



# OSATE overview & community updates

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# Report Documentation Page

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# Overview of OSATE2

## Eclipse-based AADL editor

- Support for AADLv2.1, up to date with latest standard revisions
- Textual (Xtext-based) and Graphical (Graphiti-based) edition capabilities

## Support for quantitative analysis

- SEI-based plug-ins (latency, performance, etc.)
- Third-party plug-ins (code generation, scheduling analysis)

## OSS development model

- Public SCM and bugtrack, open to external contribution
- Licensed under EPL license



# Statistics update

## Code base

- More than 6M lines of code
- Mostly generated

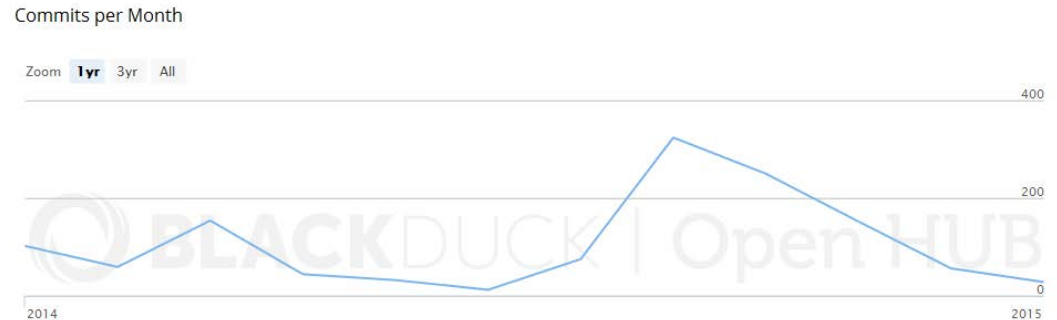
## Community

- 1900+ commits over a year !
- More than 20 contributors with ~5 active

## Software Quality

- Integrated test suite
- Test Analysis and Model Instantiation

See. <https://www.openhub.net/p/osate>



Number of Contributors



# Integration of AGREE and RESOLUTE

## Collaboration within the AADL/OSATE community

Hosted on shared github repository (<https://github.com/smaccm/smaccm>)

Integrated in the OSATE testing version

## Improvements of RESOLUTE

Support of list and not set for values

Better casting operations

## Integrate RESOLUTE for model validation

System Requirements (i.e. security, safety)

Model consistency before invoking other tools (i.e. code generation)



# Use of pre-defined RESOLUTE theorems

The screenshot displays the ADAMS IDE interface. The main editor shows AADL code for a system implementation:

```
system node
end node;

system implementation node.impl
subcomponents
  cpu : processor module.impl;
  part1 : process pr_sender.impl;
  part2 : process pr_receiver.impl;
  mem : memory mainmemory.impl;
connections
  c0 : port part1.dataout -> part2.datain;
properties
  Actual_Processor_Binding -> (reference (cpu part1)) applies
```

The Outline window on the right shows a tree view of the model components, including 'Thread consumer', 'Thread Impl consumer.impl', 'Subprogram producer\_spg', 'Subprogram consumer\_spg', 'Memory partitionmemory', 'Memory mainmemory', 'Memory Impl mainmemory.impl', and 'System node'.

The Problems window at the bottom shows a list of issues related to 'check\_deos\_compliance'. A context menu is open over the 'Resolute' theorem, listing options: 'Debugging: Serialize as 'mypack.aadl' text', 'Save As XML', 'Instantiate System', 'Ocarina', 'Open Diagram', 'Resolute', 'AGREE', and 'AADL to Sexp'.



# Improvement of Graphical Editor

## Current Improvements

- Processor and Internal Feature Support
- Array Support (e.g. creation, editing dimensions)
- Nested View
- Visualization of Bindings (i.e. processors, memories, etc.)

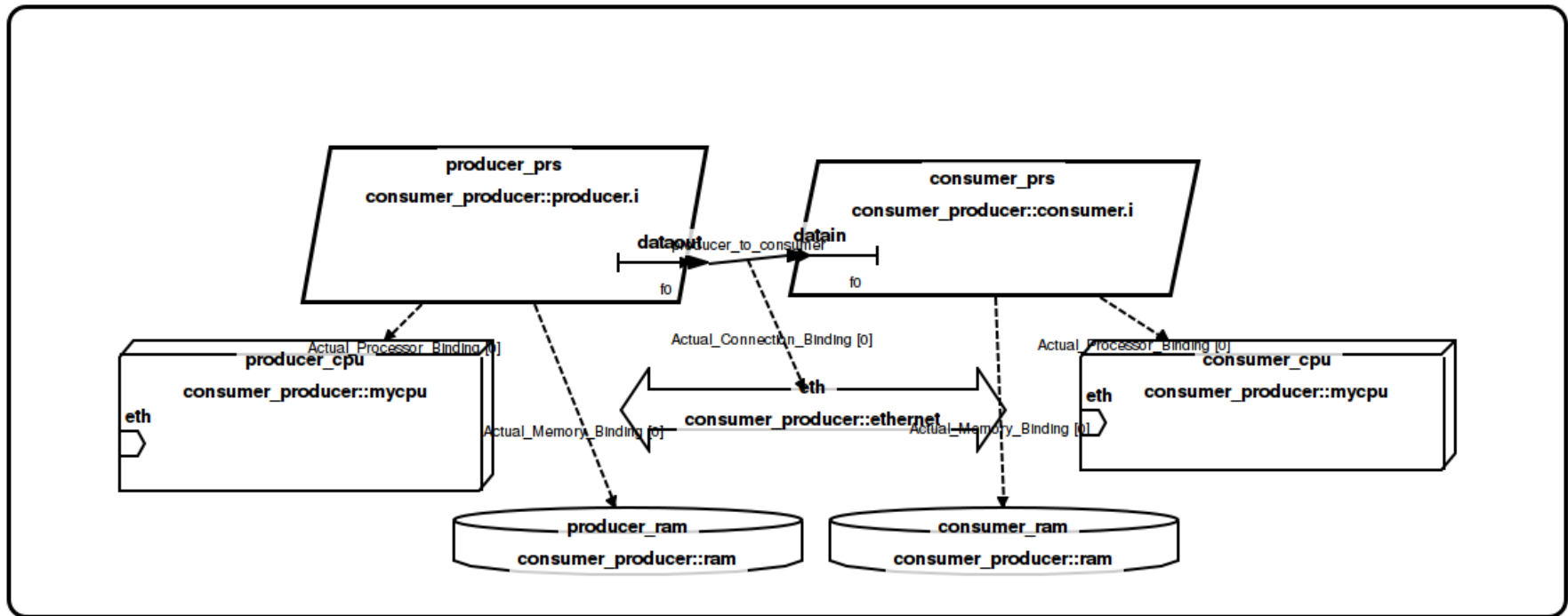
## Planned Improvements

- Improved automatic layout
- Editing Call Sequences





# Improvement of Graphical Editor - example



# Ocarina Bridge

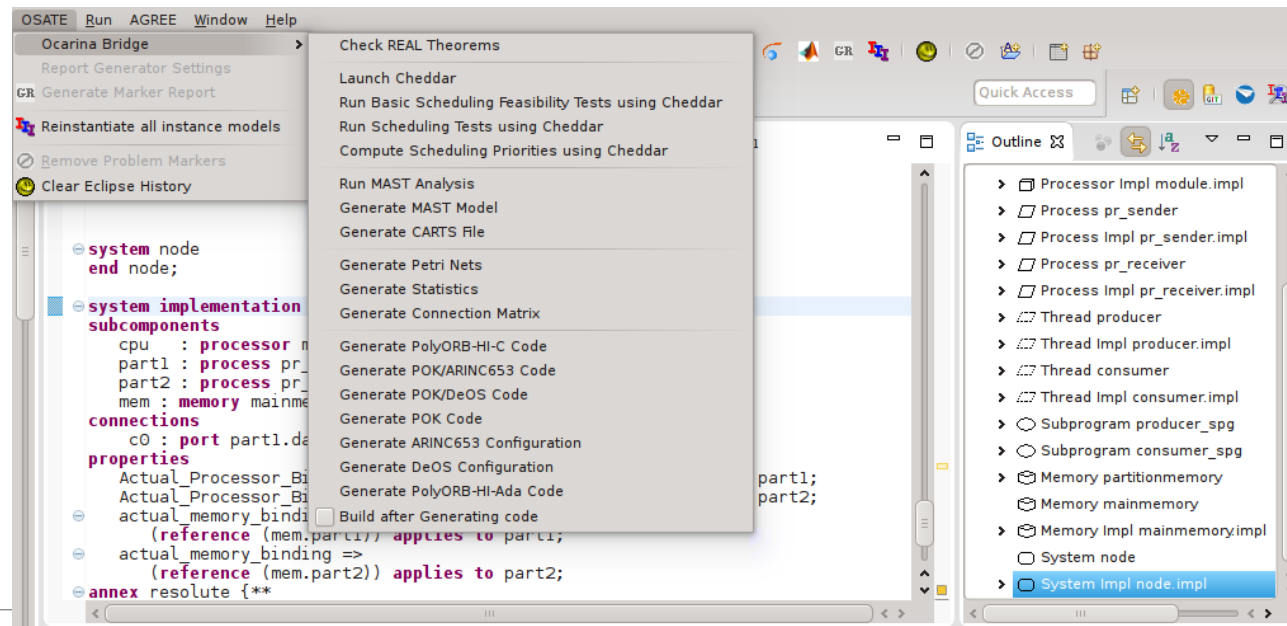
## Connect OSATE with Ocarina

Need to download Ocarina (cf. <http://www.openaadl.org>)

Invoke Ocarina with OSATE models

## Bring code generation capabilities

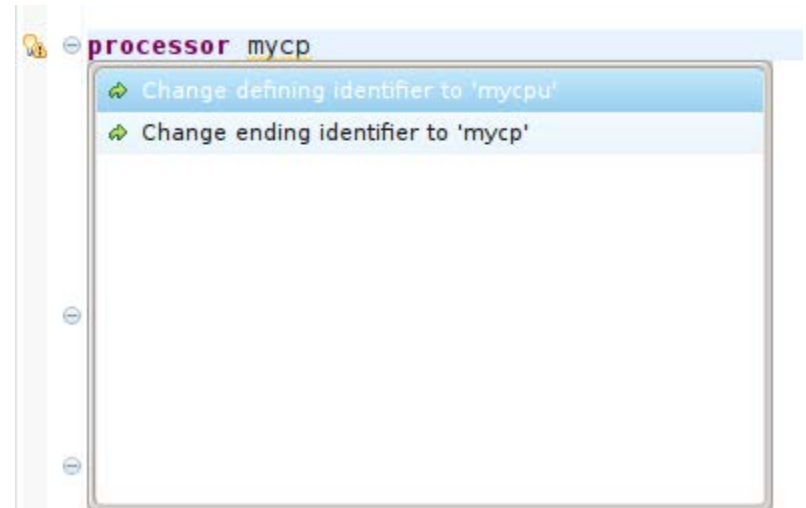
Currently work for DeOS



# Maintenance and Bugfixes

## Integration of quick fixes

- Correct mistyped models
- Suggest replacement
- Better user experience



## Improvement of Property Editor

- Support of list of list
- Support of ranges



# Public Model Repository

## Core examples

- Demonstrate main language capabilities

- Modeling patterns & model samples for beginners

## Error-Model examples

- EMV2 model constructs

- Demonstration of tools

## Case-Studies

- AIR6110

- Public version of existing projects

<https://github.com/osate/examples/>



# Getting Support

## Github

- Public bugreport
- Source code changes tracking

## Wiki

- Maintain research doc.
- Populate with documentation
- Ease community involvement

## Mailing-List

View code revision

Bugtrack

The screenshot shows the GitHub repository page for 'osate/osate2-core'. A green arrow points to the 'Code' tab, which is circled in green. A blue arrow points to the 'Issues' tab, which is circled in blue. A yellow arrow points to the 'branch: master' dropdown menu, which is circled in yellow. The repository description is 'Open Source AADL2 Tool Environment'. The page shows options to clone in Windows, ZIP, HTTP, SSH, and Git Read-Only. The commit history is visible, showing a revert commit by 'lwrage' 5 days ago, and three other commits by 'lwrage' from 3 to 5 months ago.

Branch to track



# Community update – ACVI workshop

## AADL dedicated Workshop

Replace the AADL user days

Engage with other communities

## Organization of 2015 edition

2014 edition at MoDELS – quite a success

Need to find a location for the 2015 edition

## Need suggestion/contributions

Stick with MoDELS? Use another venue?

Please contact us if you are willing to help!



# Conclusion

## Integration of new capabilities

- RESOLUTE & AGREE
- Ocarina bridge for code generation

## New release to come

- Integration of all new features
- Include many fixes and a better user experience

## AADL community open to contribution

- Open Development Model (OSS tools & license)
- New discussions support (mailing-list, blog, remote meetings)



# Links and other useful information

## OSATE-related tools

- Wiki: [https://wiki.sei.cmu.edu/aadl/index.php/Osate\\_2](https://wiki.sei.cmu.edu/aadl/index.php/Osate_2)
- Github: <https://github.com/osate/>
- Ohloh: <https://www.openhub.net/p/osate>

## General AADL discussions

- Main AADL website: <http://www.aadl.info>
- SEI blog: <http://blog.sei.cmu.edu/>
- AADL mailing-lists [https://wiki.sei.cmu.edu/aadl/index.php/Mailing\\_List](https://wiki.sei.cmu.edu/aadl/index.php/Mailing_List)





# Contact

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