

libSBML

&

SBML L3

Sarah Keating



SBML

A machine-readable format for representing computational models in systems biology



libSBML

an API library

- read
- create
- manipulate
- convert between levels/versions
- write
- validate

- Standard ANSI C++

- C
- MATLAB
- Octave

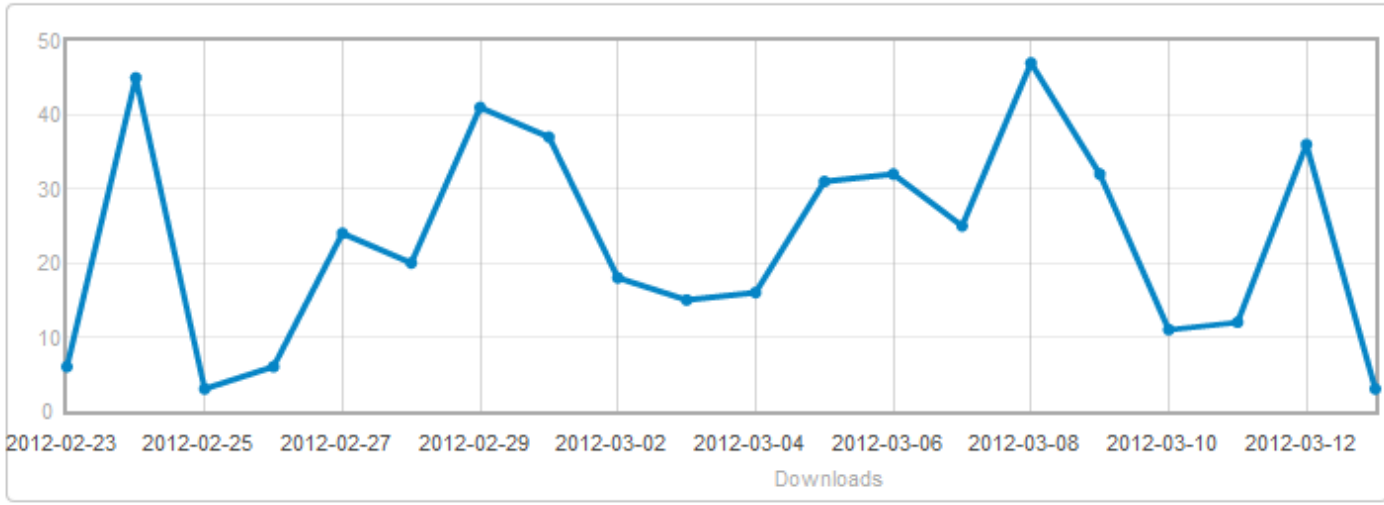
- C#
- Python
- Java
- Perl
- Ruby

Generated with SWIG



Advantages of libSBML

- closely mimic SBML structure
- different language bindings
- supports several XML parsers
- develop in line with specification
- backwards compatibility



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SBML Level 3

**The Systems Biology Markup Language (SBML):
Language Specification for Level 3 Version 1 Core**

Michael Hucka (Chair) *California Institute of Technology, US*
Frank Bergmann *University of Washington, US*
Stefan Hoops *Virginia Bioinformatics Institute, US*
Sarah M. Keating *California Institute of Technology, US*
Sven Sahle *University of Heidelberg, DE*
Darren J. Wilkinson *Newcastle University, GB*

sbml-editors@sbml.org
core
SBML Level 3 Version 1 Core

Release 1 (Candidate)
31 December 2009

Please report errors, ambiguities, and other issues in this document using the form at
<http://sbml.org/specifications/sbml-level-3/version-1/core/issue-report-form>


Corrections and other changes to this SBML language specification may appear over time.
Notifications of new releases are broadcast on the mailing list sbml-announce@sbml.org

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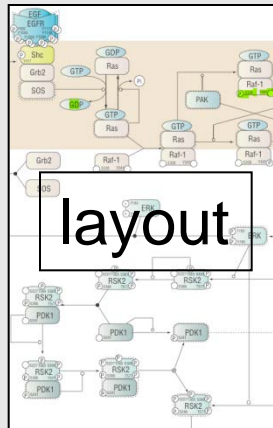
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The list of known issues in all releases of SBML Level 3 Version 1 Core is available at
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 **Systems Biology
Markup Language**

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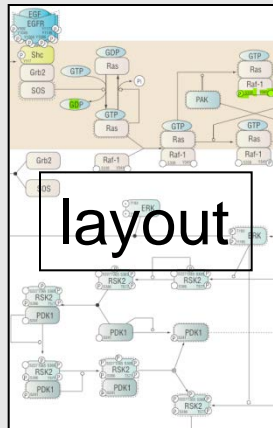
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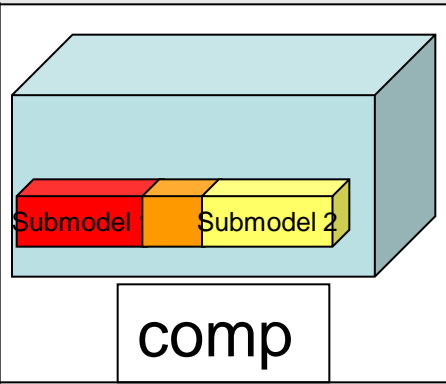
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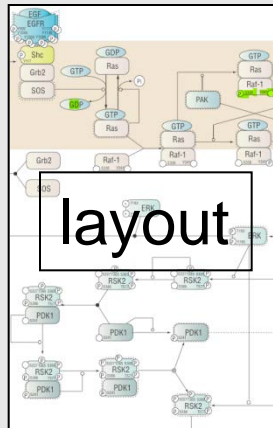
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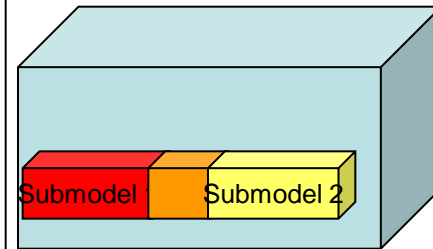
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 Systems Biology
Markup Language

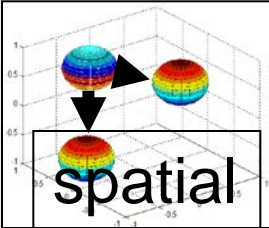

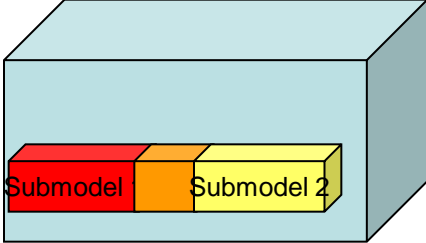
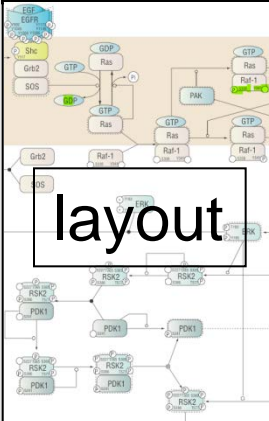



comp



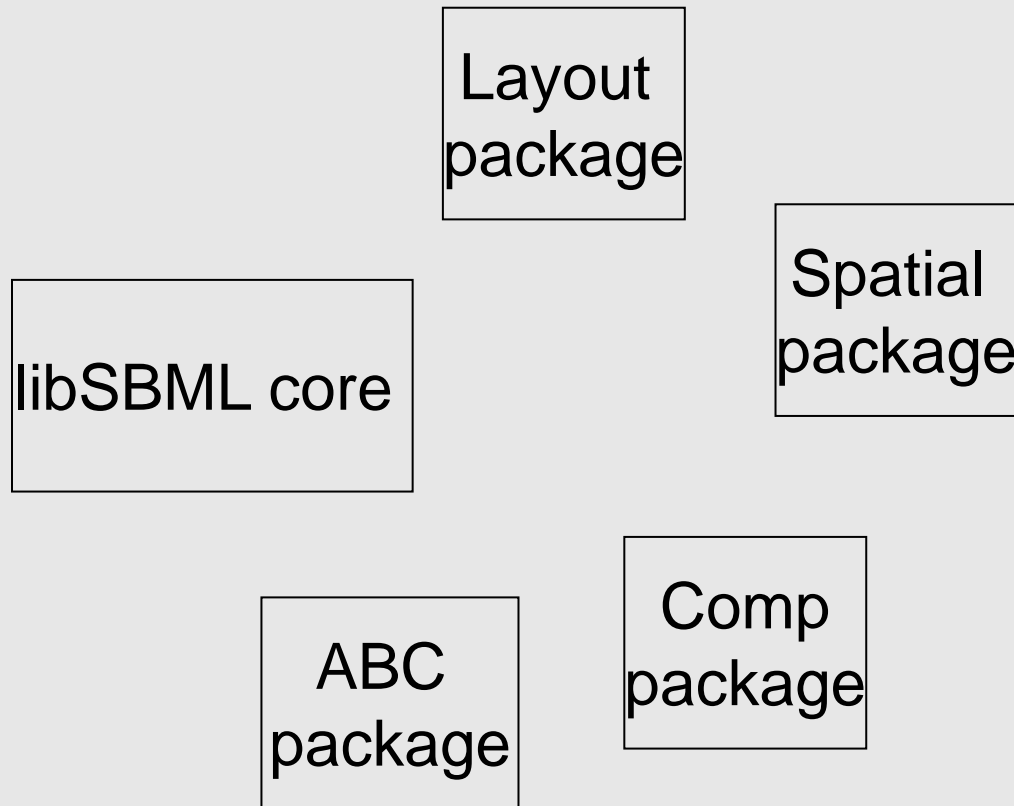
qual

SBML Level 3

 <p>spatial</p>	<p>The Systems Biology Markup Language (SBML): Language Specification for Level 3 Version 1 Core</p> <p>Michael Hucka (Chair) <i>California Institute of Technology, US</i> Frank Bergmann <i>University of Washington, US</i> Stefan Hoops <i>Virginia Bioinformatics Institute, US</i> Sarah M. Keating <i>California Institute of Technology, US</i> Sven Sahle <i>University of Heidelberg, DE</i> Darren J. Wilkinson <i>Newcastle University, GB</i></p> <p>sbml-editors@sbml.org core SBML Level 3 Version 1 Core</p> <p>Release 1 (Candidate) 31 December 2009</p> <p>Please report errors, ambiguities, and other issues in this document using the form at http://sbml.org/specifications/sbml-level-3/version-1/core/issue-report-form</p> <p>Corrections and other changes to this SBML language specification may appear over time. Notifications of new releases are broadcast on the mailing list sbml-announce@sbml.org</p> <p>The latest release of the SBML Level 3 Version 1 Core specification is available at http://sbml.org/specifications/sbml-level-3/version-1/core</p> <p>This release of the specification is available at http://sbml.org/specifications/sbml-level-3/version-1/core/release-1/</p> <p>The list of known issues in all releases of SBML Level 3 Version 1 Core is available at http://sbml.org/specifications/sbml-level-3/version-1/core/errata/</p> <p>Formal schemas for use with XML are available at http://sbml.org/specifications/sbml-level-3/version-1/schemas/</p> <p> Systems Biology Markup Language</p>	 <p>comp</p>
 <p>layout</p>		 <p>qual</p>

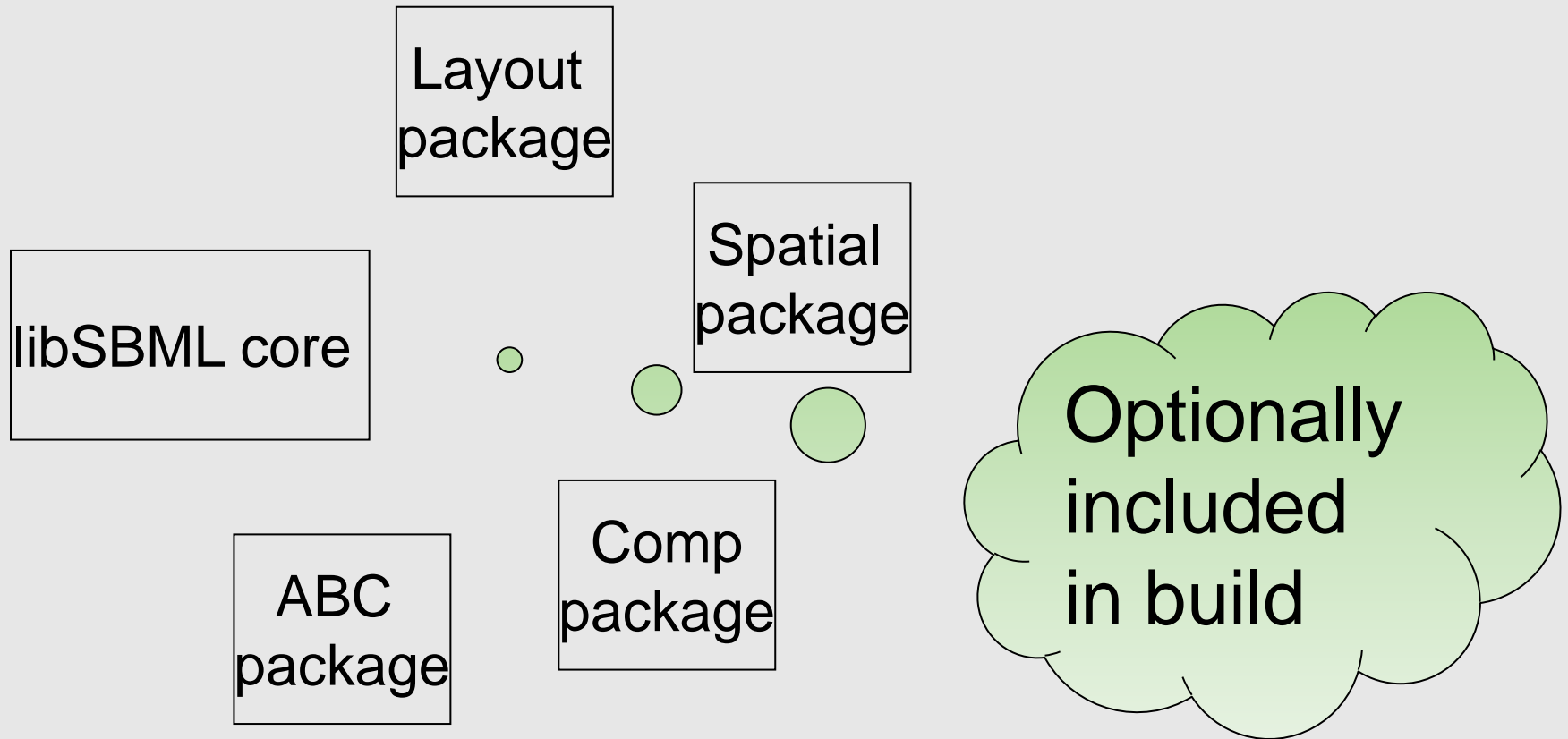
libSBML and L3 packages

libSBML-5

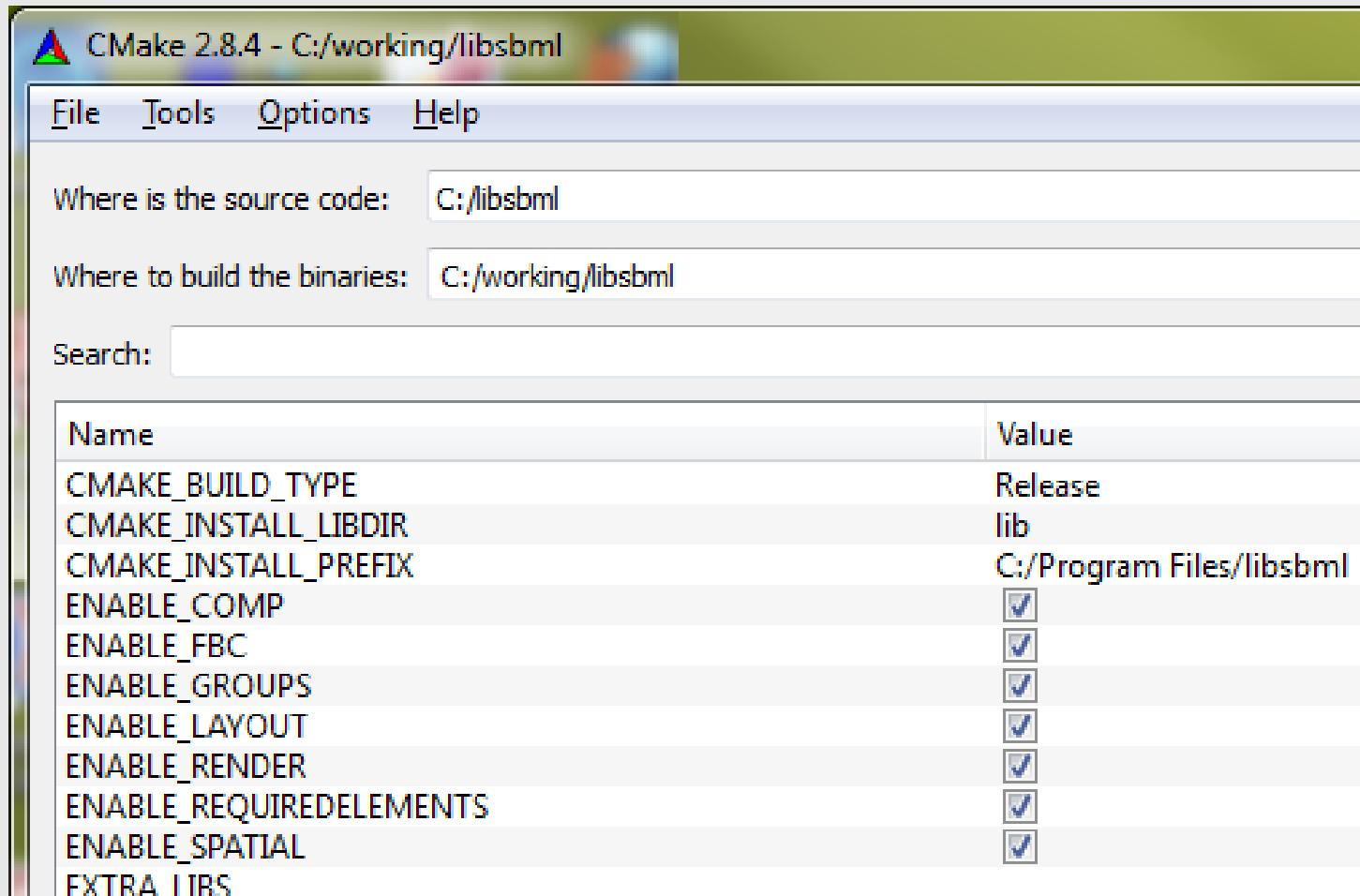


libSBML and L3 packages

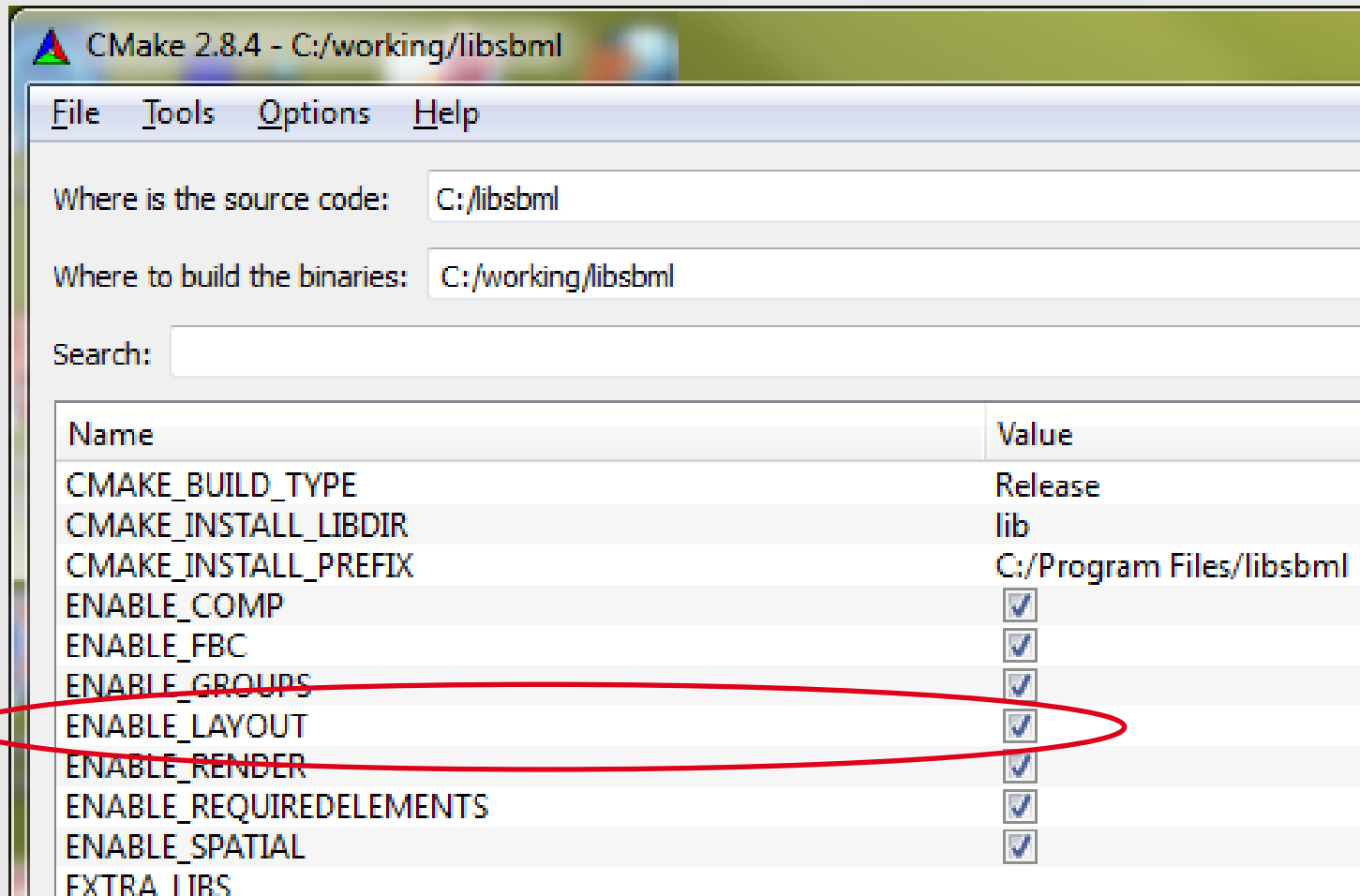
libSBML-5



libSBML and L3 packages



libSBML and L3 packages



libSBML-5

libSBML core
(very minor API changes from libSBML-4)

SBML
Extension

SBasePlugin

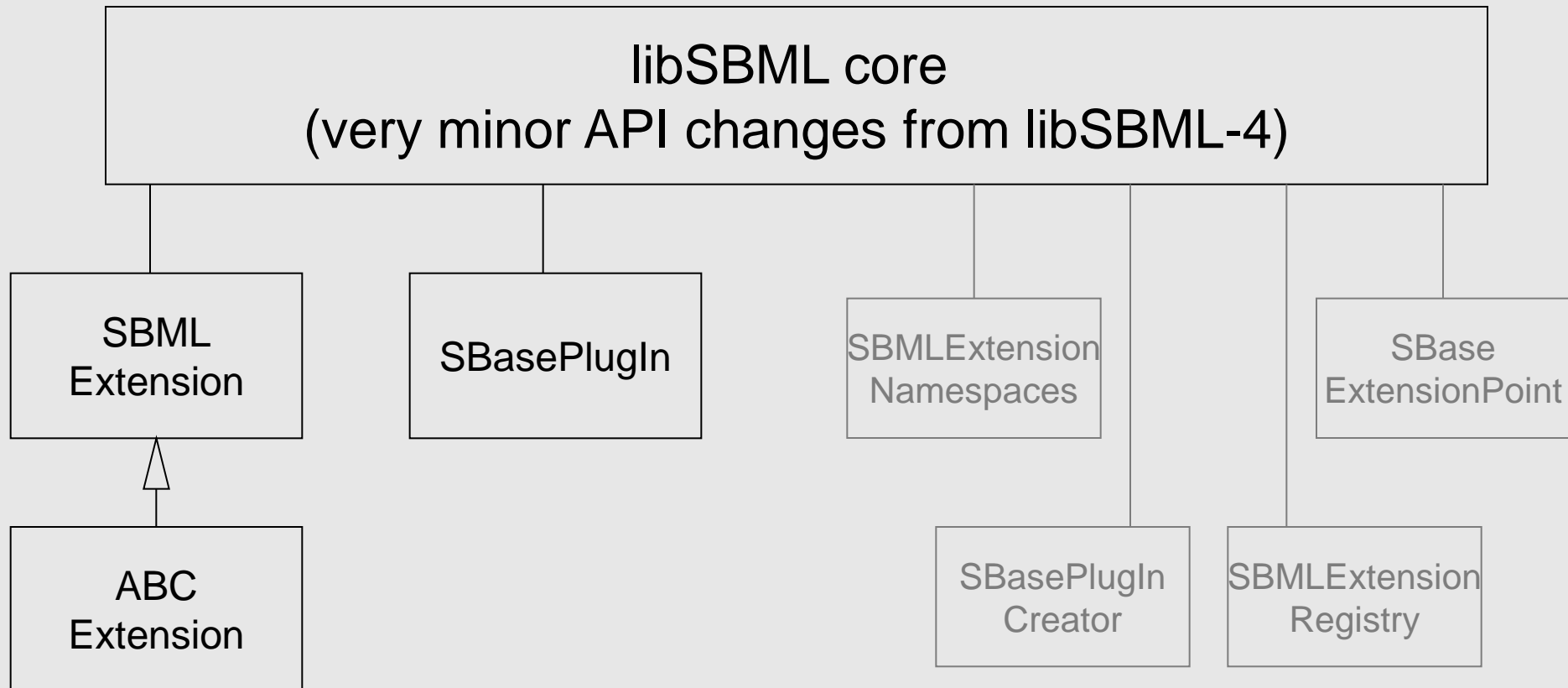
SBMLExtension
Namespaces

SBase
ExtensionPoint

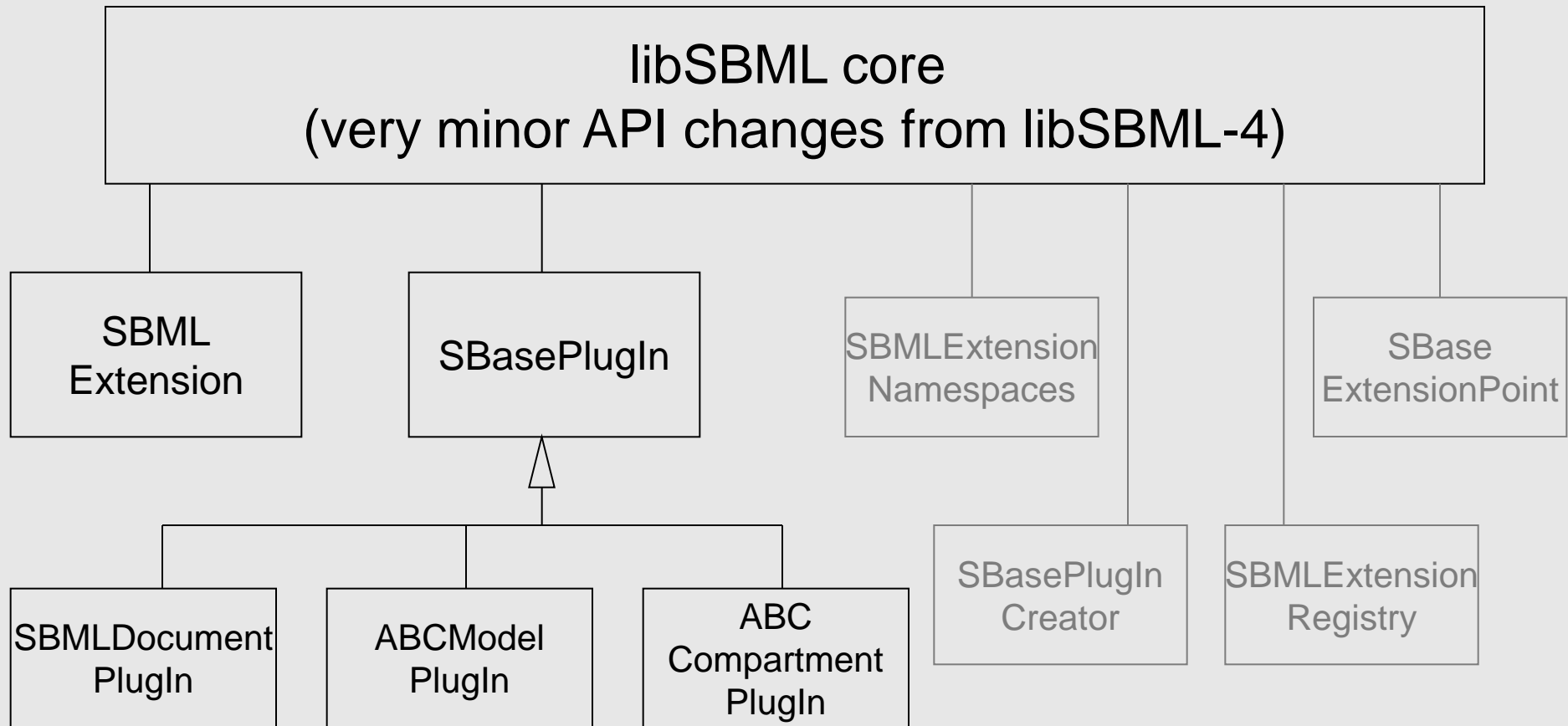
SBasePlugin
Creator

SBMLExtension
Registry

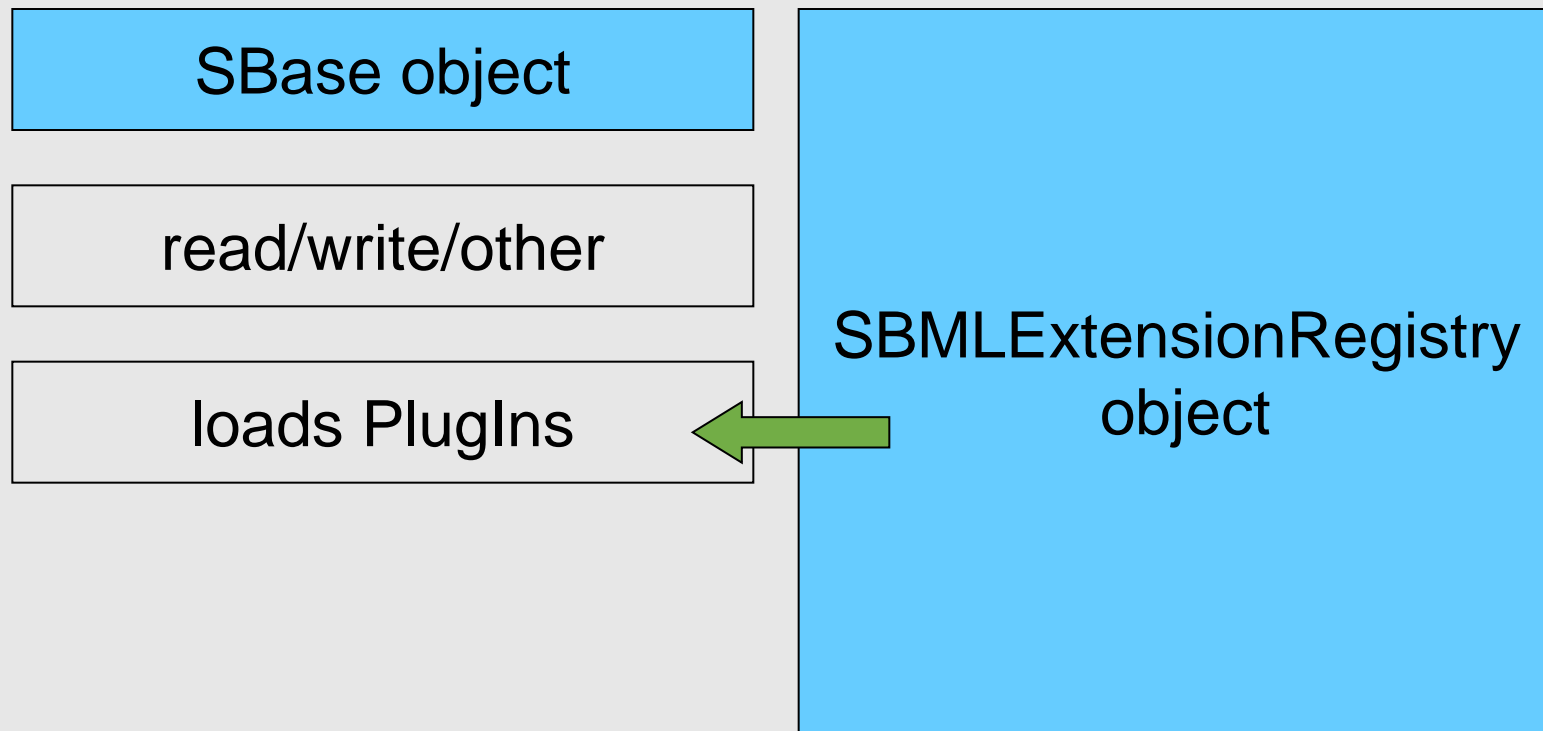
Implementing a package



Implementing a package



How does it work ?



Current status

[Home](#) / [libsbml](#) / [5.4.1](#) / [experimental](#) / [src](#)

Name ↕

[↑](#) **Parent folder**

[README.txt](#)

[libSBML-5.4.1-Source.tar.gz](#)

[comp-5.4.1-beta-1.zip](#)

[spatial-5.4.1-beta-1.zip](#)

[req-5.4.1-beta-1.zip](#)

[render-5.4.1-beta-1.zip](#)

[groups-5.4.1-beta-1.zip](#)

[fbc-5.4.1-beta-1.zip](#)

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[libSBML-5.4.1-win32.zip](#)

[libSBML-5.4.1-win64.zip](#)

[libSBML-5.4.1-Darwin.dmg](#)

SBML Team

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Ben Kovitz; Herbert Sauro; Maria Schilstra; Jo Matthews; Hamid Bolouri;
John Doyle; Hiroaki Kitano

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- ◉ International Joint Research Program of NEDO (Japan)
- ◉ JST ERATO-SORST Program (Japan)
- ◉ Japanese Ministry of Agriculture
- ◉ Japanese Ministry of Educ., Culture, Sports, Science and Tech.
- ◉ BBSRC e-Science Initiative (UK)
- ◉ DARPA IPTO Bio-SPICE Bio-Computation Program (USA)
- ◉ Air Force Office of Scientific Research (USA)
- ◉ STRI, University of Hertfordshire (UK)
- ◉ Beckman Institute, Caltech (USA)
- ◉ Molecular Sciences Institute (USA)

Links

<http://sbml.org>

<http://sbml.org/Software/libSBML>

http://sbml.org/Community/Wiki#SBML_Level_3