Welcome to participants

Prof. Claude Oestges, Chair of the Action, opened the meeting on May 27th, 2019, at 10.00 am. The participants were welcomed by the Local Organizer, Prof. Pekka Kyösti, University of Oulu. Information about the local arrangements were provided to the audience.

The Chair acknowledged the fulfilment of the quorum, i.e. at least two thirds of the COST countries participating in the Action are represented at the 10th MCM.

1. Invited speakers

The first part of the meeting was dedicated to the Keynote Sessions. Four speakers coming from as many Finnish companies were introduced by Prof. Pekka and gave the following presentations:

Keynote 0: Matti Latva-aho (Centre for Wireless Communications Oulu, Director of 6G Flagship program), on: Challenges for 6G

Keynote 1: Janne Kolu (Keysight Technologies)

Keynote 2: Olli Liinamaa (Nokia), on: 5G for Business-Critical Industry - Practical Experiments

Keynote 3: Kimmo Hyrynkangas (Verkotan), on: The future of Big Antenna Testing

2. Adoption of agenda

After the keynote sessions, the Chair presented the agenda of the 10th MCM, which had been previously circulated online. The Agenda was adopted without modifications.

The Chair took the opportunity to remind all participants to sign the official COST Attendance List for every day of attendance and to sign only once the attendance list of every WG/EWG session attended. No reimbursement of travel expenses (for those entitled to) will be processed if the attendance lists are not duly signed.

Finally, the attendees were informed that the Newsletter Meeting, involving the
Members of the steering committee, will take place on Tuesday at 6:00 pm in the plenary room.

3. Approval of minutes and matters arising from last meeting (MCM9 - Dublin, Ireland)

With no further comments from the attendees, the minutes of the 9th MC Meeting, previously circulated online, were officially approved.

4. Status of the Action

The Chair moved on to update the audience on the overall status of the Action. Since the last meeting in Dublin, no new Partners have become part of IRACON. The University of Canterbury from New Zealand had been previously approved as Partner, but they have never participated in the Action’s event, therefore their participation is still to be finalised.

Here below the main figures presented:

**Partners**

- Number of signatory countries: 35 (out of 36)
- Number of MC Members: 66 (+ Chair)
- Near Neighbour Country Institutions: 4 approved

<table>
<thead>
<tr>
<th>National Research Tomsk Polytechnic University</th>
<th>Russian Federation</th>
</tr>
</thead>
<tbody>
<tr>
<td>YK State University of Grodno</td>
<td>Belarus</td>
</tr>
<tr>
<td>RUDN University</td>
<td>Russian Federation</td>
</tr>
<tr>
<td>University of Prishtina</td>
<td>Kosovo</td>
</tr>
</tbody>
</table>

- International Partner Country Institutions: **13** approved and activated, **1** conditionally approved:

| Beijing Jiaotong University                      | China                   |
| Tokyo Institute of Technology                    | Japan                   |
| Comsearch                                         | United States of America|
| NIST                                              | United States of America|
| Samsung Electronics Co.                           | Korea, Republic of      |
| Japan Advanced Institute of Science and Technology| Japan                   |
| Motorola Mobility LLC                            | United States of America|
| Universidad Icesi                                 | Colombia                |
| Niigata University                                | Japan                   |
| Northeastern University                           | United States of America|
| CSIR                                              | South Africa            |
| Huawei Device Company                             | China                   |
| ETS                                               | Canada                  |
| University of Canterbury                         | New Zealand             |
Important Reminders: Deadlines and Procedures

The Chair went on to remind the participants about some important procedures and internal rules of the Action, such as: TD submission, meeting registration, reimbursements, and acknowledgments.

- **TD submission**
  - The Chair reminded everyone to request TD numbers and submit TDs **on time**!
  - Request a TD number (usually **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

  *It's important to meet the deadlines, as these are set to enable the StC to prepare the meeting schedule.*

  Indeed, some late TD requests were rejected because there was no more time to prepare the allocation.

- **Meeting registration**: two actions are required
  - Register on IRACON website (**20 days** before the meeting)
  - Accept the e-cost invitation

- **Reimbursement** (for those entitled to)
  - Accept the e-cost invitation (before the meeting)
  - Fill the e-cost and submit the claim (after the meeting)
Reimbursement claims must be submitted on time, the risk being that everyone’s reimbursement process is slowed down.

The reimbursement procedure MUST take place on the e-COST.

Those entitled to a reimbursement should always keep their original supporting documents (tickets, receipts, invoices), even after uploading the claim on the e-COST.

If you cannot attend and wish to be 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.

**Important Reminders: e-Mailing and Acknowledgment**

- **Usage of global reflector**
  
  ✓ The global reflector ([all_ca15104@iracon.org](mailto:all_ca15104@iracon.org), moderated) should not be used to advertise events (outside those of the Action itself)

  ✓ If you need to circulate a message among the IRACON members, the correct procedure is to ask Alice ([a.baldini@unibo.it](mailto:a.baldini@unibo.it)) to include your announcement on the IRACON website, in the “News” section

- Furthermore, WG reflectors have been created to circulate messages that are specifically related to WG issues

- **COST CA15104 IRACON should be acknowledged on all joint publications, as follows:**

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

  ✓ *The authors acknowledge the fruitful discussions in COST Action CA15104 IRACON*

The Chair highlighted that it is very important to acknowledge the Action, because it is one of the few metrics to show that the Action is doing well.

After reviewing the main procedures, the Chair briefly summarised the most recent events that took place within the Action, namely:

**January 2019**

9th MCM (Dublin, 16-18 Jan 2019)
Organized by Conor Brennan
90 TDs (including 4 workshop contributions)
3 invited speakers
131 (!) participants

**February 2019**

COST Academy - Storytelling: spotting and writing a good story. Getting people to listen (Brussels, 19-20 February 2019)
IRACON represented by Luis Correia, who briefly reported on the event
March 2019
COST Connect event on "Data sharing" (Brussels, 13-14 March 2019)
IRACON represented by Margot Deruyck, who briefly reported on the event

ECI Representative
The 10th MCM was the first meeting of the fourth and last Grant Period of the Action. Thus a new ECI Representative had to be elected for the period 2019/2020.
The Chair reminded everyone what exactly is the definition of ECI, i.e.:
Early Career Investigator, maximum 8 years after the PhD (no PhD degree or PhD degree after June 1, 2011)
The role of the ECI representative in the Core Group is to participate in the core group discussions and to prepare the MC meetings Newsletter, as editor and blog moderator. The ECI representatives of the previous year were:

✓ Margot Deruyck (BE), elected for Y1
✓ Luca Feltrin (IT), elected for Y2
✓ Conchi Garcia Pardo (ES), elected for Y3

Two applications were received for Y4:
✓ Piotr Rajchowski
✓ Nuno Leonor

Piotr Rajchowski presented himself to the audience, whereas Nuno Leonor, who could not be physically in Oulu for the 10th MCM, sent a video-presentation of himself and his career. The video was circulated via email and all the ECI attending the meeting were invited to watch the video before the election, scheduled for Monday at 3:45 pm in the plenary room, Saalastinsali.
5. Review of action deliverables

The Chair updated the participants on 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

- **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

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

- **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** (M50, May 2020): Working Group final report summarising the achievements of every WG in the overall Action (draft book)
  - all WGs

Prof. Oestges focused particularly on the timeline of Deliverables 7, to be submitted by June 30, 2019.

**Deliverable 7 timeline**

**Edition**
- ✔ WG chairs are the contributors
- ✔ Chair and Vice-Chair are the editors

**Content**
- ✔ 1 page per WG/meeting
- ✔ Scientific results and dissemination activities (no equations!)
- ✔ Will be published on IRACON website
Schedule
✓ Draft version by March 31, 2019 → postponed to June 15, 2019
✓ Delivery by June 30, 2019

6. Final Book

Afterwards, the Chair provided an update on the preparation of the Action’s final book, which is intended as a report on the TDs presented throughout the 4 years.

He stressed that there are still missing parts in the first draft of the book and that Chapter 5 is entirely missing. Therefore everyone is invited to send their contribution and to make sure that the book is delivered on time.

Prof. Sykora, referent for chapter 5, took the opportunity to solicit the editors to send their contributions at the earliest, in order for him to complete the chapter.

Additionally, Prof. Ahmadi stated that they need a professional book editor, such as OVERLEAF (www.overleaf.com) to keep track of who made changes and when. The next step should be to check with COST if this can be reimbursed (€20/month for about 5 months).

Timeline

The timeline for the book preparation is as follows:

- During Cartagena meeting, each WG discusses about a list of sections
- After Cartagena meeting, the WG chairs finalize the discussion and propose the list of sections to the Chair
- Integration of all sections into a set of coherent chapters by the BEC
- The ToC is frozen at Podgorica meeting (40 pages per chapter)
- Chapter and section editors are identified at Podgorica meeting
- IRACON Chair must search for publisher between MCM8 and MCM9
- The first draft of the book is ready by April-May 2019

The Book Editors are:

- Claude Oestges and François Quitin
Prof. Oestges reviewed the Table of Contents:

1. Introduction

2. Radio propagation modelling methods and tools
   2.1 5G and beyond propagation environments
   2.2 Channel model classification
   2.3 Algorithms for estimation of radio channel parameters

3. IRACON measurements and channels for 5G and beyond communications
   3.1 Measurement scenarios
   3.2 Millimetre wave and THz channels
   3.3 MIMO and massive MIMO channels
   3.4 Fast time-varying channels
   3.5 Electric properties of materials for 5G channel simulators

4. Over-the-Air testing for 5G
   4.1 Field emulation for electrically large test objects
   4.2 Emulation of millimetre wave channels
   4.3 Emulation techniques for testing hardware internals

5. Coding and processing for advanced wireless networks
   5.1 Advanced waveforms, coding and signal processing
   5.2 Distributed and cooperative PHY processing in wireless networks
   5.3 Massive MIMO
   5.4 Implementation and HW driven solutions and full duplex communications

6. 5G and beyond networks
   6.1 Wireless connectivity
   6.2 Spectrum management and sharing
   6.3 Scheduling and RRM
   6.4 5G radio access platforms
   6.5 HetNet and UDN
   6.6 CRAN
   6.7 SDN and NFV
   6.8 UAVs
   6.9 Application domains and solutions

7. IoT protocols, architectures and applications
   7.1 Low power Wide Area Networks
   7.2 Routing and MAC protocols for IoT
   7.3 Vehicular communications
   7.4 Energy efficient/constrained solutions for IoT
   7.5 Software Defined Networking and Virtualization for IoT
   7.6 Special applications of IoT

8. IoT for healthcare applications
   8.1 Nano-communications
   8.2 Wearable and implantable IoT-Health Technology
   8.3 IoT-Health Networking and Applications
7. Report from the Grant Holder

On behalf of the Grant Holder – Prof. Roberto Verdone – the Chair showed the Work and Budget Plan for Year 3, including the top-up that had been previously granted by COST:

<table>
<thead>
<tr>
<th>Networking Tool</th>
<th>Quantity/Description</th>
<th>Budget</th>
</tr>
</thead>
<tbody>
<tr>
<td>Meetings</td>
<td>3 MCMs</td>
<td>127,676.82 EUR</td>
</tr>
<tr>
<td>Training Schools</td>
<td>3 TSs</td>
<td>48,631.50 EUR</td>
</tr>
<tr>
<td>STSMs</td>
<td>2 STSMs</td>
<td>14,400.00 EUR</td>
</tr>
<tr>
<td>ITC Conference Grants</td>
<td>4 conference grants</td>
<td>4,600.00 EUR</td>
</tr>
<tr>
<td>Other Expenses Related to Scientific Activities</td>
<td>Bank fees</td>
<td>979.50 EUR</td>
</tr>
</tbody>
</table>

**Total Science Expenditure** 196,284.82 EUR

| Financial and Scientific Administration and Coordination (MAX. 15%) | 15 % | 29,442.72 EUR |

**Total Grant** 225,727.54 EUR

He then presented the Status of expenditures at the end of the Action’s 3rd Grant Period:

<table>
<thead>
<tr>
<th>Steps</th>
<th>Budget</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Grant</td>
<td>225,727.54 €</td>
</tr>
<tr>
<td>1st instalment received (Aug’18) → 50% pre top-up</td>
<td>98,489.74 €</td>
</tr>
<tr>
<td>2nd instalment received (Feb’19) → 35% after top-up + difference</td>
<td>93,378.67 €</td>
</tr>
<tr>
<td>3rd instalment (approx.) → to be received after FFR</td>
<td>30,047.16 €</td>
</tr>
<tr>
<td>Meetings (4)</td>
<td>130,945.06 €</td>
</tr>
<tr>
<td>Training Schools (3)</td>
<td>43,371.57 €</td>
</tr>
<tr>
<td>STSMs (11)</td>
<td>13,695.00 €</td>
</tr>
<tr>
<td>ITC Conference Grants (4)</td>
<td>3,185.00 €</td>
</tr>
<tr>
<td>Bank fees / QERSA (approx.)</td>
<td>1,773.43 €</td>
</tr>
<tr>
<td>Total spent</td>
<td>192,970.06 €</td>
</tr>
<tr>
<td>FSAC - Financial and Scientific Admin. and Coordination (approx.)</td>
<td>28,945.51 €</td>
</tr>
<tr>
<td>Grand total</td>
<td>221,915.57 €</td>
</tr>
<tr>
<td>Percentage of budget spent</td>
<td>98.5%</td>
</tr>
</tbody>
</table>
Finally, he presented the **Approved Work and Budget Plan for Year 4**. In this regard, he underlined that the budget for GP4 is significantly lower than that of GP3, therefore some difficult choices in the allocation of funds had to be made.

<table>
<thead>
<tr>
<th>Networking Tool</th>
<th>Description</th>
<th>Budget</th>
</tr>
</thead>
<tbody>
<tr>
<td>Meetings</td>
<td>3 MCMs</td>
<td>111 550.00 EUR</td>
</tr>
<tr>
<td>Training Schools</td>
<td>3 TSs</td>
<td>19 000.00 EUR</td>
</tr>
<tr>
<td>STSMs</td>
<td>5 STSMs</td>
<td>6 000.00 EUR</td>
</tr>
<tr>
<td>ITC Conference Grants</td>
<td>2 Conference grants</td>
<td>600.00 EUR</td>
</tr>
<tr>
<td>Other Expenses Related to Scientific Activities</td>
<td>Bank fees</td>
<td>1546.00 EUR</td>
</tr>
<tr>
<td><strong>Total Science Expenditure</strong></td>
<td></td>
<td><strong>138 696.00 EUR</strong></td>
</tr>
<tr>
<td>Financial and Scientific Administration and Coordination (MAX. 15%)</td>
<td>15 %</td>
<td>20 804.40 EUR</td>
</tr>
<tr>
<td><strong>Total Grant</strong></td>
<td></td>
<td><strong>159 500.40 EUR</strong></td>
</tr>
</tbody>
</table>

It was also suggested to use part of the surplus saved by EURACON while collecting the contribution to the various IRACON events, to increase the budget for the Action’s book.
8. Report from Training Manager (STSMs, Training Schools and Tutorials)

The Training Manager, Prof. Laurent Clavier, reviewed all the Training Schools that have taken place during the Action:

2017/2018
- 4- IRACON/Met5G Training School on interference in 5G – April 16-17, 2018 Guildford, Surrey, UK.
- 3- VTS PT Chapter/COST-IRACON Joint Winter School on Beyond 5G Networks operating in the Millimetre Wavebands enabled by Joint Analogue-digital Signal Processing – March 5-9, 2018 Lisbon, Portugal
- 2- ESoA/COST-IRACON Joint Training School on Large Scale Radio Propagation – June 12-16, 2017 Louvain-La-Neuve, Belgium

2016/2017
- 1- WIBEC/COST-IRACON Joint Training School on Antennas and Propagation Modeling for Body Environment Communications – May 1-3, 2017 Dresden, Germany

He focused particularly on the last 3 Training Schools, all very successful, which took place during Grant Period 3 (2018/2019), namely:

- 7- Training School on Machine Learning and Wireless Communication – 8-11 Apr. 2019 - Barcelona, CTTC.
   20 Grants. 80+ attendees (Limited due to logistic reasons)
   16 Grant (29 requests) – 45 attendees
   16 grants – 40 attendees (Space limitations due to practical works)

Prof. Clavier took the opportunity to remind the attendees that the Trainees’ Grants offered by COST are allocated on a first arrived first served basis, with a limitation to one per institution, if necessary.

He finally presented the planned and the proposed Training Schools for GP4:
PLANNED

COST CA15104 (IRACON) Training School:
Network Models, Architectures and Applications for 5G
7 – 11 October 2019
RUDN University, Moscow, Russia

Scope  Global view in key features of the emerging 5G technologies from the networking perspective
• models,
• architectures and
• applications.

Lectures will give background on 5G wireless communications networks concepts, ranging from the more fundamental ones related to concepts and mathematical modelling to experimental and applied ones connected to the incoming standardisation features.

Speakers

Andres Gonzalez, Telenor, NO  Luis M. Correia, IST-U. Lisbon, PT
Antonio Orsino, Ericsson, FI  Paul Sutton, SRS, ES
Carles Anton, CTTC, ES  Roberto Verdone, U. Bologna, IT
David Calligaris, Huawei, DE  Silvia Ruiz, UPC, ES
Hamed Ahmadi, U. Essex, UK  Yuliya Gaidamaka, RUDN, RU
Konstantin Samouylov, RUDN, RU

Organisers

Hamed Ahmadi, U. Essex, UK  Luis M. Correia, IST-U. Lisbon, PT
Konstantin Samouylov, RUDN, RU  Silvia Ruiz, UPC, ES

PROPOSED

End 2019  Winter School on System Level Optimization and Waveforms in Radio Communication Networks for 5G and Beyond”
With Marie Curie action TeamUp5G MSCA ITN
Referent: Fernando Velez
The Training Manager moved on to review the list of STSMs that have been organised throughout the Action:

**STSMs for GP1**

10 accepted

Spain (x2), Austria, Danemark (x2), Croatia, Belgium, Italy (x3), Germany (x2), France (x3), Finland (x2), Portugal, Bosnia and Herzegovina (x2)

1. Multi-bands MIMO dual-Pol measurements and characterization of Radio Propagation for future 5G and B5G Wireless systems
2. Spatial Consistency in 5G Radio Channel Propagation mm-wave Spectrum
3. Characterization and Modeling of the MIMO Radio channel in the W-band
4. Concealed, Chassis Integrated, Pattern Reconfigurable, Automotive Antenna
5. Over-the-air performance evaluation of massive MIMO antenna systems in anechoic chambers
6. Implementation and measurement of 5G waveform candidate using OpenAirInterface
7. Introducing Multiple UAV Trajectories in UAV-Aided B5G Networks
8. Impact of Radio Channel on the Performance of ALOHA-based Medium Access Control Schemes
9. Experimental Characterization of Joint Scheduling and Routing algorithm over 6TiSCH
10. Performance Evaluation of MCF (minimum cost forwarding) and SRMCF (source routing MCF) routing protocols over 6TiSCH (IPv6 over the TSCH mode of IEEE 802.15.4e)

**STSMs for GP2**

11 accepted – 2 rejected – 1 cancelled

Sweden (x5), Belgium, Austria (x2), UK, Finland, Spain (x3), Poland (x2), Portugal (x3), Italy, Russia, France, Germany

2. Characterization and design of mm-wave antennas for 5G
3. Polarised Off-body Channel Measurements with Dynamic User
4. Simulations of the radio channel in off-body communications in a passenger ferry environment
5. 5th Generation (5G) Communications: Parameterizing COST2100 at 60 GHz for the establishment of simplified user scheduling for Massive MIMO
6. Full-Duplex device-to-Device Communications
8. Power-efficient and reliable mm-wave communications in dynamic environments
9. Design RF devices in millimetres with glide-symmetry structures
10. Tactile internet enabled Drone Control over LTE for Ultra-Dense Cloud Drone Networks
11. Elaboration and description of multipath propagation for mmW
The attendees were encouraged to apply as there are still some funds available for further STSMs in GP4. However, the involvement in the action has to be clear and the applicant must include in her/his application any details regarding previous participation to IRACON meetings or plans to attend future meetings.

The maximum grant allocated for STSMs is € 1200.

The main reasons for a possible rejection are:

1. Not enough experience (Master Students) → risk of non-continuity
2. Topics a bit far from the core of the activities (e.g. antenna design)
3. A questionable involvement in the action
4. Application received too late
9. Report from Dissemination Manager

The Dissemination Manager, Prof. Luis Correia, reviewed the Dissemination Actions that are taking place, namely:

**IRACON SPECIAL SESSIONS**

- **EuCAP 2019, Krakow, March 31-April 5, 2019**
  - 2 IRACON special sessions, and 2 IRACON-inspired special sessions

<table>
<thead>
<tr>
<th>Session</th>
<th>Participants</th>
</tr>
</thead>
<tbody>
<tr>
<td>IET / COST session CA15104 (IRACON): Propagation Measurements and Modelling for 5G and Beyond</td>
<td>Sana Salous, Enrico Maria Vitucci</td>
</tr>
<tr>
<td>COST session CA15104 (IRACON): Measurements and Simulations in Channel Modelling in Wireless Body Area Network</td>
<td>Krzysztof K. Cwialna, Luis M. Correia</td>
</tr>
<tr>
<td>Assessment and Modelling of Antennas and Radio Channels Jointly</td>
<td>Alain Sibille, Ke Guan</td>
</tr>
<tr>
<td>Propagation Channels for Wide Sense Vehicle to X Communications</td>
<td>Ke Guan, Uwe-Carsten Fiebig</td>
</tr>
</tbody>
</table>

**SOCIAL MEDIA**

- **Dissemination list** for PhD training events
- **Leaflet**
  - Goal: high-level introduction of the Action
  - Updated after each meeting
- **Newsletters**
  - All issues available at www.iracon.org under “Publications”
  - Next issue to be expected after this meeting
- **Blog**
  - To launch discussions and/or express views
- **Instagram, youtube, facebook, linkedin**
  - Send contributions to Alice

**A SPECIAL ISSUE IN RADIO SCIENCE**
The Chair informed the audience that a total of 65 TDs will be presented during the Working Group meetings and shared the schedule:

He also stressed that the Working Groups discussions should include the following topics:

- Next deliverables (September 2019)
- Joint activities with H2020 projects
- Tutorial offers for upcoming meetings
- Final book
- Joint activities (experiments, papers, etc.)
- Short Term Scientific Missions among participant institutions
The Management Committee Meeting resumed on Wednesday at 1:00 pm.

**ECI Representative**

The Chair informed the audience that Piotr Rajchowski from Gdansk University of Technology (Poland) was elected as ECI Representative for 2019-2020.

11. **Final Book**

The Chair returned to the subject of the Final Book, in particular to the future versions to be released.

- **Version 1.2 (to be released before MCM11)**
  - ✓ Only for chapters 2, 3 and 5
  - ✓ All sections completed

- **Version 2 (to be released by end 2019)**
  - ✓ For all chapters
  - ✓ Must include TDs from MCM10 and 11
  - ✓ Copy-right free figures and graphs
  - ✓ Updated references (replace TDs by papers if any)

He then informed the attendees of the **deadlines for chapters 2, 3 and 5**.

**SE**: Section editors – **CE**: Chapter editors – **BE**: Book editors

<table>
<thead>
<tr>
<th>AP</th>
<th>WHAT</th>
<th>WHO</th>
<th>WHOM</th>
<th>WHEN</th>
</tr>
</thead>
<tbody>
<tr>
<td>B/1</td>
<td>Send revised sections (chapters 2, 3, 5)</td>
<td>SE</td>
<td>CE</td>
<td>June 30</td>
</tr>
<tr>
<td>B/2</td>
<td>Send draft chapters (tex files, bib files)</td>
<td>CE</td>
<td>BE</td>
<td>July 15</td>
</tr>
<tr>
<td>B/3</td>
<td>Send reminders and compile all chapters</td>
<td>BE</td>
<td>-</td>
<td>Aug 1</td>
</tr>
<tr>
<td>B/4</td>
<td>Upload draft book v1.2</td>
<td>BE</td>
<td>Secretary</td>
<td>Aug 20</td>
</tr>
</tbody>
</table>
Finally he showed the **deadlines for all chapters**:

<table>
<thead>
<tr>
<th>AP</th>
<th>WHAT</th>
<th>WHO</th>
<th>WHOM</th>
<th>WHEN</th>
</tr>
</thead>
<tbody>
<tr>
<td>B/5</td>
<td>Send revised sections (with MCM10&amp;11 TDs)</td>
<td>SE</td>
<td>CE</td>
<td>Sep 30</td>
</tr>
<tr>
<td>B/6</td>
<td>Send draft chapters (tex files, bib files)</td>
<td>CE</td>
<td>BE</td>
<td>Oct 15</td>
</tr>
<tr>
<td>B/7</td>
<td>Send reminders and compile all chapters</td>
<td>BE</td>
<td>-</td>
<td>Nov 1</td>
</tr>
<tr>
<td>B/8</td>
<td>Upload draft book v2</td>
<td>BE</td>
<td>Secretary</td>
<td>Dec 1</td>
</tr>
</tbody>
</table>

It was decided that the Conclusions of the Book should be written by someone external to the Action, for a more detached and objective point of view. The person that could cover this task is Prof. Andreas Molisch from USC Viterbi, California, but a final decision is yet to be made.

**12. AOB**

**Eligibility of Secretary’s Travels to Meetings**

Following a recent update in COST regulations, namely a change of eligibility of the Grant Holder Manager:

- In the case that the Grant Holder Manager must travel to the meeting place in an administrative role (e.g. ensuring the attendance list is signed, assisting the MC Chair with the Minutes, providing support to the Local Organiser, etc) then the travel costs of the Grant Holder Manager can be funded with the Action’s budget.

the Chair asked whether the MC agreed to include this rule in IRACON’s set of reimbursement eligibility rules.

A vote was taken: the majority of the MC approved the reimbursement of the GH Manager.
13. **Future Meetings**

The Chair reviewed the next meetings that will be organised within the Action.

- **11th IRACON MC/technical meeting**
  - Dates: 4-6 Sep 2019
  - Gdansk (PL)
  - Organizer: Slawomir Ambroziak

- **12th (final) IRACON MC/technical meeting and workshop**
  - Proposed dates: Jan 27-29 2020
  - Louvain-la-Neuve (BE)
  - Organizer: Claude Oestges

14. **Reports from Working Group Chairs**

The WG Chairs reported about the activities carried out within their own Group. The detailed WG reports are attached to this document.

**DWGs**

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 and Hamed Ahmadi

**EWGs**

1. WG-OTA: Wim Kotterman and Moray Rumney
2. WG-IoT: Erik Ström and Chiara Buratti
   - SWG IoT-Health: Slawomir J. Ambroziak and Kamran Sayrafian
3. WG-LT: Carles Anton and Klaus Witrinal
4. WG-RA: Florian Kaltenberger and Mark Beach

15. **Liaisons with International Bodies, Standards and Projects**

The Action is involved with several international bodies and other projects, including:

- **3GPP** – Moray Rumney
- **URSI** – Sana Salous
- **ITU-R** – Sana Salous and Belen Montenegro
• H2020 5G-XCAST – Narcis Cardona
• 5G-PICTURE – Mark Beach
• CommNet (EPSRC network) – Mark Beach
• IEEE 1900.6 – Kostas Katzis
• EurAAP – Claude Oestges
• EURACON – Roberto Verdone
• WiBEC – Conchi Garcia
• 5G initiative – Fernando Velez
• Met5G – Tim Brown
• Clear5G – Haibin Zhang
• Wavecombe – Sana Salous/Narcis Cardona
• 5G-VINNI – Per Hjalmar Lehne
• 5G-HEART – Per Hjalmar Lehne
• 5G-EVE – Florian Kaltenberger
• EMPOWER – Per Hjalmar Lehne
• 5G-SMART – Fredrik Tufvesson

Attached to this document are a few reports on the new and ongoing liaisons.
16. **Close of Meeting**

The Chair reminded the attendees about the upcoming deadlines and **Action Points**:

<table>
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<th>WHOM</th>
<th>WHEN</th>
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<tr>
<td>10/1</td>
<td>Submit reimbursement forms</td>
<td>Those entitled to</td>
<td>e-cost</td>
<td>June 15</td>
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<tr>
<td>10/2</td>
<td>Send Minutes of Group Meetings</td>
<td>Group Chairs</td>
<td>Chair + Secretary</td>
<td>June 15</td>
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<tr>
<td>10/3</td>
<td>Send deliverable 7 inputs</td>
<td>Group Chairs</td>
<td>Chair + Secretary</td>
<td>June 15</td>
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<tr>
<td>10/4</td>
<td>Send STSM Applic.</td>
<td>Those interested</td>
<td>e-cost +Training Chair</td>
<td>Open call</td>
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<tr>
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<td>Register to 11th MCM</td>
<td>Attendees</td>
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List of Annexes
Annex 1 - Agenda
Annex 2 - Chair’s Presentation
Annex 3 - List of persons entitled for reimbursement
Annex 4 - List of TDs
Annex 5 - TDs Schedule
Annex 6 - Attendance lists
Annex 7 - WG Reports
Annex 8 - Liaisons Reports