



Lille, May 30 - June 1, 2016

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

Lille, France
30/05/2016

1. Welcome to participants

The participants were welcomed by Prof. Claude Oestges, Chair of the Action. Prof. Oestges chaired all the parts of the meetings, including the election of the ECI Representative.

2. Verification of the presence of two-thirds of the Participating COST Countries or, if applicable, a quorum

The quorum, i.e. two-thirds of the Participating COST Countries, was present: 28 out of 33 countries participating in the Action were represented in the meeting.

3. Adoption of the agenda

The agenda (**Annex 1**) for the *2nd Management Committee and first Technical meeting* was adopted.

4. Approval of minutes and matters arising of last meeting

The minutes of the *1st MC Meeting* were posted on the IRACON website, under the section *Meetings & Events, First MC Meeting of COST Action CA15104, Documents, Agenda*. The minutes have been unanimously approved.

5. Status of Action

Prof. Oestges summarized the goals of the Action and the activities performed so far i.e. the kick-off meeting organised in Brussels (Belgium) on March 22nd, 2016, where the Core Group and the Interim WG chairs were elected, and the signature of the *Grant Agreement* in April, 2016. Further, Non-COST institutions procedures (Chair/Officer) and the Website of the Action were also set in April, 2016. The Chair reported on the status of the Action to the audience. Up to now, the Action is:

- composed of 33 (out of 36) signatory Countries
- represented by 64 MC Members (+ Chair)
- composed by 53 MC Substitutes
- composed by several International Partner Countries/ Institutions:
 - 11 approved (8 activated so far)
 - 1 pending approval (TokyoTech, Japan) → e-approval



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- composed of a number of RIs (Research Infrastructures):
 - more than 30 among the IRACON Partners, all available for joint activities.

The Chair proposed to publish the full list of RIs on IRACON website, under the section *ABOUT, IRACON RIs* (**Annex 2**). The aim is to offer a dynamic list and to work on the list with the WGs. The proposal was unanimously approved.

Then, the Chair gave information about the internal CA15104 rules and organization.

COST Country Institutions

Partners have to provide contributions (TD, tutorial, etc.) at least at one meeting/training school per year. If this requirement is not met, the partner will be removed from the *members area* of website (deregistration).

International Partner Countries/Institutions

The same rules are valid for International Partner Countries/ Institutions, but these partners have to present at least two contributions per year.

The Chair explained to the audience that IRACON will accept applications from NCIs according to COST rules:

- mutual benefit
- scientific excellence (Universities)
- role in industrial context (Industries)
- technical topics and WGs addressed
- geographic balance

Organization

The Chair described how the Action is organized:

- **7 WGs**
 - 3 Disciplinary WGs
 - 4 Experimental WGs

In order to animate the discussion and create diversity, each WG is coordinated by two co-Chairs.

- **Sub-WGs**

The possibility to create sub-WGs (flexibility) is mentioned, but only with a critical mass and a sufficient interest in order to justify session slots.

Implementation of COST policies

Prof. Oestges explained to the audience the COST policies, approved at the KO meeting, on Inclusiveness, Gender balance and Early Career Investigators (ECI):

- **Inclusiveness target countries**
 - Preferred countries for MC meetings and training schools
 - «Bonus» in STSM evaluation (additional criterion), all things being equal
 - Priority in TS grants



- **Gender balance**
 - Promoting better balance in WG chairs
 - «Bonus» in STSM evaluation (additional criterion), all things being equal
 - Priority in TS grants

- **Early Career Investigators**
 - Main targets of STMS grants
 - Represented in the core group (annual rolling representation)

The Chair also explained the organization of the Steering Committee (Core Group + WG Chairs).

Prof. Narcis Cardona, Vice-Chair of the Action, presented the Core Group, its organization and role. In order to maintain alive the Action, he also asked the audience to don't forget to use IRACON as a label for tutorials/special sessions/ etc.

Prof. Luis Correia, Dissemination Manager of the Action, intervened to answer a question about Special Sessions. He invited those who are interested to organize a Special Session to contact him via email.

6. Report from the Grant Holder

The Grant Holder responsible, Prof. Roberto Verdone, explained the goals and, line by line, the budget of the First Grant Period reported in the *Grant Agreement* and the *Work and Budget Plan* submitted to COST Office and approved during the kick-off meeting. The Grant initially assigned to the Action, approved at the KO meeting, was presented:

| Networking Tool | Description | Budget |
|---|-----------------------------|-----------------------|
| Meetings | 2 MCMs, 1 TM, 1 workshop | 97 910.00 EUR |
| Training Schools | 1 TS | 12 500.00 EUR |
| STSMs | 6 STSMs | 7 200.00 EUR |
| Dissemination | 1 (website set-up) | 4 500.00 EUR |
| Other Expenses Related to Scientific Activities | Bank fees | 500.00 EUR |
| Total Science Expenditure | | 122 610.00 EUR |
| FSAC | 15 % | 18 390.00 EUR |
| Total Grant | | 141 000.00 EUR |



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Prof. Verdone showed how the budget is split in two parts:

- Networking tool
- Total Science Expenditure

Prof. Verdone reminded that, based on good motivations, it will be possible to change the split between items during the future MCMs.

The Grant Holder explained that the Action needs to have a separate institution (any institutions, but CNIT) to manage the local services during the meetings. For the *2nd MCM and first Technical meeting* in Lille, EURACON offered the service for free. The financial balance will be presented at the next meeting. Any meeting can be organized by EURACON or by any individual Institution, but the financial balance will have to be presented at the next MC meeting.

Website

Prof. Verdone reported on the status of the IRACON website. The budget was set up to a maximum of 4.500 EUR. The Grant Holder responsible contacted 3 different companies to find the best deals by comparing a variety of offers (quality/price ratio). The agreement was done with the *Differens s.r.l.* that offered:

- 1st release by May 5
- 2nd release by May 27
- final release by July 31.

All the website contents will be provided by the Secretary, Lucia Vitiello, and a posteriori checked by The Grant Holder. Comments/ suggestions/ preferences from IRACON members will be requested via email and will be more than welcome.

7. Reimbursement issues and rules

The Chair showed the *Reimbursement issues and rules*. He explained the current COST Action rules related to travel reimbursement of meetings participants, the Action internal rules to be approved during the MCM and the priority list that will be used for the MCMs and the Technical meetings.

The following rules and priority lists were unanimously approved:

Internal rule for MC Meetings reimbursement

- Up to two MC members per COST Country
- MC members can be replaced by officially nominated MC substitute, if the Chair and GH receive request by given deadline
- Priority for MC meetings (for Lille meeting, only priority 1)
 1. All MC members who apply, or MC official substitutes, Action Chair, Secretary, invited speakers and ECI representative
 2. WG/EWG/SWG Chairs (while budget is available)
 3. Non-MC members, presenting a TD, when replacing an MC member (while budget is available)
 4. Other experts, one per country (while budget is available)



Internal rule for Technical Meetings

- Priority for technical meetings
 1. Action Chair, invited speakers
 2. WG/EWG/SWG Chairs (while budget is available) in combination with COST policy priorities (inclusiveness/gender)
 3. Core Group members, Secretary (while budget is available)

Prof. Oestges showed the reimbursements data of this meeting:

- 47 MC entitled + 3 invited speakers + Chair + Secretary = 52 people
- Budget available as per WBP: 43,250 EUR
- Expected expense for reimbursements (priority 1): $52 \times 800 = 41,600$ EUR

(**Annex 3**, list of persons entitled for reimbursement of the *2nd MCM and first Technical Meeting*).

There were two proposals from the audience.

1. In order to increase the probability to reimburse the WG co-Chairs, it was suggested not to reimburse the invited speakers. It is an Action Point to be discussed.
2. It was suggested to create a "Best paper support" for each meeting. This proposal was rejected as the time to collect the TDs and send the e-COST invitations are not compatible with the possibility to elect the best paper randomly

The Chair explained the travel reimbursements procedure. The OTRRs should be submitted on eCOST. For archiving/ audit purposes, the MC Members were requested to sign the attendance list each day, to send their travel reimbursement requests on e-COST by July 1st, 2016 and to send the travel copies with their signed reimbursement form in PDF to Lucia Vitiello, GH Manager/Administrator of the Action.

8. Election of WGs Chairs and ECI Representative

The Chair explained the meaning and the procedure for the election of the WGs Chairs and the ECI Representative. Before the meeting, an email was sent by the Chair asking for spontaneous candidacies. No other than those shown below were received, neither any was mentioned from the audience.

Working Group Chairs

- WG chairs will be proposed by each WG at the 2nd MCM (first scientific meeting) and elected by the MC at the end of the meeting
- Team of two co-chairs (one at least being MC member or substitute)
- Election of 7 WG chairs: candidacies received so far
 1. WG-1 (radio channels): Sana Salous and Katsuyuki Haneda



2. WG-2 (PHY-MAC): Hanna Bogucka and Jan Sykora
3. WG-3 (NET): Silvia Ruiz, Yan Zhang and Lucio Studer
4. WG-OTA: Wim Kotterman
5. WG-IoT: Erik Ström and Chiara Buratti
6. WG-LT: Carles Anton and Klaus Witrisal
7. WG-RA: Florian Kaltenberger and Mark Beach

ECI Representative

- What is an ECI?

Early Career Investigator, PhD + 8 years maximum

- Role of ECI representative in the core group (one-year mandate)
 - Participation to core group discussions
 - Preparation of meetings (pre-meeting, etc.)
 - Newsletter editor
 - Elected by the ECIs
 - The Core Group have received two ECI candidacies so far
 1. Margot Deruyck (BE)
 2. Valeria Petrini (IT)

ECI Representative election

The Chair asked for other spontaneous candidacies. Ristov Sasko (fYR Macedonia) also run for role.

Then, the Chair asked everyone, except for ECIs and the Action Secretary, to leave the room for the votation. It was first decided 13 votes in favor and 9 against to hold the vote by raising hands. After their presentations and some questions, the candidates were asked to leave the room for the election.

Margot Deruyck obtained 15 votes, Valeria Petrini 6 votes and Ristov Sasko 1 vote. Margot Deruyck was elected as ECI Representative for the first year of the Action.

Election of WGs

The elections of WGs co-Chairs were handled during each WG session. Listed below are the elections results:

WG-1 (Radio channels)

- Sana Salous, Durham University, United Kingdom
- Katsuyuki Haneda, Aalto University, Finland

WG-2 (PHY-MAC)

- Hanna Bogucka, Poznan University of Technology, Poland
- Jan Sykora, Czech Technical University in Prague, Czech Republic

WG-3 (NET)

- Silvia Ruiz Boqué, Universitat Politècnica de Catalunya, Spain
- Hamed Ahmadi, University College Dublin, Ireland

WG-OTA



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- Wim Kotterman, TU Ilmenau, Germany
- Moray Rumney, Keysight Technologies, United Kingdom

WG-IoT

- Erik Ström, Chalmers Univ. of Technology, Sweden
- Chiara Buratti, University of Bologna, Italy

WG-LT

- Carles Anton-Haro, Centre Tecnològic de Telecomunicacions de Catalunya, Spain
- Klaus Witrisal, Graz University of Technology, Austria

WG-RA

- Florian Kaltenberger, EURECOM, France
- Mark Beach, University of Bristol, United Kingdom

9. Report from Dissemination Manager

The Dissemination Manager, Prof. Luis M. Correia, explained the means of *dissemination* in COST Action and reported about the dissemination strategy proposed for IRACON, as reported below:

- Organisation of Training Schools, with IRACON lecturers, which are open to the community at large
- Joint organisation of Training Schools, with lecturers from IRACON and from other Actions and H2020 R&D projects, open to the scientific community at large
- Establishment of strategic liaisons and joint activities (e.g., joint meetings and workshops) with other COST Actions and H2020 R&D projects in this area
- Joint publications with COST CA15104 IRACON acknowledgment
- Organisation of topic specific Special Sessions and Workshops in conferences, namely EuCNC, but extending to key IEEE ones (ICC, GLOBECOM, PIMRC, WCNC), as well as EuCAP and URSI GA
- Presentation of IRACON in EC Coordination Meetings, reaching projects in the same area
- Active participation in COST supervised and organised activities and events
- Issue of an Action Leaflet, by the beginning of activity, explaining the key aspects of IRACON, to be distributed to stakeholders
- Social media presence (facebook, linkedin, IRACON blog)
- Quarterly Newsletter, with key news from IRACON, addressing major technical and scientific developments, and announcing future activities and events
- Steering committee meeting (highlights: TD, picture) on Tuesday at 6 pm SHARP in Amphi PASCAL
- White Papers, with the views of IRACON on the future development and research challenges in wireless communications, focusing on its specific areas

Prof. Luis Correia highlighted the importance of using the IRACON community to organize consortia, develop models and methods, foster the condition to submit



contributions on models and methods to standardisation bodies. Then, he showed the Dissemination Plan of the action with the list of Action Points to be reached:

| Project Year | | | 1 | | | 2 | | | 3 | | | 4 | | |
|----------------------|-------|-----|------|------|------|------|------|------|------|------|------|-------|-------|-------|
| Project Quadrimester | | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
| WG / Task | Start | End | | | | | | | | | | | | |
| Dissemination | 1 | 12 | | | | | | | | | | | | |
| White Paper | 1 | 9 | | | | | WP.1 | | | WP.2 | | | | |
| Recomm. & Stds | 10 | 12 | | | | | | | | | | | | RS |
| STSMs | 3 | 12 | | | | | | | | | | | | |
| Contact Research. | 1 | 9 | | | | | | | | | | | | |
| List Grad Sch. | 1 | 3 | | | | | | | | | | | | |
| Joint Meetings | 1 | 12 | | | JM.1 | | | JM.2 | | | JM.3 | | | JM.4 |
| Sp. Sess. & Works. | 1 | 12 | | SW.1 | | | SW.2 | | | SW.3 | | | SW.4 | |
| Coord. Meetings | 1 | 12 | | | CM.1 | | | CM.2 | | | CM.3 | | | CM.4 |
| Newsletter | 1 | 12 | NL.1 | NL.2 | NL.3 | NL.4 | NL.5 | NL.6 | NL.7 | NL.8 | NL.9 | NL.10 | NL.11 | NL.12 |
| Book | 8 | 12 | | | | | | | | B.1 | | B.2 | B.3 | B.4 |

10. Invited talks

Three keynote speakers and one invited paper were presented to the Plenary:

- On Monday May 30: Massive MIMO
 - **Algorithmic aspects of Massive MIMO**
Maxime Guillaud, Huawei Technologies, France Research Center
 - **Experimental aspects of Massive MIMO**
Ben Lavasani, National Instruments Europe
- On Tuesday May 31: EU research and COST
 - **European research towards 5G and beyond: Policy, Research and funding opportunities**
Rémy Bayou, DG Connect, European Commission
 - **IC1004 White Paper on Channel Measurements and Modeling for 5G Networks in the Frequency Bands above 6 GHz**
Sana Salous, Durham University, UK

The Vice-Chair, Prof. Narcis Cardona, presented Prof. Sana Salous and the IC1004 White Paper on *Channel Measurements and Modeling for 5G Networks in the Frequency Bands above 6 GHz* during the plenary on May 31, 2016. More than 1.000 downloads were done in the first 3 weeks on the main page of the COST Action.

Prof. Cardona also announced that the electronic version of the Final Book is now ready for download from IC1004 website and the paper version will be available in a few days. The access online is free to everyone and 220 copies will be distributed. The Vice-Chair announced the presentation of the White Paper during the Special Session 3 at EuCNC 2016, asked by the COST Officer. Finally, the paper will be linked for download on www.iracon.org under the *NEWS* bar.

The PDFs of the all the presentations are available online at <http://www.iracon.org/meeting/iracon-2nd-mc-meeting-and-first-technical-meeting/>



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11. Presentation and Discussion of Technical Documents

80 TDs were presented. They were be discussed by the Working Groups during the three days of the meeting. The Chair listed the subjects to deal during each WG session, then he showed the schedule of the meeting. He reminded that the schedule and the full TDs are available on the FTP site of the *MEMBERS AREA*, for members only, at www.iracon.org (**Annex 4**).

The printed version of the schedule was also available at the front desk during the meeting.

Lille, France
31/05/2016

12. Report from Training Chair (STSMs, Training Schools and Tutorials)

Prof. Laurent Clavier, Training and STSM manager, presented the goals of the STSMs, Training Schools and Tutorials. The Action aims to organise at least one Training School per Grant Period, possibly one per WG group and located in Inclusive Countries.

Training Schools

The Training and STSM manager received a proposal from Prof. Narcis Cardona and Prof. Kimmo Kansanen in the area of Body-centric propagation on November or December 2016, in Valencia (Spain). Prof. Clavier reminded that all the proposals were more than welcome.

STSMs

Prof. Clavier explained to the audience the goals of STSMs and the evaluation criteria. The aim of a STSMs, as defined by *COST Vademecum*, is to contribute to the scientific objectives of a COST Action. These Missions aim at strengthening the existing COST Actions by allowing scientists to go to an institution or laboratory in another COST Country to foster collaboration, to learn a new technique or to take measurements using instruments and/ or methods not available in their own institution/ laboratory. They are particularly intended for young scientists (ECIs).

The applications are open and should be submitted according the procedure and the budget through the eCOST tool at <http://www.cost.eu/STSM>. The applications will be evaluated by 3 people from the Steering Committee based on the cv, Wokplan & Schedule, expected outcome and scientific networking. More information will be available at <http://www.iracon.org/stsm/>.

Prof. Clavier reported on the status of the STSMs: 3 proposals were received so far. Two STSMs were rejected (but a revised proposal can be re-evaluated later) as the budget plans did not fall in the objectives of the Action and the committee were expected shorter missions with a focused scope. One STSM was approved:



Applicant: Prof. Davy Gaillot, IEMN, Villeneuve d'Ascq (FR)

Topic: Characterization and Modeling of the MIMO Radio channel in the W-band

Host: Jose María Molina-Garcia-Pardo, SiCoMo Group, Universidad Politécnica de Cartagena (SP)

Amount: 850€

Lille, France
01/06/2016

13. Future MCMs and Workshops

The Chair reported on the schedule and the proposals received for the next meetings:

- **2nd technical meeting**
 - Durham, UK, Oct. 4-6 2016
 - Organizer: Sana Salous
 - The meeting will be preceded by an *IET Workshop on mm-wave antennas and propagation* on Oct. 3 and it will be a part of the IRACON meeting.
- **3rd MC meeting and technical meeting**
 - Lisbon, PT, Feb. 1-3 2017 (+ tutorial on Jan 31)
 - Organizer: Luis Correia
- **4th (MC meeting and ?) technical meeting**
 - Spring 2017
 - Proposal from Lund University (SE) + experimental tutorial offered
- **5th technical meeting**
 - Sept. 2017
 - Proposals from TU Vienna (AT), TU Graz (AT) and Uni. Catania (IT)
- **6th MC meeting and 6th technical meeting**
 - Jan.-Feb. 2018
 - Proposal from European University Cyprus (CY)
- **Future meetings**
 - Spring 20xx: proposal from Aalborg University (DK)

Workshops

The Chair reported on the status of the Workshops proposals:

- IET Workshop on mm-wave antennas and propagation on Oct. 3, 2016, Organizer: Sana Salous
- Proposal for a joint workshop with H2020 SANSA project in 2017, co-located with one of our meeting
- Proposal from TU Graz for a workshop on localization and IoT



14. Report from Working Group Chairs

The WG co-Chairs were asked to report on the activities of each WGs.

- Prof. Sana Salous reported about the activities carried out within WG1: Radio channels (Minutes_WGs_Lille, **WG1-meeting-report_Lille**).

- Dr. Silvia Ruiz Boqué reported about the activities carried out within DWG3: Net layer (Minutes_WGs_Lille, **WG3-meeting-report_Lille**).

- Prof. Jan Sykora reported about the activities carried out within DWG2: PHY layer (Minutes_WGs_Lille, **WG2-meeting-report_Lille**).

- Dr. Wim Kotterman reported about the activities carried out within EWG-OTA: Over the air testing (Minutes_WGs_Lille, **EWG-OTA-meeting-report_Lille**).

- Dr. Chiara Buratti reported about the activities carried out within EWG-IoT: Internet of things (Minutes_WGs_Lille, **EWG-IoT-meeting-report_Lille**).

- Dr. Carles Antón-Haro and Prof. Klaus Witrisal reported about the activities carried out within EWG-LT: Localisation and tracking (Minutes_WGs_Lille, **EWG-LOC-meeting-report_Lille**, **EWG-LOC-meeting-report_Lille.xlsx**).

- Prof. Mark Beach reported about the activities carried out within EWG-RA: Radio Access (Minutes_WGs_Lille, **EWG-RA-meeting-slides_Lille**).

During the meeting were collected the WGs attendance lists (**Annex 5**).

15. Liaisons with International Bodies and Projects

The following liaisons have been established so far:

- **3GPP** – Aki Hekkala
- **URSI** – Sana Salous
- **ITU-R** – Sana Salous and Belen Montenegro
- **H2020 METIS-II** – Narcis Cardona
- **H2020 mmMAGIC** – Mark Beach
- **H2020 5G crosshaul** – Mark Beach
- **IEEE 1900.6** – Kostas Katzis
- **EurAAP** – Claude Oestges
- **EURACON** – Roberto Verdone

The liaison rapporteur were asked to send 4/5 lines on the status of their projects to the Secreatry after the meeting (**Liaisons-report_Lille**).

16. AOB

Prof. Sana Salous presented the next meeting on Oct. 4-6, 2016 in Durham (UK). She also presented the Workshop on *RADIO PROPAGATION AND TECHNOLOGIES FOR 5G*, that will be held on Oct. 3, 2016 in Durham (UK), under the organisation of



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the *Antennas & Propagation* TPN. This Workshop will precede the *CA15104 IRACON 2nd Technical meeting* and it will be a part of the IRACON meeting (**Annex 6**).

Reflectors

The Chair reported on the status of the Action reflectors. A temporary reflector is on for this meeting, but proper reflectors will be ready by July 1, 2016.

Prof. Oestges also asked the participants not to use the global reflector to advertise events outside those of the Action itself and he warned the audience that it will be moderated. He suggested to ask the Secretary, Lucia Vitiello (lucia.vitiello[at]unibo.it), to include announcements at <http://www.iracon.org/news/>.

The new reflectors will include all the people registered on IRACON Website. The Chair announced that the Blog and the Social Medias (FB, Twitter, Linkdin, Youtube) will be ready by the end of June and they will be available at www.iracon.org.

The Steering Committee members will be authorized to write posts on the Blog. In order to review each post before it appears online, at least one moderator will have to approve posts.

The Action Points to be performed after the end of the *IRACON 2nd MC meeting and first technical meeting* were reminded to the audience.

Prof. Claude Oestges closed the meeting by thanking Prof. Laurent Clavier for hosting the meeting in Lille and all attendees for their participation.

List of attachments

List of Annexes

- Annex 1- Agenda
- Annex 2- IRACON Ris
- Annex 3- List of persons entitled for reimbursement
- Annex 4- TDs list & Schedule, Lille
- Annex 5- Attendance lists-WGs, Lille
- Annex 6- Next Meeting presentation

Liaisons report_Lille

Liaisons-report

Minutes WGs_Lille

- EWG-IoT-meeting-report_Lille
- EWG-LT
- EWG-LOC-meeting-report_Lille
- EWG-LOC-meeting-report_Lille.xlsx
- EWG-OTA-meeting-report_Lille
- EWG-RA-meeting-slides_Lille
- WG1-meeting-report_Lille
- WG2-meeting-report_Lille
- WG3-meeting-report_Lille