

RESOLUTION 421 (WRC-07)

Consideration of appropriate regulatory provisions for the operation of unmanned aircraft systems

The World Radiocommunication Conference (Geneva, 2007),

considering

- a) that worldwide use of unmanned aircraft systems (UAS) is expected to increase significantly in the near future;
- b) that unmanned aircraft need to operate seamlessly with piloted aircraft in non-segregated airspaces and that there is a need to provide globally harmonized spectrum for that purpose;
- c) that the safe flight operation of UAS needs reliable communication links and associated spectrum, especially for the remote pilot to command and control the flight and to relay the air traffic control communications;
- d) that the safe flight operation of UAS necessitates advanced techniques to detect and track nearby aircraft, terrain and obstacles to navigation in order to ensure the UAS avoids these objects in a manner equivalent to that achieved by manned aircraft;
- e) that satellite radiocommunications are part of UAS operations, in particular to relay transmissions beyond the horizon and maintain safety of flight;
- f) that there is a need to protect existing services;
- g) that some applications of UAS involve high data-rate payload transmissions from the aircraft to remote stations,

recognizing

- a) that UAS will operate in the same environment as manned aircraft;
- b) that some UAS will operate below or above the current conventional air traffic of manned aircraft, including in specific environments not accessible to manned aircraft, such as volcanoes, hurricanes, poisonous or electromagnetic zones;

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- c) that studies are required to provide a basis for considering regulatory changes, including additional allocations, to accommodate spectrum requirements of UAS consistent with the protection of incumbent services;
- d) that any new allocation should not place undue constraints on services to which the frequency bands are allocated;
- e) that this agenda item is not intended to be used to identify bands for UAS use, but rather only to propose, as necessary, new allocations or modifications to existing allocations to accommodate UAS,

resolves

that WRC-11 consider, based on the results of ITU-R studies:

- 1 the spectrum requirements and possible regulatory actions, including additional allocations, to support the remote pilot in commanding and controlling the unmanned aircraft systems and in relaying the air traffic control communications, as mentioned in *considering c*);
- 2 the spectrum requirements and possible regulatory actions, including additional allocations, to support the safe operation of unmanned aircraft systems not covered by *resolves 1*, as mentioned in *considering d*),

invites ITU-R

- 1 to conduct in time for WRC-11 the necessary studies leading to technical, regulatory and operational recommendations to the Conference, enabling that Conference to decide on appropriate allocations for the operation of UAS;
- 2 that the studies referred to in *invites ITU-R 1* should include sharing and compatibility studies with services already having allocations in those bands;
- 3 to produce a report or a recommendation, as appropriate, on how to accommodate the radiocommunication requirements for UAS payloads,

further invites

the International Civil Aviation Organization (ICAO), the International Air Transport Association (IATA), administrations and other organizations concerned to participate in the studies identified in *invites ITU-R* above,

requests the Secretary-General

to bring this Resolution to the attention of ICAO.