Spectra CX – Development Tool for SCA/SDR Developers

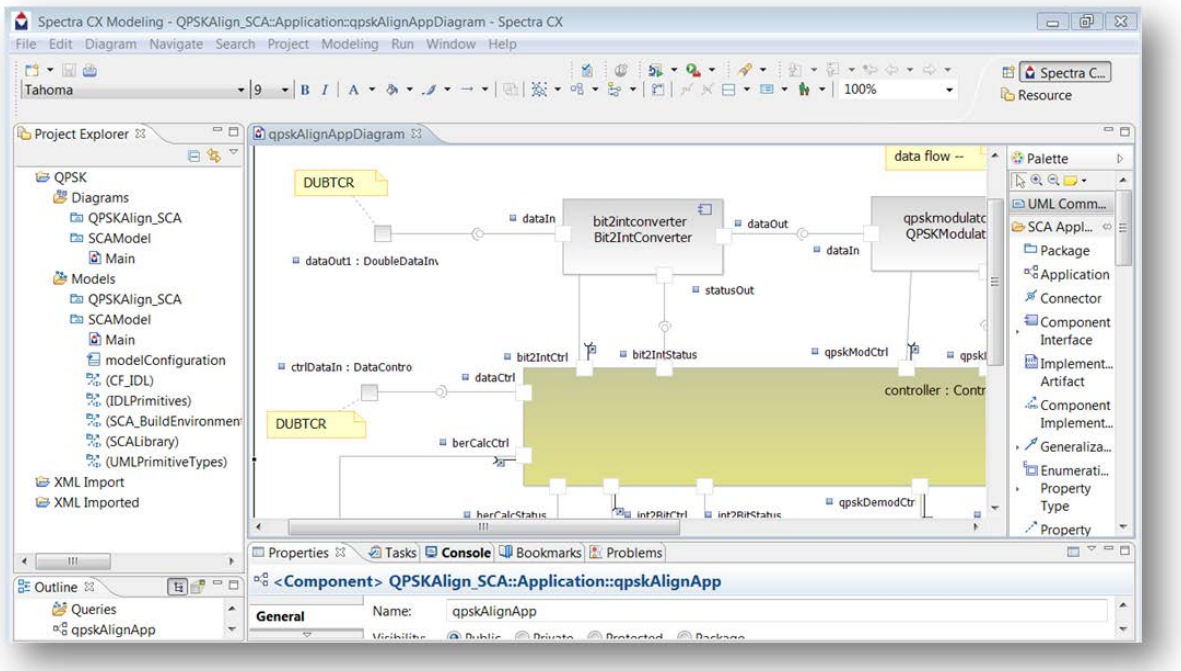
Spectra CX4 is a model-driven development tool that simplifies, accelerates, and validates a significant proportion of the Software Defined Radio (SDR) Software Communications Architecture (SCA) development process. Spectra CX4 validates SCA 4.1 compliance at the architectural level and generates correct-by-construction SCA compliant artifacts, such as: XML descriptor files and C++ source code. Spectra CX enables SCA 4.1 and non-SCA software aspects to be developed together, integrated early, and thoroughly tested. Spectra CX4 also reduces development risk due to its consistent model-based approach. Together the above benefits result in faster time-to-market, lower costs, better software quality, and superior compliance for all SCA 4.1 waveform and platform code developed with Spectra CX4.

Model with Spectra CX

Benefits from complete SCA 4.1 system modeling – components, applications, nodes platforms, deployments

Spectra CX4 provides visual modeling for all project stakeholders. Powerful visual representation of SCA concepts ensures that every project team member has a global understanding of the system and can produce correct SCA 4.1 artifacts. Spectra CX4 supports modeling of components, applications (waveforms), devices, platforms, and deployment of waveforms on target platforms. With SCA systems being dependant on multiple devices having enough resources and capacity to run the intended applications, it is vital that all applications are modeled with their planned platform.

Modeling deployments throughout the development cycle with Spectra CX4 allows the project team to specify and track the deployment explicitly, and ensure that untested deployments are never accidentally deployed.



- Model SCA 4.1 components, applications, devices, nodes, and platforms
- UML 2-based — system architecture clearly understood
- Modeling of classes with UML and C++ code generation
- Intuitive definition of application-to-platform relationships
- Define SCA 4.1 constructs in seconds
- Guides the usage of SCA 4.1 constructs
- Intuitive navigation — hyperlinks, context-sensitive menus, cross-linking
- Integrated with configuration management tools — manage model elements like any software artifact
- Define multiple views into the application

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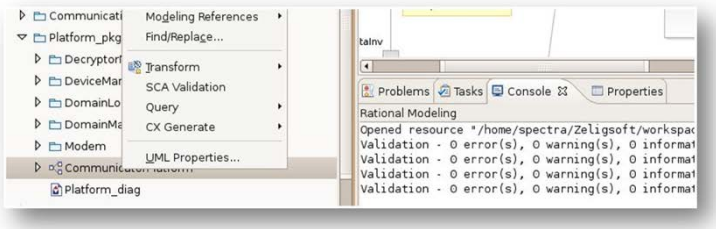
Validate with Spectra CX

De-risk projects by validating early on, and throughout the development cycle

Spectra CX4 allows developers to produce SCA 4.1 compliant software from day one. Validation is built right into Spectra CX4 providing automatic identification of errors in SCA 4.1 compliant radio platforms and waveform applications. In addition to checking the syntax of the Document Type Definition (DTD), Spectra CX4 validates the semantic correctness of the model. Errors are presented along with a hyperlink to the model construct that violates the SCA standard. Spectra CX also provides suggestions for correcting the violation.

Many SCA projects involve the integration of legacy and 3rd party waveforms. Spectra CX4 facilitates integration by allowing developers to migrate existing SCA 2.2.x models, validate them against the SCA standard for correctness, and assemble them into a complete and valid application or platform. Spectra CX4 provides a complete development environment for SCA 4.1 compliant software, validating at every stage, up to and including deployment.

- Automatically validate for SCA 4.1 compliance — applications (waveforms), platforms, and deployments
- Validate model for syntactical and semantic correctness
- Migrate SCA 2.2.x models to SCA 4.1 models
- Guidance on resolving SCA 4.1 violations with links to the cause and suggested modifications



Validate with Spectra CX

Generate with Spectra CX

Accelerate and de-risk SCA development by generating correct-by-construction SCA artifacts

Spectra CX4 provides push-button generation of correct-by-construction descriptor files and documentation. By automatically generating the complete set of SCA compliant descriptor files, i.e. the entire SCA Domain Profile, development time can be reduced from months to days. Generating documentation improves communication between team members. Documentation generation through Spectra CX4 is completely customizable. Developers can produce documentation relating to a specific view, for example, a list of all components in the waveform or a description of an intended deployment.

Automated generation of code implementing SCA 4.1 component structure is provided through Spectra CX4's C++ Code Generator. It automates the production of both SCA application code and SCA device code. Device code abstracts the physical hardware in accordance with the SCA 4.1 specification. Automating the generation of this code benefits both developers of SCA 4.1 compliant radio platforms and developers needing to modify an SCA 4.1 compliant radio platform, allowing them to make changes to their hardware while ensuring continuous adherence to the SCA 4.1 specification.

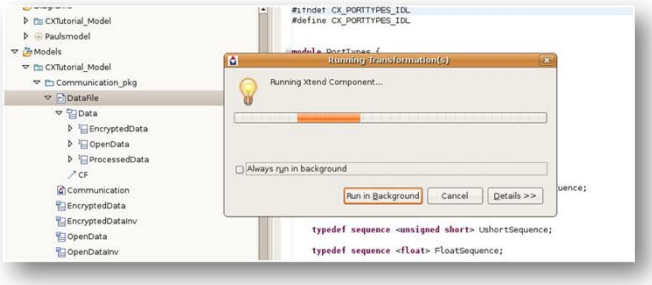
RTCORBA concepts can be modeled and C++ generation is supported in Spectra CX4.

UML generation of classes representing existing generated source code is supported in Spectra CX4. These UML classes can be used for documentation purposes or to add relationships to other C++ classes which are used during Spectra CX4 C++ generation.

- Push-button generation of the complete set of SCA XML descriptors
- Extensible code generators
- Generates SCA structural code in C++
- Build environment generation
- UML class generation representing generated C++ source code

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Generate with Spectra CX

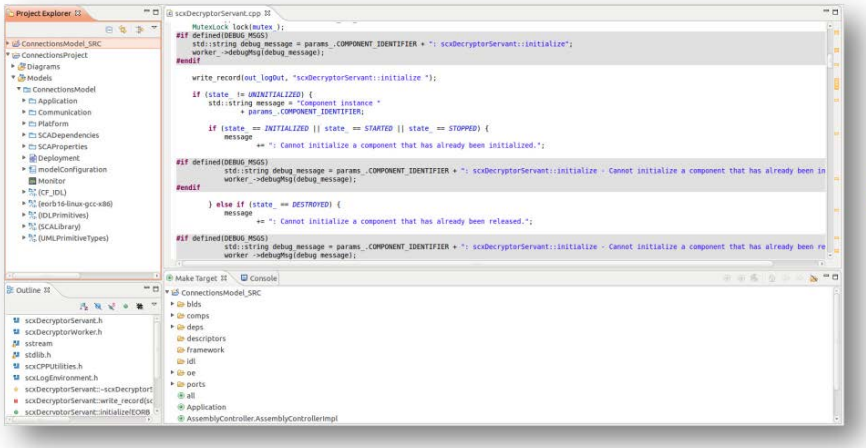


Develop with Spectra CX

Design and develop SCA4 component behavioral code using Model Driven Development (MDD)

Spectra CX4 provides developers with a complete model-based development environment that will significantly reduce the time to develop and maintain their components. Seamless integration with the Eclipse IDE allows developers to use their preferred tools for developing and managing source code that is linked to the model of the waveform.

- MDD can be used throughout the waveform realization process
- Component developers can work from a fully described application architecture
- Complex components can be designed and implemented using Spectra CX
- Integrated with Eclipse Team system and 3rd party Configuration Management solutions
- Automatic linkage of the model and source code eliminates the need for manual synchronization
- CDT integration allows developers to model and code using Spectra CX
- Supports 3rd party design tools



Develop with Spectra CX

Execute with Spectra CX

Monitor the component system on its actual target, with the platform running multiple applications for complete testing

In an SCA radio, the actual deployment of software components to hardware devices is done at system initialization time. For this reason, developers require features that enable them to connect to the SCA Core Framework (CF) to thoroughly test their application running live. In addition to features for SCA development, the Spectra CX environment contains comprehensive features allowing developers to quickly and easily test and debug their components and applications.

Also available is an SDR Development Suite comprising Spectra CX4 plus a complete SCA 4.1 operating environment (Spectra CF and Spectra CDB) designed to run on a PC host. Users can observe their applications deployed on a commercial-grade SCA CF in record time.

- Support for development hosts and embedded targets
- Use design model to force particular deployment

Complementary SDR Products

Spectra CX4 is part of the most complete family of SDR products and technologies designed to support all of your SCA SDR development needs.

Expert Professional Services

We offer a complete suite of training courses on the SCA and SDR technologies and their implementation using our Spectra SDR products.

We also offer professional services conducted by leading industry experts in all skill areas required for SCA radio development. Services include workshops to help SDR engineers develop both SCA platforms and waveforms, as well as longer term consulting services with our SDR specialists participating throughout the development lifecycle, including the actual implementation of your SDR solution.

Finally we are renowned for the quality and responsiveness of our Support and Maintenance Services that are available on a worldwide 24x7 basis where required.

Please contact us for further information about Spectra CX4 or any of our SDR products and services.

For More Information

For further information regarding the Spectra CX please e-mail: ist_info@adlinktech.com or visit: ist.adlinktech.com

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