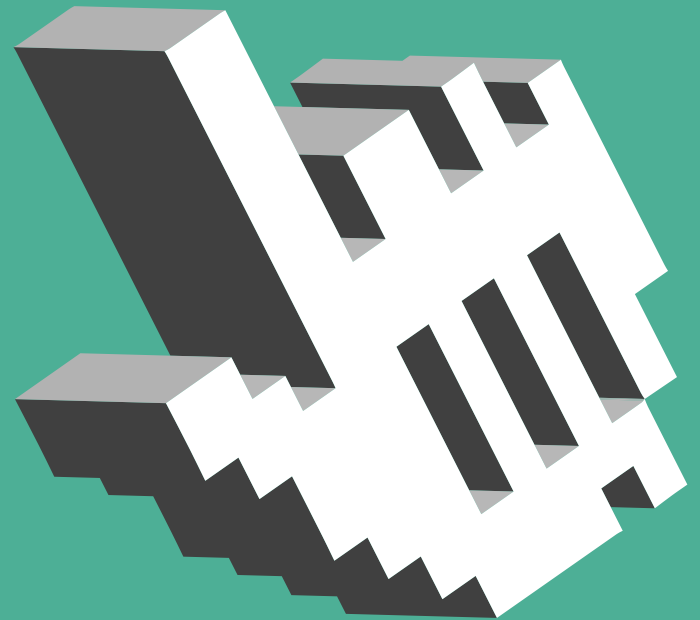


INTERNET OF THINGS, ENERGY AWARENESS AND SUSTAINABILITY

unibz

10+11
July 2017



International Workshop
at Free University of Bozen-Bolzano
Campus Bozen-Bolzano, Room D1.01
Universitätsplatz 1 - Piazza Università, 1
I-39100 Bozen-Bolzano, Italy

The visionary “**Internet of Things**” (IoT) is already on the way to become reality. It refers to a novel approach of building networks in which persons, sensors, actuators and physical objects are connected to each other.

As a general enabling technology, it provides hitherto unknown possibilities of integrating, facilitating and optimizing all kinds of human activities. It may revolutionize productive and consumptive functions, logistics and mobility, housing and living, industry and agriculture. Due to its vast spectrum of applications and its potential to change our society entirely, this subject has been attracting a tremendous professional and public attention not only in science and economics but also in politics and media. Analysts forecasted a potential disruptive economic impact of IoT, quantifiable in 3 to 6 billion USD by the year 2025, with a total of more than 40 billion of connected devices. Apart from obvious privacy and security problems, the IoT poses serious environmental

questions. The mass production and eventual disposal of billions of independent sensor nodes and electronic gadgets is a critical aspect that requires further investigation. However, the IoT offers as well capacities that may contribute essentially to a sustainable development of our societies. Optimizing the use of energetic and material resources along all steps of value-creation and product life-cycles, with fine-tuned processes of production, distribution and consumption of goods and services is one core element of this promising perspective. Simultaneously enhancing our productivity and our abilities to cooperate while sharing all kind of resources and achievements with help of sophisticated systems of autonomous transport and mobility on a basis of renewable and decentral energy supplies is the other one.

Our conference will promote, through the contribution of international experts, an open discussion of many aspects of the IoT.

It will cover its technological dimension as well as the societal impacts in connection to sustainable development. Talks on the realization of sensors, networks and complex interacting systems and of their energy supply will be accompanied by an overview about possible developments and social implications. In order to unveil the potential of this new technological framework and of its societal impact, the workshop will concentrate on several distinct but intertwined themes. Focal topics will be: smart cities, the future of agriculture, industry 4.0 and sustainable development. The workshop is jointly financed from the National Science Foundation, USA, and by the Free University of Bozen-Bolzano, Italy.

We gratefully acknowledge the financial support of the **Stiftung Südtiroler Sparkasse-Fondazione Cassa di Risparmio di Bolzano** and the **Fondazione Bruno Kessler**.

CHAIRPERSONS: Paolo Lugli, Andreas Metzner-Szigeth, Wolfgang Porod

MONDAY, JULY 10th, 2017

ORAL SESSIONS

9:50

Paolo Lugli, unibz, Bozen-Bolzano, Italy
Welcoming Address

10:00

Andreas Metzner-Szigeth, unibz,
Bozen-Bolzano, Italy
*Introduction: IoT, Smart Cities & Industry 4.0:
Driving Forces towards Sustainability?*

10:30

Luca Larcher, Università di Modena-Reggio
Emilia, Italy
*IoT sensors: power constraints
and energy harvesting*

IoT FOR INDUSTRY 4.0

11:00

Dominik Matt, unibz, Bozen-Bolzano, Italy
*Industry 4.0 - Challenges and Opportunities
for SMEs*

11:30

Tim Stock, Technical University of Berlin,
Germany
*Opportunities of Sustainable Manufacturing
in Industry 4.0*

12:00

Michael Nippa, unibz, Bozen-Bolzano, Italy
*Strategic Management & Governance
Implications of IoT*

12:30

Paul Mairl, GKN Sinter Metals,
Bruneck-Brunico, Italy
*Usage and benefit of IoT in actual
manufacturing environment*

13:00

Lunch

THE INTERNET OF THINGS AND ITS SUSTAINABILITY

14:30

Lorenz Hilty, University of Zurich, Switzerland
*ICTs and Sustainable Development:
Challenges and Perspectives*

15:00

Paolo Gemma, International Telecom-
munication Union, Geneva, Switzerland
Smart Sustainable Cities: From Vision to Reality

15:30

Bernhard Müller, Leibniz Institute of
Ecological Urban and Regional Development,
Dresden, Germany
*From "green" to "smart" cities? Questioning
the role of technology in sustainable urban
development*

16:00

Coffee Break

16:30

Martin Faulstich, Technical University
of Clausthal, Germany
Resource Efficiency, Industrial Ecology & the IoT

17:00

Heather Ross, Arizona State University,
Tempe, United States of America
*Powered by People:
Individual Implications for IoT*

17:30

Daniele Vettorato, Eurac Research,
Bozen-Bolzano, Italy
*Energy Scenarios for Smart Cities
& Sustainable Regions*

18:00

Amy Murphy, FBK, Trento, Italy
*Smart Community: Making our cities
SUSTAINABLE, SOCIAL and FUN*

18:30

Round up discussion of the 1st day

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TUESDAY, JULY 11th, 2017

TECHNOLOGIES FOR THE IoT

9:00

Paolo Lugli, unibz, Bozen-Bolzano, Italy
Printed sensors for the IoT

9:30

Wolfgang Porod, University of Notre Dame,
South Bend, IN, USA
IoT: Introduction to Sensor Technologies

10:00

Stephen M. Goodnick, Arizona State
University, Tempe, United States
of America
*Photovoltaics on Everything (PVOT):
Energy Harvesting for IoT*

10:30

Yih-Fang Huang, Notre Dame University,
South Bend, United States of America
*Towards Smarter IoT with Discerning Sensing,
Communication and Actuation*

11:00

Coffee Break

11:30

Gordon Cheng, Technical University
of Munich, Germany
Making industrial robots safer

12:00

Elio Salvadori, FBK, Trento, Italy
*Blockchain and Internet of Things:
why a perfect match*

12:30

Renato Vidoni, unibz, Bozen-Bolzano, Italy
*Field Robotic and IoT for sustainable
Agriculture*

13:00

Lunch

IoT AND SMART AGRICULTURE

14:30

Roberto Monsorno Eurac Research,
Bozen-Bolzano, Italy
*The MONALISA project: an Environmental
Information System to handle heterogeneous
sensors data towards IoT interoperability*

15:00

Angelo Zanella, Centro di Sperimentazione
Laimburg, Italy
*Sensors for non-destructive post-harvest
quality analysis*

15:30

Johann Gamper, unibz, Bozen-Bolzano, Italy
*Data Analysis and Monitoring for a Smart
Agriculture*

16:00

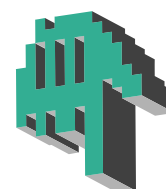
Carlo Benvenuti, Orma Solutions srl.,
Bozen-Bolzano, Italy
*Cattle and technology: IoT for monitoring
cattle breeding*

16:30

Summary of the Workshop

17:00

Coffee break and poster session



ADDITIONAL INFORMATION & ONLINE REGISTRATION:

www.unibz.it/it/events/124485-internet-of-things-iot-2017-conference

or event@unibz.it