Preface of the International Workshop on Petri Net-based Security (WooPS)

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Petri nets provide an expressive and well-studied formalism to specify and reason about security and reliability properties of abstractions/views of modern applications, such as smart grids and distributed enterprise systems. It is however unclear how the cornucopia of available techniques (based on Petri nets and related concurrency models) can provide results of the analysis with sufficient precision to increase the confidence of designers in the overall security of the new applications. The assessment of these techniques with respect to correctness, computational complexity, and real-world case-studies is indeed mandatory to significantly advance the state-of-the-art of the emerging research area.

The WooPS session was centered around the study of new methodologies and analysis techniques at the crossroads of the Petri net and security communities.

Concerning methodologies, in the paper "Analysing SONAR Model Transformations," Köhler-Bussmeier studies the dynamics of organization models, described as Petri nets, under model transformations, specified as transitions of a Petri net. With regard to analysis techniques, in the paper "Inference of Local Properties in Petri Nets Composed through an Interface," Ferigato and Mangioni study a notion of visibility of the local states for composition of elementary Petri nets representing a service provider (defender), a client of the service (attacker), and the protocol of interaction (interface). A notion of visibility formalizes the idea that an attacker tries to infer the validity of a local state of the defender even though only the interface is observable.

We would like to thank the authors of the papers for their efforts in producing stimulating contributions to the WooPS session. We also thank Prof. Karsten Wolf for his instigating keynote address during the WooPS session. Finally, thanks to the members of the organizing committees of the 33rd International Conference on Application and Theory of Petri Nets and Concurrency and the 12th International Conference on Application of Concurrency to System Design to which this event is affiliated.

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