

EventStudio System Designer 4.0

SEQUENCE DIAGRAM BASED MODELING

A NEW APPROACH TO SYSTEM MODELING

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Man invented handwriting because hieroglyphics did not scale very well with the growing complexity of human thought. However, CASE tools of today are trying to take us back to hieroglyphics.

EventStudio takes a different approach. Here is a comparison with conventional CASE tools:

CONVENTIONAL CASE TOOL	EVENTSTUDIO
Draw the diagrams using clumsy graphical editors .	Enter your specifications in a simple and intuitive text format (FDL). Automatically generate the diagrams.
Manually adjust the layout and formatting of the documents. Once printed, assemble the jig-saw-puzzle by taping together the loose sheets.	EventStudio automatically takes care of layout and page level formatting. Larger diagrams are automatically scaled to standard paper sizes.
CASE tool output looks good only for simple “demo” examples. Real world complex diagrams are cluttered and unintelligible.	EventStudio generates neat, legible and well-organized diagrams even in most demanding and complex designs.
Learn the quirks of a separate editor for every supported diagram type.	With a single input file, you can generate a wide variety of documents.
Draw a separate diagram for every success and failure scenario.	EventStudio automatically generates documents for success and failure scenarios.

KEY FEATURES:

- Generate sequence diagrams and collaboration diagrams
- Define success and failure scenarios without repeating the common parts
- Review your design by the click of a button
- Simple text based modeling language

EVENTSTUDIO APPLICATIONS

EventStudio is particularly suited for:

- Message Sequence Charts (MSCs) for Telecom
- Real-time and Embedded System Design
- Use Case Development
- Object Sequence Diagram Development
- Protocol Design and Documentation
- Process Flow Diagrams for Industrial Control Applications
- Business Process Workflows
- Distributed System Design

Telecom Design

Real-time and Embedded Design

Use Case Design

Object Oriented Design

Protocol Design

Process Workflows

Distributed System Design

GENERATE SEQUENCE DIAGRAMS

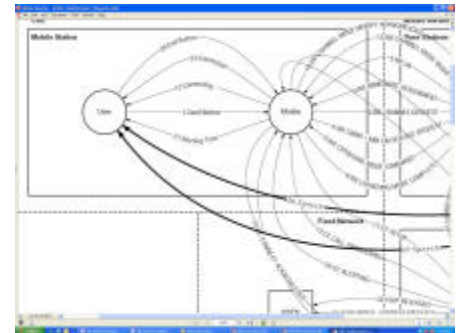
- Sequence Diagrams are very effective in modeling complex sequences of interactions between entities.
- The system architecture is captured in the document header by classifying the entities as modules, processors and objects.
- Messages between objects are represented as horizontal arrows. Time flow is represented by vertical axis.
- In-line remarks are printed on the right side. Block remarks are printed along the width of the document.
- Control the level of detail in each sequence diagram. You can enable or disable the printing of message parameters, actions, state changes, timers, resource operations and block remarks.



Sequence Diagrams are very effective in modeling complex sequences of interactions between entities.

GENERATE COLLABORATION DIAGRAMS

- Collaboration diagrams provide a birds-eye-view of the complete feature. The time dimension is deemphasized, thus providing an overview of the entire feature.
- The system is automatically arranged as modules, processors and objects.
- Message interactions are represented as numbered arrows.
- Context diagrams can be generated. These diagrams just focus on the interfaces between different entities in the system.



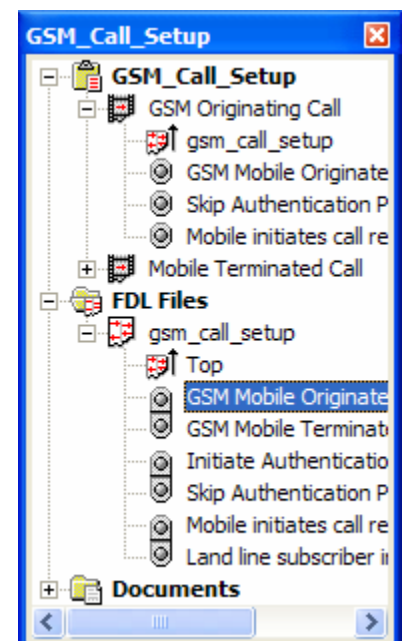
Collaboration diagrams and context diagrams provide a birds-eye-view of the complete feature.

DOCUMENT MULTIPLE SCENARIOS

Designers often generate use cases and sequence diagrams only for the basic scenarios. A large number of scenarios are simply left out as managing and maintaining documentation for that many cases is not practical.

EventStudio addresses this problem with built in support for multiple scenarios:

- Automatically generate documents for all success and failure scenarios.
- When designing multiple scenarios, you just need to provide details on how the new scenarios differs from the base scenario. Common parts shared in different scenarios need to be defined only once.
- “Case-leg” and “if-else” statements in FDL directly support multiple scenario definition. Renaming and addition of new “case-leg” statements is handled seamlessly.
- Scenario relationships are represented as scenario wise and FDL trees and you can navigate easily to the scenario branching points.
- All Scenarios are grouped together in a Scenario Project. Once the Scenarios are

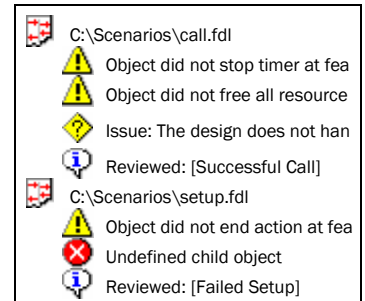


Define multiple scenarios by just specifying the differences with the base scenario.

AUTOMATE DESIGN REVIEWS

EventStudio catches design errors that would have been completely missed in the design stage. All the scenarios in a scenario project are reviewed to catch errors like:

- Timer started but not stopped
(e.g. retry timer is not stopped, even after receiving the acknowledgement)
- Resource allocated but not freed
(e.g. tone generator allocated, but not freed when exiting signaling phase)
- Action started but not finished
(e.g. dial-tone feeding started but not finished when a digit is received)
- Object deletion without cleanup
(e.g. a call object is deleted but timeslot resources are not freed)

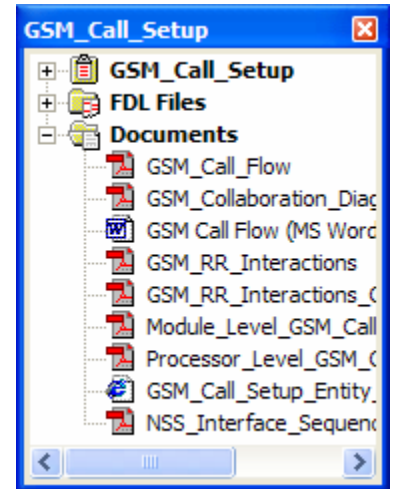


With the click of a button you review the design for all success and failure scenarios. A typical review output is shown above.

GENERATE A WIDE VARIETY OF DOCUMENTS

EventStudio generates a wide variety of documents in standard formats like Adobe PDF, Microsoft Word Picture and HTML. Here are a few examples of documents that go beyond the plain vanilla sequence diagrams and collaboration diagrams:

- Generate an interface diagram that only includes interactions that involve a specific module, processor or object.
- Generate an interaction diagram that includes only inter-module messages. Intra module interactions will be excluded from the document.
- Generate a document using powerful regular expression filters. For example a regular expression of "{Request}|{Response}" will generate a document that only includes messages that contain the string "Request" or "Response" in the message name.
- Generate a unit test procedures document for any object in your system.
- Generate an object-wise summary of all the message interactions.



EventStudio automatically generates a wide variety of documents suitable for system design.

FEATURE DESCRIPTION LANGUAGE (FDL)

EventStudio supports FDL, a powerful modeling language. With FDL you can:

- Specify the system architecture in terms of module, processor and objects.
- Show internal as well as external message interactions with detailed parameter specification.
- Model timer start, stop and expiry.
- Model resource allocation and freeing.
- Dynamically create and delete objects.
- Define multiple scenarios without repeating the common parts.
- Represent State Transitions.
- Model single step and multi-step actions (e.g. dial-tone start and stop).
- Specify inline and block remarks.

```

module : internet, user
processor : server in inte
external : http in server,
feature "Browsing"
  get(url): pc -> http
  (* User clicks on the U
  case
    leg "URL found":
      http_data : serve
      (* Server sends HT
    leg "URL Not Found":
      http_not_found: se
      (* Web page not fo
  endcase
endfeature
    
```

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EventHelix.com is dedicated to developing tools and techniques for the entire software lifecycle.

EventStudio is our first step in realizing our vision of a CASE tool. EventStudio pioneers a semi-formal development methodology that bridges the "impedance mismatch" between design and code.

We are also committed to introducing developers to software development techniques that we have learnt over the years. Visit EventHelix.com and you will find a wealth of articles on all aspects of software development.



EXPLORE MORE

Here are some useful links related to EventStudio:

EventStudio Home Page:

<http://www.EventHelix.com/EventStudio>

FDL Tutorial:

<http://www.EventHelix.com/EventStudio/Tutorial>

Getting Started With EventStudio:

<http://www.EventHelix.com/EventStudio/GettingStarted.htm>

Download a 45 Day Free Trail:

<http://www.EventHelix.com/EventStudio/Download.htm>

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