2022

GOES DCS STATUS AND BEST PRACTICE IMPLEMENTATION

Presented to CGMS-51 Working Group I session, agenda item 8.5

Coordination Group for Meteorological Satellites

Executive summary of the WP

The GOES DCS is an environmental data relay system that supports the collection of over 900,000 message per day from over 32,000 active Data Collection Platforms (DCPs) located throughout the Western Hemisphere. The GOES DCS Program has 672 different user agency agreements representing 61 countries. DCP platforms collect environmental data and transmit this information to a GOES East or West satellite. The satellites then rebroadcast this data to terrestrial receive facilities maintained by NOAA, or the users' own facilities. NOAA collects the complete range of DCS data and distributes it using the DCS Administrative and Data Distribution System (DADDS) or to other distribution interfaces. The DADDS is the central management for GOES DCS and provides user, DCP, and spectrum management tools.

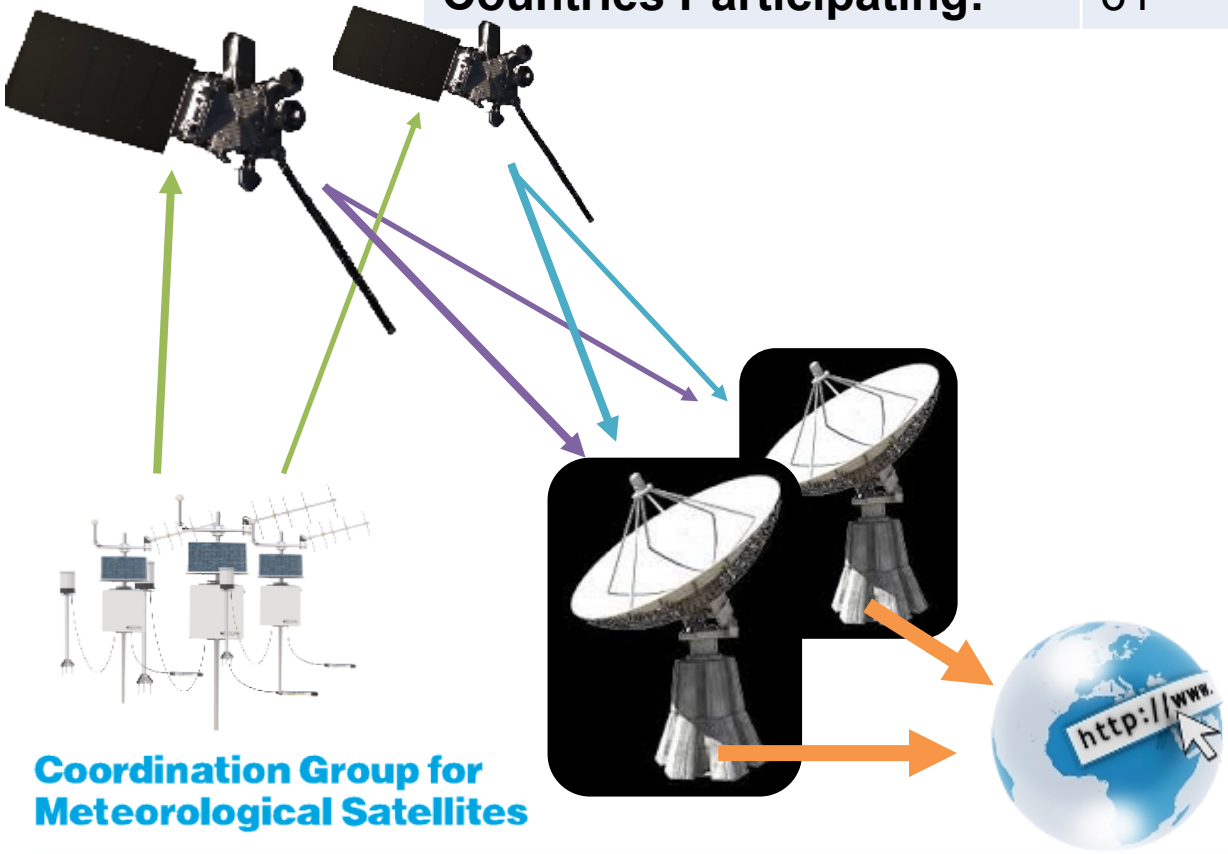
The NOAA GOES DCS continues to be a highly reliable and highly utilized. The system continues to grow and fulfils many critical roles for many users, including use of environmental data to take action to protect life, property, and the environment. However, the growth of system usage has not had an accompanying maturation in the DCS system itself. Specific challenges include spectrum management and radio frequency interference (RFI). NOAA's plans to replace the current version of DADDS, modernize DCP communication technologies, and restore a DCP Command link in order to make GOES DCS a more modern, efficient, and flexible system.

Coordination Group for Meteorological Satellites

CGMS

GOES DCS Status – Overview

Satellites:	GOES East & West
Data Collection Platforms:	32,000+ active 43,000+ registered
Agency Agreements:	672
Countries Participating:	61



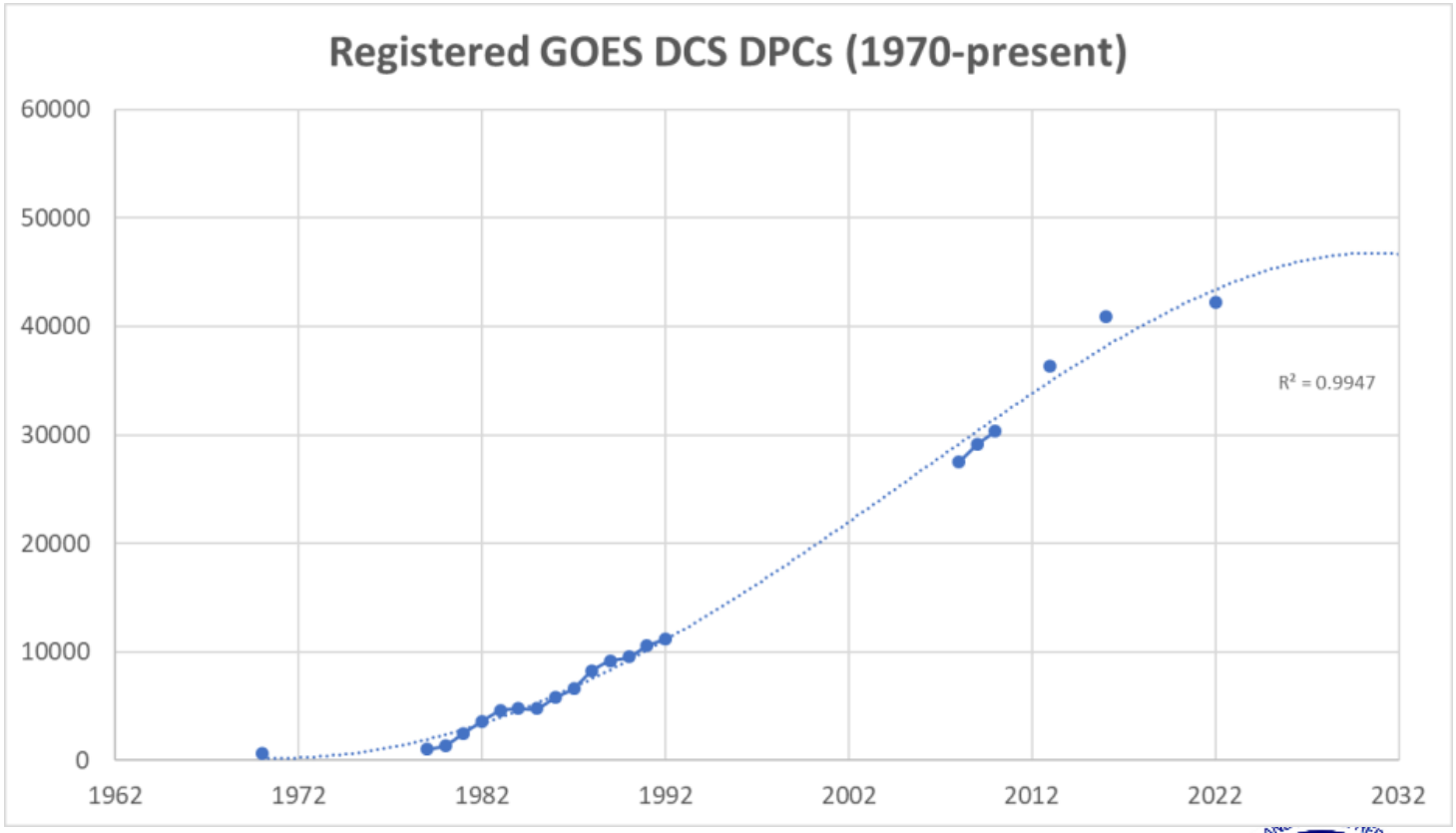
Coordination Group for Meteorological Satellites

NOAA
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
U.S. DEPARTMENT OF COMMERCE

CGMS

GOES DCS Status – System Reliability and Growth

Highly Reliable - >99.99%
Continued Growth



Coordination Group for Meteorological Satellites

CGMS

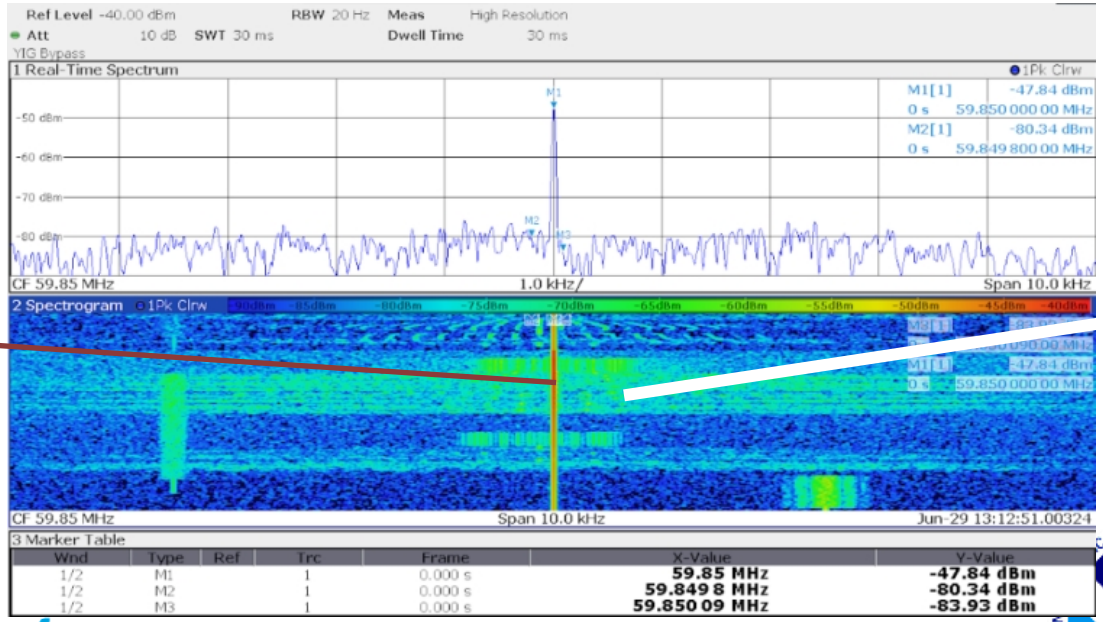
GOES DCS Status – System Challenges and Limitations

Growth Challenges

- Many Users and Many DCPs
- Reassigning DCPs efficiently during Certification Standard 2 transition is a challenge
  - User transition has created spectrum "space" that cannot be quickly utilized
  - **Solution**: Improved DCS Administration and Data Distribution System (DADDS) IT system
  - **Solution**: Two-way communication with Data Collection Platform Command (DCPC)

Spectrum Challenges – Radio Frequency Interference (RFI)

DCS Pilot Signal (Red Line)



Voice Interference - Green "noise"

CGMS DCS Best Practices and GOES DCS Practices – DCS Data Access

Practices Generally Aligned. NOAA Practices:

BP.01	CGMS
BP.02	NOAA
BP.03	CGMS
BP.04	CGMS
BP.05	CGMS
BP.06	NOAA
BP.07	CGMS
BP.08	NOAA
BP.09	CGMS
BP.10	CGMS

- BP.02 – NOAA National Weather Service Telecommunication Gateway (NWSTG) has capability to distribute on the Global Telecommunication System (GTS). No current users identified.
- BP.06 – NOAA stores user data for 30 days. Scaling storage and long-term storage is up to the user.
- BP.08 – NOAA uses web notices and all-user e-mails to communicate outages, which are rare. NOAA can implement better practices in this area by assigning status (e.g. “first notice”, “final notice”).

Coordination Group for Meteorological Satellites

NOAA National Oceanic and Atmospheric Administration U.S. Department of Commerce

CGMS

CGMS DCS Best Practices and GOES DCS Practices –RX Certification

Practices Generally Aligned. **NOAA Practices**:

BP.01	
BP.02	
BP.03	
BP.04	
BP.05	
BP.06	
BP.07	

- BP.01 – DCP certifications are very rare. Government rep conducts personal visit to the manufacturer.
- BP.02 – DCP certifications are very rare. Manufacturers contact the NOAA Radio Frequency Engineer directly. All procedures, standards, and approved manufacturers are published on a public webpage.
- BP.06 – DCP certifications are very rare, there is currently not a timeline requirement for the certification process.

Key issues of relevance to CGMS:

- ☐ Standardization of Data Collection Platform (DCP) certification
- ☐ Radio Frequency Interference (RFI)