



NOAA Weather Wire Service (NWWS) Transition Information Packet for Designated State Agencies

Office of Systems Operations
Telecommunications and Dissemination Branch

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INTRODUCTION

This document pertains to all designated State agencies with a signed Memorandum of Understanding with the National Weather Service (NWS). It provides information required for those agencies to transition from the existing NOAA Weather Wire Service (NWWS) to the new NWWS. The current NWWS, which has been in operation for over 12 years, is being phased out and replaced by a new system with enhanced capabilities and improved user interfaces. The current system is scheduled to be terminated by May 31, 2000.

For the user, the new system provides the capability to use a Windows PC to select and view desired weather products. Increased data rates will provide the capability to graphics products in addition to text products. It should be noted that on the new NWWS a new format for message product headers will be used (see section 1.3). There will be a brief transition period during which both transmissions can be received.

The National Weather service will provide, at no charge, the antenna, the receiver, the service, the standard installation, the maintenance, and the specialized PC software. The State agencies are responsible for providing the Windows PC, should they desire to use one instead of a printer.

The new NWWS will operate at C-band on the GE-4 satellite, which was successfully launched on November 13, 1999, and which successfully transitioned to take the place of the Spacenet IV satellite, in the same orbital location, on January 3, 2000.

The primary network locations will be the Message Processing Center (MPC) in Chantilly, Virginia, along with Master Ground Station (MGS) hubs located at the Washington International Teleport (WIT), in Alexandria, Virginia, and at Ft. Meade, MD.

1. System Description

1.1 General Configuration

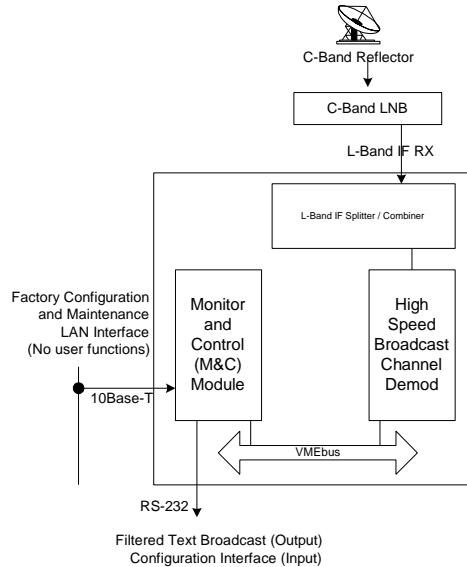
A broadcast receive site is configured to only receive traffic. This site consists of a satellite downlink terminal and a "Calypso" weatherwire receiver. The display terminals are optional.

The antenna diameter will be 1.8 meters for continental United States locations and 3.7 meters for non-continental US locations.

The broadcast downlink will be at a data rate of 64 Kbps, and will be at C-band. The filtered message output can be configured for data rates from 1200 bps to 38,400 bps. The Calypso receiver will be programmed with the capability to receive up to 150 different (Universal Generic Codes) and up to 100 different priority one messages. The optional display terminal will have the capability of selecting and displaying the products desired for viewing.

1.2 Block Diagram and Interfaces

The system block diagram of the NWWS shows the path of the signal from reception by the C-band antenna to the output port of the one-way DCE indoor unit. The indoor unit consists of a single, compact, 5.25" high x 20.0" deep x 19" wide equipment chassis, similar in size and appearance to a standard desktop personal computer. The unit is available in both a desktop and rackmount configuration, at the preference of site personnel.



As shown, the following interfaces are provided:

- **Filtered Text Broadcast Output/Configuration Interface Input.** This is a serial RS-232 DB-9 serial port which can be used **either** as a configuration interface **or** for reception of selectable NWS products from the Broadcast carrier for monitoring on a PC. The filtered text broadcast port speed is configurable to 1200, 2400, 4800, 9600, 19200 or 38,400 bps, with 9600 bps being the default. The broadcast RF carrier data rate is 64 kbps, adjustable to 32, 64, 96, 128, and 256 kbps. Note that this configuration eliminates the need for a “SIS” box, as used in the “existing” NWS.
- **IF Interface.** This RJ-6 port provides the one-way (receive) L-band interface from the C-band VSAT
- **10 Base-T Interface.** This interface is used for performing DCE software upgrades after downloading them from the Internet.

1.3 Message Product Format

The primary difference between the current and the new NWS will be the message product format that will be received. The current format utilizes “PIL” (Product Inventory List) headers; the new format will utilize WMO (World Meteorological Organization) headers. The WMO header format will be as follows:

Field Name	FORMAT	SIZE	COMMENTS
START_OF_MSG	SOH	1	ASCII SOH character (0x01)
	CRLF or CRCRLF	2 or 3	(0x0D, 0x0A) or (0x0D, 0x0D, 0x0A)
SEQ_NUM	nnn	3	Sequence Number
	CRLF or CRCRLF	2 or 3	(0x0D, 0x0A) or (0x0D, 0x0D, 0x0A)
WMO_HEADER	TTAAII sCCCCsYYGGgg<sBBB>	17 to 22	“s” is an ASCII space character (0x20)
		Bytes	<sBBB> is optional
AWIPS_ID	CRLF or CRCRLF	2 or 3	(0x0D, 0x0A) or (0x0D, 0x0D, 0x0A)
	NNNXXX	6	The NNN will be used to look up the priority of this message
	CRCRLF	3	(0x0D, 0x0D, 0x0A)
		Bytes	

WMO_TEXT	ASCII TEXT	N Bytes	Each text "line" in this message text ends with either CRLF or CRCRLF If this message text starts with a UGC_CODE line, then this message is using the "UGC" PLACEMENT FORMAT 1". If this message text starts with a CRCRLF, then this message is using the "UGC PLACEMENT FORMAT 2".
END_OF_MSG	CRLFETX or CRCRLFETX	3 or 4 Bytes	(0x0D, 0x0A, 0x02) or (0x0D, 0x0D, 0x0A, 0x02)

For up to date information regarding converting from PIL to WMO formats, consult the NWWS Web site (see Section 6).

2. Installation Procedures and Requirements

The installation will be performed by Dyncorp's installation subcontractor, United Service Source, Inc.(USSI). You will be contacted by DynCorp to provide them with information required for the installation. See section 7 for contact information.

The process begins with the assembly and accurate pointing of the VSAT antenna towards the intended satellite. The antenna must be located such that there is a clear, unobstructed line of sight towards the satellite. Antenna site selection is performed when the installer arrives on site.

Once antenna pointing is complete, the installer mounts the Calypso Outdoor Unit (ODU), consisting of a Low Noise Block (LNB) directly to the antenna feed using standard hand tools. To facilitate set-up, installation and mounting kits, matched to the specific target antenna vendor model number, will be provided. The mounting kit includes all required connectors, adapters, flex waveguide (if any) and mounting hardware necessary to affix the Outdoor Unit (ODU) to the antenna.

Once the ODU mounting has been completed, the installer runs one Intra-Facility Link (IFL) cable between the indoor and outdoor units to receive the IF. IFL runs of up to 300 feet are supported without the need for additional in-line amplification and will be supplied by Dyncorp.

Before connecting the IFL cables to the DCE, the installer accesses the DCE Configuration Interface to enter the necessary DCE configuration parameters. These parameters include information such as the satellite frequency at which the network control information and Text Data Broadcast are to be received, a system gain parameter related to IFL run length, and LNB settings. All necessary information will be provided to installers in the form of cut-sheets prior to their arrival on site.

Once the network control site has been notified (if necessary), the installer connects the IFL to the DCE. The DCE then automatically acquires the network

Finally, the installer connects all required interface cables, and performs a check-out procedure to verify that the terminal is operating properly.

2.1 Cabling

Dyncorp will provide a suitable cable with suitable connectors for connection of the NWWS indoor DCE to the NWWS PC, used for message product monitoring.

Interfacility Link (IFL) cables will be provided and installed by Dyncorp.

All conduits will be installed by Dyncorp.

All cabling will meet local codes and be plenum-rated for installation at NWS facilities.

The details regarding grounding, lightning protection, and surge suppression will be supplied when available.

3. Diagnostic Capabilities

The NWWS One-Way DCE designs includes extensive internal diagnostic capabilities to assist users and maintenance personnel in DCE troubleshooting and identification of failed components.

The Calypso IDU is programmed with a suite of Power-On Self Tests (POST) upon application of power or reboot, to verify that the equipment is operational and capable of supporting network operations. The unit also performs regular polling of each internal module to determine its operational status. Should either test fail, the operator is immediately alerted via the illumination of a front-panel LED.

The Calypso software also allows an extensive series of directed diagnostics tests to be invoked to isolate failed module(s) within the terminal. Diagnostic tests may be run on each of the Calypso s mission critical internal modules. Test results are then used to ascertain which of the internal components has failed. Diagnostic tests for one-way DCEs may be invoked locally using the Configuration interface

4. Program Schedule

The current NWWS is scheduled to terminate operations on May 31, 2000. Installation of state agency sites is scheduled to begin in mid April and to be completed by the end of April. This will allow at least a one month transition period.

5. Internet Site and Documents

In order to keep interested parties apprized of the latest information regarding the new NWWS on an ongoing basis, an NWWS Web site has been established. The URL is as follows: <http://www.nws.noaa.gov/oso/oso1/oso15/newnwws.htm>. It is suggested that this site be checked on a regular basis.

7. Contact Information

Responsibility for NWWS site implementation has been divided according to the location of the installation, as follows:

CONTACT NAME	CONTACT PHONE/EMAIL	SITE RESPONSIBILITIES
Pat Gillis	(301) 713-1743 ext 104 patrick.gillis@noaa.gov	States beginning with A-M
Howard Carlin Program Support	(301) 713-1743 ext. 109 Howard.Carlin@noaa.gov	States beginning with N-Z
NWWS Internet Web Site	http://www.nws.noaa.gov/oso/oso1/oso15/newnwsw.htm	
Installation Issues	DynCorp: Frank Wesby (703) 818-4266	

Filename: r2stateagency.doc
Directory: G:\RECOMP\After Solicitation Posting Activity\NWWS
IMPLEMENTATION\Transition Info and Issues
Template: C:\Program Files\Microsoft Office\Templates\Normal.dot
Title:
Subject:
Author: National Weather Service
Keywords:
Comments:
Creation Date: 03/07/00 10:21 AM
Change Number: 4
Last Saved On: 03/08/00 10:22 AM
Last Saved By: National Weather Service
Total Editing Time: 65 Minutes
Last Printed On: 03/08/00 10:23 AM
As of Last Complete Printing
Number of Pages: 7
Number of Words: 1,537 (approx.)
Number of Characters: 8,764 (approx.)