



Nicosia, January 29 - 31, 2018

Subject | Minutes of the 6th Management Committee Meeting of COST Action CA15104 “Inclusive Radio Communication Networks for 5G and beyond (IRACON)”

**Nicosia, Cyprus
29/01/2018**

1. Welcome to participants/Opening formalities

Prof. Claude Oestges, Chair of the Action, opened the meeting at 9.00 am. The participants were welcomed by the Local Organizer, Dr. Konstantinos Katzis. Information about local arrangements were provided to the audience. 29 Countries participating in the Action were represented in the meeting.

2. Adoption of the Agenda

The [agenda](#) for the 6th MCM was adopted without modifications, based on the online version previously circulated.

3. Approval of minutes and matters arising of last meeting (MCM5, Graz)

The minutes of the 5rd MCM were sent by email and posted on the IRACON website, under the section “Meetings & Events”, “Meetings”, “5th MC meeting and 5th technical meeting”, “Documents”, “[Minutes](#) (and [attachments](#))”. The minutes have been approved. The Chair invited participants to send an email to Lucia Vitiello, the Action GH Manager, for any comments arising of last meeting (MCM5, Graz).

The Chair reminded to sign the official attendance list for each day of the meeting attended and to sign one attendance list for each WG/EWG attended. No reimbursement of travel expenses (for those entitled to) will be processed if attendance lists are not duly signed.

Prof. Oestges announced that the Newsletter meeting for the Members of the Steering Committee will be held on Tuesday at 3:30 pm in room E:2517.

4. Status of the Action

The numbers of **Signatory Countries** were not changed:

- Number of signatory Countries : **35** (out of 36)
- Number of MC Members : **66** (+ Chair)

About **International Partner Country Institutions**, the Chair reminded that the Action had one pending approval from China (Huawei Device Company, representative person Dr. Wu Xingfeng). He pointed out that the MCMs had pre-approved it during the 5rd MCM. The application only needed of SO validation. He undertaken to write an email to ask COST Officer why the Huawei Device Company



was not yet approved.

About **Near Neighbour Country Institutions**, the Chair introduced a new submission from the RUDN University (Russian Federation) that needed of IRACON pre-approval and SO Validation. He showed the motivation letter to the audience. Prof. Luis Correia, the Dissemination Manager of the Action, presented the details of the Russian University. Prof. Oestges asked if participants had any questions on the application and if the MCMs wanted to vote on that. Since only 2 people did not want to decide, the MC Members have been asked to approve or reject the RUDN University application. The RUDN University was approved by the majority of voters with two votes again and two abstains.

The Chair reminded the rules for having access to the internal IRACON website ([member's area](#)). To be considered active, every COST Institution as well as every Near Neighbour Country Institution, has to contribute to the Action at least at ONE meeting/training school per year. Every International Partner Country Institution has to contribute to the Action at least at TWO meetings/training schools per year.

The Chair explained that IRACON had some dormant partners that were not active during the 1st Grant Period. After meeting in Graz, the GH Manager and the Chair of the Action contacted those who were inactive. These partners were de-registered from the website in November (access is regained through any activity). Before the de-registration, it was sent an email. Some did not answer, some of them replied that it was correct and they will try to contribute more in the future (as soon as they will contribute, the Action will register them again). The de-registered members can access everything, but they have not access to FTP site.

Some of dormant partners were MCMs and it was not possible to de-register them. The Chair pointed out that it is not fair to give them access without contributions and invited everyone to contribute.

A few slides with important reminders were shown to participants:

➤ **Reimbursement Eligibility**

- **MC meetings**

- ✓ Up to two MC members per COST Country
- ✓ MC members can be replaced by officially nominated MC substitute, if the Chairman and GH receive request by given deadline

It is up to the MC Member of the Country send an email to lucia.vitiello@unibo.it and claudio.oestges@uclouvain.be. The list of MC Substitutes of each Country can be found at http://www.cost.eu/COST_Actions/ca/CA15104?management.

The MC Substitutes need to be pointed out by National Coordinator.

- ✓ Eligibility priority for MC meetings



- ✓ All MC members who apply, or MC official substitutes, Action Chair, Secretary, invited speakers and ECI representative
- ✓ WG/EWG/SWG Chairs (while budget is available*)
- ✓ Non-MC members, presenting a TD, when replacing an MC member (while budget is available*)
- ✓ Other experts, one per country (while budget is available*)
 - **Technical meetings**
- ✓ Eligibility priority
- ✓ Action Chair, invited speakers
- ✓ WG/EWG/SWG Chairs (while budget is available*) in combination with COST policy priorities (inclusiveness/gender)
- ✓ Core Group members, Secretary (while budget is available*)

➤ **Deadlines and Procedures**

- ✓ TD submission
- ✓ Request a TD number (**20 days** before the meeting)
- ✓ Send to the secretary a full TD (**10 days** before the meeting) using the cover page available on the website

The Chair reminded that these deadlines are set to enable the StC to prepare the meeting schedule. TDs are usually reject after the deadline (unless there are not sufficient contributions).

➤ **Meeting registration: two actions are required**

- ✓ Register on [IRACON website](#) (**20 days** before the meeting)
- ✓ Accept the e-cost invitation

After the meeting, it is up to the LO accept or reject the registration. It is important to respect deadlines for the organization.

➤ **Reimbursement (for those entitled to)**



- ✓ Accept the e-cost invitation
- ✓ Fill the the e-cost and submit the claim (after the meeting)

The reimbursement procedure **MUST** take place on e-cost. The Chair asked for questions or clarifications, but there were any.

- ✓ If you cannot attend but are replaced by an eligible substitute
 - Send a request to the Chair and GH (cc: secretary) at least **20 days** prior to the event to enable the reimbursement of your official substitute

➤ e-Mailing and Acknowledgment

- **Usage of global reflector**
- ✓ The global reflector (all_ca15104@iracon.org) is **moderated** and should not be used to advertise events (outside those of the Action itself)
- ✓ Ask Lucia (lucia.vitiello@unibo.it) to include your announcement on the IRACON Web Page ([NEWS](#))
- ✓ WG reflectors have been created
- **Acknowledge COST CA15104 IRACON on all joint publications**

→ *This work was carried out in the framework of COST Action CA15104 IRACON*

The Chair reminded that is it very important to put the Action acknowledge since this is one of a few metrics to show that the CA15104 Action are going very good.

Prof. Oestges explained that IRACON needs to collect the Join publications.

The Chair reviewed the activities performed and reported about current and future activities:

- **September 2017**
 - 3rd Workshop and 5th MCM (Graz, 12-14 Sep 2017)
 - 15 Workshop papers and 53 TDs → 68 presentations
 - 2 Invited Speakers
- **September 2017**
 - COST Connect on “**Next Generation Internet**” (Brussels, 12-13 Sep 2017)
 - IRACON were represented by Laurent Schumacher (MC substitute, Belgium)
 - IRACON invited speaker: Jean Herveg (CRIDS, Belgium)
- Decentralized internet governance scenarios



- Human rights and the surveillance society
- Social and Health care and the digital welfare state
- Education and the development of critical minds

The Chair received really positive feedbacks about this COST event from Prof. Laurent Clavier.

The Chair explained that some COST Connection events are open to everyone, some are by invitation only. Normally, participants are invited by COST and it is covered from them.

➤ **November 2017**

- COST Connect on “**The relevance of impact in R&I policy – What role for networks?**” (Brussels, 24 Nov 2017)

Prof. Oestges reported that IRACON should be represented by him, but the day before the event he felt sick and he was in late to ask to be replaced.

➤ **January 2018**

- 6th MCM (Nicosia, 29-31 2018)
- Software Defined Radio Training tutorial
- 48 TDs
- 2 Invited Speakers

➤ **February 2018**

- [COST Academy](#) Training on **Using social media to communicate your research** (Brussels, 6 Feb 2018)
- IRACON represented by Prof. Luis M. Correia, Dissemination Manager of the Action (the COST Action specifically ask for MCM)

Prof. Correia will report on it in Cartagena. The Chair pointed out that it is very important to communicate the CA15104 research via Social Media.

➤ **March 2018**

- 3rd IRACON Training School (Lisbon, 5-9 March 2018)
- Beyond 5G Networks operating in the Millimetre Wavebands enabled by Joint Analogue-digital Signal Processing

The Chair explained that the Training School grants do not cover all the expenses and there is nothing to justify via supporting documents. But there is a priority list to follow to assign them.

➤ **April 2018**

- COST Connect on “**How to shape a Sustainable Urban Mobility for all?**” (Bucharest, 25-26 April 2018)
- IRACON represented by Vasos Vassiliou (MC Cyprus)



The Chair thanked Prof. Vasos for representing the Action and asked him to present a report at the next MC Meeting in Cartagena.

➤ **May 2018**

- 7th MCM (Cartagena, 30 May-1 Jun 2018)
- Organized by Jose Molina-Garcia-Pardo
- Up to 4 Invited Speakers
- Training Seminar on "RF Localisation Techniques" (jointly organized with ITN WIBEC) organized by Prof. Narcis Cardona of half day. It is going to take place before the MCM.

Prof. Oestges thanked people like Dr. Konstantinos Katzis Kostas and Prof. Jose Molina Garcia Pardo for organizing and proposing the venues.

Prof. Jose Molina Garcia Pardo thanked the MCMs for permitting the organization of the next meeting in Cartagena, Spain. He explained that all the information about the venue will be published online and uploaded to the [website](#). Prof. Oestges asked if there were questions for Prof. Molina Garcia Pardo.

The Chair reminded a few points on Dissemination Actions.

The CA15104 Action has events branded as IRACON:

➤ **Special Sessions**

- **EuCAP 2018, London, April 9-13, 2018**

→ **4 IRACON special sessions**

- ✓ **Beamforming techniques for information and power transmission – a joint COST IRACON and COST WiPE session**
- ✓ COST CA15104 (IRACON): Frequency dependency modelling of radio channels
- ✓ COST CA15104 (IRACON): Measurements and simulations in channel modelling in wireless body area networks
- ✓ COST CA15104 IRACON: Mm wave and THz channel modelling
- **IEEE WCNC 2018: IRACON Special Session on Localization in Current and Emerging Networks, Barcelona, 15-18 April 2018**
 - Eucaap: 4 Special Sessions. Last year we had 2, these year we have 4. We had to convinced the organizers as they want to refuse the sessions because there are IRACON in the name. At the end they accepted 4 ss.

➤ **Workshops**

- **IEEE WCNC 2018: IRACON Workshop on IoT Enabling Technologies in Healthcare, Barcelona, 15 April 2018**



- ✓ Workshop organizers: Kamran Sayrafian, Hamed Ahmadi, Konstantinos Katzis, Slawomir J. Ambroziak

The Chair thanked the organizers for these opportunities.

- **EuCNC 2018: Joint IRACON-Clear5G-5Gcar Workshop on Vertical Industries & Applications for 5G (VIA5G), Ljubljana, 18-21 June 2018**
- ✓ Workshop organizers: Haibin Zhang, Klaus Moessner, Woon Hau Chin, Erik Ström, Chiara Buratti
- **PIMRC 2018, Bologna, 9-12 Sep 2018**
- ✓ Proposals for Special Sessions and Workshops → March 2, 2018
- ✓ Proposals for Tutorials → April 20, 2018

The Chair reminded that call for Workshops and Special Sessions were still open and the Action expected proposals. Prof. Oestges invited to use this meeting to discuss on them.

5. Review of action deliverables

The Chair reported on the status of the M25 Monitoring Report. He pointed out that there was not the template anymore, but he had a guideline to follow. Publications has to be published, co-authored and acknowledged. The GH Manager sent a template to All in October 2017. Participants were called to feel it, but the numbers of answers where very low. Prof. Oestges invited the audience to fill out the template by February 15th in order to submit the M25 Monitoring Report in March. Prof. Oestges said that he cannot forced participants, but he underlined that if participants join interactions and meetings, the Action needed to receive information.

Prof. Oestges replied to a question from the audience. It was not clear the meaning of “joint publication with IRACON”. Prof. Oestges explained that any publications with CA15104 members people (at least 2 authors, from 2 affiliations) is considered a joint publication even without acknowledgment. Any joint publication with partners involved in our COST Action CA15104 are welcome.

The Chair invited participants to achieve the deliverables. He stressed that if the Action does not provide them, IRACON will be bad evaluated.

Deliverables are available online at <http://www.iracon.org/deliverables/>.

Prof. Oestges showed the status of the technical deliverables (in green the Deliverables already provided):

- **Technical deliverables for the first two years**
 - **Deliverable 1 (M14, May 2017): Working Groups first year term annual report summarising the achievements of every WG → all WGs**



- **Deliverable 2 (M20, November 2017): Overview of IRACON Reference Scenarios** and assessment of 5G radio access techniques through experimental platforms → **WG3, EWG-RA**

The Chair explained that the Deliverable 2 was not submitted in time with his disappointment. IRACON published only the first part of the deliverable. He invited to deliver the second part very soon.

- **Deliverable 3 (M24, March 2018):** Submission to international bodies of contributions about concerted 5G radio channel models → **WG1**
- **Deliverable 4 (M24, March 2018):** Collaborative white paper on new localization techniques suitable for 5G and the Internet of Things → **EWG-LT+IoT**

The Chair explained that the Deliverable 3 and Deliverable 4 were already on-going and he expected that they will be delivered in time.

- **Deliverable 5 (M26, May 2018):** Working Groups second year term annual report summarising the achievements of every WG → **all WGs**

➤ **Technical deliverables for the last two years**

- **Deliverable 6 (M36, March 2019):** Collaborative white paper on future architecture and protocols for the Internet of Things → **EWG-IoT**
- **Deliverable 7 (M38, May 2019) :** Working Group third year term annual report summarising the achievements of every WG → **all WGs**
- **Deliverable 8 (M42, September 2019):** Technical inputs and liaison statements to Standardisation Groups on metrics for Over the Air (OTA) testing
→ **EWG-OTA**
- **Deliverable 9 (M42, September 2019):** IRACON concerted radio channel models for 5G and beyond (draft book chapter) → **WG1**
- **Deliverable 10 (M26, May 2018):** Working Group final report summarising the achievements of every WG in the overall Action (draft book) → **all WGs**

6. Financial Reporting

The Chair made known the 1st Grant Period Financial Report:



6. Financial Reporting

Grant Holder
cnit

Secretary
Miss Lucia Vitiello

Budget for Y1

| Networking Tool | Description | Budget | Actual expenditures |
|---|--------------------------|-----------------------|-----------------------|
| Meetings | 2 MCMs, 1 TM, 1 workshop | 97 910.00 EUR | 92 173.63 EUR |
| Training Schools | 1 TS | 12 500.00 EUR | 11 164.00 EUR |
| STSMs | 6 STSMs | 7 200.00 EUR | 7 851.59 EUR |
| Dissemination | 1 (website set-up) | 4 500.00 EUR | 4 500.00 EUR |
| Other Expenses Related to Scientific Activities | Bank fees | 498.65 EUR | 562.80 EUR |
| Total Science Expenditure | | 122 608.65 EUR | 116 252.02 EUR |
| Financial and Scientific Administration and Coordination (MAX. 15%) | 15 % | 18 391.30 EUR | 17 437.80 EUR |
| Total Grant | | 140 999.95 EUR | 133 689.82 EUR |

6th Management Committee Meeting – Nicosia (Cyprus), 29-31 Jan 2018

Then, Prof. Oestges presented the current status of the 2nd Grant Period Financial Report to the audience:



6. Financial Reporting

Grant Holder
cnit

Secretary
Miss Lucia Vitiello

Budget for Y2: **we are on the right track !**

| Networking Tool | Description | Budget | Actual expenditures |
|---|--------------------------|-----------------------|-----------------------|
| Meetings | 2 MCMs, 1 TM, 1 workshop | 126 000.00 EUR | 84 303.85 EUR |
| Training Schools | 1 TS | 15 000.00 EUR | 3 200.00 EUR |
| STSMs | 6 STSMs | 12 700.00 EUR | 10 850.00 EUR |
| ITC Conference Grants | New tool | 6020.00 EUR | 750.00 EUR |
| Other Expenses Related to Scientific Activities | Bank fees | 930.03 EUR | 1 017.40 EUR |
| Total Science Expenditure | | 160 670.03 EUR | 100 121.25 EUR |
| Financial and Scientific Administration and Coordination (MAX. 15%) | 15 % | 24 100.50 EUR | 15 018.19 EUR |
| Total Grant | | 184 770.03 EUR | 115 139.44 EUR |

6th Management Committee Meeting – Nicosia (Cyprus), 29-31 Jan 2018

The Chair pointed out that the Action did not spent all the grant during the 1st Grant Period, but that the current budget was in line with the Work and Budget plan of the 2nd Grant Period.

Prof. Oestges invited participants to present more ITC CG applications. The Action only had 1 application and it was accepted. The Chair expected to receive more claims. If not, the Core Group proposed to give more budget to STSMs before the end of the 2nd Grant Period. The proposal was unanimously approved.



The Chair asked ECI and/or PhD to send applications for ITC CGs and STSMs before April 31st, 2018.

A detailed Work and Budget was prepared by the Chair and was presented to the MC Members during the meeting:

| IRACON | | 6. Financial Reporting |
|---|---|------------------------|
| Grant Holder cniit | Secretary Miss Lucia Vitiello | |
| New Work and Budget Plan for Y3 | | |
| Networking Tool | Description | Budget |
| Meetings | 3 MCMs | 126 087.00 EUR |
| Training Schools | 2 TS | 20 000.00 EUR |
| STSMs | At least 12 STSMs | 15 000.00 EUR |
| ITC Conference Grants | Conference grants | 4000.00 EUR |
| Other Expenses Related to Scientific Activities | Bank fees | 1000.00 EUR |
| Total Science Expenditure | | 166 087.00 EUR |
| Financial and Scientific Administration and Coordination (MAX. 15%) | 15 % | 24 913.00 EUR |
| Total Grant | | 191 000.00 EUR |

6th Management Committee Meeting – Nicosia (Cyprus), 29-31 Jan 2018

The Chair asked for comments. MC Members have been asked to vote on the proposal. The Work and Budget plan for the 3rd Grant Period was unanimously pre-approved. Prof. Oestges announced that the MC Members will receive an e-voting e-mail.

7. Report from Dissemination Manager

Prof. Luis M. Correia, the Dissemination Manager of the Action, presented the status on the Dissemination and Exploitation. He detailed the [chair’s presentation slides](#) from page 30 to page 41 and he explained the meaning of the colour code used:

- Orange= Still to be done, IRACON can be proactive
- Yellow= On-going
- Green= Done
- Blue= Not depending on us, dont depend on IRACON
- Red= No longer valid
- Black= General Statements, done

The participants has been strongly urged to send the “List of research groups-PhD schools” and the “Joint publications” files to the Action GH Manager, Lucia Vitiello, who has already sent emails asking for contributions.

Prof. Correia reported that the new leaflet and the 6th Newsletter were on-going thank to Luca Feltrin, the ECI Representative of the Action.



Prof. Correia reminded that they are all available online at www.iracon.org under “Publications”. Then, he mentioned the Newsletter meeting at 17:00.

The Dissemination Manager explained that he is going to take a COST Training Course. Prof. Correia invited all to be proactive on blog and Social Media and to send inputs and contribute with answers and questions.

8. Presentation and Discussion of TDs

The Chair presented the TDs and the schedule.

48 TD number requests were requested by the deadline, 48 TDs have been finally submitted. They were presented and discussed by the Working Groups during the three days of the meeting.

| IRACON (17) Jan 29-31, 2018 | Day One | | Day Two | | Day Three | |
|--|-----------------------|-------------|---|-------------|--|-----------------------|
| WPI | | | | | | |
| URL: www.iracon.org | | | | | | |
| password: www.iracon.org | | | | | | |
| Start time | Beta | | Delta | | Alpha | |
| Hours | 9:00 - 10:30 | | 9:00 - 10:30 | | 9:00 - 10:30 | |
| Sessions | MC Plenary (Cultural) | | Technical Plenary (Cultural) | | Technical Plenary (Cultural) | |
| TD number or other | MC Plenary (Cultural) | | Muhammad Zeeshan Shakir, U. West Scotland, UK | | Ioannis Krikides, University of Cyprus, Cyprus | |
| TD number or other | MC Plenary (Cultural) | | TD#22 | | Reference Scenarios (WGS) | |
| TD number or other | MC Plenary (Cultural) | | | | | |
| TD number or other | MC Plenary (Cultural) | | | | | |
| TD number or other | MC Plenary (Cultural) | | | | | |
| Coffee break | 10:40-11:00 | | 10:40-11:00 | | 10:45-10:45 | |
| Hours | 11:00 - 13:00 | | 11:00 - 13:00 | | 10:45-12:00 | |
| Sessions | WGS (HTA) | WGS (IoT) | [group of interest] | WGS (HTA) | WGS (IoT) | [group of interest] |
| TD number or other | new + Alt | Special emc | Topic | Vehicles | NB-IoT | Topic |
| TD number or other | 29 | 32 | | 8 | 34 | |
| TD number or other | 37 | 40 | | 9 | 35 | |
| TD number or other | 3 | 5 | | 43 | 36 | |
| TD number or other | 41 | DISC | | 38 | 38 | |
| TD number or other | | | | DISC | 42 | |
| TD number or other | | | | | | MC Plenary (Cultural) |
| Lunch | 13:00-14:00 | | 13:00-14:00 | | 12:00-14:00 | |
| Hours | 14:00 - 15:30 | | 14:00 - 15:30 | | 14:00 - 17:00 | |
| Sessions | WGS | WGS | [group of interest] | OTR | WGS | WGS |
| TD number or other | Key-Tracking | ANR | Topic | OTR | SmallCell/5G | Drones/5G-Net |
| TD number or other | 20 | 40 | | 47 | 17 | 20 |
| TD number or other | 36 | 44 | | 35 | 4 | 39 |
| TD number or other | 46 | 13 | | DISC | 21 | 7 |
| TD number or other | 27 | 18 | | | DISC | 8 |
| TD number or other | | | | | | |
| Coffee break | 15:30 - 16:00 | | 15:30 - 16:00 | | | |
| Hours | 16:00 - 17:30 | | 16:00 - 17:30 | | | |
| Sessions | WGS | WGS | [group of interest] | WGS | OTR | |
| TD number or other | Models | IoT | Topic | 5G/Networks | Location | |
| TD number or other | 1 | 8 | | 19 | 11 | |
| TD number or other | 20 | 30 | | 25 | 48 | |
| TD number or other | 22 | 48 | | 31 | DISC | |
| TD number or other | 23 | 49 | | DISC | DISC | |
| TD number or other | 45 | DISC | | | | |
| End time | City-Tour | | 18:00-20:00 | | | |
| | Dinner | | 20:00-end | | | |

2 keynote speakers were presented by the Chair:

- Muhammad Zeeshan Shakir, University of West Scotland, UK

Title: Networked Flying Platforms: Paving the Way Towards B5G Wireless Networks

- Ioannis Krikides, University of Cyprus, Cyprus



Title: From Wireless Power Transfer to Wireless Powered Communications

The Chair reminded that the TDs list can be also found at <http://www.iracon.org/temporary-documents/> and that the schedule was also available at the registration desk. As usual, TDs and schedule for the *6th MCM and 6th TM* in Nicosia were available online at www.iracon.org. To access the IRACON [member area](#), members have to use their login credentials (email address and password) and to click on the "FTP Site". The credentials of the FTP site were sent before the starting of the meeting. Only one change has been done to the schedule: the TD 42 was moved on day 2.

The Chair invited the Working Groups to include the following topics during the Sessions:

- Next deliverables
- Training School proposals/topics for 2019 and beyond
- Workshop and special session proposals for 2018 (eg PIMRC) and beyond
- Joint activities with H2020 projects
- Tutorial offers for upcoming meetings
- Joint activities (experiments, papers, etc.)
- Short Term Scientific Missions among participant institutions
- Any other idea to foster the dissemination of the Action?

Finally, the Chair asked if there were any questions.

Nicosia, Cyprus
31/01/2018

9. Report from Training Manager

The Management Committee Meeting resumed on January 31 at 10:45 AM.

The Grant Holder Scientific Representative, Prof. Roberto Verdone, said a few words about the budget.

The Training and STSM Manager, Prof. Laurent Clavier, reminded the grants criteria to the audience.

The Action offers a limited number of grants to attend CA15104 Training Schools. A fixed grant will be assigned to every granted person, except for local students, who will be granted only for the registration fee. The selection is based on a first coming first served base and on the following priorities:

1. PhD students from COST Country Institutions (one grant per Country)
2. While grants available, ESRs from COST Country Institutions
3. While grants available, other applicants

In any of the above steps, the ICT Countries and gender balance is taken for resolving



equality.

Prof. Clavier presented the next CA15104 Training Schools:

- **IEEE VTS Portugal Chapter/COST-IRACON Joint Winter School on Beyond 5G Networks operating in the Millimetre Wavebands enabled by Joint Analogue-digital Signal Processing**

Contact: Fernando J. Velez

Dates – 5-9 of March 2018

Host – Instituto de Telecomunicações, Lisbon site, Portugal

- Recent advances in antennas, RF, signal and multi antenna processing to achieve implementable Massive Antenna Array Systems (MAAS) technologies at mmW frequencies
- Business aspects, cost/revenue trade-off, standardization, public policies for spectrum sharing, entrepreneurship and IPR protection ...
- **CA15104 support:** up to 4 Trainers travel costs, 10 grants for PhD and ESRs, organisational support
- **Budget** – MC decision required to lower the flat rate for speakers to 75 EUR/day

Prof. Oestges asked to approve the Training School. Comments on the proposal have been considered and it was unanimously approved.

The Training and STSM Manager proposed another Training School:

- **Joint IRACON & Met5G Training School**

Contact: Tim Brown

Working Title – Massive MIMO and Massive Interference – Identifying and Quantifying for Future 5G Networks

Proposed dates – April 2018

Host – University of Surrey, Guildford, UK. Easily accessible from London Heathrow and Gatwick Airports

1. Massive MIMO Systems and their purpose
2. Structural function of Massive MIMO and issues around interference including non linearity
3. The necessity to characterize SINR in supporting future 5G systems



4. Traceable metrology solutions for characterizing/predicting SINR

CA15104 support: up to 4 Trainers travel costs, 10 grants for PhD and ESRs, organisational support

Comments on the proposal have been considered. The Training School has been unanimously approved.

The Training and STSM Manager presented the upcoming Training Schools for the 3rd Grant Period:

➤ **IRACON Training School**

Working Title – Transmission of small information quantities in dense networks, from theory to practice

Jean-Marie Gorce, Laurent Clavier

Proposed dates – around Oct 2018

Host – Lyon, France.

1. Theoretical foundations – Inf. Theory, small packets, stochastic geometry, interference... Cooperation – Network coding.
2. Connected things - Energy harvesting / RF / Hardware / OS and embedded software
3. Standardization and access networks - (802.15.4, LP-WAN, Lifi...) → SigFox / LoRa / NB-IoT
4. Experimentation - 1/2 day cortex-lab or NB-IoT ; 1/2 day FIT-Senslab, MAC & NET

The proposal was accepted by MC Members.

Prof. Clavier reminded that for the 3rd Grant Period the program was not fixed yet, any idea/input on this topic will be welcome.

Prof. Oestges strongly suggested to have co-organizing Training Schools and to do not hesitate to propose them.

Regarding the STSMs, the Training and STSM Manager reported the status of the STSMs of the 1st and the 2nd Grant Period following the [chair's presentation slides](#) from page 51 to page 52. He used different colors to refer to the WGs of belonging:

- Blue= WP1
- Green= WG2
- Red= WG3

This balance reflects the balance of the Action. There were more WP1 STSMs also



because WP1 needs of measurements.

For the 2nd Grant Period IRACON had 9 accepted STSMs so far, a few rejected. The list of finished STSMs can be found online at <http://www.iracon.org/stsms/>.

Prof. Oestges reminded that the applicants should present the result obtained. Prof. Clavier invited to submit new applications.

10. Future Meetings

The Chair moved to the next, already approved, meeting in Cartagena:

- **7th MC and technical meeting**
 - ✓ Cartagena (ES), **30 May – 1 June 2018**
 - ✓ Organizer: Jose Molina-Garcia-Pardo

The Chair reminded that, if a member want to help the local organization, he/she can send an email to the Local Organizer.

There was a new proposal from Montenegro to organize the *8th MCM and 8th TM* in Podgorica (MT). The Chair proposed to approve it:

- **8th MC and technical meeting**
 - ✓ Podgorica (MT), 1-3 October 2018
 - ✓ Organizer: Milica Pejanovic-Djurisic

The proposal has been approved. The goal was also to approve the dates. Prof. Oestges asked to provide comments via email. If he won't received any reactions, these dates will be fixed.

The Chair noted that he was pleased because the Action received many offers for future meetings:

- **9th MC and technical meeting**
 - ✓ Jan 2019 (week 3 or 4)
 - ✓ Offer from **DCU Dubin (EI)**
- **10th MC and technical meeting**
 - ✓ Spring 2019
 - ✓ Offers from CEA-LETI Grenoble (FR), UGent (BE), U Oulu/Keysight (FI), CTTC Barcelona (ES)
- **11th MC and technical meeting**



- ✓ Fall 2019
- ✓ Offer from Gdansk University (PL)

11. Reports from WG Chairs

The Chair invited all the WG-Chairs to report on activities of each WGs.

- Prof. Katsuyuki Haneda reported about the activities carried out within WG1: Radio channels (**Minutes_WGs_Nicosia, DWG1-meeting-report_Nicosia**).
- Prof. Jan Sykora reported about the activities carried out within DWG2: PHY layer (**Minutes_WGs_Nicosia, DWG2-meeting-report_Nicosia**).
- Dr. Hamed Ahmadi reported about the activities carried out within DWG3: Net layer (**Minutes_WGs_Nicosia, DWG3-meeting-report_Nicosia**).
- Mr. Moray Rumney reported about the activities carried out within EWG-OTA: Over the air testing (**Minutes_WGs_Nicosia, EWG-OTA-meeting-report_Nicosia**).

Prof. Oestges invited to do more activities within the EWG-OTA Working Group, but he also pointed out that funds are extremely limited since OTA requires experimental activities and equipments. Comments on this topic have been considered.

- Prof. Chiara Buratti reported about the activities carried out within the new EWG-IoT: Internet-of-Things (**Minutes_WGs_Nicosia, EWG-IoT-meeting-report_Nicosia**).
- Dr. Kamran Sayrafian reported about the activities carried out within the SEWG-IoT: Internet-of-Things for Health (**Minutes_WGs_Nicosia, EWG-IoT-meeting-report_Nicosia**).
- Prof. Klaus Witrissal reported about the activities carried out within EWG-LT: Localisation and tracking (**Minutes_WGs_Nicosia, EWG-LT-meeting-report_Nicosia**).
- Prof. Claude Oestges reported about the activities carried out within EWG-RA: Radio. There was not a proper EWG-RA Session in Nicosia.

12. Liaisons

The Chair invited to send Liaison reports to the GH Manager, Lucia Vitiello, in the next days.

Prof. Oestges invited the new Institutions to present themselves.

13. AOB

The Chair reminded the upcoming deadlines and action points:



- The dates for Cartagena (ES) meeting are fixed
→ Book your flight and hotel early

Submit

- EuCNC SS/Workshop proposals by Feb 12, 2018
- PIRMC SS/Workshop proposals by March 2, 2018

Action points

| AP | WHAT | WHO | WHOM | WHEN |
|-----|--|-------------------|-------------------------|-----------|
| 7/1 | Submit reimbursement forms | Those entitled to | e-cost | Feb 15 |
| 7/2 | Send Minutes of Group Meetings | Group Chairs | Chair + Secretary | Feb 15 |
| 7/3 | Send STSM Applic. | Those interested | e-cost + Training Chair | Open call |
| 7/4 | Send ITC Conf. Grant Application | ITC ECIs | e-cost + Action Chair | Open call |
| 7/5 | Send list of joint publications/projects | All | Secretary | Feb 15 |



Action points

| AP | WHAT | WHO | WHOM | WHEN |
|-----|--------------------------|---------------------|-------------------|---------|
| 7/6 | Send drafts for D3 et D4 | WG1 & EWG-LT chairs | Chair, Vice-Chair | March 1 |
| 7/7 | Register to 7th MCM | Attendees | Website | May 14 |
| 7/8 | Request TD number | Authors | Website | May 14 |
| 7/9 | Submit TD | Authors | Website | May 21 |

The last reminder has been made:

- Joint publications are publications at least 2 institutions participating in this COST with only 1 constraint i.e. submission date after March 22, 2015.

Prof. Oestges closed the meeting by thanking Dr. Konstantinos Katzis and all his team for hosting the meeting and all attendees for participating.

Dr. Konstantinos Katzis thanked all the participants.



IRACON



List of attachments

List of Annexes

- Annex 1- Agenda
- Annex 2- List of persons entitled for reimbursement
- Annex 3- TDs list Nicosia
- Annex 4- TDs Schedule Nicosia
- Annex 5- Attendance lists Nicosia
- Annex 6- Attendance lists WGs Nicosia
- Annex 7- Attendance list Training Workshop Nicosia

Minutes_WGs_ Nicosia

- DWG1 meeting report Nicosia
- DWG2 meeting report Nicosia
- DWG3 meeting report Nicosia
- EWG-IoT&SEWG-IoT-Health meeting report Nicosia
- EWG-LT meeting report Nicosia
- EWG-OTA meeting report Nicosia