul style="list-style-type: none"> • Integrate 3rd party or custom products • Develop complex applications • Software/firmware code porting • Program management 	<p>Signal Processing Development</p> <ul style="list-style-type: none"> • Size, weight and power optimization • Spectral analysis and geolocation • FPGA wrappers and IP cores • Modem implementations • Develop system examples

[Experience]

Spectrum's AES team has extensive experience assisting our customers with development of applications for military communications (MILCOM), satellite communications (SATCOM and MILSATCOM) and signals intelligence/electronic warfare (SIGINT/EW). Examples of our accomplishments include:

- SCA Waveform compliance testing including porting of COBRA waveform from third party hardware to the SDR-3000
- SCA radio services for future waveform ports as mandated by the JTRS Program Office (JPO)
- Development and demonstration of SCA reference waveforms for rapid development and prototyping
- Development of a earth station for satellite communications asset tracking operating a CDMA simplex waveform
- 6 Mbps QPSK (Quadrature Phase-Shift Keying)-based waveform in support of NASA's Cross Link Integrated Development Environment
- Digital Receiver for the Distress Alerting Satellite System Developmental Local User Terminal, a satellite-based search and rescue application
- Rapid-prototyping digital transceiver system for waveform development
- 802.11 a/b/g MAC and PHY implementation on the SDR-3000 for operations at 2.4 GHz, with data rates up to 54 Mbps, to provide a proxy for future implementations of wideband waveforms
- Signal analysis system for interference detection and geolocation in ultra high frequency SATCOM applications

[Customers]

Spectrum AES customers include:

- JTRS Technology Laboratory: US Space and Naval Warfare Systems Command (SPAWAR, San Diego)
- US Space and Naval Warfare Systems Command (SPAWAR, Charleston)
- General Dynamics C4S (Scottsdale)
- NASA Goddard Flight Center
- WTD 81, an agency of the German Federal Office of Defense Technology and Procurement
- Lockheed Martin Space Systems (Denver)
- Globalstar LLC

[Ordering Information]

Contact Spectrum Sales for further information on available services to accelerate your application development.

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| • SERVICES-804 | Application Engineering Services IV | • SERVICES-808 | Program Management Services |
| • SERVICES-805 | Application Engineering Services III | • SERVICES-809 | Project Management Services |
| • SERVICES-806 | Application Engineering Services II | • SERVICES-803 | System Engineering Services |
| • SERVICES-807 | Application Engineering Services I | • SERVICES-802 | Principle Engineering Services |
| | | • SERVICES-801 | Subject Matter Expert |