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Prepared by EUMETSAT
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FUTURE USE OF IDCS

In response to CGMS action 35.15

Working Paper Abstract

The bandwidth allocated to the IDCS has, in recent years, been allocated to Regional/Domestic DCP systems on a temporary basis with agreement of the CGMS. A questionnaire was completed by JMA, NOAA and EUMETSAT to find out the current and future status of the IDCS. The results show that the overall usage of the IDCS for its intended purpose has decreased in recent years, whereas the Regional/Domestic use has increased. It is proposed to reduce the bandwidth allocated to IDCS and reallocate the channels for Regional/Domestic use.

Recommendation proposed: To endorse the reallocation of 11 IDCS channels to Regional/Domestic use

Future use of IDCS

1 INTRODUCTION

This paper summarises the results of CGMS Action 35.15.

2 MAIN TEXT

In the course of 2008 a questionnaire was circulated to the IDCS operators; JMA, NOAA and EUMETSAT to find out the current status of IDCS system and the plan for its future use.

The results are contained in Annex 1.

To summarise: There are currently only 18 ship-based Data Collection Platforms (DCPs) from a two operators using the IDCS channels:

- 17 operated by Deutsche Wetterdienst (DWD)
- 1 operated by Bundesamt für Seeschifffahrt und Hydrologie (BSH)

The DCPs transmit on 4 different IDCS channels and use the IDCS system for its intended purpose i.e. Deployed on mobile platforms which travel around the world and transmit under the footprint of more than one Meteorological Satellite. However, it should be noted that although these DCPs travel around the world, they are currently only allocated on the Meteosat DCS.

The decrease in utilisation of the IDCS is in part due to its reliability in comparison to other forms of ship and airborne communications e.g. INMARSAT. DWD has, however, expressed its commitment to the utilisation of the IDCS for the foreseeable future.

In contrast to the slow decrease in IDCS usage there continues to be a growth in the Regional/Domestic use of the DCS and an increasingly limited capacity to support new Programmes, particularly for NOAA. In the case of the Meteosat DCS, part of the IDCS bandwidth has, for several years, been re-allocated to WMO sponsored regional programmes and more recently, Tsunami Warning Systems with the understanding from CGMS that this is a temporary arrangement.

Based on the results of the questionnaire and follow-up discussions between JMA, NOAA and EUMETSAT it is proposed to make more effective use of the bandwidth allocated to the IDCS by decreasing the number of International channels to 11 and thereby increasing the bandwidth available for regional purposes.

The proposed change in bandwidth allocation between IDCS and DCS is detailed in Annex 2 and may be summarised as follows:

Current bandwidth allocation:

402.0025 MHz – 402.0985 MHz i.e. 33 channels at 3 KHz spacing

Proposed bandwidth allocation:

402.0025 MHz – 402.0325 MHz for NOAA – 11 extra 3 KHz channels for domestic use

402.0355 MHz – 402.0655 MHz for IDCS - 11 channels at 3 KHz spacing

402.0685 MHz – 402.0985 MHz for EUM – 11 extra channels for regional use

This allocation would also apply JMA and MTSAT.

EUMETSAT has no allocations at 0° on the current International channels I1 – I11, however EUMETSAT will continue to use these channels for IODC Tsunami Warning System DCPs transmitting through Meteosat-6 at 67°E, as they would not interfere with NOAA domestic allocations on these channels.

NOAA would ensure that there are no allocations on the current International channels I23 – I33 (no different from today).

The change in frequency allocation will necessitate an update to the IDCS User's Guide and other related documentation and webpages.

3 CONCLUSIONS

CGMS is invited to endorse this proposal

EUMETSAT IDCS Status

IDCS Current Status:

1. How many of the 33 International channels are used for 'true' International use i.e. with DCPs that transmit via more than one CGMS satellite?

There are currently 5 'true' International Channels with allocations. These are:

I13 – D/SHIP (4 DCPs)
I15 – D/DHIXBT (1 DCP)
I16 – D/SHIP (3 DCPs)
I20 – D/SHIP (10 DCPs)

2. How many DCPs are allocated and how many are active on these channels?

From 18 allocated DCPs, only 14 DCP platforms are reporting regularly on the 'true' International channels (July 2008):

13 D/SHIP

3. Which DCP Programmes are using the International channels?

The following Programmes are assigned to the International channels:

D/SHIP + D/DHIXBT – 18 DCPs

4. Do you have knowledge of duration of these current Programmes?

D/SHIP and D/DHIXBT regularly use the system, and will for the foreseeable future. The Operator has been contacted to find out if the ships are in fact international and transmit to more than one satellite or are reporting only via Meteosat. It is foreseen that 4 of their allocated platforms will transmit via more than one satellite.

5. Statistics for International DCP allocations over the last 5 years?

Available in the CGMS annual reports, but have only been produced in tabular form. There have been basically no new International use allocations over the last few years. The allocated/active numbers have remained static.

6. Which International channels are now used for Regional purposes?

There are 18 International channels used for 'Regional' purposes, as agreed at CGMS:

| | |
|------------------------------|-------------------------------|
| I08, I09, I11, I17, I19, I21 | – IOTWS on Meteosat-6 at 67°E |
| I22 | – CMA (China) |
| I23, I24 | – AERONET* |
| I25, I26 | – Roshydromet (Russia) |
| I27 – 33 | – AGRHYMET, WHYCOS, MEPA* |

* are WMO sponsored Programmes assigned to the International channels for Regional use, as agreed at CGMS.

7. Which International channels are not used?

I01 – I07 inclusive, I10, I12 and I18

8. Coordination between agencies (common database)?

A common database is no longer used; it was abandoned over 3 years ago. It was mainly used by EUMETSAT, occasionally used by JMA to download any changes made by EUMETSAT.

9. Support from industry to 100bps DCPs, do all manufacturers still support these DCPs (especially in the USA)?

Yes, there is support for 100 bps from the manufacturers. There are currently 3 US DCP manufacturers that support 100 bps and are certified for MSG. In Europe, the main manufacturer is OTT-Messtechnik and supports 100 bps (MSG certified). There is also ELTA in France.

IDCS Future:

10. What are the known future user plans for using IDCS?

There have been very preliminary discussions regarding the allocation of ARGOS DCPs on the International channels in the coming years.

11. Do future satellite programmes MTG/GOES-R/MTSAT follow-on support to DCPs and IDCS?

EUMETSAT will definitely have a DCP service with MTG although the final bandwidth is TBD, it will cover out the current frequencies and possibly be extended. The current plan is to continue with IDCS.

IDCS Current Status:

1. How many of the 33 International channels are used for 'true' International use i.e. with DCPs that transmit via more than one CGMS satellite?

No NOAA 'true' International Channels in use, GOES allocations have been removed from the NOAA database.

2. How many DCPs are allocated and how many are active on these channels?

No NOAA allocations.

3. Which DCP Programmes are using the International channels?

N/A

4. Do you have knowledge of duration of these current Programmes?

N/A

5. Statistics for International DCP allocations over the last 5 years?

Only the GOES allocations, however these have not been used for several years and are now deallocated.

6. Which International channels are now used for Regional purposes?

I16, I17? – Duplicating IOTWS on Meteosat-6 at 67°E

7. Which International channels are not used?

No International channels are used by NOAA.

8. Coordination between agencies (common database)?

NOAA was not able to participate in the use of the common database, because many id's generated by the IDCS were already in use in NOAA's system by domestic users. These were longstanding DCP's, and could not easily be changed over.

9. Support from industry to 100bps DCPs, do all manufacturers still support these DCPs (especially in the USA)?

Yes, all manufacturers still support the 100 bps, although NOAA is allowing no NEW assignments at 100 bps. Most transmitters are 100/300/1200 baud switchable. Users can reuse existing assignments until 2013, although we are encouraging them to decommission them.

IDCS Future:

10. What are the known future user plans for using IDCS?

No known future plans. I would like to see some portion of the IDCS dedicated to Tsunami users.

11. Do future satellite programmes MTG/GOES-R/MTSAT follow-on support to DCPs and IDCS?

Yes, GOES-R will provide follow-on support to DCP's. There is a possibility of a 2nd transponder on GOES-R, if frequency allocations for uplinks can be obtained (in process.) This would effectively double the existing capacity, which is already being doubled by channel splitting. Use of DCS on GOES for emergency warnings, both in the U.S. and in neighbouring countries, has exploded.

NOAA has had great success with using dual polarization for downlink, which means we can expand the uplink frequency without expanding the downlink frequency.

JMA IDCS Status

IDCS Current Status:

1. How many of the 33 International channels are used for 'true' International use i.e. with DCPs that transmit via more than one CGMS satellite?

Four channels of MTSAT-DCS listed below are currently used internationally.

- I12 - ASAP (3 DCPs)
- I15 - D/SHIP (1 DCP) and D/DXIXBT (1 DCP)
- I16 - D/SHIP (4 DCPs)
- I20 - D/SHIP (2 DCPs)

2. How many DCPs are allocated and how many are active on these channels?

Eleven DCPs are allocated as listed above. However, JMA receives no transmissions from these DCPs (as of the end of Feb 2008).

In the late 2007, with the support of the CGMS secretariat, JMA questioned the operators of each DCP about its status and confirmed that all these DCPs were in operation.

3. Which DCP Programmes are using the International channels?

- 1 D/DHIXBT
- 7 D/SHIP
- 3 ASAP

4. Do you have knowledge of duration of these current Programmes?

No.

5. Statistics for International DCP allocations over the last 5 years?

- There have been no new International allocations for MTSAT-DCS over the last 5 years.
- Eleven DCPs are currently allocated.

The allocation change on international MTSAT-DCS over the last 5 years is listed below.

- Three ASDAR DCPs (on I18) were deregistered in Mar 2005.
- Seven ASDAR DCPs were deregistered in Mar 2007 due to the termination of ASDAR program.
- Forty-six DCPs such as those of NOAA GOES SEAs project were deregistered in Apr 2007.
- Three SHIP DCPs were deregistered in Dec 2007.

6. Which International channels are now used for Regional purposes?

No MTSAT-DCS international channels are used for Regional purposes.

7. Which International channels are not used?

Among 33 international channels, 29 channels (I01 - 11, I13, I14, I17 - 19, and I21 -33) are not used.

8. Coordination between agencies (common database)?

JMA had accessed the common database on EUMETSAT website on several occasions just for checking the status of IDCS until EUMETSAT removed the database.

JMA has not coordinated new IDCS allocations with other agencies for these years because JMA has received no application for IDCS over the last 5 years.

9. Support from industry to 100bps DCPs - do all manufacturers still support these DCPs?

JMA does not have information on manufacturers supporting status. For your reference, as for regional MTSAT-DCS compliant with the IDCS, the manufacturers such as Sutron support 100bps DCPs.

IDCS Future:

10. What are the known future user plans for using IDCS?

No known plans.

11. Do future satellite programmes MTG/GOES-R/MTSAT follow-on support to DCPs and IDCS?

JMA will continue the data collection service with the follow-on satellite to MTSAT-2 including IDCS. Although the final specification is TBD, JMA plans to make it basically the same as the current one. The final decision will be made taking into consideration the result of discussion about IDCS at CGMS36.

Present International Channels

| | |
|-----|----------|
| I01 | 402.0025 |
| I02 | 402.0055 |
| I03 | 402.0085 |
| I04 | 402.0115 |
| I05 | 402.0145 |
| I06 | 402.0175 |
| I07 | 402.0205 |
| I08 | 402.0235 |
| I09 | 402.0265 |
| I10 | 402.0295 |
| I11 | 402.0325 |
| I12 | 402.0355 |
| I13 | 402.0385 |
| I14 | 402.0415 |
| I15 | 402.0445 |
| I16 | 402.0475 |
| I17 | 402.0505 |
| I18 | 402.0535 |
| I19 | 402.0565 |
| I20 | 402.0595 |
| I21 | 402.0625 |
| I22 | 402.0655 |
| I23 | 402.0685 |
| I24 | 402.0715 |
| I25 | 402.0745 |
| I26 | 402.0775 |
| I27 | 402.0805 |
| I28 | 402.0835 |
| I29 | 402.0865 |
| I30 | 402.0895 |
| I31 | 402.0925 |
| I32 | 402.0955 |
| I33 | 402.0985 |

Proposed change to the International Channels

| | | |
|-----------|----------|--|
| Reg. Chan | 402.0025 | Extra channel for NOAA regional use |
| Reg. Chan | 402.0055 | Extra channel for NOAA regional use |
| Reg. Chan | 402.0085 | Extra channel for NOAA regional use |
| Reg. Chan | 402.0115 | Extra channel for NOAA regional use |
| Reg. Chan | 402.0145 | Extra channel for NOAA regional use |
| Reg. Chan | 402.0175 | Extra channel for NOAA regional use |
| Reg. Chan | 402.0205 | Extra channel for NOAA regional use |
| Reg. Chan | 402.0235 | Extra channel for NOAA regional use |
| Reg. Chan | 402.0265 | Extra channel for NOAA regional use |
| Reg. Chan | 402.0295 | Extra channel for NOAA regional use |
| Reg. Chan | 402.0325 | Extra channel for NOAA regional use |
| I01 | 402.0355 | |
| I02 | 402.0385 | |
| I03 | 402.0415 | |
| I04 | 402.0445 | |
| I05 | 402.0475 | |
| I06 | 402.0505 | |
| I07 | 402.0535 | |
| I08 | 402.0565 | |
| I09 | 402.0595 | |
| I10 | 402.0625 | |
| I11 | 402.0655 | |
| Reg. Chan | 402.0685 | Extra channel for EUM/JMA regional use |
| Reg. Chan | 402.0715 | Extra channel for EUM/JMA regional use |
| Reg. Chan | 402.0745 | Extra channel for EUM/JMA regional use |
| Reg. Chan | 402.0775 | Extra channel for EUM/JMA regional use |
| Reg. Chan | 402.0805 | Extra channel for EUM/JMA regional use |
| Reg. Chan | 402.0835 | Extra channel for EUM/JMA regional use |
| Reg. Chan | 402.0865 | Extra channel for EUM/JMA regional use |
| Reg. Chan | 402.0895 | Extra channel for EUM/JMA regional use |
| Reg. Chan | 402.0925 | Extra channel for EUM/JMA regional use |
| Reg. Chan | 402.0955 | Extra channel for EUM/JMA regional use |
| Reg. Chan | 402.0985 | Extra channel for EUM/JMA regional use |