



Zeligsoft Code Generator 2.0

SCA Component Code

Zeligsoft CE™ is a model-driven development tool that forms the backbone of the Software Communications Architecture (SCA) development process. CE accelerates development and improves the software quality of SCA applications and platforms through automatic generation of SCA artifacts such as XML descriptor files and documentation. Zeligsoft Code Generator provides industrial strength code implementing component structure that can be optimized for SCA operating environments.

Reduced Development Risk for Improved Quality, Cost Control and Better Time-to-Market

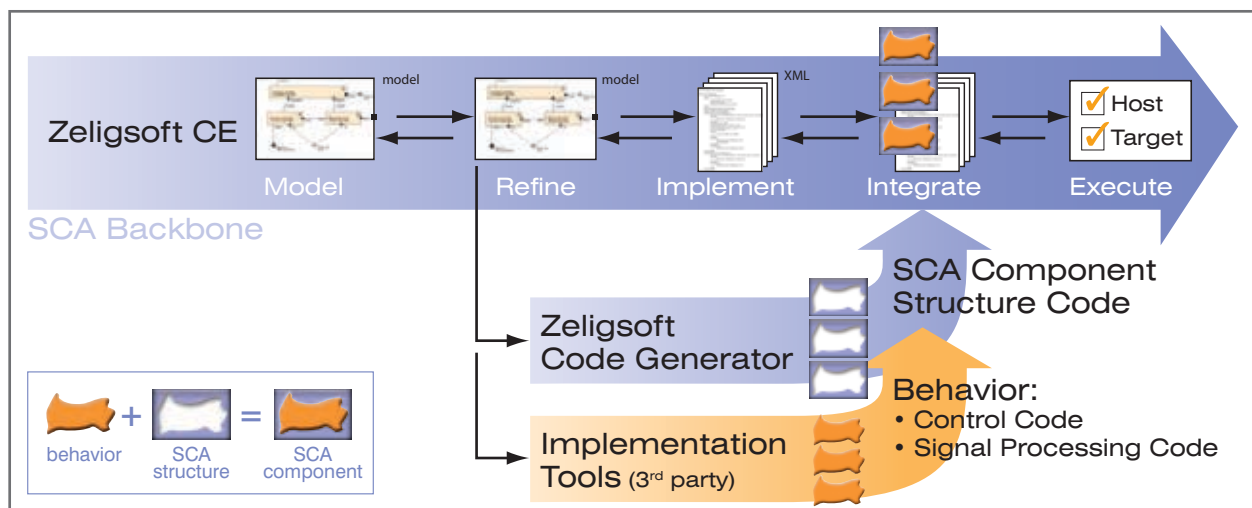
Generation of SCA component code from the visual model de-risks development since the code precisely reflects the SCA-validated application or platform model, preserving the architectural intent of the system and ensuring consistent implementations of SCA interfaces, ports and properties. Code generation also ensures consistency of coding across the project, resulting in high quality, easy to maintain code.

With Zeligsoft, SCA component code is repeatable and predictable — not prone to human coding errors. Code templates have been tested and proven, so that code reliability is achieved from the very beginning of the project.

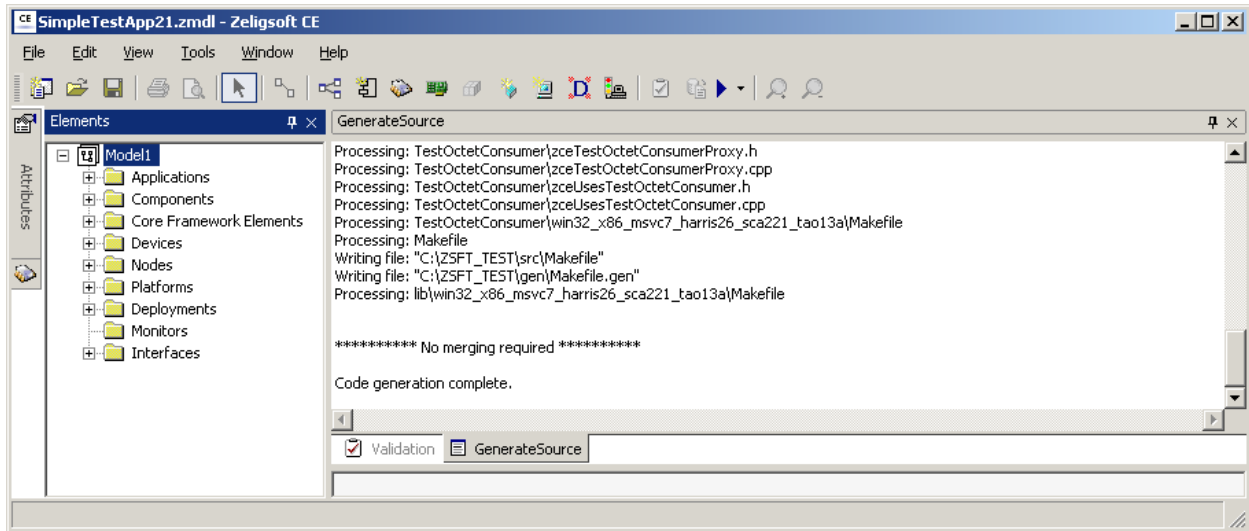
New in this Release

- SCA device code generation
- Enhanced support for SCA resource factories

Zeligsoft Code Generator adapts to existing coding tools and processes, contributing required SCA artifacts and allowing developers to continue to use their existing tools for developing code behavior for radio e.g. control code and signal processing code. Ready access to quality SCA structure code allows specialists such as FPGA programmers to rapidly move their programming tasks along; Code Generator provides value to every member of the project team.



Zeligsoft Code Generator produces SCA component structure code and integrates with other tools in the developer's tool chain.



Zeligsoft's Code Generator produces proven code.

SCA Application Code and Device Code Generation

Zeligsoft Code Generator automates the production of both SCA application code and SCA device code. Device code abstracts the physical hardware in accordance with the SCA specification. Automating the generation of this code benefits both developers of SCA-compliant radio platforms and developers needing to modify an SCA-compliant radio platform, allowing them to make changes to their hardware while ensuring continuous adherence to the SCA specification.

Universal Code Template

Zeligsoft Code Generator provides a universal code generation template that renders 100% portable code across embedded targets. Since many SDR architectures take advantage of real-time operating system (RTOS), Object Request Broker (ORB) and SCA Core Framework (CF) optimization, Zeligsoft also provides code templates optimized for the chosen operating environment (OE).

Optimized Code Templates

Optimizing SCA wrapper code is as important as optimizing behavior (e.g. signal processing code).

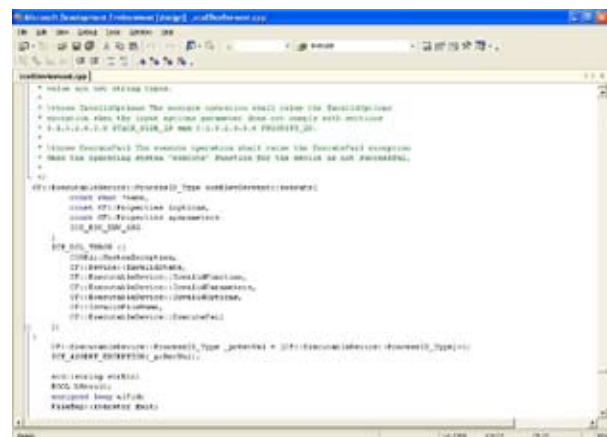
Zeligsoft's code generation engine pre-integrates Core Framework and ORB development kits, often referred to as "Component Development Kits", available from industry leading middleware and RTOS vendors. These kits provide features that take advantage of CF and RTOS services for optimization of control and distribution. These services include extensions for connection, messaging, logging

and debugging. Using these services allows developers to maximize the benefits of their chosen platform.

Zeligsoft's Code Generation enables developers to benefit from automation without losing the value of the component development kit and the performance enhancements gained from it.

Enhanced Support for SCA Resource Factories

SCA resource factories incorporate components that are meant to run together in a single process and provide a framework for running and controlling the co-located components. Zeligsoft Code Generator enables developers to easily benefit from this inherent SCA functionality by automatically generating the ResourceFactory framework for creating these Resource components. Zeligsoft Code Generator generates multiple related Resource component structures and then automatically builds and links them with the resource factory executable.



Executable device code generated by Zeligsoft Code Generator 2.0

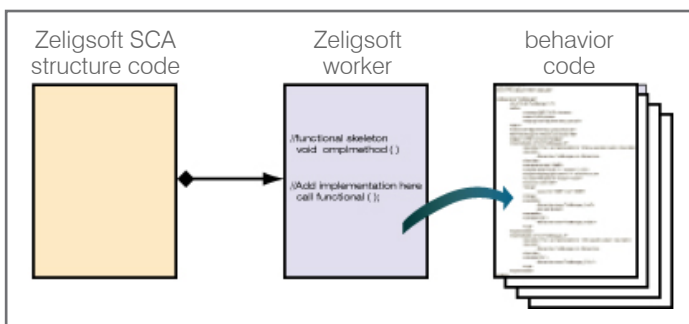
Future-Proof Development: Flexible Build Environment

Zeligsoft Code Generator produces SCA component structure code complete with a “skeleton” for the inclusion of behavior code (signal processing and control code typically made up of additional source code or 3rd party libraries). Zeligsoft’s build environment compiles and links the SCA structure and behavior into a single executable — all within the Zeligsoft environment — placing elements of the compiled code into a directory structure and make-file system that allows for:

- Maximum flexibility for developers
- Maximum code portability
- Multiple implementations per component

Clean Separation of SCA Structure Code and Behavior Code

Behavior code contains virtually no OE dependant code. Zeligsoft Code Generator promotes the seamless reusability of this code by cleanly separating it from the SCA structure code in the directory structure. Sending and receiving messages are translated to operation calls in the behavior directories so that virtually no CORBA code is contained within them. It is thus very easy to migrate behavior code from one operating environment to another, future-proofing development. This scheme also makes it very clear, even to new users, where behavior code should be added or changed.



Zeligsoft’s code patterns provide maximum flexibility and portability.

Adaptable to Multiple Targets and Settings

During the course of the software project, developers will create multiple implementations of components to support different target configurations such as develop-

ment host and embedded target. Developers will also create multiple implementations with different compiler settings such as debug configurations. By using a few simple settings and a button click, Zeligsoft Code Generator will generate multiple component implementations using the same model and code base. Developers write code once and run it on multiple platforms, again future-proofing development.

Zeligsoft Code Generator future-proofs development.

Support for Iterative Development — Build & Merge Management

Numerous changes will be made to both the SCA model and the behavior (control code and signal processing code) as the project progresses.

When changes to the SCA model cause new SCA structure code to be generated, developers must be careful not to override any changes made to the behavior when merging the two together. Zeligsoft Code Generator helps users merge changes into behavior code.

Delays caused by re-compiling over and over can impact projects. Zeligsoft Code Generator recompiles files that have been changed in the model, reducing cycle time.

Build avoidance reduces cycle time.

Total Control over Generated Code

While not generally required, the SCA structure code can be edited. Once this code is modified, the Zeligsoft Code Generator will not override these changes when re-compiling for changes to the model. Code Generator helps developers manage these changes within their overall code base. Developers have complete flexibility and control over generated code throughout the development cycle so that they maintain tight control over code at all times.

Zeligsoft Code Generator reduces risk by first adapting to the project’s requirements and then by allowing code to be modified once generated.

Integrated Environment

All compile and build actions can be initiated from the Zeligsoft environment. Additionally, users can prepare the runtime environment for execution and observe their code running on host and/or target. Developers benefit from the simplicity of using only one tool for modeling, validation, code generation and execution.

Multiple Programming Languages, Patterns and Customizable Templates

In order to assimilate with established processes, code generation must accommodate preferred programming languages. Zeligsoft Code Generator can generate SCA structure code in C, C++, VHDL, Java and ADA programming languages.

Zeligsoft uses open standards to translate model information to code and gives users full access to the code generation template. Engineering teams can therefore optimize the template to accommodate their environment if they need to.

Zeligsoft also provides a scripting interface so that structure code builds can be integrated into an automated build process.

Support and Professional Services

Zeligsoft provides 1st line support for customers generating code for a variety of middleware, RTOS and hardware combinations. Zeligsoft maintains reference platforms in house to ensure timely assistance.

Proprietary Core Frameworks and other middleware suites can be supported by retaining Zeligsoft's professional services team.

Zeligsoft offers comprehensive professional services and training for the SCA, Zeligsoft CE and Code Generator.

System Requirements

- CPU speed 1.6 Ghz
- Windows 2000 Professional service pack 4
- Windows XP Professional service pack 2
- MS .NET Framework 1.1 Service Pack 1
- 512 MB Memory
- 100 MB free hard disk space

Ordering Information

Code Generator (Universal)CEC-1006
Code Generator (Optimized for OE)CEC-2003