Proceedings

»PNSE'16«

International Workshop on

Petri Nets and Software Engineering

Satellite event of the

37th International Conference on Application and Theory of Petri Nets and Concurrency

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16th International Conference on Application of Concurrency to System Design

Toruń, Poland, June, 2016

including papers of

»BioPPN'16«

International Workshop on

Biological Processes and Petri Nets

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Lars Michael Kristensen,
Heiko Rölke

Proceedings of the International Workshop on **P**etri **N**ets and **S**oftware **E**ngineering **PNSE'16**

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Preface

These are the proceedings of the International Workshop on *Petri Nets and Software Engineering* (PNSE'16) in Toruń, Poland, June 20–21, 2016. It is a co-located event of

- *Petri Nets 2016* – the 37th International Conference on Applications and Theory of Petri Nets and Concurrency and
- *ACSD 2016* – the 16th International Conference on Application of Concurrency to System Design.

More information about the workshop can be found at

`http://www.informatik.uni-hamburg.de/TGI/events/pnse16/`

For the successful realization of complex systems of interacting and reactive software and hardware components the use of a precise language at different stages of the development process is of crucial importance. Petri nets are becoming increasingly popular in this area, as they provide a uniform language supporting the tasks of modeling, validation and verification. Their popularity is due to the fact that Petri nets capture fundamental aspects of causality, concurrency and choice in a natural and mathematically precise way without compromising readability. The use of Petri nets (P/T-nets, colored Petri nets and extensions) in the formal process of software engineering, covering modeling, validation and verification, is presented as well as their application and tools supporting the disciplines mentioned above.

We have chosen Gabriele Taentzer and Yann Thierry-Mieg as invited speakers. We received twenty-three high-quality contributions. The program committee has accepted eleven of them for full presentation. Four papers were accepted as short presentations, two as short papers and one as poster presentation.

The international program committee was supported by the valued work of David Mosteller, Camille Coti, Dimitri Racordon, Yann Ben Maissa, Alban Linard, Thomas Wagner, Maciej Szreter, Benjamin Meis, Michał Knapik as additional reviewers. Their work is highly appreciated.
Furthermore, we would like to thank our colleagues in the local organization team at the Nicolaus Copernicus University in Toruń for their support. Without the enormous efforts of authors, reviewers, PC members and the organizational team, this workshop would not provide such an interesting booklet.

Thanks!

Lawrence Cabac, Lars Michael Kristensen, Heiko Rölke
Hamburg, June 2016

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Preface BioPPN

This volume contains the peer-reviewed papers accepted for BioPPN 2016 – the 7th International Workshop on *Biological Processes & Petri Nets* held on June 20, 2015 in Toruń as satellite event of PETRI NETS 2016 and ACSD 2016.

The workshop had been organised to provide a platform for researchers aiming at fundamental research and real life applications of Petri nets and other concurrency models in Systems and Synthetic Biology. Systems and Synthetic Biology are full of challenges and open issues, with adequate modelling and analysis techniques being one of them. The need for appropriate mathematical and computational modelling tools is widely acknowledged.

Petri nets offer a family of related models, which can be used as umbrella formalism – models may share network structure, but vary in their kinetic details. This undoubtedly contributes to bridging the gap between different formalisms, and helps to unify diversity. Thus, Petri nets have proved their usefulness for the modelling, analysis, and simulation of a diversity of biological networks, covering qualitative, stochastic, continuous and hybrid models. The deployment of Petri nets to study biological applications has not only supported the development of original models, but has also motivated research of formal foundations.

The workshop was opened by an invited talk on *Quasi-Steady State Petri Nets* given by Andrzej M Kierzek, Head of Systems Modeling, Simcyp a Certara company, Sheffield, UK and Visiting Professor of Systems Biology, Faculty of Health and Medical Sciences, University of Surrey, UK.

In addition, there was a Poster Session, and each poster was briefly introduced by a short talk.

Each submission was reviewed by up to eight program committee members, supported by an external subreviewer, followed by an intensive and thorough discussion. The list of reviewers comprised 16 professionals of the field coming from 9 different countries and writing in total 25 reviews, most of them of substantial length. The programme committee finally decided to accept two papers, involving 3 authors coming from two different countries, and three posters, with authors all coming from Poland, the hosting country. The two full papers got substantially improved in their final version – credits go to the detailed reviews.

For more details see the workshop's website
`http://www-dssz.informatik.tu-cottbus.de/BME/BioPPN2016`.

June 12, 2016 Anna Gambin
Cottbus Monika Heiner

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