More and more entities allow remote management. This observation applies within the Network Management (NM) community and outside it. The sphere where the use of NM methodologies and tools can be beneficial expands. Recent examples such as the Internet of Things (IoT), Software Defined Networking (SDN), and Network Function Virtualization (NFV) bring challenges and opportunities to the field. Major challenges are caused by the increased interconnectivity of entities, their increased functional diversity, their increased amount, and their increased protocol heterogeneity. Major opportunities arise by adapting well-understood mechanisms and tools from the NM domain to new applications.

We are looking forward to discussing about managing hyperconnected entities with you!

For more information on this panel visit:

http://s2o.net.in.tum.de/?site=__hyperqna

Twitter: **@hyperqna**

Moderation:
   Marc-Oliver Pahl (Technical University of Munich)

Panelists:
  • Alexander Clemm (Cisco Systems)
  • Hanan Lutfiyya (University of Western Ontario)
  • Henning Sanneck (Nokia Networks)
  • Burkhard Stiller (University of Zürich)
  • Nur Zincir-Heywood (Dalhousie University)

Marc-Oliver Pahl (Moderation)

Technical University of Munich

"Managing future hyperconnected entities requires powerful abstractions for enabling crowdsourcing."

Marc-Oliver (pahl@net.in.tum.de) is a senior researcher and lecturer at Technical University of Munich. His current major research interest is managing the Internet of Things with an emphasis on security and usability. His vision is making Smart Spaces a part of people's reality like smartphones are today.

Marc-Oliver studied Informatics at Eberhard Karls Universität Tübingen. He received his diploma degree with emphasis on computer graphics, media science and computer networks in 2008. In 2014, Marc-Oliver received his PhD with highest honor from Technical University of Munich (TUM) for his research on Distributed Smart Space Orchestration.

Marc-Oliver is a member of IEEE, ACM, and GI. He is currently a member of the IEEE Technical Committee on Factory Automation (TCFA).

Alexander Clemm

Cisco Systems

"Observation will eat planning's lunch."

Alexander Clemm (alex@cisco.com) is a Principal Engineer at Cisco where he provides technical direction and leadership for technology that relates to manageability of Cisco networking products. In addition to papers and patents, he has authored or edited several books related to management technology, including "Network Management Fundamentals" (Cisco Press 2006) and "Network-Embedded Management and Applications" (Springer 2013). Alex also served as TPC Co-Chair of IM in 2005 and as General Co-Chair of Manweek (now CNSM) 2007 and of IM in 2013. Alex holds a Master of Science in Computer Science from Stanford University and a PhD from the University of Munich.

Hanan Lutfiyya

University of Western Ontario

"All management entities must be context-aware."

Hanan Lutfiyya (hanan@csd.uwo.ca) is a Professor in the Department of Computer Science at the University of Western Ontario. Her research broadly falls into distributed systems and software engineering. More specifically she is interested in systems management.

Henning Sanneck

Nokia Networks

"Verticals (automotive, industry 4.0) will require customized management (abstraction, reduced complexity) for customized services in a virtualized network infrastructure."

Henning Sanneck (henning.sanneck@nokia.com) studied Electrical Engineering at the University of Erlangen-Nuremberg, Germany. After receiving his Diploma in 1995, he joined GMD Fokus (now part of Fraunhofer) in Berlin. He received his Dr.-Ing. (PhD) degree in Electrical Engineering from the Technical University of Berlin with a thesis on Voice over IP QoS in 2000. In 2001 he joined Siemens - Mobile Networks in Munich, as a Senior Research Engineer. He became a Project Manager for technology innovation projects in the area of Network Management for 3G and beyond RANs in 2003. In 2007, at the formation of Nokia Siemens Networks (now: Nokia Networks), Henning started to lead the "Network Management Automation" team as a Research Manager with a focus on LTE Self-Organizing Networks (SON). Since 2014, as Head of Cognitive Network Management, his responsibility also includes the internal coordination of Research and Standardization work in Network Management Automation.

Burkhard Stiller

University of Zürich

"Decentralized management combined with economics principles is the key."

Burkhard Stiller received his diploma degree in computer science and his doctoral degree from the University of Karlsruhe, in 1990 and 1994, respectively. From 1991 until 1995 he has been a Research Assistant at the University of Karlsruhe, being on leave in 1994/95 for a one-year EC Research Fellowship at the University of Cambridge, Computer Laboratory, UK. From November 1995 he has been with the Computer Engineering and Networks Laboratory TIK of ETH Zürich. He was appointed Assistant Professor for Communication Systems at ETH in 1999 and hold that post until September 2004. Burkhard Stiller held additionally from April 2002 until August 2004 a Chair at the University of Federal Armed Forces Munich (UniBwM), where he headed the Information Systems Laboratory IIS and had a part-time appointment with ETH Zurich. Since September 2004 Prof. Dr. Burkhard Stiller holds the Communications Chair at UniZH, IFI.

Nur Zincir-Heywood

Dalhousie University

"Mission aware management blocks."

Nur Zincir-Heywood (zincir@cs.dal.ca) is currently a Professor of Computer Science at Dalhousie University, Canada. She received her PhD in 1998 in Computer Science and Engineering from Ege University, Turkey. Prior to moving to Dalhousie in 2000, Dr. Zincir-Heywood had been a researcher at Sussex University, UK and Karlsruhe University, Germany as well as working as an instructor at the Internet Society Network Management workshops. She has published over 150 papers on networks, security and intelligent systems. She has substantial experience of industrial research in autonomous systems, network management and security

related topics with partners such as RUAG, Raytheon, Gtech, Sandvine and Public Safety Canada. She is a member of the IEEE and the ACM.

We are looking forward to your questions!

"What are the challenges of hyperconnection for you?"

When preparing the panel, we identified the following relevant areas. They may **inspire your questions**:

- scalability
- heterogeneity
- security (privacy, safety)
- economics
- usability
- energy efficiency
- legal implications
- ethical implications
- What else do you find relevant?

We are looking forward to discussing with you!

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https://twitter.com/hyperqna

Panel 4: **Managing Hyperconnected Entities - but how?**
Wed, Apr 27, 2016 4pm @NOMS2016

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Your place to be @NOMS on **Wed 16h00**?
Panel 4
Managing Hyperconnected Entities – but how?