

Petri Nets Tutorial, from Symmetric Nets to Symmetric Nets with Bags (session 2)

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What is CosyVerif ?

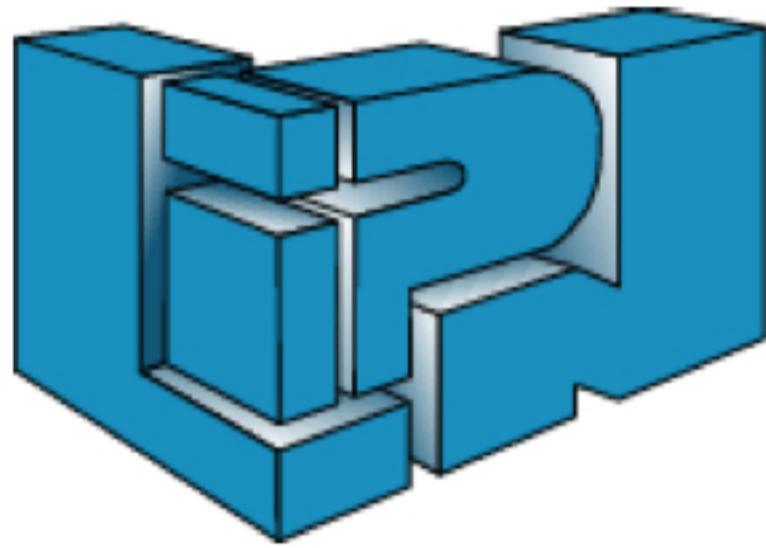
“ CosyVerif is a software environment, the goal of which is the formal specification and verification of dynamic systems.

”



cosyverif.org

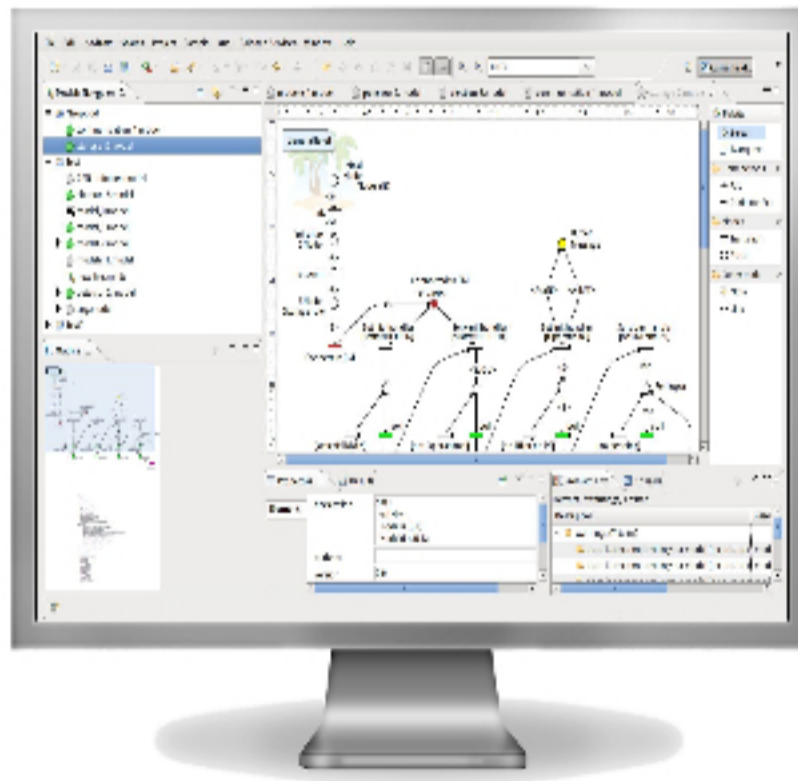
A project with active partners !



A client server architecture

```
cli
import retrieve an execution from server from its USID. An
USID is an execution identifier on server
kill kill an execution on server after retrieving its st
ate
list lists commands
parameters Retrieve the parameters of a set of executions.
prepare create an execution from a service name. Services are
retrieved with the services command
refresh get the current state of a running execution
run send an execution on server. It will run synchronou
sly or asynchronously depending of options/configuration
services Retrieve the list of available services
set set a field of an execution. If the value is the co
ntent of a file, you can give its path.
update Updates clior to the latest version
update-running Update a running execution on server from its local
state
wait wait until an execution has finished to run
olivard@saucisse-portable:~/projects/cosyverif/clior$
```

Clients



↔ Webservice



Server

↔ Webservice

Principles of the CosyVerif platform

- Distributed and Open
 - ✓ Developed at ENS Cachan, Paris 13, UPMC, etc.
- Supports different families of formalisms
 - ✓ Petri nets
 - ✓ automata
- 12 concrete formalisms
- 2-layered XML-based description language
 - ✓ FML, Formalism Markup Language (modelling language description)
 - ✓ GrML, Graph Markup Language (actual model description)
- Reuse of existing formalisms
- Open to new tool contributions
- Tools invoked through web services transparent to the user
- Graphical user interface: Coloane
- Repository of models

Current Formalisms and Tools

Formalisms	Tools
Petri Nets	<p>PROD (U. Helsinki, Symmetric nets) PNXDD (LIP6, Symmetric nets) Crocodile (LIP6, Symmetric nets w. bags) Cunf (LSV, P/T nets) Cosmos (LSV, Stochastic Petri nets) GreatSPN invariants (U. Torino, P/T nets) GreatSPN (symbolic) (U. Torino & LIP6, Symmetric nets) Helena (LIPN, HL nets) ModGraph (LIPN, HL nets) ObsGraph (LIPN, HL nets) Structural bounds (LIP6, P/T nets) Unfold into P/T nets (LIP6, Symmetric nets) Various exports (LIP6, P/T nets)</p>
Automata	<p>IMITATOR (LIPN, Timed automata) Modgraph (LIPN, Synchronised automata)</p>

Key content

- VirtualBox
- Java Virtual Machine
- CosyVerif as Bundle
"Clic and Go"



- Poster of CosyVerif
- Handout



Outline of the practical session

Modelling a shared bicycle service

have a look on the differences between P/T and SN

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Modelling a swimming pool

Use SNs and parametrise the model