### DAY 1: 2nd November – 14:00 – 17:30

#### Opening: Keynotes on the context for 5G

**Summary:** This session will present relevant background information on existing work on 5G in both a global and European context. The performance objectives and targets of 5G will be introduced.

<table>
<thead>
<tr>
<th>Global context</th>
<th>Mario Maniewicz (ITU BR Deputy Director)</th>
</tr>
</thead>
<tbody>
<tr>
<td>5G performance objectives and target applications</td>
<td>Philip Marnick (RSPG Chair, Ofcom UK)</td>
</tr>
<tr>
<td>European context – RSPG</td>
<td>Dr. Wilhelm Eschweiler (BEREC Chair, BNetzA)</td>
</tr>
<tr>
<td>European context – competition issues</td>
<td>Andreas Geiss (DG CONNECT)</td>
</tr>
</tbody>
</table>

#### Session A: Overview of ECC activities on 5G

**Summary:** This session will focus on existing ECC activities on spectrum requirements for 5G, covering short term work in existing bands and longer term work on identification of new bands for 5G. Prioritisation of bands will be considered.

<table>
<thead>
<tr>
<th>ECC PT1 activities</th>
<th>Steve Green (ECC PT1 Chair, Ofcom UK)</th>
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<tbody>
<tr>
<td>Ongoing activities in 3.4-3.8 GHz – is there anything else that could be done? Should other existing bands be considered?</td>
<td></td>
</tr>
<tr>
<td>CPG activities</td>
<td>Alexander Kühn (CPG Chair, BNetzA)</td>
</tr>
<tr>
<td>Overview of AI 1.13 bands, initial prioritisation</td>
<td></td>
</tr>
</tbody>
</table>

#### Coffee break

#### Session B - The road to WRC 19: AI 1.13

**Summary:** This session will focus on the recent developments regarding the global regulatory environment for 5G, i.e. which spectrum will be available on a globally harmonised basis. What are the key obstacles to overcome on millimetre wave spectrum allocations and identification? What needs to be done so that spectrum for 5G on a global scale will be available directly after WRC-19?

<table>
<thead>
<tr>
<th>CPG</th>
<th>Robert Cooper (CEPT AI 1.13 Co-ordinator, Ofcom UK)</th>
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</thead>
<tbody>
<tr>
<td>List of bands and current priorities. Is the identified prioritisation suitable?</td>
<td></td>
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<tr>
<td>ITU-R</td>
<td>Cindy Cook (TG 5/1 Chair, Government of Canada)</td>
</tr>
<tr>
<td>TG 5/1 and related matters</td>
<td></td>
</tr>
</tbody>
</table>
### Day 2: 3rd November – 9:00 – 17:00

#### Session C: Technological outline (standardisation)

**Summary:** This session will provide an overview of 5G technological developments, and relevant ongoing and planned standardisation activities.

<table>
<thead>
<tr>
<th>Topic</th>
<th>Speakers</th>
</tr>
</thead>
<tbody>
<tr>
<td>ITU-R activities on technology development and standardisation</td>
<td>Håkan Ohlén (WP 5D Vice Chair, Ericsson)</td>
</tr>
<tr>
<td>Ongoing IMT 2020 work items in WP 5D</td>
<td></td>
</tr>
<tr>
<td>Global context for standardisation for 5G</td>
<td>Dino Flore (3GPP RAN Chair, Qualcomm)</td>
</tr>
<tr>
<td>Ongoing and planned activities within 3GPP</td>
<td></td>
</tr>
<tr>
<td>Requirements for European harmonised standards</td>
<td>Adrian Scrase (ETSI CTO)</td>
</tr>
<tr>
<td>Ongoing and planned activities within ETSI, and link with 3GPP process</td>
<td></td>
</tr>
</tbody>
</table>

**Coffee break**

#### Session D: Future mobile broadband requirements

**Summary:** This session will focus on the requirements from industry to meet the objectives of 5G performance objectives. Viewpoints from both operators and manufacturers will be considered.

<table>
<thead>
<tr>
<th>Topic</th>
<th>Speakers</th>
</tr>
</thead>
<tbody>
<tr>
<td>General overview of technology requirements</td>
<td>Dr. Werner Mohr (5GPPP, Nokia)</td>
</tr>
<tr>
<td>Operators’ perspective</td>
<td>GSMA, speaker TBC</td>
</tr>
<tr>
<td>Network manufacturers’ perspective</td>
<td>Ulrich Rehfuess (Digital Europe, Nokia)</td>
</tr>
<tr>
<td>Device manufacturers’ perspective</td>
<td>Quan Yu (GSA, Huawei)</td>
</tr>
<tr>
<td>Satellite industry perspective</td>
<td>Alexander Geurtz (ESOA, SES)</td>
</tr>
</tbody>
</table>

**Lunch**
### Session E: New applications – new requirements

**Summary:** In this session new 5G applications and requirements from vertical industries will be considered.

#### Intelligent Transport:
- **Automotive**
  - Niels Peter Skov Andersen  
    (CAR 2 CAR Communication Consortium)
- **Railways**
  - Dirk Schattschneider  
    (Deutsche Bahn)

#### Media and Broadcast
- Darko Ratkaj  
  (EBU)

#### Utilities
- Robert Heiliger  
  (EUTC, EON)

#### Machine to Machine communications:
- **Home automation and wearables**
  - Daniel Hartnett  
    (DECT Forum)
- **Industrial automation**
  - Ludwig Winkel  
    (ZVEI, Siemens)

#### Healthcare
- Speaker TBC

#### Public safety
- Dr. Barbara Held  
  (TCCA, BDBOS)

### Coffee break

### Session F: Other challenges

**Summary:** This session will present an overview of some of the wider technological and infrastructure related challenges to meet the 5G performance objectives.

#### Rural challenges
*What are the challenges involved to provide reliable national coverage?*
- Taco Kluwer  
  (Radiocommunications Agency Netherlands)

#### Backhaul challenges – an operator’s view
*What are the requirements to provide necessary backhaul capacity for 5G? What technologies are required (fibre vs wireless)? Is there a risk of spectrum crunch?*
- Walter Kroeze  
  (Vodafone)

#### Device issues/design challenges
*What are the implications of including multiple mmwave bands in a single device. Are there battery life issues?*
- Luigi Ardito  
  (Digital Europe, Qualcomm)

#### Science industry issues
- Edoardo Marelli  
  (European Space Agency)
### Session G: Looking beyond the borders - Status outside Europe

**Summary:** In this session 5G activities in other regions will be presented, focusing on existing research and developments as well as identified future plans.

**Session chair:**
Alexander Kühn  
(CPG Chair, BNetzA)

#### WRC AI1.13 - perspectives from other regions:

- **Inter-American Telecommunication Commission (CITEL)**  
  Brian Patten  
  (NTIA USA)

- **Asia-Pacific Telecommunity (APT)**  
  Hiroyuki Atarashi  
  (NTT DoCoMo Japan)

- **Regional commonwealth in the field of communications (RCC)**  
  Vadim Poskakukhin  
  (Radio Research and Development Institute (NIIR) Russia)

- **African Telecommunications Union (ATU)**  
  Mario Maniewicz  
  (ITU BR Deputy Director, on behalf of ATU)

- **Arab Spectrum Management Group (ASMG)**  
  Tariq Al Awadhi  
  (Telecommunications Regulatory Authority UAE)

#### Other ongoing and planned 5G developments:

- **USA**  
  Brian Patten  
  (NTIA USA)

- **Japan**  
  Hiroyuki Atarashi  
  (NTT DoCoMo Japan)

- **China**  
  Xu Xiaoyan  
  (China Academy of Information and Communications Technology)

- **UAE**  
  Tariq Al Awadhi  
  (Telecommunications Regulatory Authority UAE)

- **Russia**  
  Vadim Poskakukhin  
  (Radio Research and Development Institute (NIIR) Russia)

#### 5G trials and pre-commercial networks

Michael Krämer  
(GSA, Intel)

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**Coffee break**
Final Panel Session: Sum up and Way forward

Summary: In this session the conclusions from the workshop will be summarised, and the identified next steps for CEPT will be discussed.

Session chair: Eric Fournier (ECC Chair, ANFR)

Setting up the CEPT roadmap for 5G

- 3.4-3.8 GHz band
- Other existing bands
- Priority bands for AI 1.13
- Other priorities, challenges, timeframe

Panellists:
- Alexander Kühn (CPG Chair, BNetzA)
- Steve Green (ECC PT1 Chair, Ofcom UK)
- Alexandre Kholod (CPG PTD Chair, Ofcom Switzerland)
- Doriana Guiducci (ECC PT1 SWG-C Chair, Fondazione Ugo Bordoni)
- Karl Löw (WGSE Chair, BNetzA)
- Thomas Weilacher (WGFM Chair, BNetzA)

Closing – 12:00