(Questions ITU-R 139/7 and ITU-R 141/7)

Scope

This Recommendation provides information on the performance and interference criteria for non-GSO Data Collection Systems (DCS) in the 401-403 MHz.

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| **Radiocommunication Study Groups** |  |
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| **26 September 2013** |
| **English only** |
| Radiocommunication Study Group 7 | |
| DRAFT NEW RECOMMENDATION  ITU-R SA.[EES/METSAT usage 401-403 MHz] | |
| Basic general partitioning and sharing conditions for the band 401-403 MHz for future long-term coordinated use of data collection systems on geostationary and non-geostationary METSAT and EESS systems | |

The ITU Radiocommunication Assembly,

considering

*a)* that Data Collection Systems (DCS) are operated on geostationary and non-geostationary METSAT and EESS systems in the frequency band 401-403 MHz;

*b)* that for next generation DCS systems on both geostationary and non-geostationary METSAT and EESS systems, bandwidth requirements have significantly increased;

*c)* that the increased spectrum requirements for both geostationary and non-geostationary METSAT and EESS systems require all operators to respect a basic general partitioning of the band 401-403 MHz for current and future DCS systems accompanied by sharing conditions,

recommends

1that operators of current and future DCS systems on geostationary and non‑geostationary METSAT and EESS satellites plan frequency use in accordance with the basic general partitioning of the band 401-403 MHz as shown in the Annex, taking into account the sharing conditions as detailed in *recommends* 2 to 7 below;

2that the band 401.7-402.435 MHz remains available only for DCS on geostationary METSAT systems. However, within this frequency range, the non-geostationary METSAT system Meteor-3M, which is planned for use in the band 401.899-401.998 MHz, will only operate over the territory of the Russian Federation;

3that the band 402.435-402.850 MHz is used only for DCS on geostationary METSAT systems;

4that the band 401.1-401.4 MHz is used for DCS on geostationary METSAT systems. However, within this frequency range, the bands 401.1-401.2 MHz and 401.3-401.4 MHz can also be used for ARGOS platforms under the following conditions:

– maximum e.i.r.p. of –3 dBW;

– maximum number of ARGOS active platforms to be deployed in each of the two sub‑bands not to exceed 1 000 within the visibility circle of FY-2 and FYGEOSAT series satellites;

– maximum duty cycle (ratio of transmission duration over the repetition period) of each platform not to exceed 0.01 (on average 0.6 sec over 60 sec);

5that the bands 401-401.1 MHz, 401.4-401.7 MHz and 402.850-403 MHz are designated to non-geostationary systems, such as ARGOS. However, the sub-band 401.5-401.7 MHz can also be used by DCP GEO systems of the Russian Federation, noting that for the sub-band 401.58-401.7 MHz these systems must be limited to operation over Russian territory with a maximum e.i.r.p. of 16 dBW;

6that the band 401.605-401.665 MHz is also designated for use by the Brazilian DCS NGSO over South America;

7that the band 402.034-402.067 MHz is dedicated to the International Data Collection Systems (IDCS).

Annex

Basic general partitioning of the band 401-403 MHz for future long-term coordinated use of DCS systems on geostationary and  
non-geostationary METSAT and EESS

Background on data collection system

One of the EESS/METSAT usage comprises the data collection platforms gathering information activity related to the Earth, the environment and scientific application, weather and environment observation. The data which are collected by ground platforms, are sent to the corresponding satellites that retransmit the retrieved information to dedicated earth stations. The DCS is particularly useful for the collection of data from remote and inhospitable locations where it may provide the only possibility for data relay. Even so, the system has very many uses in regions with a highly developed infrastructure. The installations required for relay of the data tend to be inexpensive, unobtrusive and normally blend easily into the local environment.

There are two kinds of data collection systems: geostationary which usually operate under the METSAT radio service and the non-geostationary systems which usually operate under the EES radio service.

For example, geostationary satellites are traditionally operated by meteorological agencies and Data Collection Systems (DCS) are provided by several geostationary meteorological satellite operators, giving almost total coverage around the world with the exception of the polar regions.

For non-geostationary satellites, on example is the ARGOS satellite-based location and Data Collection System: this system enables scientists to gather information on any platform equipped with an appropriate transmitter, anywhere in the world. Argos transmitters’ messages are recorded by a constellation of satellites carrying Argos instruments, and then relayed to dedicated processing centres.

The International Data Collection System comprises eleven channels are which are reserved for DCP mounted on aircraft, ship, drifting ocean buoy or balloon, to transmit environmental data continuously. The transmissions are received by the nearest geostationary meteorological satellite, relayed to its primary ground station and then distributed to the relevant user community.

Acronyms

DCS: Data Collection Systems

DCP: Data Collection Platform

IDCS: International Data Collection System

ARGOS: Global satellite data collection and positioning system.

Overall usage of the band 401 to 403 MHz

401.1

401.2

401

401.3

401.4

401.7

402.034

402.067

402.435

402.850

ARGOS

NGSO

NGSO

DCP GSO

DCP GSO

ARGOS

NGSO

DCP

GSO

IDCS

DCP

GSO

DCP

GSO

401.899

ARGOS

NGSO

ARGOS

NGSO

403

DCP GSO

**Basic general partitioning of the band 401-403 MHz for future long-term coordinated use of DCS systems on geostationary and non-geostationary MetSat and EESS systems**

401.5

401.58

ARGOS

NGSO

DCP

GSO

ARGOS

NGSO

DCP

GSO

METEOR

NGSO

DCP

GSO

402.001

(1)

(2)

(2)

(3)

(3)

1) The following conditions contained in *recommends* 2 are as follows: in the band 401.899-401.998 MHz the non-geostationary MetSat system Meteor-3M will only operate over the territory of the Russian Federation.

2) The following conditions contained in *recommends* 4 are valid for the use of the bands 401.1-401.2 MHz and 401.3-401.4 MHz by ARGOS platforms:

– maximum e.i.r.p. of –3 dBW;

– maximum number of ARGOS active platforms to be deployed in each of the two sub-bands not to exceed 1 000 within the visibility circle of FY-2 and FYGEOSAT series satellites;

– maximum duty cycle (ratio of transmission duration over the repetition period) of each platform not to exceed 0.01 (on average 0.6 sec over 60 sec).

3) The following conditions contained in *recommends* 5 are as follows: the band 401.5-401.7 MHz can also be used by DCP GSO systems of the Russian Federation, noting that for the sub-band 401.58-401.7 MHz these systems must be limited to operation over Russian territory with a maximum e.i.r.p. of 16 dBW.

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