

United States of America

DRAFT PROPOSAL FOR THE WORK OF THE CONFERENCE

Agenda Item 7.2: to recommend to the Council items for inclusion in the agenda for the next WRC, and to give its views on the preliminary agenda for the subsequent conference and on possible agenda items for future conferences, taking into account Resolution **803 (WRC-03)**,

Background Information:

The accommodation of unmanned aircraft vehicles or systems (UASs) will likely have impact on overall aviation spectrum requirements. There is significant growth forecast in the UAS sector of aviation. Though UASs have traditionally been used in segregated airspace where separation from other air traffic can be assured, it is planned to deploy them in non-segregated airspace. If UASs operate in non-segregated civil airspace, they must be integrated safely and adhere to the same operational practices as conventional manned aircraft. To accommodate such actions, additional safety communication links will be required (such as AM(R)S and/or aeronautical mobile satellite (R) service (AMS(R)S)).

Although specific spectrum requirements have yet to be fully assessed, material has been received regarding UAS integration into non-segregated civil airspace. Because the pilot is located remotely from the UAS, bandwidth will be required to support, among other things, each UAS relaying Air Traffic Control instructions to its respective pilot, additional operational data, encryption, and interference resilience.

These applications will require additional safety communication links. While it is expected that short term requirements may be accommodated in either existing aeronautical bands (e.g. AM(R)S or AMS(R)S) or new AM(R)S allocations, given the longer term plans for large-scale deployment of UASs, additional spectrum may be required in the future.

Proposal:

USA/ /1 MOD

RESOLUTION 803 (WRC-0307)

~~Preliminary~~ Agenda for the 2011 World Radiocommunication Conference

The World Radiocommunication Conference (Geneva, 20037),

USA/ /2 ADD

2. UASCOM to consider spectrum requirements and possible additional spectrum allocations in the aeronautical mobile (R), aeronautical mobile-satellite (R), and/or aeronautical radionavigation service to support the operation of unmanned aircraft systems (UASs), in accordance with Resolution **UASCOM (WRC-07)**.

Reasons: To have an agenda item for WRC-11 to consider the spectrum requirements for unmanned aircraft systems to be operated in non-segregated airspace.

USA/ /3 ADD

DRAFT RESOLUTION [UASCOM (WRC-07)]

Consideration of spectrum allocations for use by unmanned aircraft systems (UASs)

The World Radiocommunication Conference (Geneva, 2007),

considering

a) that world-wide use of unmanned aircraft systems (UASs) is expected to increase significantly in the next 10 years;

b) that there is a possible need for additional aeronautical mobile (R), aeronautical radionavigation, and/or aeronautical mobile-satellite (R) service spectrum to support the operation of future UASs;

c) that there is a need to protect existing services,

further considering

a) that UASs represent an application within a radio service such as, by way of example only, the aeronautical mobile (R) service or the aeronautical mobile-satellite (R) service;

b) that there are emerging UAS applications, including plans to deploy them in non-segregated airspace alongside conventional manned aircraft where the UAS must be integrated safely and adhere to the same operational practices as conventional manned aircraft;

c) that future technologies and performance expectations for UASs may require operations in aeronautical mobile (R), aeronautical mobile-satellite (R), and/or aeronautical radionavigation service spectrum to support the transfer of UAS status information to its control station, transfer flight commands to the UAS from its control station, and real-time relaying of air traffic control instructions to and from the UAS operator;

d) that studies will be required to provide a basis for considering regulatory changes, including additional allocations, consistent with the protection of incumbent services,

recognizing

that due to the importance of ensuring the safe operation of UASs in non-segregated airspace alongside conventional manned aircraft, this spectrum must be afforded consideration as a safety service according to No. **4.10** of the Radio Regulations.

resolves

that WRC-11 consider spectrum requirements and possible additional spectrum allocations for terrestrial and satellite services in the aeronautical radionavigation, aeronautical mobile (R) and/or aeronautical mobile-satellite (R) services to support the communications requirements of UASs;

further resolves to invite the ITU-R

1 to conduct, as a matter of urgency, studies to determine the spectrum requirements and potential frequency bands in the range 108 MHz to 30 GHz suitable to support deployment of UASs in non-segregated airspace.

2 that the studies referred to in *further resolves* 1 should include sharing and compatibility studies with services already having allocations in those bands having regard for not constraining the development of such services.

further invites

all members of the Radiocommunications Sector, the International Civil Aviation Organization (ICAO), and the International Air Transport Association (IATA) to contribute to these studies.

Reasons: This resolution details the scope and required studies related to future spectrum requirements of unmanned aircraft system communications links.
