



CGMS-39 NOAA-WP-17  
Prepared by NOAA  
Agenda Item: I/4  
Discussed in WG1

## **STATUS OF THE INTERNATIONAL DATA COLLECTION SYSTEM (IDCS)**

IN RESPONSE TO CGMS PERMANENT ACTION 01

NOAA-WP-17 provides a status report on the performance of the International Data Collection System (IDCS) and NOAA's domestic DCS. NOAA's DCS Automated Processing System (DAPS) was replaced by the new DCS Administrative and Data Distribution System (DADDS) in October 2009. This year's focus has been on populating user and platform tables, and registering and training the community to use the system. NOAA has finalized new Certification Standards to allow transmitters to use smaller channels, has certified 3 manufacturers to this standard and has configured our receive systems to allow those transmitters to operate. The transition to high data rate (HDR) continues, with more than 20,000 of the 22,774 platforms that are active reporting at 300 or 1200 bit/sec. NOAA plans to continue to investigate the use of two way communications to better command and control platforms but has made little progress this year due to conflicting priorities. NOAA is proceeding slowly with this project, since most resources are being committed to DADDS and to the Version 2 HDR transmitter implementation. Use of the international channels is minimal. NOAA has begun fully using the channels assigned to us for our domestic use by CGMS. An initial problem was encountered because many manufacturers built transmitters that could only operate in the international format in channels above number 200, but those have been resolved by reprogramming of the transmitters by their developers.



## **STATUS OF THE INTERNATIONAL DATA COLLECTION SYSTEM (IDCS)**

NOAA has continued to make more efficient use of the GOES DCS to provide more capacity for critical environmental monitoring systems. The use of the NOAA Regional DCS continues to grow, with approximately 22,000 transmitters operating on the system at the current time. New users, new sites, and more frequent reporting schedules for existing sites are added every week. In the years since the deployment of our high data rate transmitter, use of the system has more than tripled. The demand continues to grow, so NOAA is focusing on several activities to increase system capacity, and to improve system efficiency.

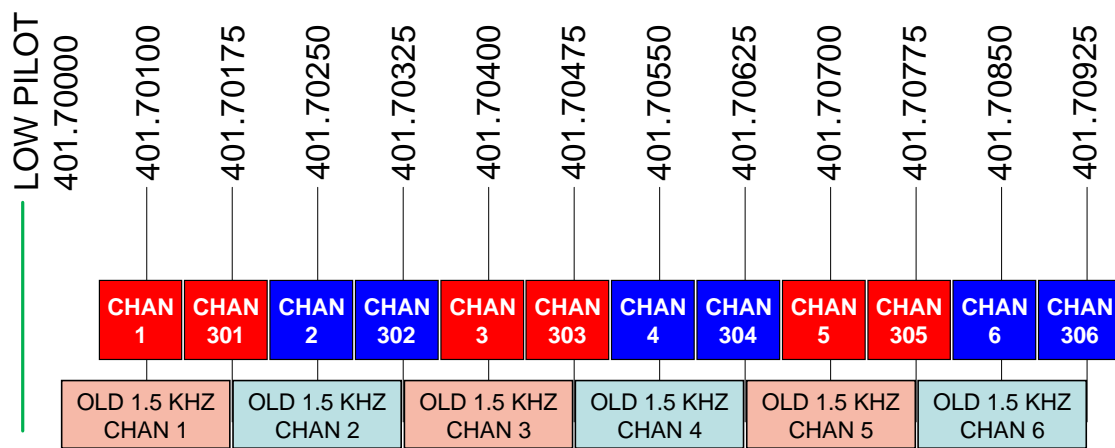
### **1.1 DADDS Status**

NOAA's DCS Administration and Data Distribution System (DADDS) was placed into operation in October 2009. The system was brought on line with minimal capability, but has grown in the past 2 years to be a highly functional system. Enhancement and debugging of the system continues, but basic operability is in place. One major enhancement is the addition of a flag that show last active date for transmitters. This function is critical in monitoring the system and clearing unused assignments from the system. NOAA continues to evolve into operations and maintenance mode. The focus of the past year has been on populating data bases with user and platform information and registering and training users to employ the system. The backup DADDS in Suitland, Maryland is operable, but is being used for testing of new system modules so is not always completely synced with the primary system in Wallops, Virginia. In case of an emergency, however, it can be quickly reconfigured and available for use.

### **1.2 Narrow Band Transmitter**

NOAA has finalized new transmitter Certification Standards (designated as "Version 2") to allow transmitters to use smaller channels, thereby doubling system capacity.. There are now three certified vendors who provide equipment that is "Version 2" certified. Changes to the digital demodulators have been implemented, allowing new transmitters and legacy transmitters to operate on the same channels. As new platforms are deployed and legacy transmitters are removed from the system the channels will eventually realign themselves. Once the existing channels are realigned, we will insert new channels between them. This approach to transition will minimize the impact on users of existing systems. The next step of development is to develop software that will recognize the Version 2 transmitters and implement a new "Square Root Raised Cosine (SRRRC)" filter which will provide better reception of the new transmitters. This should be completed within 6 months, but in the meantime the degradation of data by using the current Bessell filter is expected to be minimal. Users will be given a 10 year timeframe to upgrade their transmitters to the new standard. Most transmitters will be upgradeable through a software change.

**New NOAA Regional DCS Frequency Plan**



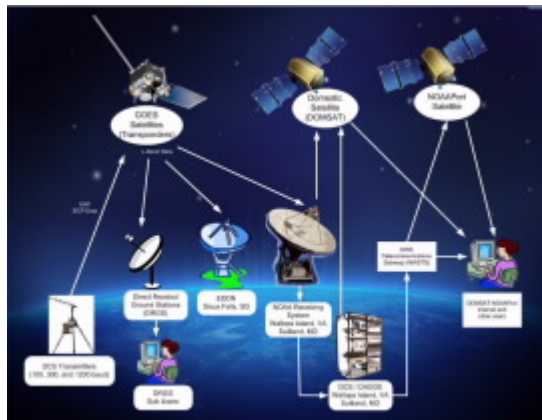
ODD NUMBERED (RED) CHANNELS ON EAST SATELLITE  
 EVEN NUMBERED (BLUE) CHANNELS ON WEST SATELLITE

### 1.3 High Data Rate Transition.

The transition to high data rate continues, with 22,774 platforms actively using NOAA's DCS. Of that number 20,143 are high data rate and 2631 are 100 bits per second (bps). NOAA is well on the way to meeting our deadline of May 31, 2013 to have all 100 bps transmitters removed from the system. We are using the new channels allocated to NOAA by the CGMS and have some assignments on most of them. Several of these are allocated to international tsunami warning networks who have requirements for very frequent transmissions (in most cases transmitting every five minutes.) This high demand has challenged NOAA to seek other ways to increase capacity.

### 1.4 Rebroadcast of DCS Data

Due to the critical nature of data sent through DCS in the U.S. NOAA provides many ways of rebroadcasting data to ensure reliability of delivery. Two such rebroadcasts are through a commercial satellite service called DOMSAT, and through the Low Rate Information Transfer (LRIT) system off of GOES.



are through a commercial satellite service called DOMSAT, and through the Low Rate Information Transfer (LRIT) system off of GOES. NOAA is investigating the possibility of dropping the commercial rebroadcast over a long period of time (6 years) by making the LRIT, and the follow on HRIT (High Rate Information Transfer) system more reliable and efficient.

### 1.5 Data Collection Platform Command (DCPC) development

Due to many priorities NOAA has made little progress in this area in the last year. NOAA is looking forward to continuing research into this area and provide a successful implementation in the next few years. More resources will be devoted to the project once other development activities are completed.

### 1.6 Concern

In response to a 2010 Presidential initiative to make more spectrum available for mobile phone development, a decision was made by US frequency management agencies to recommend allocation of the 1695-1710 MHz frequencies to auction for broadband use. The 1675-1695 MHz frequencies used by GOES were removed from the fast track list thus delaying any impact to the DCS system. This topic will be addressed in other presentations.



## 2. STATUS OF IDCS

During the last 30 days (August 2011) NOAA has received 5355 messages on channel 246. There are 5 active platforms assigned to that channel. These platforms are all assigned to the National Aeronautics and Space Administration (NASA). No new assignments have been made in the last year. Channel 246 is not part of the current international allocation, but these five platforms have been operating on this channel through international agreement for many years.

Current allocations include:

New International Channels	22 4	22 6	22 8	23 0	23 2	23 4	23 6	23 8	24 0	24 2	24 4
Channel #	01	02	03	04	05	06	07	08	09	10	11
# of PLT(s)	0	0	0	1	1	0	0	0	4	0	0

A query of the DADDS message table showed no transmissions from any of these platforms.

## 3. INTERFERENCE TO THE IDCS

Due to the current limited use of the IDCS no monitoring is performed. If the usage expands NOAA's DADDS provides tools to make it easier to monitor interference.

## 4. CONSOLIDATED LIST OF IDCS ALLOCATIONS

There have been no new allocations of IDCPs within the past year.

## 5. CONCLUSION

CGMS members are invited to take note of the status and performance of the NOAA DCS at <http://www.noaasis.noaa.gov/DCS/>.