Airbus Defence and Space response to European Commission's RSPG Consultation:

"Strategic Roadmap towards 5G for Europe: DRAFT RSPG Opinion on spectrum related aspects for next generation wireless systems (5G)" (RSPG16-031)

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Introduction:

Airbus Defence and Space wish to thank the Radio Spectrum Policy Group for having the opportunity to provide inputs to this consultation on "Strategic Roadmap towards 5G for Europe: Opinion on spectrum related aspects for next generation wireless systems (5G)", published on 8th June 2016.

Airbus Defence and Space agree with the necessity to alleviate the regulatory uncertainty to allow the level of investment necessary to the deployment of 5G in Europe and in the world.

If we can concur with the fact that the 5G network architecture and engineering work need to advance in Europe, we also believe that Europe has the possibility, by identifying pioneer bands for 5G in Europe to establish a proper leadership in the international harmonized spectrum and standardization process.

Airbus Defence and Space welcomes the RSPG opinion providing that all bands under consideration for 5G deployment shall remain within the scope of the bands identified for 5G at WRC-15 and studied under AI 1.13 in view of WRC 19.

We strongly believe that, while the technical and regulatory studies are still to be initiated, early 5G spectrum identification for technology developments shall focus on frequency bands under study by WRC 19 which provide a real potential for global harmonization.

Airbus DS is one of the company signatory of the 5G Manifesto with European Commissioner Günther Oettinger published on July 7th 2016. We strongly support 5G as an ecosystem of technologies.

As Full member of the EMEA Satellite Operator Association we participated to the response the Association filed in response to this consultation. In this context, the views expressed by ESOA and relevant to the satellite commercial communications are fully shared and supported by our company.

Please find hereafter our comments on each 7 items of this draft opinion.

RSPG Opinion 1: *The RSPG considers the 3400-3800 MHz band to be primary band suitable for the introduction of 5G use in Europe even before 2020, nothing that this band is already harmonised for mobile networks, and consists of up to 400 MHz of continuous spectrum, enabling wide channel bandwidth. This band has the possibility to put Europe at the forefront of the 5G deployment.*

- Airbus Defence and Space wants to recall that the 3400-3600 MHz band was almost globally identified for IMT at WRC 15.
- In ITU Region 1 the 3600-3800 MHz band is allocated to FSS on primary basis and to mobile on a secondary basis.
- EC Decision 2008/411/EC - cfr Article 1 & Article 2 of the Decision - designates and makes available the 3400-3600 MHz and 3600-3800 MHz bands for mobile use in the internal market on a 'on a non-exclusive basis . Member States shall therefore provide for harmonised protection conditions for the incumbent FSS services in the band while considering the introduction of 5G /IMT 2020.
- ECC Decision (11) 06 acknowledges that the 3.6 – 3.8 GHz portion of the lower C band is used heavily by FSS in Europe.

RSPG Opinion 2: *The RSPG is of opinion that 5G will need to be deployed also in bands already harmonised below 1 GHz, including particularly the 700 MHz band, in order to enable nationwide and indoor 5G coverage.*

- Airbus Defence and Space agrees with this RSPG's opinion

RSPG Opinion 3: *The RSPG considers that there will be a need to ensure that technical and regulatory conditions for all bands already harmonised for mobile networks are fit for 5G use.*

- Airbus Defence and Space agrees with this RSPG's consideration.

RSPG Opinion 4: *The RSPG stresses that there are many bands above 24 GHz which are of potential interest for 5G in Europe.*

- *To give sufficient guidance to industry, the RSPG will aim to identify at the earliest opportunity, a suitable band to be made available in Europe. In order to do this, RSPG members will prioritize the necessary work to assess what would be involved in enabling access to each candidate band in their country.*
- *In this regard, the RSPG believes that global harmonisation will be essential for developing 5G.*

- *The RSPG will define the timeline for availability of other bands taking into account sharing and transition challenges, for example for mobile access and fixed services (including backhauling).*

  - Airbus Defence and Space strongly advocate and agree with the RSPG on the necessity for the identification of globally harmonised spectrum to facilitate the transition phase of 5G deployment in newly identified bands for IMT 2020 by WRC 19.
  - We would like to underline here that Resolution COM6/20 (WRC-15) text provides the following footnote:

    "*When conducting studies in the band 24.5-27.5 GHz, to take into account the need to ensure the protection of existing earth stations and the deployment of future receiving earth stations under the EESS (space-to-Earth) and SRS (space-to-Earth) allocation in the frequency band 25.5-27 GHz. "*
  - Airbus Defence and Space would like to raise a word of caution with regard to RSPG intention to define before WRC 19 the timeline for availability of other bands above 24 GHz i.e.
  - we understand bands which have no potential for global harmonisation. We urge to consider that only bands currently listed under WRC 19 AI 1.13 shall be considered and this in the light of the results of the technical and regulatory studies still to be performed.

RSPG Opinion 5: *The RSPG believes that considerations of bands above 6 GHz for 5G shall be limited to the bands listed by WRC-15, in order to strengthen the global harmonisation opportunities. This work should focus on the frequency bands proposed by Europe, in particular the bands 24.5-27.5 GHz, 31.8-33.4 GHz and 40.5-43.5 GHz. The RSPG intends to identify which one of these could be harmonised in Europe for early implementation.*

  - Airbus defence and Space agree and support the RSPG statement that only bands which have a real potential for global harmonisation shall be considered for 5G/IMT 2020 identification.
  - The 31.8-33.4GHz band range was proposed as candidate band by all Regions at WRC 15 for 5G future development. On this basis, Airbus DS considers that early technology developments funded under the EU ICT H2020 program, shall take place in this frequency range in Europe. This would enable Europe to establish for its industry a global reference and a competitive positioning.
  - The band is currently lightly used globally and therefore it has a higher chance than any other band to become a global harmonised band for 5G in mm-Wave. This band represents a potential of up to 1.6 GHz of contiguous spectrum for 5G services

implementation on a global scale. Moreover the propagation characteristics in the 32 GHz band are similar to mm-Wave bands below 30 GHz.

RSPG Opinion 6: *The RSPG will keep under review whether there is any requirement for European harmonisation measures in bands above 24 GHz before WRC-19.*

- Airbus Defence and Space does not agree and cannot support the necessity of a European harmonisation decision for 5G in mmWaves bands before WRC-19.
- Any future spectrum regulatory decision can only be grounded on the basis of the technical and regulatory studies results and this taking into account the protection criteria enabling the continued operation of the existing incumbent services and their future deployments.

RSPG Opinion 7: *The RSPG will prepare a supplementary opinion elaborating on the implementation of this opinion taking also into account the wider RSPG work programme, in particular the working groups on IoT and ITS.*

- IoT and ITS are one of the most important vertical sector (EU 5G Action plan) of the 5G environment, which could benefit from the satellite resilience and ubiquitous coverage undisputed features.
- Airbus DS looks at providing satellite solutions & services for IoT using spectrum below 5 GHz for the two way transmissions