

CADP (Construction and Analysis of Distributed Processes)

CONVECS
Axe MFML
<https://cadp.inria.fr>

Formal input languages

- modern language for concurrent systems: **LNT**
- networks of communicating automata: **EXP**

Simulation and rapid prototyping

- code generation (C)
- step-by-step & guided simulation
- random execution



Explicit-state verification...

- (probabilistic) model checking: **MCL**
- equivalence checking (bisimulations)
- visual checking

...using different techniques:

- exhaustive
- partial
- on the fly
- compositional
- distributed (clusters, grids)



Performance evaluation

- Markovian minimization
- transient & steady state analysis
- steady state simulation

Test case generation

Script language for verification scenarios: **SVL**

Some figures about CADP

- 50 tools and 17 software libraries
- 5 computing platforms: PC/Solaris, PC/Linux (32 and 64 bit), PC/Windows, MacOS
- International dissemination:
 - 16,000th license granted in 2024
 - 217 case-studies using CADP <http://cadp.inria.fr/case-studies>
 - 114 research tools connected to CADP <http://cadp.inria.fr/software>
 - 60 university lectures based on CADP <https://cadp.inria.fr/training>
 - User forum (more than 480 users and 2000 messages) <http://cadp.inria.fr/forum.html>

Awards

- 2023: ETAPS Test-of-time Tool
- 2021: Inria - Académie des sciences - Dassault Systèmes Innovation Prize

Reference publication: Hubert Garavel, Radu Mateescu, Frédéric Lang, and Wendelin Serwe. *CADP 2011: A Toolbox for the Construction and Analysis of Distributed Processes*. In Software Tools for Technology Transfer (STTT), volume 15, issue 2, pages 89-107, April 2013. <http://hal.inria.fr/hal-00715056>

