



**25th INTERNATIONAL  
CONFERENCE ON  
APPLICATION AND THEORY OF PETRI NETS**

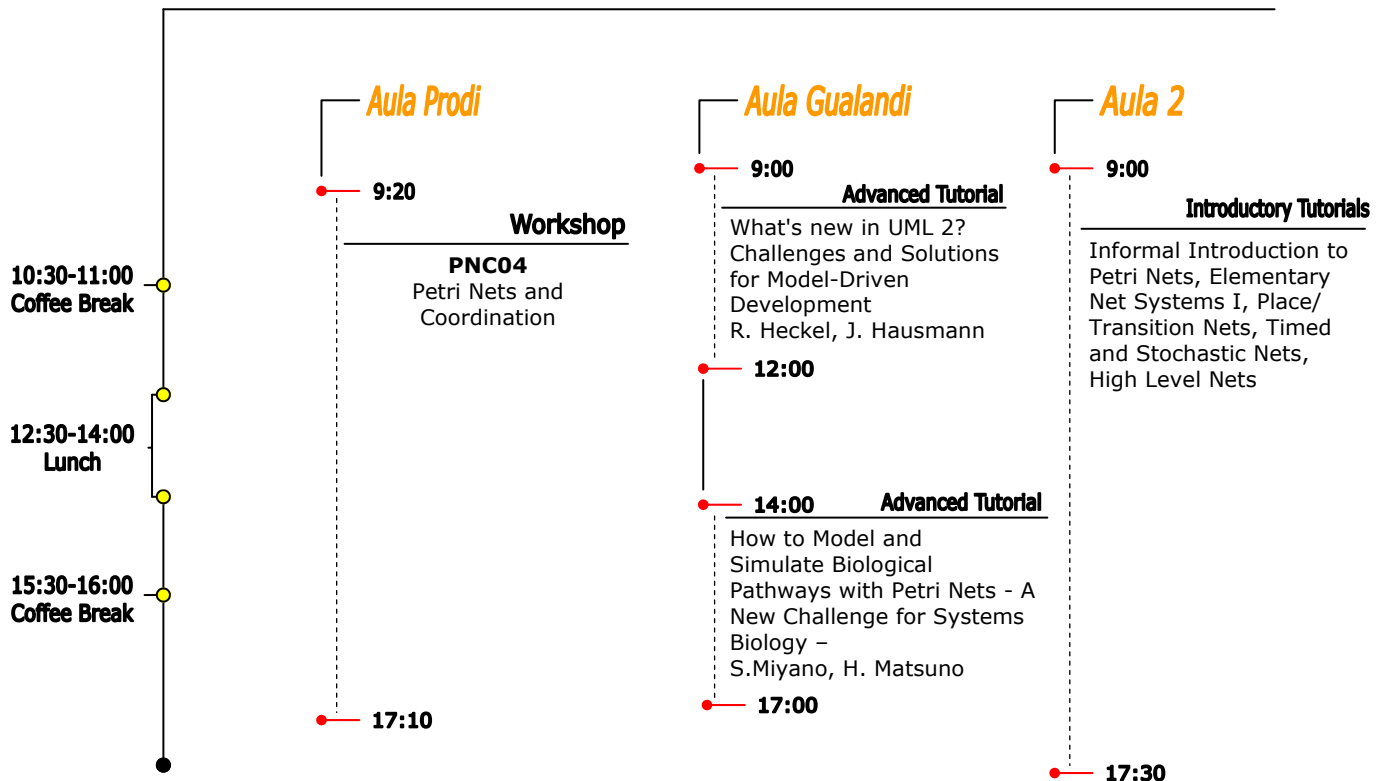
June 21-26, Bologna, Italy

ATPN 2004



# Events Program 1/3

Monday, June 21





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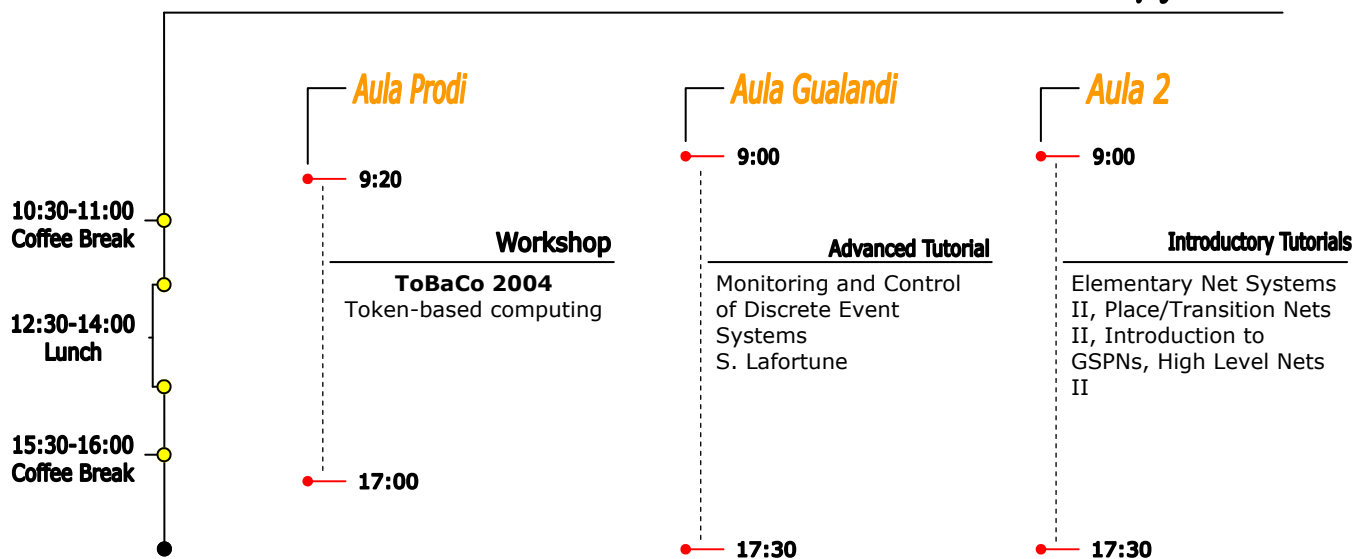
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# ATPN 2004



## Events Program 2/3

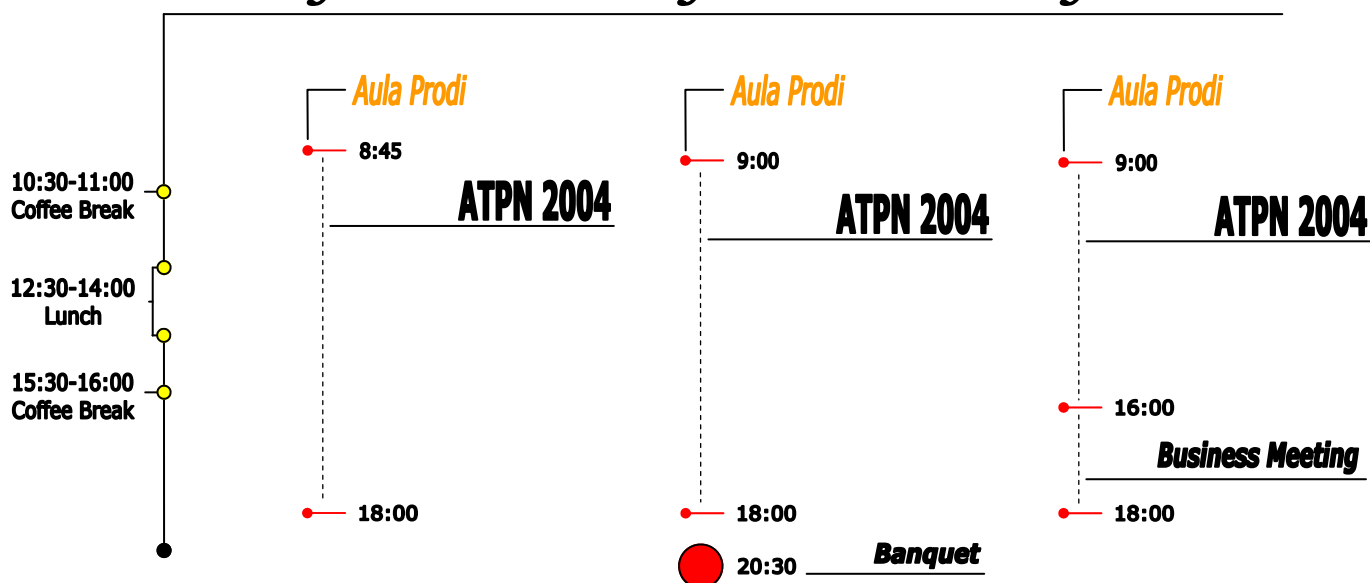
**Tuesday, June 22**



**June 23**

**June 24**

**June 25**





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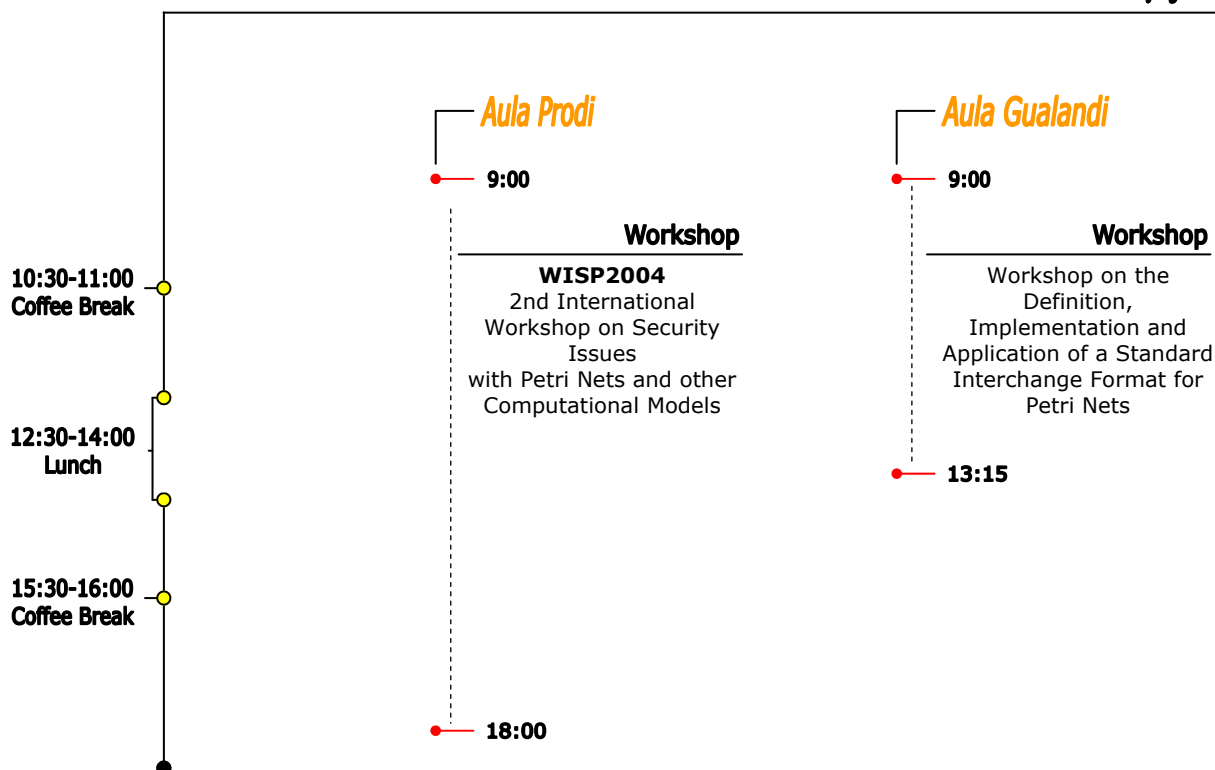
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# ATPN 2004



## Events Program <sub>3/3</sub>

**Saturday, June 26**





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# ATPN 2004



## PNC04

Organizers:

**Laura Bocchi**, University of Bologna, Italy

**Paolo Ciancarini**, University of Bologna, Italy

### *First International Workshop on Coordination and Petri Nets*

## *Program* **Aula Prodi** June 21

● 9:20-9:30 *Opening*

● 9:30-10:00 *A Formal Component-Oriented Design  
Language for Building Distributed  
System*  
Mathieu Buffo and Didier Buchs

● 10:00-10:30 *Workflow as Composition of  
Domain-Specific Languages*  
F. Corradini, E. Merelli, and  
A. Pierantonio

● 12:30-14:00 *Lunch*

● 14:00-14:30 *A Colored Petri Net for Regional  
Synchronization in Situated Multi-Agent  
Systems*  
Danny Weyns and Tom Holvoet

● 14:30-15:00 *Coordination of Mobile Agents:  
The Bucket Chain-Example*  
Michael Kohler and Heiko Rolke

● 15:00-15:30 *Describing Coordination Mechanism of  
Autonomous Distributed Systems  
by using Multi Agent Nets*  
Toshiyuki Miyamoto and  
Sadatoshi Kumagai

● 10:30-11:00 *Coffee Break*

● 11:00-11:30 *A Process Algebra View of Coordination  
Models with a Case Study in  
Computational System Biology*  
Roberta Amici, Flavio Corradini, and  
Emanuela Merelli

● 11:30-12:00 *Discovering Coordination Patterns using  
Process Mining*  
W.M.P. van der Aalst

● 12:00-12:30 *Brainstorming*

● 15:30-16:00 *Coffee Break*

● 16:00-16:30 *Exploiting Petri Nets in the Analysis of  
the Expressiveness of Publish/Subscribe  
Coordination*  
Nadia Busi and Gianluigi Zavattaro

● 16:30-17:00 *Verifying Workflow Nets  
by Model Checking and Abstraction*  
Dan Cristian Marinescu,  
Freucio Laurentiu Tiplea, and Chuang Lin

● 17:00-17:10 *Closure*



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## ToBaCo

Organizers:

**Jordi Cortadella,**

**Alex Yakovlev,**

Universitat Politècnica de  
Catalunya, Barcelona, Spain

University of Newcastle upon Tyne, UK

## *Workshop on Token-based computing*

### *Program*

## *Aula Prodi*

June 22

● 9:20-9:30 *Opening*

● 9:30-10:30 *Invited Talk: Token-based computing on nanometer scales*  
Dr. Ferdinand Peper

● 12:30-14:00 *Lunch*

● 14:00-14:30 *A Software Power Cost Analysis based on Colored Petri Net*  
M. Oliveira Júnior, P. Marciel,  
F. Carvalho and R. Barreto

● 14:30-15:00 *Reduction in synchronization in bundled data systems*  
C.F. Brej and J.D. Garside

● 15:00-15:30 *A Standard Cell Implementation of a Phased Logic CPU*  
R.B. Reese, M.A. Thornton  
and C. Traver

● 10:30-11:00 *Coffee Break*

● 11:00-11:30 *Modelling and Analysis of Self-Timed Cellular Automata Using High-Level Petri Nets*  
O. Penttinen

● 11:30-12:00 *Interactive Behaviour of Multi-Component Systems*  
J. Carmona and H.C.M. Kleijn

● 12:00-12:30 *Decomposition-based Calculation of Petri net Invariants*  
D.A. Zaitsev

● 15:30-16:00 *Coffee Break*

● 16:00-16:30 *From Hardware Processes to Asynchronous Circuits via Petri nets: an Application to Arbiter Design*  
M. Renaudin and A. Yakovlev

● 16:30-17:00 *Gate Transfer Level Synthesis as an Automated Approach to Fine-Grain Pipelining*  
A. Smirnov, A. Taubin, M. Karpovsky  
and L. Rozenblyum

● 17:00-17:10 *Closure*



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# ATPN 2004

*Program* **Aula Prodi**  
June 23

● 8:45-9:00 *Welcome and Opening*

● 9:00-10:00 *Invited talk - Embedded Software:  
Better Models, Better Code*  
Thomas A. Henzinger

● 10:00-10:30 *Time Petri Nets with Inhibitor  
Hyperarcs. Formal Semantics and  
State Space Computation*  
Olivier H. Roux and Didier Lime

● 12:30-14:00 *Lunch*

● 14:00-15:00 *Invited talk - Stochastic Methods for  
Dependability, Performability, and  
Security Evaluation*  
William H. Sanders

● 15:00-15:30 *Tool presentation - An Extensible Editor  
and Simulation Engine for Petri Nets:  
Renew*  
Olaf Kummer, Frank Wienberg,  
Michael Duvigneau, Jörn Schumacher,  
Michael Köhler, Daniel Moldt,  
Heiko Rölke and Rüdiger Valk

● 10:30-11:00 *Coffee Break*

● 11:00-11:30 *New Canonical Representative Marking  
Algorithms for Place/Transition-Nets*  
Tommi A. Junttila

● 11:30-12:00 *Finit Unfoldings of Unbounded Petri Nets*  
Joerg Desel, Gabriel Juhas and  
Christian Neumair

● 12:00-12:30 *Operation Net System: A Formal Design  
Representation Model for  
High-Level Synthesis of Asynchronous  
Systems based on Transformations*  
Dong-Hoon Yoo, Dong-Ik Lee and  
Jeong-A Lee

● 15:30-16:00 *Coffee Break*

● 16:00-16:30 *Tool presentation - EMiT: A process  
mining tool*  
Boudewijn Van Dongen and  
Wil Van der Aalst

● 16:30-17:00 *Tool presentation - Web Supported  
Enactment of Petri-Net Based Workflows  
with XRL/flower*  
Alexander Norta

● 17:00-17:30 *Tool presentation - 3D-Visualization  
of Petri Net Models: A concept*  
Ekkart Kindler

● 17:30-18:00 *Tool presentation - An Approach to  
Distributed State Space Exploration for  
Coloured Petri Nets*  
Lars Kristensen and Laure Petrucci



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# ATPN 2004

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June 24

- 9:00-10:00** Invited talk - *Reachability Set Generation for Petri Nets: Can Brute Force Be SMART?*  
Gianfranco Ciardo
- 10:00-10:30** *Synthesis of Controlled Behavior with Modules of Signal Nets*  
Gabriel Juhas, Robert Lorenz and Christian Neumair
- 10:30-11:00** Coffee Break
- 11:00-11:30** *Petri Net Based Model Validation in Systems Biology*  
Monika Heiner and Ina Koch
- 11:30-12:00** *Qualitative Modelling of Genetic Networks: From Logical Regulatory Graphs to Standard Petri Nets*  
Claudine Chaouiya, Elisabeth Remy, Paul Ruet and Denis Thieffry
- 12:00-12:30** *Modeling and Analysis of Margolus Quantum Cellular Automata Using Net-Theoretical Methods*  
Leo Ojala, Olli-Matti Penttinen and Elina Parviainen
- 12:30-14:00** Lunch
- 14:00-15:00** Invited talk - *Formal tools for modular system development*  
Lucia Pomello
- 15:00-15:30** Edward Ochmański  
*Covering Fairness against Conspiracies*
- 15:30-16:00** Coffee Break
- 16:00-16:30** *Transit case study*  
Eric Verbeek and Robert van der Toorn
- 16:30-17:00** *Infinity of Intermediate States is Decidable for Petri Nets*  
Harro Wimmel
- 17:00-17:30** *Generalised Soundness of Workflow Nets is Decidable*  
Kees van Hee, Natalia Sidorova and Marc Voorhoeve
- 17:30-18:00** *Properties of Object Petri Nets*  
Michael Köhler and Heiko Rölke



**20:30**

## **Banquet**

The banquet will take place at the **Cantina Bentivoglio** which is situated in via Mascarella 4/B



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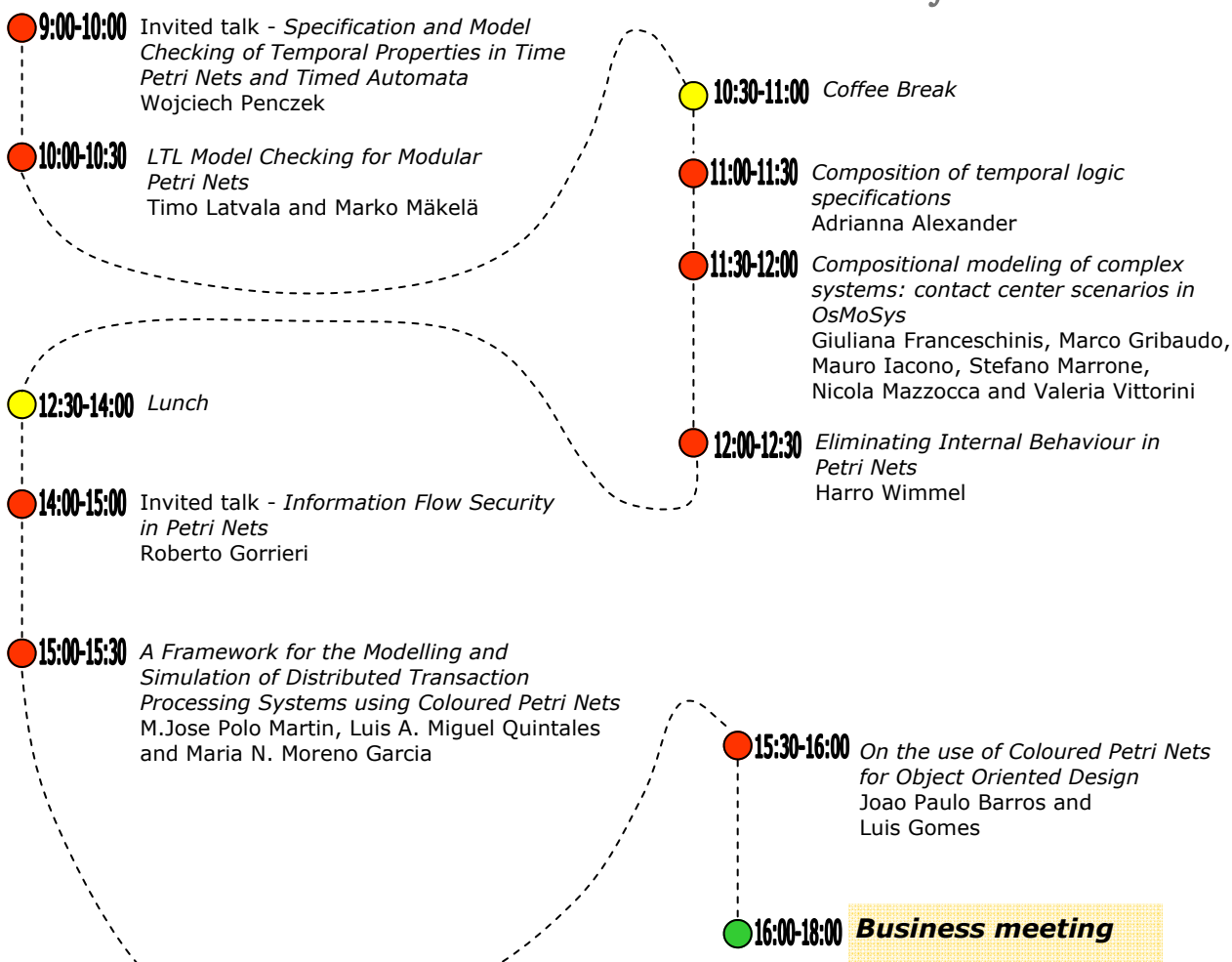
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# ATPN 2004



# ATPN 2004

*Program* **Aula Prodi**  
June 25







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# ATPN 2004



## WISP

Organizers:

**Nadia Busi**, University of Bologna, Italy

**Roberto Gorrieri**, University of Bologna, Italy

**Fabio Martinelli**, National Research Council, C.N.R. Italy

*2nd International Workshop on  
Security Issues with Petri Nets  
and other Computational Models*

*Program* **Aula Prodi**  
June 26

8:50-9:00 Welcome

9:00-10:00 Invited Talk: *Events in security protocols*  
Glynn Winskel

10:00-10:30 *Modelling non-deducibility using Petri nets*  
Jeremy Bryans, Maciej Koutny, Peter Ryan

12:30-14:00 Lunch

14:00-15:00 Invited Talk: *TBA*  
Pierpaolo Degano

15:00-15:30 *A formal approach for the evaluation of network security mechanisms based on RBAC policies*  
Romain Laborde, Frederic Grasset, Bassem Nasser, Francois Barrere, Abdelmalek Benzekri

10:30-11:00 Coffee Break

11:00-12:30 **Panel:** *Security Research in the NIS Countries and Opportunities for joint Cooperation with EU*  
I.Kotenko, F. Massacci, E.Pogossian, A.Procopio

15:30-16:00 Coffee Break

16:00-16:30 *Analysing Password Protocol Security Against Off-line Dictionary Attacks (Extended Abstract)*  
Ricardo Corin, Jeroen Doumen, Sandro Etalle

16:30-17:00 *A Coordination-based Methodology for Security Protocol Verification*  
Giacomo Baldi, Andrea Bracciali, Gianluigi Ferrari, Emilio Tuosto

17:00-17:30 *Process Mining and Security: Detecting Anomalous Process Executions and Checking Process Conformance*  
Wil van der Aalst, Ana Karla Alves de Medeiros

17:30-18:00 *Hybrid Workflow and Bayesian Networks to Correlate Information in the Protection of Large Scale Critical Infrastructures*  
John Bigham, Xuan Jin, David Gamez



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*Workshop on the*

Organizer:  
**Ekkart Kindler**, Universität Paderborn, Germany

*Definition, Implementation and Application of a  
Standard Interchange Format for Petri Nets*

● 9:00-9:05 *Opening*

● 9:05-9:35 *An Interchange Format for Stochastic  
Activity Networks Based on the PNML*  
M. Abdollahi Azgomi and A. Movaghar

● 9:35-10:05 *Applying Petri Nets to Systems Biology  
using XML Technologies*  
O. Shaw, A. Koelmans, J. Steggles and  
A. Wipat

● 10:05-10:35 *From PNML to counter systems for  
accelerating Petri Nets with FAST*  
S. Bardin and L. Petrucci

*Program* **Aula Gualandi**  
June 26

● 10:35-11:00 *Coffee Break*

● 11:00-11:30 *Operational PNML: Towards a PNML  
Support for Model Construction and  
Modification*  
J. P. Barros and L. Gomes

● 11:30-12:00 *Process model repositories and PNML*  
K.M. van Hee, R.D.J. Post,  
L.J.A.M. Somers and  
J.M.E.M van der Werf

● 12:00-12:30 *Towards a High-level Petri Net Type  
Definition*  
M. Westergaard

● 12:30-13:15 *Discussion*



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# ATPN<sup>2</sup> 2004



## Tutorials

**Aula 2**

June 21

### *Introductory Tutorial*

9:00-9:30	Informal Introduction to Petri Nets	<i>W. Reisig</i>
9:30-10:30	Elementary Net Systems I	<i>J. Kleijn</i>
10:30-11:00	Coffee break	
11:00-11:30	Elementary Net Systems I (cont.)	<i>G. Rozenberg</i>
11:30-12:30	Place/Transition Nets I	<i>J. Desel, K. Schmidt</i>
12:30-14:00	Lunch	
14:00-14:30	Place/Transition Nets I (cont.)	<i>J. Desel, K. Schmidt</i>
14:30-15:30	Timed and Stochastic Nets	<i>S. Donatelli</i>
15:30-16:00	Coffee break	
16:00-17:30	High Level Nets	<i>K. Jensen</i>

**Aula 2**

June 22

### *Introductory Tutorial*

9:00-10:30	Elementary Net Systems II	<i>J. Kleijn</i>
10:30-11:00	Coffee break	
11:00-12:30	Place/Transition Nets II	<i>M. Silva</i>
12:30-14:00	Lunch	
14:00-15:00	Introduction to GSPNs	<i>S. Donatelli</i>
15:00-15:30	High Level Nets II	<i>K. Jensen</i>
15:30-16:00	Coffee break	
16:00-17:30	High Level Nets II (cont.)	<i>K. Jensen</i>

**Aula Gualandi**

June 22

### *Advanced Tutorial*

**Monitoring and Control of  
Discrete Event Systems  
S. Lafortune**

09:00 - 10:00	Discrete Event System (DES), Formal Languages, Automata and Petri Nets
10:00 - 10:30	Monitoring Problems for DES Modeled by Automata and Petri Nets
10:30 - 11:00	Coffee break
11:00 - 12:30	Monitoring Problems for DES Modeled by Automata and Petri Nets
12:30 - 14:00	Lunch
14:00 - 15:30	Supervisory Control of DES
15:30 - 16:00	Coffee break
16:00 - 17:00	Supervisory Control of DES
17:00 - 17:30	Summary and Current Research Directions