



# CosyVerif: Present and Future

Alban Linard

LSV / INRIA

20 décembre 2013

# *CosyVerif*



# What is CosyVerif?

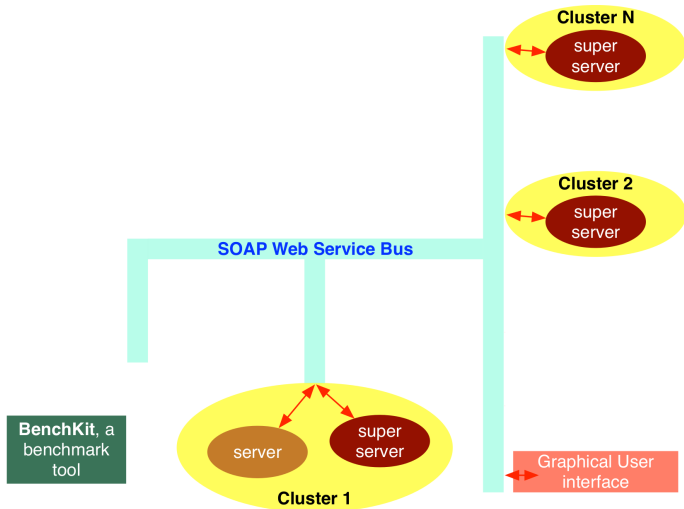
CosyVerif is a platform dedicated to formal specification and verification.





# What is CosyVerif?

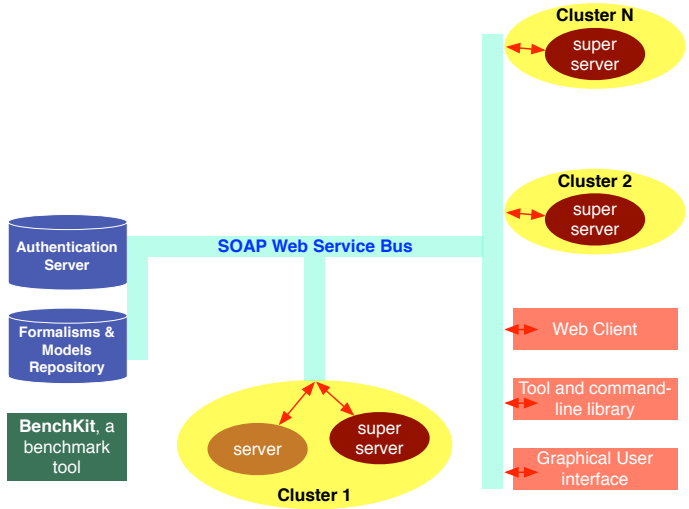
CosyVerif is a platform dedicated to formal specification and verification.





# What is CosyVerif?

CosyVerif is a platform dedicated to formal specification and verification.





# Public and Internal Servers

## Present

- CosyVerif-Release (publigator)
- CosyVerif-Latest (testigator)
- Build Farm (Teamcity)

## Future

- Build Farm (Jenkins)  
Internship proposal Licence-3
- Authentication  
Internship proposal Master-1 / PSAR
- Formalism & Model Repository (PNMLWeb resurrection !)  
Internship proposal Master-2



# Alligator Server

## Present

- Switched to the new API
- Asynchronous mode with possible synchronization
- Handles each request in its own process
- Connection between alligators (Multigator)  
Internship Jia-Hua Xu 2012 and 2013

## Future

- Resources allocation  
Internship proposal License-3 / Master-1
- Connection with the formalisms & models repository  
Covered in Internship proposal Master-2
- Authentication and sessions  
Internship proposal Master-1 / PSAR



## Coloane

### Graphical Editor & Client

- Maintenance problems
- Not adapted to CosyVerif

## Clitor

### Client only

- Allows scripting
- Will be used in MIDAS
- Will be used in services composition

## CosyWeb

### Graphical Editor & Client

- No installation
- Portable
- Easy to maintain
- Easy to use



## Present

### Interfacing by a (simple) Java class

- All services updated this summer (Henoc Khouilla, Idrissa Sokhona)
- Old interfaces have been removed

## Future

### Interfacing by scripts :

- Shell
- Python
- ...

Internship proposal Master-1 / PSAR





## Principle

Archive containing :

- Client (Coloane, Clitor)
- Virtual machine (Alligator, Tools, Dependencies)

## Why ?

- Easy to install (requires only VirtualBox and JRE)
- Runs (almost) everywhere
- Preconfigured



Tool	Latest	Release	PetriNets	Automata	Cosmos	...
Bounds	✓	✗	✓	✗	✗	...
Cunf	✓	✓	✓	✗	✗	...
Cosmos	✓	✓	✓	✗	✓	...
Crocodile	✓	✓	✓	✗	✗	...
GreatSPN	✓	✗	✓	✗	✗	...
IMITATOR	✓	✓	✗	✓	✗	...
ModGraph	✓	✗	✗	✓	✗	...
ObsGraph	✓	✗	✗	✓	✗	...
PNXDD	✓	✓	✓	✗	✗	...
Prod	✓	✗	✓	✗	✗	...



Tool	Latest	Release	PetriNets	Automata	Cosmos	...
Bounds	✓	✗	✓	✗	✗	
Cunf	✓	✓	✓	✗	✗	
Cosmos	✓	✓	✓	✗	✗	...
Crocodile	✓	✓	✓	✗	✗	...
GreatSPN	✓	✗	✗	✗	✗	...
IMITATOR	✗	✗	✗	✓	✗	...
ModG	✗	✗	✗	✓	✗	...
ObsG	✓	✗	✗	✓	✗	...
PNXDD	✓	✓	✓	✗	✗	...
Prod	✓	✗	✓	✗	✗	...

Make Your Own Bundle!



## Present

- JPO ENS-Cachan
- IWAISE 2012
- ETR 2013
- ICECCS'2013 [AHHH<sup>+</sup>13]
- ICFEM'2013 [ABD<sup>+</sup>13]
- Master SAR (CosyVerif4PN)
- Bundles

## Future

- FML v2



## Composition of Services

- Create a formalism for services composition
- Internship proposal Master-2

## Bridge with PNML

- Relation between FML and PNML ? (Article)
- Make bidirectional converters (Depends on FML v2)

## Model Checking Contest

- Create a CosyVerif tool that combines several techniques
- Answer to all examinations of the MCC
- Create a server dedicated to benchmarks (using BenchKit)



Etienne André, Benoît Barbot, Clément Démoulin, Lom-Messan Hillah, Francis Hulin-Hubard, Fabrice Kordon, Alban Linard, and Laure Petrucci, *A Modular Approach for Reusing Formalisms in Verification Tools of Concurrent Systems*, ICFEM'13 : 15th International Conference on Formal Engineering Methods, Lecture Notes in Computer Science, Springer, 2013.



Etienne André, Lom-Messan Hillah, Francis Hulin-Hubard, Fabrice Kordon, Yousra Lembachar, Alban Linard, and Laure Petrucci, *CosyVerif : an Open Source Extensible Verification Environment*, ICECCS'13 : 18th IEEE International Conference on Engineering of Complex Computer Systems (Yang Liu and Andrew Martin, eds.), IEEE Computer Society, 2013.