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| Hilversum, The Netherlands, 27th - 30th November 2018 |
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| Summary:  |
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| Proposal: |
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DRAFT CEPT BRIEF ON AGENDA ITEM 1.10

1.10 to consider spectrum needs and regulatory provisions for the introduction and use of the Global Aeronautical Distress and Safety System (GADSS), in accordance with Resolution 426 (WRC-15)

# ISSUE

 Resolution 426 (WRC-15) invites ITU-R:

1. to conduct the relevant studies, taking into account information and requirements provided by ICAO for both the terrestrial and satellite components, including:
	1. quantification and characterization of radiocommunication requirements related to GADSS, such as:

data traffic requirements for different system components of GADSS (such as the aircraft tracking, autonomous distress and flight data recovery systems) and their terrestrial and satellite components at each phase of the operation;

information on the radiocommunication requirement related to safety-of-life applications;

performance criteria for terrestrial and satellite systems;

* 1. analysis of the existing allocations to the relevant aeronautical services and determining whether any additional spectrum is required;
	2. studies on sharing and/or compatibility with the existing services;
1. to undertake studies of the existing regulatory provisions to determine whether it might be necessary to apply additional regulatory measures.

It also resolves to invite WRC-19:

1. to take appropriate actions, taking into account the results of ITU-R studies
2. to analyse the necessity for further studies, and consider whether this matter should be brought to the attention of future competent conference.

# Preliminary CEPT position

CEPT is of the view that

* systems contributing to the GADSS shall operate in accordance with ICAO requirements or recommendations contained in Standard and Recommended Practices (SARPs), manuals or guidance material;
* any changes to the Radio Regulations should be determined on the basis of the GADSS concept developed by ICAO;
* systems identified to contribute to the GADSS do not require any change to Article 5 of the Radio Regulations;
* [the list of the frequency bands and systems used by GADSS and also their technical and operational characteristics and operational parameters should be included in the corresponding ITU-R Recommendations;]
* additional regulatory actions for the introduction and use of GADSS should not place any additional constraints on the existing and planned systems.

# Background

One of the main reasons why the level of safety of air transport remains high is the willingness of the aviation community to learn important lessons from prior events.

On the rare occasions when accidents occur, rescuing survivors has the highest priority, followed by the recovery of fatalities, the wreckage and the flight recorders. Analysis of the data from such recorders is very important in supporting accident investigation which may, through identification of the cause of the accident, contribute towards enhancing safety.

The tragedies of Malaysia Airlines flight 370 and Air France flight 447, have highlighted the need to improve the effectiveness and global consistency with which search and rescue services are notified of an incident. As a result, ICAO is developing a concept of operations for a GADSS which is currently in a mature draft form.

ICAO has developed a Concept of Operations (Version 6.0) for the GADSS which specifies the required high level objectives and functionality. It describes, how, from a user perspective, flight tracking information during all phases of flight, both normal and distress flight conditions will be used in a manner that will facilitate the timely and accurate location of an aircraft accident site and recovery of flight data.

The objectives of the GADSS Concept of Operation are, on a worldwide scale, to:

* Ensure timely detection of aircraft in distress

To initiate SAR actions in a timely manner

* Ensure tracking of aircraft in distress and timely and accurate location of end of flight

To accurately direct SAR actions

* Enable efficient and effective SAR operations
* Ensure timely retrieval of Flight Recorder Data

A table in the Concept of Operations for GADSS (version 6.0), which is reproduced below, shows which types of frequency bands could be considered for the various categories of functions specified under the GADSS.

Table 1: Various categories of specified functions under GADSS

|  |  |
| --- | --- |
| Function | Spectrum Category |
| Aircraft tracking system | A |
| ATC Surveillance systems | B |
| Distress Tracking systems | C |
| Post Flight Localization and Recovery |  |
| Localization systems | C |
| Post Flight Localization and Recovery  |  |
| Flight Recorder Data Recovery system | A |

 A: any type of spectrum properly allocated[[1]](#footnote-2), on a primary basis, for the function being performed.

 B: only protected aeronautical safety spectrum can be used.

 C: only protected aeronautical safety spectrum, or protected distress spectrum (e.g., 406.1 MHz), can be used.

[However the frequency bands, the list of systems included in GADSS and their technical characteristics should be reflected in the corresponding Recommendations ITU-R to take them into account in future sharing and compatibility studies in these frequency bands.]

To date ICAO has identified changes to its Standards and Recommended Practices to enable the GADSS concept, among which are those establishing:

* the operator’s responsibility to track its aircraft with a 15-minute time interval;
* the need for aircraft in distress to transmit an autonomous distress tracking signal at least every minute.

Studies within ICAO have determined that the GADSS requirements can be satisfied using systems operating within existing frequency allocations. As a result, no ITU-R studies regarding spectrum needs have been conducted, and no modifications to Article 5 of the Radio Regulations are required. However, in the view of Europe text should be incorporated into Chapter VII of the Radio Regulations to identify specific radio regulatory provisions for GADSS and for which the functional requirements are set forth in the Convention on International Civil Aviation, as amended.

Then CEPT recognises

* that the implementation of the GADSS concept would contribute to increasing the effectiveness of the current alerting of search and rescue (SAR) services for civil aviation transportation;
* that ICAO has stated that the GADSS requirements can be satisfied using systems operating within existing frequency allocations, and that for WRC-19 no additional spectrum allocations are required and no changes to Article 5 are required.

Whilst reviewing the various regulatory provisions associated to aeronautical use of spectrum it was noted that a number of provisions within Articles of the Radio Regulations other than Article 5 no longer reflect current aeronautical operational practices.

# List of relevant documents

ICAO GADSS Concept of operation Version 6.0 (see <https://www.icao.int/safety/globaltracking/Documents/GADSS%20Concept%20of%20Operations%20-%20Version%206.0%20-%2007%20June%202017.pdf>);

5В/305 Annex 26 Working Document towards a Preliminary Draft New Report ITU-R M.[GADSS]

# Actions to be taken

To consider the both options in the draft ECP and to continue seeking a common CEPT view on:

the consideration of the category of the service if required,

the mean to make available the technical characteristics of aeronautical systems at ITU-R.

# Relevant information from outside CEPT

## European Union (date of proposal)

TBD

## Regional telecommunication organisations

## Regional telecommunication organisations

APT (March 2018)

APT Preliminary Views:

APT Members support the ITU-R studies being undertaken for the introduction and use of Global Aeronautical Distress and Safety System (GADSS) in accordance with Resolution 426 (WRC-15).

APT Members are of the view that:

* No additional spectrum allocations and no changes to Article 5 of the Radio Regulations are required
* Modification of Radio Regulations other than Article 5 to facilitate introduction of GADSS may be required e.g. modification of Article 30 General provision
* Any studies on regulatory provisions required for the implementation of GADSS should take into account the GADSS concept provided by ICAO

ATU (September 2018)

No Change to Article 5 of Radio Regulations but rather support regulatory provisions that facilitate the implementation of the Global Aeronautical Distress and Safety System (GADSS) in accordance with ICAO’s requirements, while protecting incumbent services.

Arab Group (April 2018)

ASMG Position is to support:

* Following-up the on-going studies in ITU-R and related results and ensuring the protection of existing services in the case of new allocations are required.

CITEL (December 2017)

ICAO is responsible for the identification of radiocommunication requirements and is still studying if new spectrum needed for data retrieval; ITU-R studies should be done in coordination with ICAO based on their input

RCC (March 2018)

The RCC Administrations support the need in the development of the Global Aeronautical Distress and Safety System (GADSS).

The RCC Administrations consider that spectrum requirements, frequency bands, regulatory provisions for the introduction and use of GADSS should be identified based on GADSS concept which shall be developed by ICAO and submitted to the ITU. And GADSS shall share the considered and adjacent frequency bands with systems in existing services without imposing additional constraints on the existing systems.

In the case of the GADSS system is exclusively based on the existing aeronautical systems operating within the existing radio services, the RCC Administrations consider that in order to describe the GADSS system and take it into account in the subsequent ITU-R studies, it would be reasonable to develop relevant ITU-R Recommendations and Reports devoted to this system.

The RCC Administrations do not oppose to increasing the period of studies on spectrum requirements and regulation for implementation and use of GADSS and transfer this issue to the WRC-23 agenda.

## International organisations

IATA (date of proposal)

TBD

ICAO (September 16)

To support studies to identify any regulatory changes required for the implementation of GADSS in accordance with ICAO requirements, and action by WRC-19 to integrate those changes into the Radio Regulations.

IMO (September 17)

The integrity of the GMDSS should be protected. IMO supports the concept of a Chapter separate from Chapter VII of the Radio Regulations to accommodate the regulatory framework for GADSS.

SFCG (date of proposal)

TBD

WMO and EUMETNET (December 2016)

TBD

## Regional organisations

Nato (June 2018)

NATO Military Assessment

This agenda item currently has no direct impact on NATO military usage, but constraints due to safety and other aspects, could be added to military systems in existing aeronautical bands.

NATO will evaluate any proposed modifications in the RR, based on the ICAO GADSS CONOPS.

NATO Position

No position at this stage.

ESA (date of proposal)

TBD

Eurocontrol (date of proposal)

TBD

## OTHER INTERNATIONAL AND REGIONAL ORGANISATIONS

EBU (date of proposal)

TBD

GSMA (date of proposal)

TBD

CRAF (June 2017)

CRAF supports the protection of existing RAS frequency allocations. No changes should be made to the RR unless acceptable sharing and compatibility criteria are developed to ensure the protection of RAS from future GADSS operations.

1. Note: The words “type of spectrum properly allocated” by ICAO are understood to mean that the use of the frequencies are in accordance with the definition of the service in Article 1 of the RR to which a frequency in question is allocated.. [↑](#footnote-ref-2)