

NWS Liaison Message

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Installation Guide

Introduction

Purpose

NWS Liaison Message automates an interface to permit an agency/office outside of the National Weather Service (NWS) to compose messages for broadcast on NOAA* Weather Radio (NWR). This interface is *not* fully automated: a manual review by NWS personnel of each proposed message must occur before it is released for transmission.

Structural Overview

Each NWS Weather Forecast Office (WFO) is responsible for a given, non-overlapping, area of the country. This area is termed its County Warning Area[†] (CWA). Each WFO “owns” and operates a number of NWR transmitters to provide coverage for their CWA. A given Outside Agency/Office may therefore need to interface with more than one WFO to broadcast its message to all the NWR transmitters in *its own* area of responsibility. For example: a state has three WFO’s, which together blanket that state with NOAA Weather Radio. The state’s Department of XYZ would like to broadcast a message relating to XYZ-type public safety on NWR periodically. They must therefore interface with all three WFOs if they wish to cover the whole state. And a given WFO may need to interface with more than one Outside Agency/Office, simply because more than one Outside Agency/Office may desire these services.

One more acronym needs to be introduced: CRS. A WFO’s NWR transmitters broadcast unattended using a computer system named the Console Replacement System (CRS).

Definitions

For the purposes of **NWS Liaison Message**, the following definitions apply.

Liaison Instance: the “universe” of one of these interfaces: one Outside Agency/Office, one or more WFOs, this software, and the specific configuration changes necessary to establish the instance.

Outside Agency/Office: the customer, from the NWS-centric point of view of this document.

Primary WFO: the one that first establishes an interface with an Outside Agency/Office. They start the Liaison Instance by configuring the software and providing that configuration to the Outside Agency/Office and any Secondary WFOs. The software running at a primary WFO will provide feedback about errors to the Outside Agency/Office. A primary WFO is not necessarily the official NWS liaison office for the state in question.

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† This, unfortunately, is a misnomer, as a WFO’s area of responsibility does not necessarily conform to normal county boundaries: it is instead based on what the NWS terms a zone. Zones may be larger or smaller than counties. Zones aggregate into CWAs. Counties may be split between CWAs. States may be split between CWAs. CWAs may cross state boundaries.

Secondary WFO: one to join a Liaison Instance after it has been configured by a Primary WFO. They are still responsible for the initial software installation of this package, but simply agree to accept an instance configuration from the Primary WFO. The software running at a secondary WFO does not provide error notification to the Outside Agency/Office. This prevents the Outside Agency/Office from receiving duplicate error notifications.

A WFO may be Primary WFO for some Liaison Instances and Secondary WFO for others.

Task Summaries

Initial Installation of Software

At a Primary or Secondary WFO

The **NWS Liaison Message** package is downloaded from the NWS Local Application Database. Components are installed on the WFO's Local Acquisition and Dissemination (LDAD) computer, on the Advanced Weather Interactive Processing System (AWIPS) server that runs their LDAD interface, and on their office's Intranet Local Area Network (LAN) that serves their Microsoft Windows PCs. One-time local configuration changes are made to some components.

Another required component, the Microsoft XML Notepad (freeware), is downloaded from a Microsoft web site and installed on computers attached to the WFO's Intranet LAN.

One last component that may be required is the Perl module XML::XSLT. If not already installed, it must be downloaded from the Internet and applied to the LDAD computer.

At an Outside Agency/Office

A recommended component, the Microsoft XML Notepad (freeware), is downloaded from a Microsoft web site and installed on the computers to be used to host this interface.

Configuring a Liaison Instance

At a Primary WFO

1. Copies of **NWS Liaison Message** template files are made and the copies modified for this Liaison Instance.
2. A Joint Photographic Experts Group (JPEG) map image file is locally developed to depict the NWS zones that are to be referenced by the Outside Agency/Office for use in this instance.
3. A template document is modified to serve as instructions for the WFO Operations Staff. It is then sent to the Meteorologist in Charge (MIC), or his/her appointee, for coordination.
4. A cron job is scheduled on the LDAD computer to pull, via FTP, the Outside Agency/Office's message(s), analyze them, and then send them through LDAD, to AWIPS and CRS.

5. CRS is reconfigured to accept the new Product Identifier List (PIL) ids invented for this instance.
6. Files from the first three steps are emailed as attachments to the Outside Agency/Office and any Secondary WFOs with instructions.

At a Secondary WFO

Email received from the Primary WFO provides files to copy to the existing **NWS Liaison Message** installation directory to establish this Liaison Instance and provides a user's guide for WFO Operations Staff to be forwarded to the MIC for coordination.

A scheduled cron on the LDAD computer pulls, via FTP, the Outside Agency/Office's message(s), analyzes, and then sends it through LDAD, to AWIPS and CRS.

A reconfigured CRS accepts the new Product Identifier List (PIL) ids selected for this instance.

At an Outside Agency/Office

The **NWS Liaison Message** components required are sent as email attachments from the Primary WFO. Included instructions explain how to host these files on the computers to be used for this interface.

Operations

At an Outside Agency/Office

As required, Outside Agency/Office personnel use the recommended Microsoft XML Notepad software to create new messages. After creation, they FTP the edited file to an FTP site determined when the Liaison Instance was established.

At a Primary or Secondary WFO

NWS Liaison Message receives and processes a new message. Processing triggers a "Red Banner" AWIPS Guardian message to WFO Operations Staff. They review the message on an AWIPS workstation using their NWRBrowser tool. Upon approval, they send it to CRS for transmission.

Installation Task Details

Primary Site Installation Tasks

Initial Installation of Software

Complete this worksheet first:

Install Worksheet 1

1. The intended Outside Agency/Office, the customer, already have an XML editing tool that understands XML schema definitions written in XML Schema (W3C) language (.xsd extension).
 (Yes) (No)
2. The customer, has a Windows PC running Windows Server 2003; Windows Vista; Windows XP; or Windows XP Home Edition .NET Frameworks v2.0 and are able to download and install freeware such as Microsoft XML Notepad.
 (Yes) (No)

If both 1 and 2 above are checked no, then stop here: you cannot proceed

3. My WFO already has an XML editing tool that understands XML schema definitions written in XML Schema (W3C) language (.xsd extension).
 (Yes) (No)
4. My WFO has a Windows PC running Windows Server 2003; Windows Vista; Windows XP; or Windows XP Home Edition .NET Frameworks v2.0 and is able to download and install freeware such as Microsoft XML Notepad.
 (Yes) (No)

If both 3 and 4 are checked no, you can continue but will be hindered in helping the customer with any problems they have.

5. The Customer owns, or has access to, an FTP site both they and we have access to (read/write for them, read-only for us are the minimum requirements).
 (Yes) (No)
6. We own or have access to an FTP site both that both we and the customer can access (read/write for them, read-only for us are the minimum requirements).
 (Yes) (No)

If both 5 and 6 are checked no, then stop here: you cannot proceed.

7. My WFO's LDAD setup is running in mode B (the old ls1 has been cut over to the new Linux ls2/ls3 setup).
 (Yes) (No)
8. My WFO has another Linux computer on which to host **NWS Liaison Message**. It has access to the agreed upon FTP site, can send email to the intended customer using sendmail, and has Perl installed with modules Time::Local, XML::LibXML, XML::Simple, Net::Ftp, File::Spec, and File::Basename installed.
 (Yes) (No)

If both 7 and 8 are checked no, you can only continue after you have converted your LDAD to mode B

If none of the above stopped you, go ahead with the install.

Microsoft Windows PC

This portion of the install partially depends on what tool your customer will be using to edit the XML file that **NWS Liaison Message** requires. If they are unwilling to download and install Microsoft XML Notepad because they already have an XML editor and are familiar with it, that's perfectly acceptable as long as it will honor **Nws Liaison Message**'s XML Schema. You would be better off if you could install their XML tool to simulate their environment, but you can always download the Microsoft XML Notepad and be close enough.

You can download and install the Microsoft XML Notepad at <http://www.microsoft.com/downloads/thankyou.aspx?familyId=72d6aa49-787d-4118-ba5f-4f30fe913628&displayLang=en>. Supported Operating Systems: Windows Server 2003; Windows Vista; Windows XP; Windows XP Home Edition .NET Frameworks v2.0.

Decide where you want the Microsoft Windows portion of **NWS Liaison Message** to reside. Create a new directory there. It will only hold six or seven small files, so space is not an issue. Let's call that directory **NwsLiaisonMessage** for the purposes of this document.

Download the **NWS Liaison Message** package from the NWS Local Application Database at <http://140.90.90.253/~applications/LAD/>. It is a gzipped tar file. Open it with WinZip and copy the files named **NwsLiaisonMessage.xml**, **CustomerQuickInstall.pdf**, and **CustomerUserGuide.pdf** to the **NwsLiaisonMessage** directory.

LDAD Linux Server

Create a directory for **NWS Liaison Message** on your LDAD. It doesn't matter where you put it. If you stick to running the cron job that will query the FTP site for file updates from the customer every 15 minutes or more, the space requirement will be at most one megabyte per Liaison Instance.

Name the directory **NWSLiaisonMessage**. If you can't decide where to put it, choose the **ldad** user's home directory, which is **/ldad**, in which case you would make the **/ldad/NwsLiaisonMessage** directory.

Change to the parent directory, and, as **root**, change the perms and ownership as follows:

```
chmod 775 NWSLiaisonMessage  
chown ldad:ldad NWSLiaisonMessage
```

Copy the gzipped tar file that you downloaded to your LDAD. Change to your new **NWSLiaisonMessage** directory and untar, as root, with:

```
tar -xzipf <path and filename of the gzipped tar file>
```

Imagine everything is specified as above and that you copied the tar file to **/tmp**. The commands would be:

```
cd /ldad/NwsLiaisonMessage  
tar -xzipf /tmp/NwsLiaisonMessage.tgz
```

Note the **p** switch for permission retention. This is important so that the files will come out of **tar** with proper perms and **ldad** ownership. Everybody's **ldad** has uid 1130, so this will work.

Check for the Perl **XML::XSLT** module and install it if necessary. As root:

```
perl -MXML::XSLT -e 'print "$XML::XSLT::VERSION\n"'
```

If this returns "**Can't locate XML/XSLT.pm in @INC...**" you must download and install the module. One place it can be found is at

<http://search.cpan.org/perldoc?XML::XSLT>. Go to that URL and look for the link on the right side of the page labeled: **XML-XSLT-0.48.tar.gz**. Download it, copy it to the LDAD computer, and put it in the **NWSLiaisonMessage** directory, so these instructions will have a reference point. As root:

```
cd NWSLiaisonMessage
tar xzf XML-XSLT-0.48.tar.gz
cd XML-XSLT-0.48
perl Makefile.PL
make
make test
make install
```

Now, repeat the command:

```
perl -MXML::XSLT -e 'print "$XML::XSLT::VERSION\n"'
```

and it will print out "**0.48**" instead. Keep an eye on this module after AWIPS installs that affect the LDAD. It may disappear.

The final steps are one-time, configuration edits:

Edit the file **NwsLiaisonMessageNwrCrs.xml**. On line 11, which reads:

```
<xsl:text>ccc</xsl:text>
```

replace **ccc** with your WFO PILs' **ccc**. For example: my normal PIL is **PWMnnnnCAR** for Caribou (CAR) in Maine, (PWM), so I would replace **ccc** with **PWM**. My line 11 would read:

```
<xsl:text>PWM</xsl:text>
```

Next, on line 13, which reads:

```
<xsl:text>xxx</xsl:text>
```

replace **xxx** with your WFO PILs' **xxx**. For example: my normal PIL is **PWMnnnnCAR** for Caribou (CAR) in Maine, (PWM), so I would replace **xxx** with **CAR**. My line 13 would read:

```
<xsl:text>CAR</xsl:text>
```

Don't worry about the **nnn** part yet. That is a configuration item specified in establishing a new Liaison Instance. The edits *here* are one-time and never need be done again.

Next, edit the file **NwsLiaisonMessage.pl**. On line 23, which reads:

```
my $LOCAL_EMAIL_LIST = 'some.body@noaa.gov'
```

change what's between the single quotes to a comma separated list of system administrators who will be responsible for **NWS Liaison Message**. If there is just you, put your email address between the quotes. You must code at least one: a null value, "", is not allowed. This value allows the script to send errors to someone when they occur so early in the script's execution that the normal configuration file hasn't been read yet.

One more optional edit you may want to make is to change some of the entries in the file **NwsLiaisonMessage.conf.template**. These would be:

NWS_SITE_NAME

LOCAL_EMAIL_LIST

NOTIFY_FOR EVERY RECIPIENT

and perhaps

CRONJOB_MINUTES

But wait on changing these until you establish your first Liaison Instance. Their descriptions belong in that part of this document, so you'll read them there. And changing this template will really only save you time and effort if you intend to establish many Liaison Instances.

AWIPS Server Running Your LDAD Interface

Copy the file **NwsLiaisonMessageIngest.pl** from the **NwsLiaisonMessage** directory on your LDAD to the **/awips/ldad/bin** directory on the AWIPS server running your LDAD Interface. As of 4/2/2008, with AWIPS running OB 8.2, this would be your px2 server. Edit the **/awips/ldad/data/LDADInfo.txt** file to ingest a file named **NWSLiaisonMessage.txt**. When it ingests it is to be filtered through **NwsLiaisonMessageIngest.pl**.

Switch user to **ldad** and restart the LDAD processes to put these changes into effect (**stopLDAD.sh** followed by **startLDAD.csh**).

Configuring a Liaison Instance

Start by filling out this worksheet.

Install Worksheet 2

Pick three characters as an identifier for this Liaison Instance. These characters will be used to make everything for this instance unique. Actually, three characters is just a recommendation. If you must choose four or five, do so. Use uppercase letters only. In order to refer to this field, we'll call it the **Liaison Instance Id**, for the proposes of this document.

Come up with a short name for your own organization. This will be used to identify you to the customer in any automated emails generated because of errors they commit. For example: "WFO Caribou, Maine".

List the UGC codes for the zones that this Outside Agency/Office will need to use. Do not necessarily list all your zones: if this customer will only reference some, then only list those. An example: a state Park Department wants to broadcast safety info about their parks. These parks reside in only three zones, two in your CWA and one in a neighboring WFO's. List just those three zones.

This example points out that this list may extend beyond your own CWA: remember, you are the Primary WFO and are now thinking for all the Secondary WFOs that will end up running this Liaison Instance.

Now filter these UGCs to list only your own. This may actually include some that are not in your own CWA, if you regularly provide NWR coverage for them. An example might be a boundary zone owned by a neighboring office, but for which they have no CRS transmitter. Your office covers for them by regularly broadcasting their products to the NWR listeners in those zones.

List your own email address, plus those of any other people at your WFO who will want to receive notification when a message from the customer is processed

NWS Liaison Message execution is based on a cron job you will schedule on your LDAD. How often do you want to run it? What kind of timeliness does your customer desire? Will they be issuing short-fused-type messages or long-fused ones that they can send in days ahead of time? **NWS Liaison Message** takes full advantage of CRS' capability to defer message broadcast: if the customer specifies that a message should start broadcasting on Tuesday at 4 p.m., that's when it will start, not when they send it in. Back to the cron. Every 15 minutes? Every hour? Twice a day? At specific times of the day due to Operational Staffing requirements? Plus, only you know how over or under loaded your LDAD is. It's up to you.

Write the email address(es) of the POC(s) at the Outside Agency/Office that you or the person in your office who initiated this contact have been coordinating with. Normally,

these addresses will be provided by the XML file from the FTP site during regular processing: the list here will only be used as a fallback by **NWS Liaison Message** when the XML file cannot be processed.

What's the customer's timezone?

Specify the lead-in sentence that CRS will broadcast before the customer's messages. This is required by directive. For example: "The following information is being relayed by the National Weather Service at the request of the <state> <department of ??>."

List the categories of messages that the customer wants to broadcast. For each of these, you will also assign a PIL for CRS to process, so *that* really dictates how many you need to invent here. The way that CRS works, you will need more than one PIL if the customer has a requirement to broadcast different messages simultaneously on a given transmitter

The categories you list here are just customer-friendly human-readable names for the PILs you are going to invent. For example: that fictitious Parks Department from above wants to broadcast messages about specific hiking trails that have been closed due to trail damage or weather and other messages about access restrictions due to bear sightings. You realize that these two types could overlap: some trails could be closed at the same time as bears were sighted in other areas, but both in the same NWS zone, so **NWS Liaison Message** and CRS must handle two types of messages simultaneously. You invent two categories and name them "Trail Closure" and "Bear Sighting". You also invent two PILs to go with these, whose **nnn** parts are: "PTC" and "PBS", for "Parks Trail Closures" and "Parks Bears Sightings", respectively.

Also specify the **nnn** part of the PILs that will be used by CRS for each category. (Your **ccc** and **xxx** parts were specified earlier in these instructions.) The only requirement is that the PILs, of course, cannot clash with your existing set of PILs as determined by your CRS/Cafe/NWRWAVES mix, or with each other.

You can code as many of these cross references as you need, without limit.

Category Name	. nnn part of PIL
	.
	.
	.
	.

Finally, specify the information about the FTP site you have agreed to use with the customer.

Name of host where the FTP site resides (specify FQDN):

Name of target directory on the FTP site where **NWS Liaison Message** is to look for the XML file. You will probably use a relative path if the FTP login starts the userid out below the FTP root directory.

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User name that **NWS Liaison Message** is to use to login to the FTP site:

Password for this user:

Name of the XML file **NWS Liaison Message** is to look for. Please keep “.xml” as the file’s extension or Windows and Linux conventions for the file type may not work. A good choice is <**Liaison Instance Id**>.xml. However, if the customer just doesn’t like this name, change it.

Making the Instance

LDAD Linux Server

Start on the LDAD server as root. In order to have specific syntax examples, let's imagine you specified **XYZ** as the **Liaison Instance Id** on *Install Worksheet 2*. Go to the **NwsLiaisonMessage** directory. Make a copy of the **NwsLiaisonMessage.conf.template** file and name it <Liaison Instance Id>.conf. That would be **XYZ.conf**, in our example, hence:

```
cp -p NwsLiaisonMessage.conf.template XYZ.conf
```

Edit this new file and transfer in the info you entered on *Install Worksheet 2*. Be sure to code the value of the **\$NWS_SITE_TYPE** variable as **primary**. The variable **\$NWS_ZONE_LIST** takes the shortened list of just your own UGC codes: the full list will be used later. Give **\$NOTIFY_FOR EVERY RECEIPT** a different value if desired after reading its associated comment in the file. **\$CRONJOB_MINUTES** takes its value in minutes, as a numeric value, without surrounding quotes.

\$ORIGINATORS_TIMEZONE takes its value in UNIX terms: see the examples in the associated comment in the file. Only you will know if you have any quirks (daylight savings time and Indiana and Arizona?). Be mindful of the syntax of the **%MESSAGE_TYPE_XREF** variable. Leave the value of the **\$FTP_PW** variable surrounded by single quotes and you will have no trouble with special characters that may occur in the password.

After you are done with the edits, copy this file to the **NwsLiaisonMessage** directory in your Windows environment if you will have Secondary WFOs participating in this Liaison Instance. You must email it to them.

Make a copy of the **NwsLiaisonMessage.xsd.template** file and name it <Liaison Instance Id>.xsd. That would be **XYZ.xsd**, in our example, hence:

```
cp -p NwsLiaisonMessage.xsd.template XYZ.xsd
```

Edit this new file and transfer in the full zone list from *Install Worksheet 2*. The full zone list replaces the values found in lines 75 to 78. There are four example lines shown, so depending on how many zones you decided on, you may have to delete or add some lines. You replace the values shown between double quotes as **ssZ998**, **ssZ999**, **ooZ998**, and **ooZ999** with yours, leaving the rest of the line intact.. (“Ss” is intended to stand for the state code in land zones and “oo” for the ocean or lake code in marine zones.) Also change the documentation message in line 70 to reflect a few of the zones. Note that the documentation message shows just examples: the full zone list is not necessary here.

Next, move down *Install Worksheet 2* to where you decided what the category names would be. You have already entered these and their associated **nnn** PIL parts as the values of the **%MESSAGE_TYPE_XREF** variable in the previous file edited, above. Now, in this file, enter just the category names, spelled exactly the same, letter by letter, paying attention to case, in the values found in lines 107 to 109. (If you added or deleted lines above, these new lines will be *near* 107 to 109. They are the **xs:enumeration** lines with **Phrase One**, **Phrase Two**, etc. in them.) There are three example lines shown, so depending on how many categories you decided on, you may have to delete or add some lines. You replace the values shown between double quotes as **Phrase One**, **Phrase Two**

and **Phrase Three** with yours, leaving the rest of the line intact. Also change the documentation message in or near line 102 to reflect the correct categories. This line will also currently mention **Phrase One**, **Phrase Two**, etc.

Copy this newly edited file to the **NwsLiaisonMessage** directory in your Windows environment. You must email it to the customer and to any Secondary WFOs.

Make a copy of the **NwsLiaisonMessageSample.xml.template** file and name it <Liaison Instance Id>**sample.xml**. That would be **XYZsample.xml**, in our example, hence:

```
cp -p NwsLiaisonMessageSample.xml.template XYZsample.xml
```

Edit this file. On line 3, change the value of the attribute

xsi:noNamespaceSchemaLocation to <Liaison Instance Id>**.xsd**. In our example, it would end up reading:

```
<NwsLiaisonMessage xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"  
xsi:noNamespaceSchemaLocation="XYZ.xsd">
```

all on one line.

Copy this new file to the **NwsLiaisonMessage** directory in your Windows environment. You must email it to the customer and to any Secondary WFOs.

Make a copy of the **NwsLiaisonMessageOperationsGuide.doc.template** file and name it <Liaison Instance Id>**operationsGuide.doc**. That would be

XYZoperationsGuide.doc, in our example, hence:

```
cp -p NwsLiaisonMessageOperationsGuide.doc.template XYZoperationsGuide.doc
```

Copy this new file to the **NwsLiaisonMessage** directory in your Windows environment. You must email it to any Secondary WFOs and then edit it and send it to your own MIC.

CRS Server

Configure CRS to broadcast the PILs you noted on *Install Worksheet 2*. For each PIL **nnn** part you entered in the file **XYZ.conf**, above, the full PIL presented to CRS will be the combination of what you entered on line 11 in file **NwsLiaisonMessageNwrCrs.xml** referenced in the section *Initial Installation of Software, LDAD Linux Server*, above, followed by the **nnn** part, followed by what you entered on line 13 in **NwsLiaisonMessageNwrCrs.xml**. For example, imagining that the fictitious Park Service were in my CWA, the PILs would be **PWMPPTCCAR** for the "Trail Closure" category and **PWMPBSCAR** for "Bear Sighting". Note: **NWRWaves** is not a part of the **Nws Liaison Message** dataflow. It is bypassed completely. The customer messages are presented to CRS just as the Climate Reports and Hourly Weather Roundups are, as of 4/2/2008, with AWIPS running OB 8.2, except they always go to the Pending queue. They must be sent manually to CRS.

LDAD Linux Server

Now move to back to the LDAD server. Set up a cron job as the user **ldad**. Edit **/etc/ha.d/cron.d/SITElscron**. On your cron line, you enter the timing info as established on *Install Worksheet 2*, the user of **ldad** as the one to run the command, and the following syntax as the command to be executed:

```
<full path to NwsLiaisonMessage dir>/NwsLiaisonMessage.pl <Liaison Instance  
Id>.conf >/dev/null 2>&1
```

or, using our assumptions so far, the command would be:

```
/ldad/NwsLiaisonMessage/NwsLiaisonMessage.pl XYZ.conf >/dev/null 2>&1
```

As an example: a cron line for every fifteen minute execution could look like this:

```
5,20,35,50 * * * * ldad /ldad/NwsLiaisonMessage/NwsLiaisonMessage.pl XYZ.conf >/dev/null 2>&1
```

Save the crontab. Copy it to its partner:

```
scp -p SITElscron ls3:/etc/ha.d/cron.d
```

Copy it to the currently active cron entry:

```
cp -p SITElscron /etc/cron.d
```

replying “yes” to the overwrite prompt. Finally:

```
service crond restart
```

to activate it.

Everything on your end is now ready and waiting to process any messages from the customer. Get them online and you are done.

Microsoft Windows PC

Lastly, move the Windows environment and log into a PC where you can access both XML Notepad and files copied to this location from above. Find the files in the Windows **NwsLiaisonMessage** directory. Each Liaison Instance should have its own directory to keep the files positively separate (even though the ones that are different all have unique names), so create a new directory here, named <Liaison Instance Id>. Continuing to use our example, the new directory would be **XYZ**. *Move* (not copy) the three or four files prefixed with <Liaison Instance Id> to this new directory (**XYZ.xsd**, **XYZsample.xml**, **XYZoperationsGuide.doc** and maybe **XYZ.conf** in our example). *Copy* the files named **NWSLiaisonMessage.xsl**, **CustomerQuickInstall.pdf**, and **CustomerUserGuide.pdf** to this directory.

Use XML Notepad to edit **XYZsample.xml**. Errors will appear in red in the lower pane in the **Error List** tab. Fix them. This will give you a brief exposure to this tool. Once you have fixed them all, save your changes and exit the tool.

Create a map showing the appropriate zones (the full zone set) so that the customer, who is completely unfamiliar with NWS zones, will know which ones to specify in their messages. The map must be stored as a JPEG image and have the name **NwsLiaisonMessageZoneMap.jpg**. Save this image file to the new <Liaison Instance Id> directory. *Do not* name it <Liaison Instance Id>.jpg by mistake. Unfortunately, this map will not display until the instance is installed and fixed at the customer’s site. There is a bug in the XML Notepad that seems to require a full path for this filename. If you want to check it yourself you must edit the **XYZsample.xml** file and change one of the commented lines near 112 so the value of the **src** attribute is full path to the image file. It will then appear in the XML Notepad when you select the XSL Output tab.

Send an email to the customer. Include all the files in the <Liaison Instance Id> directory as attachments, *except* <Liaison Instance Id>**operationsGuide.doc** and <Liaison Instance Id>**.conf**, if it appears. *This* file is only for Secondary WFOs. As part of the body of the message, please direct the customer to read the **CustomerQuickInstall.pdf** document

first. Most importantly, clearly identify in the body the values for **\$FTP_SITE**, **\$FTP_DIR** and **\$FTP_FILE**, that have already been agreed upon with them.

Using Microsoft Word, edit the document <Liaison Instance Id>**operationsGuide.doc**. In our example: **XYZoperationsGuide.doc**. It is a Word form, so you only have to fill in a few fields to tailor it for this instance. For now, in order to let any Secondary WFOs know about the instance, only fill out the first four fields in the very first *Preliminaries* paragraph.

If or when you have lined up any Secondary WFOs, send them an email. Include all the files in the <Liaison Instance Id> directory as attachments, *except* the PDF files. Also include this document as an attachment and direct them to read it. They should experience the same pain you just have, no?

Finally, return to Microsoft Word and **XYZoperationsGuide.doc**. Finish editing it by filling out the last two fields: one in the *Disapproval Action* paragraph and the other in the *Must Conclude within 30 Minutes* paragraph. Email this document to the MIC or his/her appointee for review and distribution to the Operations staff.

Secondary Site Installation Tasks

Initial Installation of Software

You have probably just received an email from one of your nearby WFOs about something called **Nws Liaison Message**. You've read the *Introduction* section down to at least *Definitions* and know what a Primary and a Secondary WFO are. You've skipped down here to see if this is what you need. It is! You are reading at exactly the right place. You must first install the software, as follows.

Microsoft Windows PC

Having an XML editing tool is not 100% necessary at a Secondary WFO. If you'd like to see what the customer is doing or you expect to have to help them when they try to send messages for zones in your CWA, then install the Microsoft XML Notepad. You can download and install it from <http://www.microsoft.com/downloads/thankyou.aspx?familyId=72d6aa49-787d-4118-ba5f-4f30fe913628&displayLang=en>. Supported Operating Systems: Windows Server 2003; Windows Vista; Windows XP; Windows XP Home Edition .NET Frameworks v2.0.

If you decide to install the Microsoft XML Notepad you will want some sample files to play around with, so you should decide where you want the Microsoft Windows portion of **NWS Liaison Message** to reside. Create a new directory there. It will only hold four small files, so space is not an issue. Let's call that directory **NwsLiaisonMessage** for the purposes of this document.

This paragraph is not optional. Download the **NWS Liaison Message** package from the NWS Local Application Database at <http://140.90.90.253/~applications/LAD/>. It is a zipped tar file. Just save it somewhere: you will copy it to your LDAD in the next section.

LDAD Linux Server

Create a directory for **NWS Liaison Message** on your LDAD. It doesn't matter where you put it. If you stick to running the cron job that will query the FTP site for file updates from the customer every 15 minutes or more, the space requirement will be at most one megabyte per Liaison Instance.

Name the directory **NWSLiaisonMessage**. If you can't decide where to put it, choose the **ldad** user's home directory, which is **/ldad**, in which case you would make the **/ldad/NwsLiaisonMessage** directory.

Change to the parent directory and then, as root, change the perms and ownership as follows:

```
chmod 775 NWSLiaisonMessage  
chown ldad:ldad NWSLiaisonMessage
```

Copy the gzipped tar file that you downloaded to your LDAD. Change to your new **NWSLiaisonMessage** directory and untar, as root, with:

```
tar -xzipf <path and filename of the gzipped tar file>
```

Imagine everything is specified as above and that you copied the tar file to **/tmp**. The commands would be:

```
cd /ldad/NwsLiaisonMessage  
tar -xzipf /tmp/NwsLiaisonMessage.tgz
```

Note the **p** switch for permission retention. This is important so that the files will come out of **tar** with proper perms and **ldad** ownership. Everybody's **ldad** has uid 1130, so this will work.

Check for the Perl **XML::XSLT** module and install it if necessary. As root:

```
perl -MXML::XSLT -e 'print "$XML::XSLT::VERSION\n"'
```

If this returns "**Can't locate XML/XSLT.pm in @INC...**" you must download and install the module. One place it can be found is at <http://search.cpan.org/perldoc?XML::XSLT>. Go to that URL and look for the link on the right side of the page labeled: **XML-XSLT-0.48.tar.gz**. Download it, copy it to the LDAD computer, and put it in the **NWSLiaisonMessage** directory, so these instructions will have a reference point. As root:

```
cd NWSLiaisonMessage  
tar xzf XML-XSLT-0.48.tar.gz  
cd XML-XSLT-0.48  
perl Makefile.PL  
make  
make test  
make install
```

Now, repeat the command:

```
perl -MXML::XSLT -e 'print "$XML::XSLT::VERSION\n"'
```

and it will print out "**0.48**" instead. Keep an eye on this module after AWIPS installs that affect the LDAD. It may disappear.

The final steps are one-time, configuration edits:

Edit the file **NwsLiaisonMessageNwrCrs.xml**. On line 11, which reads:

```
<xsl:text>ccc</xsl:text>
```

replace **ccc** with your WFO PILs' **ccc**. For example: my normal PIL is PWMnnnnCAR for Caribou (CAR) in Maine, (PWM), so I would replace **ccc** with **PWM**. My line 11 would read:

```
<xsl:text>PWM</xsl:text>
```

Next, on line 13, which reads:

```
<xsl:text>xxx</xsl:text>
```

replace **xxx** with your WFO PILs' **xxx**. For example: my normal PIL is PWMnnnnCAR for Caribou (CAR) in Maine, (PWM), so I would replace **xxx** with **CAR**. My line 13 would read:

```
<xsl:text>CAR</xsl:text>
```

Don't worry about the **nnn** part yet. That is a configuration item specified when establishing a new Liaison Instance. The edits here are one-time and never need be done again.

Next, edit the file **NwsLiaisonMessage.pl**. On line 23, which reads:

```
my $LOCAL_EMAIL_LIST = 'some.body@noaa.gov'
```

Change what's between the single quotes to a comma separated list of system administrators who will be responsible for **NWS Liaison Message**. If there is just you, put your email address between the quotes. You must code at least one: a null value, '', is not allowed. Your change allows the script to send errors to someone when they occur so early in the script's execution that the normal configuration file hasn't been read yet.

AWIPS Server Running Your LDAD Interface

Copy the file **NwsLiaisonMessageIngest.pl** from the **NwsLiaisonMessage** directory on your LDAD to the **/awips/ldad/bin** directory on the AWIPS Server running your LDAD interface. As of 4/2/2008, with AWIPS running OB 8.2, this would be your px2 server. Edit the **/awips/ldad/data/LDADinfo.txt** file to ingest a file named **NWSLiaisonMessage.txt**.

Switch user to **ldad** and restart the LDAD processes to put these changes into effect (**stopLDAD.sh** followed by **startLDAD.csh**).

Initial installation is complete. However, if you just received an email from a neighboring WFO, what are you supposed to do with those attachments? Continue reading.

Configuring a Liaison Instance

You've received an email from a nearby WFO about something called **Nws Liaison Message**. First, install the **Nws Liaison Message** software following the previous instructions, titled *Initial Installation of Software*. Return here and continue to install the instance.

Take a look at the names of the attachment files. Save them somewhere, if needed, before you do this. Use the Windows **NwsLiaisonMessage** directory, if you created one: that's a good place.

Note that some of the attachments start with something besides the letters **NwsLiaisonMessage** or **Customer**. Those "other" characters are the **Liaison Instance Id**. View the attachment named <Liaison Instance Id>.**conf**. Let's assume for the sake of

discussion that this prefix is **XYZ**, so view the attachment named **XYZ.conf**. Near the top is a line that reads:

\$ID = '<Liaison Instance Id>'

This will confirm the value of the **Liaison Instance Id**. Note these exact characters on *Install Worksheet 3*, below.

NWS Liaison Message execution is based on a cron job you will schedule on your LDAD computer. Continue viewing **XYZ.conf**. Further down in **XYZ.conf** is a variable assignment to **\$CRONJOB_MINUTES**. Its value shows the frequency in minutes at which the Primary WFO has chosen to run the **Nws Liaison Message**. You do not have to choose the same frequency. The Primary WFO has already weighed the customer's desired timeliness and their own LDAD's workload to come up with this number. But only you know how over or under loaded your own LDAD is. It's up to you. How often do you want to run it? Whatever value you choose, note it on *Install Worksheet 3*.

Yet further down **XYZ.conf** is a complex assignment to **%MESSAGE_TYPE_XREF**. Its value shows a cross reference between the message category names the customer will use and the PIL **nnn** parts the Primary WFO has chosen (there may only be one pair). Once again, you may choose other PILs if the ones in **%MESSAGE_TYPE_XREF** are already in conflict with your existing CRS setup. (Your **ccc** and **xxx** parts are the normal ones that you coded into the **NwsLiaisonMessageNwrCrs.xml** file in the initial install.) Whatever the resultant set of **nnn** parts is, note it on *Install Worksheet 3*.

Close the <Liaison Instance Id>.conf file and view the <Liaison Instance Id>.xsd file. With our assumptions, it would be named **XYZ.xsd**. Near line 75 begins a set of lines showing the UGC zones that the Primary WFO has put into use for this instance. From these lines, however many there are, filter the UGCs to list only your own. This may actually include some that are not in your own CWA, if you regularly provide NWR coverage for them. An example might be a boundary zone owned by a neighboring office, but for which they have no CRS transmitter. Your office covers for them by regularly broadcasting their products to the NWR listeners in those zones.

Transfer the filtered list to *Install Worksheet 3*.

Now complete the remainder of *Install Worksheet 3*.

Install Worksheet 3

ID:

CRONJOB_MINUTES:

PIL nnn parts:

Your UGC zone list:

Come up with a short name for your own organization. This will be used to identify you to the customer in any automated emails generated because of errors they commit. For example: "WFO Caribou, Maine".

List your own email address, plus those of any other people at your WFO who will want to receive notification when a message from the customer is processed

Making the Instance

Microsoft Windows PC

If you decided during initial installation that you wanted to use the Windows portion of **Nws Liaison Message**, move to your Windows environment and log into a PC where you can access both XML Notepad and the Windows **NwsLiaisonMessage** directory.

Each Liaison Instance should have its own directory to keep the files positively separate (even though the ones that are different all have unique names), so create a new directory here, named <Liaison Instance Id>. Continuing to use our example, the new directory would be **XYZ**.

Go back to the email and save three of the attachments prefixed with <Liaison Instance Id> to this new directory: the ones with the **.xsd**, **.xml** and **.doc** extensions (**XYZ.xsd**, **XYZsample.xml**, and **XYZoperationsGuide.doc** in our example). Also save the attachments named **NWSLiaisonMesssage.xsl** and **NwsLiaisonMessageZoneMap.jpg** to the new **XYZ** directory.

Forward the attachment named <Liaison Instance Id>**operationsGuide.doc** to the MIC or whoever will coordinate this new task with your Operations Staff (**XYZoperationsGuide.doc** in our example).

LDAD Linux Server

Start on the LDAD server as root. Change to the **NwsLiaisonMessage** directory.

Get a copy of the <Liaison Instance Id>**.conf**. email attachment into this directory. That would be **XYZ.conf**, in our example.

Edit this new file and transfer in the info you entered on *Install Worksheet 3* (ID, of course, is already there). You *must* change the value of the **\$NWS_SITE_TYPE** variable from **primary** to **secondary**. The variable **\$NWS_ZONE_LIST** takes the shortened list of just your own UGC codes. Give **\$NOTIFY_FOR_EVERY_RECEIPT** a different value if desired after reading its associated comment in the file.

\$CRONJOB_MINUTES takes its value in minutes, as a numeric value, without surrounding quotes. Change the **\$ORIGINATORS_IDENTIFICATION_MESSAGE** if you don't like the Primary WFO's choice. Be mindful of the syntax of the **%MESSAGE_TYPE_XREF** variable as you transfer in changes to the **nnn** parts list..

Get a copy of the <**Liaison Instance Id**>**.xsd**. email attachment into this **NwsLiaisonMessage** directory. That would be **XYZ.xsd**, in our example. No changes need be made to this file.

CRS Server

Configure CRS to broadcast the PILs you noted on *Install Worksheet 3*. For each PIL **nnn** part you entered in the file **XYZ.conf**, above, the full PIL presented to CRS will be the combination of what you entered on line 11 in file **NwsLiaisonMessageNwrCrs.xsl** referenced in the section *Initial Installation of Software, LDAD Linux Server*, above, followed by the **nnn** part, followed by what you entered on line 13 in **NwsLiaisonMessageNwrCrs.xsl**. Note: **NWRWaves** is not a part of the **Nws Liaison Message** dataflow. It is bypassed completely. The customer messages are presented to

CRS just as the Climate Reports and Hourly Weather Roundups are, as of 4/2/2008, with AWIPS running OB 8.2, except they always go to the Pending queue. They must be sent manually to CRS.

LDAD Linux Server

Now move to back to the LDAD server. Set up a cron job as the user **ldad**. Edit **/etc/ha.d/cron.d/SITElscron**. On your cron line, you enter the timing info as established on *Install Worksheet3*, the user of **ldad** as the one to run the command, and the following syntax as the command to be executed:

```
<full path to NwsLiaisonMessage dir>/NwsLiaisonMessage.pl <Liaison Instance Id>.conf >/dev/null 2>&1
```

or, using our assumptions so far, the command would be:

```
/ldad/NwsLiaisonMessage/NwsLiaisonMessage.pl XYZ.conf >/dev/null 2>&1
```

As an example: a cron line for every fifteen minute execution could look like this:

```
5,20,35,50 * * * * ldad /ldad/NwsLiaisonMessage/NwsLiaisonMessage.pl XYZ.conf >/dev/null 2>&1
```

Save the crontab. Copy it to its partner:

```
scp -p SITElscron ls3:/etc/ha.d/cron.d
```

Copy it to the currently active cron entry:

```
cp -p SITElscron /etc/cron.d
```

replying “yes” to the overwrite prompt. Finally:

```
service crond restart
```

to activate it.

Everything on your end is now ready and waiting to process any messages from the customer. Assuming that the Primary WFO and the customer are already up and running, you will process the very next message they post. Perhaps you’ll want to leave the line commented out and hold off copying and activating this cron until your MIC has approved and coordinated the Operation’s Guide attachment to the email.

Outside Agency/Office Site Tasks

You have probably just received an email from a National Weather Service Weather Forecast Office about something called **Nws Liaison Message**. You’ve read the *Introduction* section down to at least *Definitions* and know that you are being called an Outside Agency/Office here.

Download and install Microsoft XML Notepad at

<http://www.microsoft.com/downloads/thankyou.aspx?familyId=72d6aa49-787d-4118-ba5f-4f30fe913628&displayLang=en>. Supported Operating Systems: Windows Server 2003; Windows Vista; Windows XP; Windows XP Home Edition .NET Frameworks v2.0.

Nws Liaison Message is designed for use with Microsoft XML Notepad. If you already have an XML editor that honors the XML Schema (WC3) language, you can use it instead. It would be best to compare the two, however, to see which behaves best with the XML file, schema definition and XSLT transformation supplied with **Nws Liaison Message**.

Decide where you want **NWS Liaison Message** to reside. Create a new directory there. It will only hold four small files, so space is not an issue.

Go back to the email and save all of the attachments to this new directory. Make a backup copy of these four files somewhere private that only you have access to. Who knows what a coworker may do to one of these files? They may even delete one by mistake.

That's it! You are done with the install. Proceed to the file named **CustomerUserGuide.pdf** for usage instructions.

User's Guide

Introduction

Purpose

NWS Liaison Message automates an interface to permit an agency/office outside of the National Weather Service (NWS) to compose messages for broadcast on NOAA* Weather Radio (NWR). This interface is *not* fully automated: a manual review by NWS personnel of each proposed message must occur before it is released for transmission.

Structural Overview

Each NWS Weather Forecast Office (WFO) is responsible for a given, non-overlapping, area of the country. This area is termed its County Warning Area[†] (CWA). Each WFO “owns” and operates a number of NWR transmitters to provide coverage for their CWA. A given Outside Agency/Office may therefore need to interface with more than one WFO to broadcast its message to all the NWR transmitters in *its own* area of responsibility. For example: a state has three WFO's, which together blanket that state with NOAA Weather Radio. The state's Department of XYZ would like to broadcast a message relating to XYZ-type public safety on NWR periodically. They must therefore interface with all three WFOs if they wish to cover the whole state. And a given WFO may need to interface with more than one Outside Agency/Office, simply because more than one Outside Agency/Office may desire these services.

One more acronym needs to be introduced: CRS. A WFO's NWR transmitters broadcast unattended using a computer system named the Console Replacement System (CRS).

Definitions

For the purposes of **NWS Liaison Message**, the following definitions apply.

Liaison Instance: the “universe” of one of these interfaces: one Outside Agency/Office, one or more WFOs, this software, and the specific configuration changes necessary to establish the instance.

Outside Agency/Office: the customer, from the NWS-centric point of view of this document.

Primary WFO: the one that first establishes an interface with an Outside Agency/Office. They start the Liaison Instance by configuring the software and providing that configuration to the Outside Agency/Office and any Secondary WFOs. The software running at a primary WFO will provide feedback about errors to the Outside Agency/Office. A primary WFO is not necessarily the official NWS liaison office for the state in question.

* National Oceanic and Atmospheric Administration

[†] This, unfortunately, is a misnomer, as a WFO's area of responsibility does not necessarily conform to normal county boundaries: it is instead based on what the NWS terms a zone. Zones may be larger or smaller than counties. Zones aggregate into CWAs. Counties may be split between CWAs. States may be split between CWAs. CWAs may cross state boundaries.

Secondary WFO: one to join a Liaison Instance after it has been configured by a Primary WFO. They are still responsible for the initial software installation of this package, but simply agree to accept an instance configuration from the Primary WFO. The software running at a secondary WFO does not provide error notification to the Outside Agency/Office. This prevents the Outside Agency/Office from receiving duplicate error notifications.

A WFO may be Primary WFO for some Liaison Instances and Secondary WFO for others.

Outside Agency/Office Users

Preliminaries

Ask the person who installed **Nws Liaison Message** at your site where it's directory is located.

Ask them if your site will be using Microsoft's XML Notepad or another XML editor. If it is another, make a mental note of that and continue reading this document.

No matter which XML editor you will use, ask your installer how to start it up.

Login to your Microsoft Windows environment and start Microsoft XML Notepad or the other XML editor. We'll assume from here on that you are using XML Notepad.

Creating a Message

Use the XML Notepad's File->Open function to navigate to the **Nws Liaison Message** directory. There you will find a number of files that start with *<something>*. These characters comprising *<something>* were chosen by the National Weather Service (NWS) Weather Forecast Office (WFO) to identify their interface with your organization. Let's assume for the sake of discussion that *<something>* is **ABC**.

Use a file manager to make a copy of **ABC.xml**. Call it anything you want but keep the **.xml** extension. That way, the sample data will remain intact if you should make a mistake later and need something to look at as a reference. If you have your computer configured *not* to display file extensions, the file will only be identified as **ABC**, making the job of finding it just that more difficult, since there will be more than one shown named **ABC**. You'll have to figure out how to find the file's **Type**. The **Type** you are looking for is **XML Document**.

The very first time you use **Nws Liaison Message**, you want to open the file named **ABC.xml**. *Do not* open the one named **ABC.xsd** whose Type is **XSD File** or **XSD Document**.

Once the XML file is open in XML Notepad, mouse up to the View menu and choose Expand All. This will expand the display to show every field and value in the sample file. That's basically it. You've probably used many different editors on your PC. This is yet another, similar in many ways. The field structure and naming in this XML document is straight forward. You edit the file to create one or more messages for the NWS to transmit on its NOAA Weather Radio. You also add in as many email addresses of people at your organization who will want to receive feedback about this process. You

should definitely add your own email address as you are the person who needs to be notified if the automated process at the NWS discovers errors it cannot correct.

Save the **ABC.xml** file. When your organization set up this agreement with the NWS they chose a name to use to transfer the information. The recommended name was *<something>.XML*, or **ABC.xml**, in our example. But ask anyway, just to be sure. If it is not *<something>.XML*, then do a Save As instead and save it as whatever other name was chosen.

A couple of hints:

Be sure to pay attention to the pane at the bottom of XML Notepad under the tab named Error List. Here, errors will display as you make them. As you type in mistakes or delete info that is required, for example, immediate feedback is presented in that pane. There is no point in sending an XML file to the FTP site for processing if there are errors shown in this pane. The file will simply be rejected when it gets to the NWS and is processed.

Use the tab named XSL Output near the top of the display to view a more human-readable summary of what you have entered under the Tree View tab. At the bottom of this human-readable display is a map of the NWS zones. This will help you choose the correct zones. *Do not* simply blanket all NWS zones with your message. There is a Quality Control check by a human being made at the NWS WFO before your message is broadcast. If it's obvious that you are broadcasting to zones to which the message does not apply, it *will not be sent*. If this map does not display, check with your installer and have her/him follow the instructions under *Fix for Map Display*, below.

Sending the Message to the National Weather Service

You will FTP the file you just edited to the National Weather Service using an FTP tool already available to you. When this interface was established, your site and the NWS WFO in question agreed upon an FTP site, target directory, and file name to use for this transfer. Find out what was decided upon from the one you asked for help above. If unfamiliar with FTP, ask them for help.

Important: the file you FTP to the site has a standard name. You must find out what this is. This is the only file name you can put on the FTP site that will be processed and not cause errors.

Getting Feedback

Within the hour, you will receive automated email about the success or failure of the processing of your file. You *may* receive extra feedback later from the humans involved in the quality control of your message. If you receive *only* positive, successful feedback from the automated process, your message was good and will be broadcast at the time you requested.

Listen to your message on NOAA Weather Radio if your broadcast was for a zone that is nearby where you are located. Our broadcasts are completely automated and are tuned for *our* business, which is Weather. Our automation software may not know how to pronounce the terms common to your business, whatever that may be. But, we can fix them if you let us know about mispronunciations.

Managing Files, Messages and Email Lists

You can keep as many message XML files as you like. If one department will send out one type of message and another department a different type, then come up with a naming convention to keep departmental files separate, and maintain two sets of files. You can both edit them simultaneously as long as you have different computers to do this with and you don't try to edit the same exact file at the same time. But don't try to *send* them at the same time: you *must* coordinate this between departments. The FTP site will only handle one file at time. The first file must be received and processed before the next file is FTPed. The feedback email must be received from the first file before sending the second. Otherwise the second file will wipe out the first and will be the only one processed. This is not the end of the world, however. If this happens, just wait for the second file to process fully and its feedback to be received, then resend the first.

Here's a simple strategy for coordinating FTP transmission. Share a common directory with *every* one else as the place to FTP from. Look for the FTP file in this shared directory: if one exists, that tells you that someone else is in the process of dealing with the FTP site and the NWS right now. Wait for the file to disappear: this is your signal to proceed. Now, make your copy of the FTP file and place it in the shared directory. Do your FTP. When you receive your feedback, you **must** erase this file from the shared location. That erasure signals others that they may proceed.

You can build multiple messages into one file. This makes sense: what if you want to broadcast a certain message about one set of zones on day one, then a similar message on the next set of zones on day two. Put both messages in one file and send them at once. This way, you don't have to remember to send the second message on day two. If you change your mind, or circumstances change the text of the second message, simply correct and resend. You can keep replacing a message up until the time it *ends* broadcasting. You can even keep all your messages in one file: old ones that have already been broadcast with new ones you are scheduling. The process at the NWS WFO will strip out the old ones and only broadcast the new ones. It simply can not broadcast anything whose time is up (defined by PlayEndDateTime in the XML file).

It is completely up to you: you can keep every message in its own separate file or you can keep every message in one big file. Or anything in between.

Each email entry in the XML file has a field named Active. If it's value is Yes, that address is active: when the XML file is FTPed and processed, that email address will receive feedback. When the value is No, that email address is inactive and will not receive feedback. This feature lets you keep a long list of email addresses for all the people that may end up using this system sometime, yet not annoy them with feedback email for messages they aren't working on or interested in. This feature is more valuable if you decide to keep multiple messages in one big file. If you decide to break out by department or build a new file for every message, then you will probably end up just entering new, active email addresses with each message. Once again, it's up to you.

The Automated Voice

If you've heard NOAA Weather Radio, you know that it broadcasts using an automated voice. You must keep this in mind when composing your messages. Normal English words and Maine place names will not be a problem. The automated voice has no

problems with numbers in general, individually or in phone numbers and the like. It does have problems when things are spelled out, so try to avoid this, except for common usages such as “am” and “pm.” Avoid acronyms. Avoid abbreviations. Monitor your broadcasts and let the WFO know about mispronunciations.

Quality Control at the NWS WFO

Your messages will be reviewed before transmission. Here is how the NWS personnel are instructed:

*QC the body of the message for spelling, grammar and professional content.
Imagine it were a product you were issuing. Apply the same criteria.*

Therefore, if you listen to our broadcasts, it will give you an idea what we will accept.

Your messages will also be reviewed for proper timing and choice of zones. For example: if you try to blanket every zone for two weeks when you could have transmitted individual messages for specific zones at the specific times they were affected, then your blanketing messages will be rejected.

Fix for Map Display

First, check the map file to make sure that the WFO supplied you with something (there is a generic map file with nothing in it that they may have simply passed on to you).

View the file named **NwsLiaisonMessageZoneMap.jpg** in your **Nws Liaison Message** directory. Use the image viewer installed on your system. If the map is valid, proceed.

Figure out a valid Windows full path to your file: this will either have a drive letter in it, like:

X:\someDir\someOtherDir\NwsLiaisonMessage\NwsLiaisonMessageZoneMap.jpg

or, use a Windows UNC name, like:

\\server\sharename\anotherDir\NwsLiaisonMessage\NwsLiaisonMessageZoneMap.jpg

Do a **Properties** on the file **NwsLiaisonMessageZoneMap.jpg**. That may help you decide.

Edit the file **NwsLiaisonMessage.xml** with **Notepad** or **Wordpad** (perhaps make a backup copy first). Go down to the lines 6 and 5 from the bottom where you will see two lines that look like this:

```
<!--  -->  
<!--  -->
```

Pick one of these, depending on your decision for drive letter or UNC name. Uncomment the one you pick by removing the leading “<!--“ and the trailing “-->” then add the full path you decided upon between the double quotes that surround the value for **src**. For example: lets say your full path ended up being:

H:\Common\NwsLiaisonMessage\NwsLiaisonMessageoneMap.jpg

You would uncomment the line that read:

```
<!--  -->
```

and make it read:

```

```

If, on the other hand, you chose something like:

`\\rbosrv\deptshr\NwsLiaisonMessage\NwsLiaisonMessageZoneMap.jpg`

you would uncomment the line that read:

```
<!--  -->
```

and make it read:

```

```

Save the **NwsLiaisonMessage.xsl** file. Get back into XML Notepad, open your XML file and go to the XSL Output tab. Scroll down and you should see the map. If not, you made a typo. Fix it and try again. Note: you must completely exit XML Notepad and start it up again to view changes to the **.xsl** file.

Operations Staff

Preliminaries

Our office has agreed by Memorandum with OutsideAgencyOffice to relay messages from them for broadcast on NOAA Weather Radio. Their messages will fall into these categories: catList

The expected frequency is occurrences messages per period.

Receipt in AWIPS

These messages will arrive via automation. Upon receipt into AWIPS, you will receive a "Red Banner" Guardian message stating:

NWS Liaison Message(s) have just arrived. Open the NWRBrowser, review them, and, if appropriate, send them to CRS. You must do this within 20 minutes.

This is your trigger to act.

Your Manual Action Required

Your job is to quality control each message and either send it on the CRS if appropriate, or delete it, if not.

Preliminaries

Open your NWRBrowser. Each message received will be listed in the left side's Pending queue as **NLM-yyyymmdd-hhmmss-<i>**, where yyyymmdd-hhmmss is a timestamp, formatted as indicated, and <i> is a one-up integer.

Select each file in turn with a single mouse click followed by a mouse press on the View button. The content of the message will be displayed in the View Window.

Quality Control

You will QC the body of the message for spelling, grammar and professional content. Imagine it were a product you were issuing. Apply the same criteria.

You need only approve or disapprove. Yours is not to correct.

Approval Action

Exit the View function, reselect the message just reviewed, if necessary, and then mouse press the Send button to send the approved message onward to CRS. The message will move to the right side's Sent queue.

Disapproval Action

Email the following address(es) with a note of your disapproval action: emailList. As "focal points" monitoring this Memorandum of Agreement, *they* will contact the customer. After repeated disapprovals, perhaps the Agreement will be terminated.

In the email, be sure to include the timestamp and one-up number of the messages disapproved.

Exit the View function, reselect the message just reviewed, if necessary, and then mouse press the Delete button to remove the message from the Pending queue. Confirm any prompts that may appear.

Must Conclude within 30 Minutes

You have thirty minutes before the messages will be deleted from the Pending queue. You must respond to the "Red Banner" and begin the approval or disapproval within 20 minutes of receipt of the "Red Banner" to allow time for your review.

Thirty minute automatic deletions of NLM messages will be noted and result in the following action:

actionUponFailureToProcess

System Administrators

Log files of each cron execution are kept in the **NwsLiaisonMessage/**<Liaison Instance Id>**log** directory. These will help with debugging problems. They are purged by the cron process itself during the run soonest after midnight every day, if the value of \$CRONJOB_MINUTES and the actual cron scheduling coincide. Check this for success the first few weeks after install to be sure its working. The process will keep seven days of logs, so you must wait at least one week for them to build up. Thereafter, you should only see seven days of log files.

A temporary directory is created and named **NwsLiaisonMessage/**<Liaison Instance Id>**tmp**. If your cron stops running after complaining about locking problems, look for a lock file here named **lockFile.txt**. Erase it once sure no other **Nws Liaison Message** processes are running. Do not erase the file named **lastFileInfo.bak** resident in this directory. It is not temporary. It maintains date/time info about the last FTP file downloaded for the next run.

After every AWIPS release which installs onto the LDAD computers, recheck your installation of the **XML::XSLT** Perl module.

Your cron job on the LDAD should not get trounced with the new ls2/ls3 failover strategy, but who knows, check this too.