

68th IFIP WG 10.4 Meeting
Búzios, Brazil
25-28 June, 2015





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**Business
Meeting**

Business Meeting Agenda

- IEEE/IFIP DSNs - DSN-2015 wrap-up, DSN 2016
- Upcoming events: Future DSNs and other sponsored events
...
- Awards
- Future WG Meetings AND workshops
- Workshop ideas
- **Members only portion**

IEEE/IFIP International Conference on Dependable Systems and Networks



■ Rio de Janeiro, Brazil (2015)

- ◆ General co-Chairs: **Eliane Martins**, **Regina Moraes** (State Univ of Campinas, Brazil)
- ◆ Program co-Chairs: **Yair Amir** (Johns Hopkins Univ., US), **Johan Karlsson** (Chalmers Univ., Sweden)

IEEE/IFIP International Conference on Dependable Systems and Networks



■ Toulouse, France (2016)

- ◆ General co-Chairs: **Karama Kanoun, Mohamed Kaaniche** (LAAS-CNRS, France)
- ◆ Program co-Chairs: **Cristina Nita-Rotaru** (Purdue Univ., US), **Domenico Cotroneo** (U. Naples Federico II, IT)



DSN 2016

Toulouse • France
June 28 - July 1st

The 46th Annual IEEE/IFIP International Conference on Dependable Systems and Networks

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Call for contributions

The Annual IEEE/IFIP International Conference on Dependable Systems and Networks (DSN) is the most prestigious international forum for presenting research results in the field of dependable and secure computing.

Authors are invited to submit original papers on the research and practice of creating, validating, deploying and maintaining dependable and secure systems and networks.

All aspects of dependable and secure systems and networks are within the scope of DSN including innovative architectures, protocols and algorithms as well as experimentation with and assessment of dependable and secure systems. DSN's current thematic areas of emphasis are:

- Hardware (e.g. microprocessors; VLSI; storage systems; and nanoscale systems)
- Software (e.g. applications; middleware; and operating systems)
- Cyber-physical systems (e.g. embedded systems; networked embedded systems; SCADA; automotive aerospace, and medical systems; and smart grid)
- Socio-technical systems (e.g. virtual worlds; human-computer interaction; usable security; and online social networking)
- Clouds (e.g. cloud storage; computing; platforms; and applications)
- Networks (e.g. wireless networks; mobility; next-generation networks; and software-defined networking)
- Models and methodologies for programming, evaluating, and assessing dependable and secure systems (e.g. performance, dependability and security evaluation; analytical and numerical methods; simulation; experimentation; benchmarking; verification; field data analysis; and data mining techniques)

See
<http://dsn.org>

Upcoming Events

IEEE/IFIP International Conference on Dependable Systems and Networks



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■ Denver, CO, US (2017)

- ◆ General Chair: Shivakant Misra (University of Colorado, Boulder, US)
- ◆ Program co-Chairs: TBD

■ Luxembourg City, Luxembourg (2018)

- ◆ To be ratified by the SC
- ◆ General Chair: Paulo Veríssimo (University of Luxembourg, Luxembourg)
- ◆ Program co-Chairs: TBD

Other, in-collaboration or related events

- EDCC 2015, Paris
- PRDC 2015, China
- LADC 2016, Colombia
- SBRC 2016, Brasil

Award Updates

Award Updates

■ Carter Award in Dependable Computing

- ◆ Scope: An outstanding paper based on a graduate dissertation and presented at DSN.
- ◆ Committee: DSN Steering Committee
- ◆ Selection:
 - ✦ finished

■ URL: www.dsn.org

■ The winner of the **DSN 2015** edition was:

- ◆ Dmitrii Kuvaiskii from T.U. Dresden, DE
- ◆ Δ -Encoding: Practical Encoded Processing. *Dmitrii Kuvaiskii and Christof Fetzer*

Award Updates

■ DSN Best paper award (2015)

- ◆ Scope: Best paper accepted and presented at DSN.
- ◆ Committee: joint decision of: PC -> SC -> DSN audience
- ◆ Selection:
 - ✦ finished

■ URL: www.dsn.org

■ Winner:

- ◆ Leveraging State Information for Automated Attack Discovery in Transport Protocol Implementations. *Samuel Jero, Hyojeong Lee, and Cristina Nita-Rotaru*

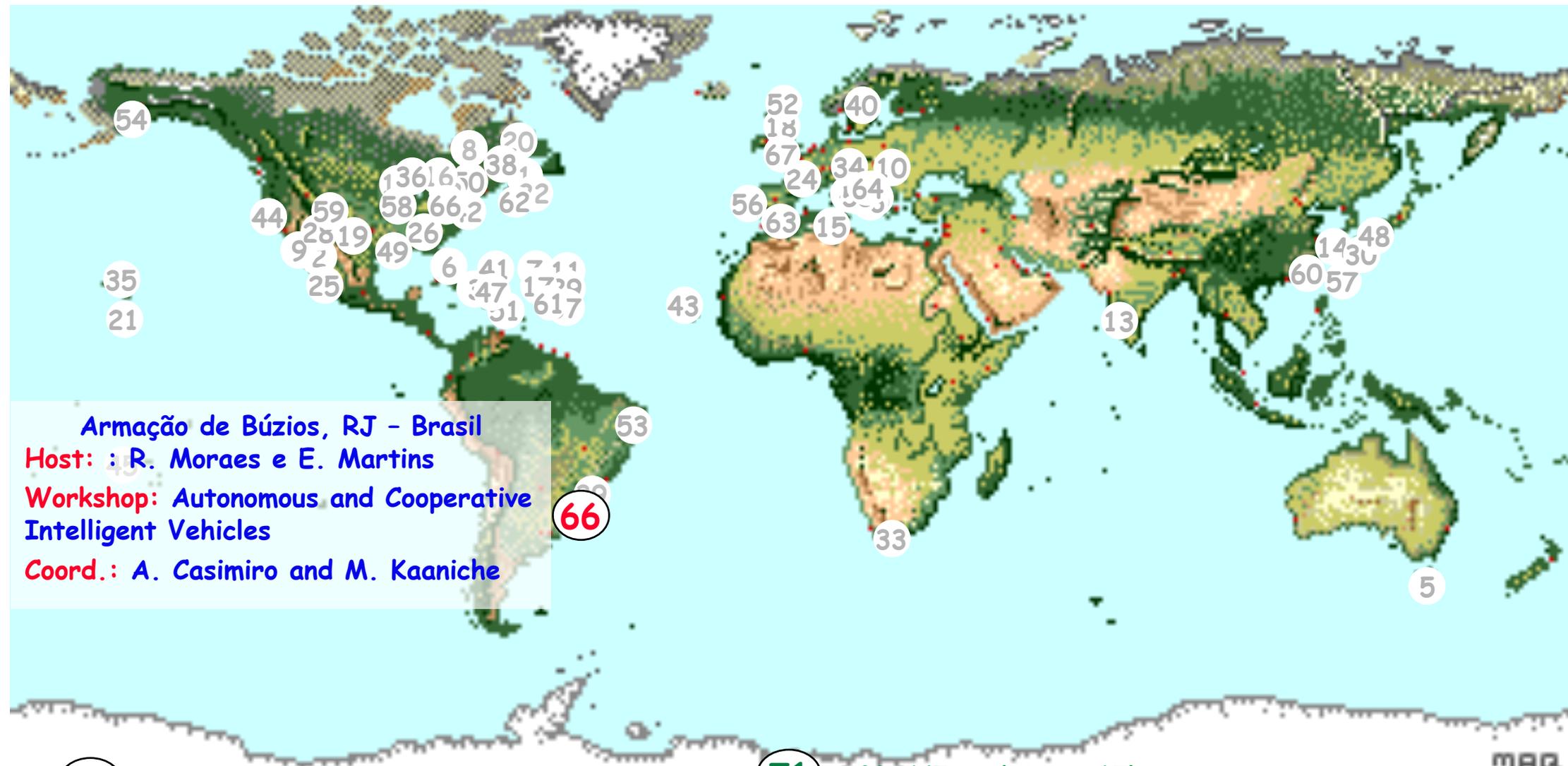
Award Updates

- **Jean-Claude Laprie Award in Dependable Computing (2015)**
 - ◆ **Scope:** Outstanding paper(s) have significantly influenced the theory and/or practice of dependable computing.
 - ◆ **Committee:** appointed by IFIP WG10.4
 - Jean Arlat (LAAS-CNRS, FR)
 - Andrea Bondavalli (U. Firenze, IT)
 - Hermann Kopetz (T.U. Vienna, AT)
 - Bev Littlewood (City University, UK)
 - Brian Randell (Chair, U. Newcastle, UK)
 - Bob Yeh (Boeing, US)
 - ◆ **Selection:**
 - ✦ finished
- **URL:** <http://www.dependability.org/wg10.4/laprie-award.html>
- **Winner(s):**
 - ◆ A. L. Hopkins, Jr., T.B. Smith, III, and J.H. Lala. FTMP - A Highly Reliable Fault-Tolerant Multiprocessor for Aircraft, Proceedings of the IEEE, Vol. 66, No. 10, October 1978.

Award Updates

- IEEE Innovation in Societal Infrastructure Award to Hirokazu (Hiro) Ihara (2015), "For pioneering the concept of dependable autonomous decentralized systems and contributing to its practical application in early transport control systems."
- (co-recipient, along with Takemochi Ishii and Atsunobu Ichikawa)
- Delivered at DSN 2015!

Future Working Group Meetings



Armação de Búzios, RJ - Brasil

Host: R. Moraes e E. Martins

Workshop: Autonomous and Cooperative Intelligent Vehicles

Coord.: A. Casimiro and M. Kaaniche

69 ??, ?? — (winter 16)

70 Toulouse, FR — (summer 16)

71 ??, NZ — (winter 17)

72 ??

69th Meeting (winter 2016)

**PROPOSAL
APPROVED !**

Location: Aspen, Sowmass

Host: Basil Smith, Nick Bowen

Dates: tentative 10-14 Jan '16

Hotels: see next slides

Costs: 320 or 170USD+tax/night hotel; ~700USD reg.

▪ Hotel Includes

- Breakfast in meeting room
- Several facilities
- WiFi

Workshop : Systems Dependability in the Internet of Things (IoT), **org.** Nick Bowen, Basil Smith

69th Meeting (winter 2016)



IFIP WG 10.4

Proposal for 2016 Winter Meeting

Nick Bowen
Basil Smith



Venue



Venue

- Venue is repeat of the 2011 meeting
 - Silvertree Hotel since purchased and remodeled by Westin (~\$320+tax/night)
 - Wildwood Lodge purchased and remodeled by Holiday Inn (~\$170+tax/night)
- Meeting format: Early morning meeting, long break, late afternoon/evening meeting.
- Free 3rd day for independent activities and discussion.
- Working on bullet for registration costs.
- Aspen served by Aspen Airport (ASE) with non-stop service to: Denver, Dallas, Houston, Chicago, LA, SFO, Atlanta, Minneapolis, one stop service from much of the world (weather permitting).
- Hotel provides shuttle service to/from Airport (15 min driving slowly)
- Four hour drive from Denver, 1:30 from Eagle/Vail

Workshop Proposal by Nick Bowen and Basil Smith

Topic: "Systems Dependability in the Internet of Things (IoT)"

Background: IoT and its close cousin Cyber-Physical Systems is defined by the NSF as:

"engineered systems that are built from, and depend upon, the seamless integration of computational algorithms and physical components. Advances in CPS will enable capability, adaptability, scalability, resiliency, safety, security, and usability that will far exceed the simple embedded systems of today. CPS technology will transform the way people interact with engineered systems New smart CPS will drive innovation and competition in sectors such as agriculture, energy, transportation, building design and automation, healthcare, and manufacturing."

<http://www.nsf.gov/pubs/2014/nsf14542/nsf14542.htm>

Rationale: IoT is the next "Hot IT trend" and we need to align research agendas with this new world.

We'll show some charts that highlight some of the activities.

Michigan Micro Mote (M³) is the smallest autonomous computer in the world.



- programmed and charged by strobing light at a high frequency,
- uses nano-watts
- send the information to a central computer via conventional radio frequencies.



- \$35 total cost
- Huge “maker movement”
- Used in K-12 classes
- More powerful than original S/360 mainframe
- 2x USB ports, HDMI, ethernet, audio, video
- Ribbon cable to “breadboard”

1. Every major IT vendor has an IoT strategy (IBM, CISCO, Microsoft, etc.)
2. Sensor vendors are moving "up the stack" (Honeywell, Siemens)
3. GE is defining "Industrial Internet" across all their business units, building a 4,000 person software team.
4. Apple & Samsung (~100% market share in smart phones) is launching development kits to be the "IoT Control point"
5. Cloud vendors (e.g., Facebook's "Parse")
6. "Moore's law" is alive in the embedded space and will accelerate this.

1. Potential invited speakers:

1. GE Research – Colin Paris
2. Apple and/or Samsung
3. Honeywell and/or Siemens

2. Potentials themes

1. Reliability services in the internet-cloud
2. Security
3. Device Topics

70th Meeting (summer 2016)

**PROPOSAL
APPROVED !**

Location: Sorèze (near Toulouse)

Host: J. Arlat

Dates: **before (!)** DSN, 24-27 June 2016 (fri-mon)

Hotels: Abbaye Ecole de Sorèze, Hotel and SPA

Costs: ~ TBD /night hotel; ~ TBD reg.

▪ Hotel Includes

- Breakfast
- Several facilities
- WiFi

▪ Transfer to Toulouse on Monday 27 June

Workshop : Intelligent Manufacturing / Factory of the Future, proposal by J. Arlat, to be refined

71st Meeting (winter 2017)

**PROPOSAL
TABLED!**

Location: Queenstown, New Zealand

Host: Takashi Nanya (Univ. of Tokyo, JP), Dong Seong Kim (University of Canterbury, NZ)

Dates proposal: right **after PRDC**, maybe within last 2 weeks January '17

Hotels: TBD

Costs: ~ TBD /night hotel; ~ TBD reg.

• Hotel Includes

- Breakfast
- Several facilities
- WiFi

Workshop : Workshop ideas TBD

71st Meeting (winter 2017)

Possible Locations

■ a) Akaroa

- ◆ Located in **1.5-2 hours driving distance** from Christchurch city where PRDC conference is going to be held. Akaroa is a historic French and British settlement nestled in the **heart of an ancient volcano**. There are **cruises, sail boats**, and an excellent range of walking tracks.

■ <http://www.akaroa.com/>

■ b) Hanmer Springs

- ◆ **2 hours driving distance** from Christchurch city. It is a small town and is built around a popular **hot spring**. Bungee jumping, **mountain biking** and bush walking are common tourist activities in addition to outdoor hot spa.

■ <http://hanmersprings.co.nz/>

■ c) Queenstown

- ◆ **Need to fly** (non-stop flights available, less than one hour flying time). Definitely **one of the best places in NZ**. Good to have one day excursion from Queenstown to **Milford sound**, which is an amazing place to visit.

■ <http://www.queenstownnz.co.nz/>

72nd Meeting (summer 2017)

**PROPOSALS
WELCOME!**

Location: TBD, near Boulder, Colorado, US (DSN17)

Host: **A willing member, in colab with Shivakant!**

Dates: after DSN

Hotels: TBD

Costs: ~ TBD /night hotel; ~ TBD reg.

▪ Hotel Includes

- Breakfast
- Several facilities
- WiFi

Workshop : Workshop ideas TBD

73rd Meeting (winter 2018)

**PROPOSALS
WELCOME !**

Location: TBD

Host: TBD

Dates: TBD

Hotels: TBD

Costs: ~ TBD /night hotel; ~ TBD reg.

▪ Hotel Includes

- Breakfast
- Several facilities
- WiFi

Workshop : Workshop ideas TBD

74th Meeting (summer 2018)

PROPOSAL
will be tabled!

Location: **Petite Suisse?**, Luxembourg (DSN18)

Host: Paulo Veríssimo

Dates: after DSN

Hotels: TBD

Costs: ~ TBD /night hotel; ~ TBD reg.

▪ Hotel Includes

- Breakfast
- Several facilities
- WiFi

Workshop : Workshop ideas TBD

Workshops outlook

- Winter 2014 (Sorrento-Italy)
 - ◆ Security Assessment: Metrics and Methods, DONE
- Summer 2014 (Amicalola Falls near-Atlanta-US)
 - ◆ Electrical Smart Grids Security and Dependability, DONE
- Winter 2015 (Tortworth-Bristol, UK)
 - ◆ Science of Cyber Security, DONE
- Summer 2015 (Búzios, Brazil)
 - ◆ Autonomous and Cooperative Intelligent Vehicles, DONE
- Winter 2016 (TBD)
 - ◆ Systems Dependability in the Internet of Things (IoT)
- Summer 2016 (TBD)
 - ◆ Intelligent Manufacturing / Factory of the Future
- Winter 2017 (TBD)
 - ◆ tbd

Major Workshop Topics

distributed computing, parallel computing, real-time systems, certification of dependable systems, specification methods, design diversity, specification and validation of hard dependability requirements, methodologies for experiments, VLSI testing and fault tolerance, hardware- and-software testing and validation, fault tolerance in new architectures, communication networks, algorithms for distributed agreement, cars and computers, accidental vs. intentional faults, robotics and dependability, limits in dependability, avionics and dependability, dependability issues in medical computing, security and dependability, tools for dependable system design and evaluation, railway safety, safety cases, dependability in automotive electronics, computer systems benchmarking with applications to dependability, time and dependability, dependability, survivability, and integrity in e-commerce transactions and infrastructure, dependability benchmarking, utilization of formal methods in dependable systems, challenges and directions for dependable computing, dependability and survivability, middleware for adaptivity and dependability, measuring assurance in cyberspace + hardware design and dependability, open source and dependability, human computer interaction and dependability, autonomic web computing, grid computing and dependability, nomadic computing and dependability, infrastructure security and operational challenges of service provider networks, critical infrastructure protection, achieving and assessing safety, cps dependability, dependability in cloud systems, security assessment: metrics and methods, electrical smart grids sec&dep, science of cyber security, Autonomous and Cooperative Intelligent Vehicles

Should close:
• Winter 2016
• Summer 2016

Workshop ideas

(FUTURE ideas circulated recently)

- Medical systems (assisted living, health informatics, applied biomedical engineering)
- Other focused topics on CPS (a property, a kind)
- Autonomous human-machine interaction, cooperative robots
- Socio-technical issues of security research and training (ethics, "ethical hacking", awareness)
- Economics of security and/or dependability
- Foundational research on Dep & Sec
- Scaling down to <10nm: dependability challenges and opportunities (H.Madeira and others)
- Present and future of Dep & Sec R&D and relevant outlets

Members please consider organizing a workshop, even if not the next, it's good to have a few lined-up!

You may do it with the assistance of non-member colleagues.

Please contact me (PJV)

Dependability and Security R&D and R&D outlets: present and future

- We are in a crucial moment of the development of our community, and its major outlets, DSN figuring out as the flagship conference
- In the near future, it would be appropriate to foster some discussion about the topic in headline.