# YAKINDU Statechart Tools

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**YAKINDU Statechart Tools (YAKINDU SCT)** is a tool[1] for the specification and development of reactive, event-driven systems with the help of finite-state machines. It consists of an easy-to-use tool for the graphical editing of statecharts and provides validation, simulation and code generators for various target platforms. YAKINDU Statechart Tools are available as an Open-Source product (Community Edition) and in a commercial variant (Professional Edition).[2] Users are coming from both industry[3][4] and academia.[5][6][7][8][9][10][11][12][13][14][15][16]

## Contents



## Concepts

YAKINDU Statechart Tools implement the concept of statecharts as invented by David Harel in 1984.[17] Statecharts have been adopted by the UML later.[18]

The software can be used to model finite-state machines. Important theoretical models for finite-state machines are Mealy machines and Moore machines. YAKINDU Statechart Tools can be used to model both these types.

## Functionality

The main features of YAKINDU Statechart Tools are:

- smart combination of textual and graphical modeling
- syntactic and semantic validation of the state machines
- executable models via the simulation engine
- code generators for Java, C and C++

## Extensibility

YAKINDU Statechart Tools provide open APIs, allowing for adaptions to specific requirements to a large extend. Not only are the code generators expandable; the developer can also specify his own statechart dialect. For this purpose the concept of domain-specific statecharts is defined. This makes it possible to use statecharts as reusable language modules.

## History

The first version of YAKINDU Statechart Tools was released in 2008 as part of the research project *MDA for Embedded*.[19] In this research project, model-based development processes for the development of embedded systems based on the Eclipse project were developed. Since mid-2010 the YAKINDU team, consisting mainly of employees of itemis AG, a company in Lünen, Germany, has been working on Version 2.0. The first official version was released together with Eclipse version Juno.

- Release 2.9 is compatible to Eclipse versions 4.5 (Mars) and 4.6 (Neon). Starting with this release, it is possible to run code generators from the command-line resp. in a continuous integration system.

### Professional Edition

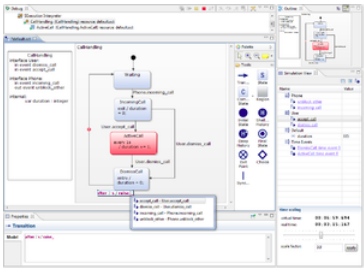
In December 2016, itemis AG released a professional edition of the software with costs, providing additional functionalities:

- Seamless integration with the C programming language
- Advanced capabilities for simulating statecharts

## Award

- Germany – Land of Ideas 2008: Model-based generative software development for embedded systems[20]

**YAKINDU Statechart Tools**



YAKINDU Statechart Tools executing a statechart in simulation mode

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|---|---|
| **Developer(s)** | YAKINDU team at itemis AG |
| **Initial release** | 2008 |
| **Stable release** | 2.9.2 / 27 January 2017 |
| **Repository** | https://github.com/Yakindu/statecharts |
| **Development status** | active |
| **Written in** | Java |
| **Operating system** | Cross-platform, binaries for Microsoft Windows, Linux and MacOS available |
| **Platform** | Eclipse |
| **Available in** | English |
| **Licence** | Eclipse Public License |
| **Website** | http://www.statecharts.org |

**YAKINDU Statechart Tools Professional Edition**

YAKINDU Statechart Tools Professional Edition offering seamless integration of the C programming language.

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|---|---|
| **Developer(s)** | YAKINDU team at itemis AG |
| **Initial release** | 16 December 2016 |
| **Stable release** | 1.0.1 / 27 January 2017 |
| **Development status** | active |
| **Written in** | Java |
| **Operating system** | Cross-platform, binaries for Microsoft Windows, Linux and MacOS available |
| **Platform** | Eclipse |
| **Available in** | English |
| **Licence** | Proprietary |
| **Website** | https://www.itemis.com/en/yakindu/statechart-tools/ |

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## External links

- Project homepage (http://www.statecharts.org/)
- Source code on Github (https://github.com/Yakindu/statecharts)
- Project statistics (http://www.ohloh.net/p/sct2)

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Categories: Eclipse (software) | Free integrated development environments

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