# The Channel Interference Monitoring System

**Summary and Purpose of Document**
To provide an update on the operation of the GOES Channel Interference Monitoring System (CIMS).


Action Requested: None

# The Channel Interference Monitoring System (CIMS)

## Overview

As a member of the Coordination Group for Meteorological Satellites (CGMS), NOAA is tasked with managing the GOES frequency resources for the International Data Collection Service (IDCS).  To efficiently utilize these resources requires that NOAA monitor and report interfering signals on unassigned international channels so that new services can be  initiated on interference free channels.  In January 1996, the Wallops Command and Data Acquisition Station (WCDAS) developed the IDCS Automatic Monitoring System (IDAMS) to provide interference monitoring.  Although this system provided continuous, automatic frequency monitoring and reporting, the system was limited in it's capabilities and reaction time.  The IDAMS provided a "proof of concept" to build on.  In May 1999 the WCDAS deployed an improved system, the Channel Interference Monitoring System (CIMS).

The CIMS provides continuous, automatic testing and reporting for both GOES East and West unassigned international channels.  It's capabilities have also been expanded to provide operator scheduled testing of all GOES DCS channels, both International and Domestic.  Along with statistical reporting of Radio Frequency Interference (RFI), the CIMS proves the capability to capture, archive and analyze a Spectrum Analyzer plot of all tested signals.

## System Reporting

A statics log of all unassigned international channels where the CIMS indicates the presence of RFI is maintained in the form of an Excel spreadsheet to help in manipulating the data.  A monthly report is generated (see Table 1) from this spreadsheet showing a running account of the percent time that any channel has interference when tested.  For this reports purpose, the running account begins January 1 each year so that the monthly report shows statistics gathered up to that point in time each year.  The report is generated in text format and is posted on the IDCS website each month at **http://dcs.noaa.gov/internat.htm**.  The Spectrum Analyzer plots of channel RFI are also archived and can be printed out, along with the measurement parameters, for analysis.  CIMS system level work continues on automating the process of posting the monthly reports on the website.

**Data Analysis for Year 2000**

Analysis of the monthly data over the past year indicates that, with the exception of Channel 266, the current unused GOES International DCS channels are relatively free of any long term interference that would prohibit their operational assignment. Channel 266 continues to exhibit a near continuous interfering signal which renders the channel unsuitable for IDCS operations.

**DAPS II and CIMS**

Sometime in the near future, NOAA expects to award a contract for the design and implementation of the next GOES DCS Automated Processing System, DAPS II. DAPS II will fully integrate the CIMS system and functionality, providing realtime data and interference "snapshots" through the Internet as well as archiving the data for long term statistical analysis.

**Conclusion**

With the deployment of the CIMS in May 1999, GOES IDCS is now able to provide a flexible, continuous, automated service in the monitoring of the international channels. Through better interference detection and monitoring, NOAA helps to ensure that new services offered through the GOES IDCS are as efficiently used as is possible.

## Status and Problems of IDCS

| None |
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| Action Requested: None |