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## **North American Broadcasters Association (NABA)**

### SHARING STUDY ON THE EFFECTS OF INTERNATIONAL MOBILE TELECOMMUNICATIONS-ADVANCED SYSTEMS ON C-BAND EARTH STATIONS

#### **Introduction**

The North American Broadcasters Association<sup>1</sup> (NABA, [www.nabanet.com](http://www.nabanet.com)) is an association of broadcasters in Canada, Mexico and the United States, and the NABA Technical Committee is its standing technical body. NABA is thus in a position to present the technical viewpoints of the most authoritative association of professional North American Broadcasters in television and sound programme production, post-production, and distribution for terrestrial, satellite, and cable broadcasting.

NABA is a Sector Member of ITU-R and a long-time participant in ITU-R Study Groups, Working Parties, Task Groups, Rapporteur Groups, etc. NABA numbers among its members Chairmen, Vice-Chairmen and members of the above groups. NABA also participates widely in the ITU work on radio, television and multimedia services.

#### **Summary**

World Radiocommunication Conference 2015 (WRC-15) agenda item (AI) 1.1 proposes the consideration of additional spectrum allocations to the mobile service on a primary basis and identification of additional frequency bands for International Mobile Telecommunications (IMT) and related regulatory provisions, to facilitate the development of terrestrial mobile broadband applications, in accordance with Resolution **233 (WRC-12)**. International Telecommunication

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<sup>1</sup> NABA members include: CBC/Radio-Canada; CBS Broadcasting, Inc.; DIRECTV, Inc.; Disney/ABC Television Group; Ericsson Television Inc.; Eutelsat America Corp.; Evertz Microsystems Ltd.; Fox Entertainment Group, Inc.; Grupo Televisa S.A.; Inmarsat; Intelsat; National Association of Broadcasters (NAB); National Public Radio (NPR); NBC Universal; Nexion Media, Inc.; Public Broadcasting Service (PBS); Rogers Broadcast; SES; Shaw Communications; SiriusXM Radio Inc.; Time Warner, Inc.; TV Azteca S.A. de C.V.; Univision Communications Inc.; and ViaSat.

Union – Radiocommunication Sector (ITU-R) WP 5D has been tasked with identifying suitable bands for IMT sharing. The space-to-Earth C-band has been identified as a suitable band by ITU-R WP 5D. Joint Task Group (JTG) 4-5-6-7 will consider the space-to-Earth C-band for a new IMT allocation and is responsible for generating sharing studies for WRC-15.

The North American Broadcasters Association (NABA) represents incumbent commercial users of C-Band (3 700-4 200 MHz). In North America, the band is extensively used for satellite downlink of video and television broadcasts of programming materials and other data. Alion Science and Technology Corporation (Alion) was contracted by NABA to perform an analysis of the potential interference caused by IMT-Advanced (IMT-A) sharing of the space-to-Earth C-Band (3 700-4 200 MHz), and adjacent channel interference from IMT transmitters in the extended band (3 400-3 700 MHz) to C- Band earth stations in the 3 700-4 200 MHz is also analyzed.

This study provides an additional sharing study, oriented toward North America's usage of C-Band, to the JTG 4-5-6-7 regarding IMT-A systems. Both in-band and adjacent-channel cases including short and long-term interference criteria were evaluated, as well as non-linear effects. Consideration of the suitability of this band as a possible candidate band should take into account the results and conclusions of this sharing study.

### **Conclusion**

The conclusion of this attached Alion study is that sharing the band 3 700-4 200 MHz is not feasible due to the size of the needed exclusion zones, and the large number of C-Band earth stations that would need to be protected. Similarly, IMT-A system use of the band 3 400-3 700 MHz will create unacceptable restrictions to avoid RFI or large-signal interactions with C-band earth stations. Prior ITU studies drew the same conclusions.

If the updated IMT-A system characteristics are different, especially regarding reduced or increased EIRP, these results would change.

### **Attachment:**

