OPERATIONAL ACCEPTANCE TEST REPORT

for the

Console Replacement System (CRS) Software Build 9.0

and

Voice Improvement Processor (VIP) Software Build 3.0.1

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National Oceanic and Atmospheric Administration
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Executive Summary

This report explains the method by which the National Weather Service (NWS) conducted the Operational Acceptance Test (OAT) of the Console Replacement System (CRS) Build 9.0 and the Voice Improvement Processor (VIP) Build 3.0.1. The report describes the test results, Test Trouble Reports (TTRs), and evaluation results from which conclusions were drawn and recommendations made. The report also contains the test background, methodology, sites, and resources used.

NWS Headquarters (WSH) engineered the CRS Build 9.0 and VIP Build 3.0.1 software development, integration, and testing. The CRS Program Manager conducted the CRS software development update for Build 9.0 containing 23 modifications including a new off-line tone generation capability, one modified database backup and recovery window capability, two security updates, and 19 bug fixes.

The VIP software development and integration for Build 3.0.1 contained 22 changes including 5 major and 17 minor changes. Major changes to the VIP Build 3.0.1 include a new Spanish language audio conversion capability, incorporation of new speech engine for a new English voice type (Tom), an improved English female voice (Donna), and new Spanish male voice (Javier). The new VIP Build 3.0.1 processing allows audio conversion of incoming Spanish text messages into voice files in addition to English messages, for subsequent broadcast. However, the new VIP Build 3.0.1 requires dedicated preprocessor and dictionary files for each voice: English Male and Female, and the Spanish Male.

The OAT sites were the Weather Forecast Offices (WFO) San Diego CA (SGX), Miami FL (MFL), and the San Juan PR (SJU). The OAT began on April 22, 2003 and ended May 23, 2003.

The CRS Build 9.0/VIP Build 3.0.1 installations required an average of four hours to complete with minor problems which were corrected during installations. Overall, the CRS and VIP systems at all OAT sites performed remarkably well with no operational problems. The new English Male voice (Tom) voice was agreed by all OAT sites to be appreciably better than the previous VIP English Male voice (Craig). The OAT sites reported a slight improvement to the upgraded English Female (Donna) voice. The new Spanish Male voice (Javier) was also tested on spare test channels at the WFO SGX and WFO MFL sites and operationally at the WFO SJU site. All OAT sites were impressed with the quality of the Spanish voice and minimal work required for the Spanish preprocessor and/or dictionary files to commence Spanish message broadcasting.

The OAT officially ended May 23, 2003. At the Final OAT Test Review Group (TRG) conference meeting held on May 22, 2003, the OAT test results indicated the CRS Build 9.0/ VIP Build 3.0.1 systems are stable. One Test Trouble Report (TTR) is classified as a Watch item and three TTRs remain Open and all are considered non-critical and will not cause the systems to fail.

The CRS Build 9.0/VIP Build 3.0.1 OAT TRG recommends deploying the CRS Build 9.0 and the VIP Build 3.0.1 nationally.

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Acronyms

AWIPS	Advanced Weather Interactive Processing System
ASCII	American Standard Code for Information Interchange
CAFÉ	CRS AWIPS Formatter Extended
CP_VC	Communications Processing Voice Conversion
CRS	Console Replacement System
EAS	Emergency Alert System
ECR	Engineering Change Request
EO	Emergency Override
FEP	Front End Processor
FTP	File Transfer Protocol
GUI	Graphical User Interface
Hz	Hertz
IP	Internet Protocol
LAN	Local Area Network
MIC	Meteorologist-In-Charge
MP	Main Processor
NWR	NOAA Weather Radio
NWRSAME	National Weather Radio Specific Area Message Encoder
NWS	National Weather Service
NWSTC	National Weather Service Training Center
OAT	Operational Acceptance Test
OS	Operating System
OPS23	Office of Operational Systems, Field Systems Operations Center, Software Branch
OPS24	Office of Operational Systems, Field Systems Operations Center, Test and Evaluation Branch
ROAMS	Remote Off-Air Monitoring System
ST	System Test
TRG	Test Review Group
TTR	Test Trouble Report
WFO	Weather Forecast Office
WSH	Weather Service Headquarters

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Introduction

This report explains the results of the National Weather Service (NWS) Operational Acceptance Test (OAT) of the NOAA Weather Radio Console Replacement System (CRS) Build 9.0/ Voice Improvement Processor (VIP) Build 3.0.1. This report is organized into two Parts: the OAT results and recommendations (Part I), and the background and methodology details (Part II):

- Part I presents the OAT results documented in the Test Trouble Reports (TTRs) and OAT evaluation forms completed by the test site personnel. The OAT Conclusions and Recommendations are also in Part I, in Sections 3 and 4 respectively.

- Part II presents the test objectives, test conduct, evaluation criteria, test sites, personnel resources, responsibilities and test schedules for these field tests.

A total of three Weather Forecast Office (WFO) sites (see Table 3 for sites and configurations) conducted the OAT. The WFO San Diego CA (SGX) and the WFO Miami FL sites installed the CRS Build 9.0/VIP Build 3.0.1 on April 22, 2003. Due to the inability of key CRS focal points to be present at the WFO San Juan PR (SJU) site during the same week, the WFO SJU began the OAT a week later on the April 28. The OAT concluded May 23, 2003.

An OAT Test Review Group (TRG, see Attachment A) met during weekly conference calls to coordinate issues, review activities and classify problems identified during the OAT. The TRG members also reviewed the draft of this CRS Build 9.0/VIP Build 3.0.1 OAT Report. The report contains the TRG's recommendation for national implementation of the CRS Build 9.0/VIP Build 3.0.1.

The purpose of the OAT was to have National Weather Service (NWS) field personnel evaluate CRS Build 9.0/VIP Build 3.0.1, including installation, documentation, and system operation during a 30-day period. The evaluation verified Build 9.0/VIP Build 3.0.1 software usability and system stability during operational use in an NWS office. This evaluation provides information for NWS management to use in making the decision for national deployment of CRS Build 9.0/VIP Build 3.0.1.

PART I: CRS Build 9.0/VIP Build 3.0.1 OAT Test Results and Recommendations

Part I presents the OAT test results. The TRG used data gathered during the OAT to assess the results. Section 1 presents the CRS/VIP installation process and documentation evaluation. Section 2 presents the site test activities and results during the OAT. Section 3 contains the summarized information from the TTRs documenting CRS/VIP problems. Section 4 contains an overview of CRS/VIP operational readiness gathered from the test site personnel. In Section 5, conclusions are drawn from the presented test data and a recommendation is made based on those conclusions.

1.0 Installation Evaluation Results

The OAT gathered information on two major installation activities: the CRS Build 9.0 and VIP Build 3.0.1 software installations. At all three OAT test sites (WFO SGX, WFO MFL, and WFO SJU), the site Electronic System's Analysts (ESA), electronic technicians, and CRS focal points successfully loaded the new CRS and VIP software by following instructions in Communications Equipment Software Note 4 (hereafter referred to as Software Note 4). Table 1 summarizes the OAT site installation.

Table 1 - Installation Information Summary

Questions:	SGX	MFL	SJU
Were the CRS Build 9.0 and VIP Build 3.0.1 software successfully installed and configured?	Yes	Yes	Yes
Was assistance from outside the office required to complete the Build 9.0/VIP Build 3.0.1 replacement?	No	No	No
How long did the CRS Build 9.0/VIP Build 3.0.1 installation take?	~ 5 hours	~4 hours	~3 ½ hours

1.1 CRS Build 9.0 Software Installation

The CRS Build 9.0 Software Installation at the WFO SGX went smoothly without any errors or problems. The total installation took longer (~5 hours) than the recommended four hours due to a VIP installation (see Section 1.2) error regarding the setting of the Gateway Internet Protocol (IP) address (TTR #216). This IP address is required only for using the remote audio file transport protocol (FTP) VIP feature. This remote audio FTP feature was never tested, during the CRS Build 9.0/VIP Build 3.0.1 System Test (ST), at Weather Service Headquarters (WSH) due to network limitations in the WSH CRS test bed. The CRS system was successfully started with no errors and problems

The CRS Build 9.0 software installation and CRS startup at both WFO MFL and WFO SJU sites were also successful and proceeded without any errors. There were some recommended installation instruction modifications (see Attachment B) for both sites.

Recommendation: Revise the Software Note 4 CRS instructions to include the corrections and recommendations contained in Attachment B.

1.2 VIP Build 3.0.1 Software Installation

The WFO SGX reported an installation problem (TTR #216) requiring a manual file update of the "/etc/hosts" file to continue the VIP Setup Wizard processing. The setting of the Gateway IP address for allowing remote ftp of audio products resulted in a display of an error dialog informing the inability to open the "/etc/hosts" file. The manual file update was performed on the "/etc/hosts" file by adding the "gw-KSGX" name with the correct Gateway IP address. After saving the updated file and checking the VIP graphical user interface (GUI) IP address values, the VIP system was successfully started. The TTR #216 was addressed and subsequently closed. The TTR #216 resolution resulted in a modification to the Software Note 4 installation instruction which included the update of the "/etc/hosts" file group and file write privileges.

Both WFO MFL and WFO SJU did not incur any VIP Build 3.0.1 errors during installation and startup.

Recommendation: Revise the Software Note 4 VIP installation instructions to include the corrections and recommendations contained in Attachment B.

1.3 Installation Time

The software installation times (see Table 1) for all OAT sites averaged four hours. The WFO SGX took about five hours due to a VIP installation error in setting the Gateway IP address (see Section 1.2). The WFO SJU took about 3 ½ hours to install but it took another 30 minutes to find and fix an incorrect Software Note 4 installation instruction.

Recommendation: None. The Software Note 4 correctly recommends about 4 hours for installation.

2.0 OAT Testing

The OAT Testing started on April 22, 2003 for WFO SGX and WFO MFL and April 29 for the WFO SJU. During the first week of OAT testing, WSH personnel (see Table 4) were on-site at all OAT sites to support the WFO site personnel during scheduled and routine weekly tests. The OAT officially ended on May 23, 2003.

2.1 OAT Testing - WFO SGX

On April 22, the WFO SGX started their scheduled tests after successfully installing the CRS Build 9.0/VIP Build 3.0.1. The initial transfer tone tests resulted in problems due to the inconsistent switching of the transmitters. The WFO SGX ESA recommended a retest be performed the next day to perform manual calibration of the transmitters. The remote audio FTP VIP feature test was successful. The CRS Main Processor (MP) switchover tests also were successfully tested. However, the WFO SGX's formatter (an updated version of the Café Espresso) did not properly detect a new Master MP was already switched and the formatter was still sending the incoming Advanced Weather Interactive Processing System (AWIPS) messages to the shadow MP. The TRG recommended the WFO SGX's formatter be updated to conform to MP switchover detection. The WFO SGX site personnel successfully updated their formatter and subsequent MP switchovers successfully detected the current MP.

The site personnel proceeded to test incoming English messages using the new VIP English Male voice (Tom) on their operational transmitters. They also tested incoming Spanish messages sent to a spare test channel. In both cases, these incoming messages were successfully scheduled and broadcast with little work performed on dictionaries and/or preprocessor files. The WFO SGX personnel commented the new Tom voice was appreciably better than the former English Male voice (Craig). The Spanish Male voice (Javier) was also judged to be very understandable.

On April 23, the site personnel successfully tested and validated the transfer tone processing after performing initial transmitter mechanical tests. The transfer tones were verified to have no gaps in between the tone transition (primary to secondary power and vice versa). After the CRS transfer tone tests were successfully retested twice, it was agreed the transfer tones are operational and stable. The routine weekly tests were also successfully verified.

WSH personnel discovered the initial streamcopy processing (fast data packet transfer of audio data from master processor to shadow and front end processors) was failing (see TTR #217) for almost all incoming AWIPS messages. Upon inspection of the Communications Processing Voice Conversion (CP_VC) log, it was determined at least ten seconds of delay time was occurring from the initial streamcopy error to the successful streamcopy retry. The messages were eventually streamcopied to the shadow MP and Front End Processors (FEPs) and were properly scheduled and broadcasted. The site personnel attempted to change the CRS network T-connectors and LAN bridge, but results were inconsistent. The TTR status remains open and the cause of this initial streamcopy failure is still unknown.

On April 24, the TRG conference call was conducted and the WFO SGX site personnel agreed their CRS Build 9.0/VIP Build 3.0.1 systems were operational and stable for continuing the OAT. During the week of April 27 to May 3, the WFO SGX reported other than the currently known initial streamcopy problem (TTR #217), their CRS and VIP systems were still operational with no problems. To investigate the TTR #217 occurrence, the OPS23 software group recommended the WFO SGX personnel to perform MP switchovers to isolate which MP caused the streamcopy failure. The WFO SGX retested and did not find any correlation since the streamcopy failures were still occurring in either processor. The site also reported further testing had not been performed due to limited manpower.

During the week of May 4 to May 24, the WFO SGX reported other than the currently known initial streamcopy problem (TTR #217), their CRS and VIP systems are operationally stable with no problems. The WFO SGX also successfully tested the VIP feature audio FTP of mp3 files and proceeded to deploy this feature to send mp3 files over to their website instead of the larger-sized WAV files.

At the Final OAT TRG conference call, the WFO SGX reported both CRS and VIP systems were still operationally stable. A new CRS Build 9.0 delivered by the OPS23 group was also successfully reinstalled and tested. The new build was sent to display the Spanish umlaut (**ü**) character (TTR #220) and fix the Station ID unlink problem (TTR #221). Procedural instructions were provided for their VIP to allow the umlaut character display. Overall, the WFO SGX was impressed with the new and updated VIP voice quality and updated VIP GUI. **The WFO SGX recommended the national deployment of CRS Build 9.0/VIP Build 3.0.1**.

2.2 OAT Testing - WFO MFL

On April 22, the WFO MFL started their scheduled tests after successfully installing the CRS Build 9.0/VIP Build 3.0.1. Prior to the actual installation, an issue with DECtalk dictionaries was resolved after consulting the OPS23 group. The site ASCII file for CRS database recompilation was checked and verified. Additional Spanish-related scheduling data were updated to use the test spare channel exclusively for Spanish broadcasting. After a successful installation and subsequent CRS and VIP startup, the MP switchover tests were also successfully performed.

The Tom and Donna English voices were evaluated and the initial assessment was positive. The transfer tones were also successfully tested as the transmitter power properly switched from primary to secondary and vice versa without any gaps in between tones. The switching was monitored from the actual transmitter site and to the WFO office. Two Spanish product formatters (CWF and ZFP) were created, by the WFO MFL site personnel and the test channel properly scheduled and broadcast the VIP converted messages. The WFO MFL site personnel were impressed with the quality of the Spanish messages. An attempt to add a new entry to the DECtalk Spanish dictionary resulted in an error .

On April 23, the playback channels were reconfigured for English and Spanish dictionaries and new entries were now correctly added for the DECtalk Spanish dictionaries. The routine weekly tests were successfully performed. Two additional product formatters (RWT and HWR) were completed. Some VIP timeout processing occurred for the HWRSPA, CWFOUT, WRKSAI and OFFAPF products.

On April 24, the TRG conference call was conducted and the WFO MFL site personnel agreed their CRS Build 9.0/VIP Build 3.0.1 systems are operational and stable for continuing the OAT. Additional work was performed by WFO MFL site personnel on the Tom and Donna preprocessor and dictionary files. The VIP timeout problem was reconfirmed and was due to the time between last conversions (Tom conversions are between six hours and Donna conversions are between four to six hours). A timeout event will eventually redirect messages to be synthesized by DECtalk, but the added delay could be unacceptable for watch and warning messages. This issue was reported to the OST23 group for possible resolution. The OST23 group determined the VIP Speechify servers ‘sleep’ (see TTR #215) during long periods

of inactivity, thereby causing a VIP timeout when a conversion request occurs. WFO MFL chose to schedule their warning messages to DECtalk to ensure there is no delay in broadcasting them.

During the week of April 27 to May 24, the WFO MFL reported that other than the currently known 'sleeping' Speechify servers problem (TTR #215), their CRS and VIP systems were operationally stable and performed assigned tasks with no problems.

At the Final OAT TRG conference call, the WFO MFL reported both CRS and VIP systems were still operationally stable. The new CRS Build 9.0 delivered by the OPS23 group was also successfully reinstalled and tested. Overall, the WFO MFL was impressed by the quality of the new and updated VIP voices, including the Spanish Javier voice. **The WFO MFL recommended the national deployment of CRS Build 9.0/VIP Build 3.0.1**.

2.3 OAT Testing - WFO SJU

On April 29, the WFO SJU started their scheduled tests after successfully installing the CRS Build 9.0/VIP Build 3.0.1. There were some minor installation instruction corrections and redlines, but the tests proceeded as scheduled. The site was impressed with the Spanish voice and decided to play a Spanish message live on a digital backup unit to introduce the Spanish voice to the public.

On April 30, the WFO SJU site personnel listened to the new English Tom voice and was impressed with the improved quality and its ability to pronounce Spanish place names in English. The Donna voice required a little more work to pronounce the same names. WFO SJU reported the voice was not as advanced as Tom. The site took a half a day's work updating the Tom voice preprocessor and dictionary files for the place names. However, some Spanish place names could not be modified correctly in either Tom or Donna. This was especially apparent for sounds that do not exist in English.

After realizing the Javier voice was more than adequate and required little added work on the preprocessor and dictionary files, the site decided to use Javier on their weather summary using their operational transmitters. The site reported the Javier voice performed much better than Tom in pronouncing the Spanish place names. The routine weekly tests were also performed without incident.

On May 1, the site personnel discovered the sounds denoted by the capital letters 'J', 'I', and 'A' are not pronounced despite being listed in the table of valid Spanish phonemes on the VIP GUI (see TTR #219). The list of Spanish phonemes displayed on the VIP GUI and the User's Guide was determined by OST11 to be outdated. According to OST11, the Speechify list of valid Spanish phonemes did not include the 'J', 'I', and 'A' characters. The TTR workaround is to update the list of Spanish phonemes on the VIP User's Guide included in the distribution CDs. The VIP GUI will be updated in a later build. The sites were also given the correct phoneme list by an email message.

The WFO SJU also discovered the umlaut character (**ü**) could not display (see TTR #220) using the prescribed CRS and VIP keystrokes and character buffer copy and paste methods.

This special character is required in some Spanish words and had not been understood by the developers who do not speak Spanish. The OPS23 group created a fix and included this fix to the new CRS Build 9.0 sent to all OAT sites on May 15. Procedural instructions were provided for the VIP to mitigate the umlaut character display. This umlaut special character was tested and verified by all OAT sites on both CRS and VIP terminals.

The WFO SJU completed their Tom and Donna rework on the preprocessor and dictionary files. The Javier voice was agreed by the site to be impressive in quality and able to pronounce most Spanish words properly. Another observation by the WSH personnel was the particularly long zone broadcasts (about 15 minutes in duration). Consequently, the VIP conversions sometimes timed out and DECtalk synthesized voice played instead. The software performed as expected and the site agreed to reevaluate how they create their zone broadcasts to shorten their lengths for VIP to properly convert the messages.

WFO SJU chooses to manually record warning messages instead of using the synthesized voices to avoid transmitting the Emergency Alert System (EAS) warning tones twice for the same message. It would be sent twice because they broadcast each message in both English and Spanish. OPS23 is examining this issue for resolution in a future build.

At the Final OAT TRG conference call, the WFO SJU reported both CRS and VIP systems were still operationally stable. The new CRS Build 9.0 delivered by the OPS23 group was also successfully reinstalled and tested. Overall, the SJU WFO was impressed by the quality of the new and updated VIP voices, including the Spanish Javier voice. **The SJU WFO recommended the national deployment of CRS Build 9.0/VIP Build 3.0.1**.

3.0 Test Trouble Reports

This section describes the TTRs written during the OAT, their priority classifications by the CRS TRG, and their resolutions and status (see Part II, Section 2.1, Problem Documentation and Classification). The seven TTRs written during the OAT are summarized in Table 2. Three TTRs were categorized as **Urgent**. Three TTRs were categorized as **Routine** and one TTR was categorized as a **Watch**. All TTRs are considered non-critical, and all remaining **Open** TTRs, requiring resolution, will be candidates for a fix in a future build. Three TTRs have been **Closed** and require no further action. The detailed TTRs are included in Attachment C.

Table 2 - TTRs from the CRS Build 9.0/VIP Build 3.0.1 OAT				
No.	**Priority**	**Summary**	**Resolution**	**Status**
215	Urgent	Speechify servers slow to start adding delay time when idle for a while	A workaround attempt by OST23 to play VIP keep-alive messages in a cron job was considered NOT viable by OPS23 since it could interfere with any current play request on the TTS clipboard. OST23 is currently working on a fix. The current workaround is not to use VIP voices for watches and/or warnings.	**Open**
216	Routine	VIP Load - Error on Gateway IP address Entry.	Software Note 4 installation instruction update	**Closed**
217	Watch	Initial streamcopy failed - subsequent retries are successful	MP switchover testing to isolate streamcopy failure is inconclusive.	**Open**
218	Urgent	Non-Spanish VIP installation does not check for Spanish messages.	The current workaround is to inform the CRS sites Spanish message processing is ONLY allowed on sites that are listed in Mod Note 4.	**Open**
219	Routine	VIP does not pronounce the 'J', 'I', 'A' phoneme even though they are listed on the Spanish list of phonemes.	The current workaround is to use the updated list of valid Spanish phonemes in the VIP User's Guide. The VIP GUI currently displays an outdated list of Spanish phonemes.	**Open**
220	Routine	Special character requiring the 'umlaut' in Spanish is NOT allowed in CRS and VIP.	Software Note 4 installation instruction update. The /etc/X11/Xmodmap file was updated in both CRS and VIP to display the 'umlaut' character for text entry.	**Closed**
221	Urgent	ECR 775 fix caused CRS to be operational though Station ID links are NULL and/or removed.	The CRS system will not be operational if there are unlinked components (Station ID, interrupts, keep-alives). The site will have to recompile their CRS database.	**Closed**

3.1 Urgent Test Trouble Reports

The TRG categorized three problems as **Urgent** priority: TTRs #215, #218, and #221 (see Attachment C for details). TTR #215 - "Slow Speechify servers" and TTR #218 - "Non-Spanish site installation" were left open pending fixes for a future VIP build. The WFO sites will continue to monitor the slow server problem and may choose not to use the VIP to process watches and warnings. Additionally, all sites will be informed not to process Spanish messages if they are NOT a valid Spanish-capable site per Software Note 4 installation instructions. TTR #221 was fixed, tested, and is agreed, by the TRG, to be closed.

3.2 Routine Test Trouble Reports

Three of the TTRs were considered **Routine** priority: TTR #216, #219, and 220. TTR #216 was closed by the TRG with installation instructions correction. The Gateway IP address required new procedures to add file read/write and group privileges to the "/etc/hosts" file for the VIP Setup Wizard to properly add the new IP address. TTR #219 remains open because the VIP GUI does NOT display the correct list of Spanish phonemes. The current workaround is to use the VIP User's Guide where the updated list is displayed for operator review. TTR #220 is closed since all OAT sites were able to test and verify the display of the Spanish special umlaut (**ü**) character. The detailed TTRs are included in Attachment C.

3.3 Watch Test Trouble Reports

One of the TTRs was considered a **Watch** item by the TRG: TTR #217- *Initial streamcopy failed - subsequent retries are successful*. This TTR was designated to be a Watch item since the cause of the initial streamcopy failure at the SGX WFO has not been determined by OPS23. Initial investigations included MP switchovers to isolate which MP produces the streamcopy failure. Both MPs exhibit the same initial streamcopy failures so results are inconclusive.

3.4 Closed Test Trouble Reports

Three of the test trouble reports , TTRs #216, #220, and #221, were classified by the TRG as fixed and closed.

4.0 Conclusions

Conclusions are based on the OAT information gathered from installation and operational use of CRS Build 9.0/VIP Build 3.0.1 at the three NWS field office test sites. Overall, the OAT tests verified CRS Build 9.0/VIP Build 3.0.1 provided reliable, timely, and understandable NWR transmission of products using AWIPS in an operational environment. This general conclusion is supported by the following examination of the original OAT test objectives:

a. <u>Verify the Installation Instructions for the installation of CRS Build 9.0 and the VIP Build 3.0.1 software are complete and accurate.</u>

   The software installation had minor problems documented and forwarded to the CRS Software and VIP Program Managers. The Software Mod Note 4 was updated for CRS and VIP functions (see TTR #216 and #220) to properly execute.

b. <u>Verify, in an operational environment, successful operation of the CRS Build 9.0 and the VIP Build 3.0.1 software</u>

   The CRS Build 9.0/VIP Build 3.0.1 software was stable and operated satisfactorily during the OAT with no problems and shutdowns. The product formatters worked well

with the new CRS system. **<u>The OAT questionnaire user ratings (see Attachment D) for CRS and VIP ranged from "Excellent" to "Good"</u>**. **<u>All OAT sites recommended the CRS Build 9.0/VIP Build 3.0.1 is suitable for implementation in all NWS sites</u>**.

The WFO SJU rated the "...CRS Build 9.0/VIP Build 3.0.1 operations under severe weather conditions..." as **Deficient**. This assessment is because "*...for a mostly Spanish speaking population, EAS products need to be broadcasted once in both, Spanish and English languages. On this matter CRS Build 9.0/VIP Build 3.0.1 is not ready but neither was the previous build. We do manual recordings for this type of product. The system works well for manual recordings and also with other non-EAS warnings products*..." (Vidal Santiago, Meteorological Technician).

The WFO SJU later clarified, from a response email, this assessment was a result of their inability to schedule warnings for both English and Spanish products without triggering off EAS alarms twice since each English and Spanish product is played in the same schedule. If the Spanish products were all played in one transmitter and/or one schedule, there wouldn't be any problems. The WFO SJU also reiterated this rating was not indicative of the quality and effectiveness of the new VIP system. They are impressed by the ability of the new VIP to convert both English and Spanish words without too much additional work on the dictionaries.

The WFO SGX rated the "...CRS Build 9.0/VIP Build 3.0.1 operations under severe weather conditions..." as **N/A**. This assessment is because they "*...have not tested the upgraded system under severe weather, as we rarely have any out here...*" (Mike Lauderdale, ESA)

c. <u>Verify required CRS documents, updated for CRS Build 9.0 and VIP Build 3.0.1 software, are adequate.</u>

The documentation provided to the OAT sites were adequate and understandable. Minor corrections were made to the installation instructions to correctly proceed with installation and/or configure required data.

d. <u>Verify the VIP Build 3.0.1 products, for both English and Spanish languages, are clearly pronounced</u>.

Based on OAT Questionnaire responses, the OAT sites rated the clear pronunciation of English and Spanish as either **Excellent** or **Good**. All OAT sites agreed the new English Male voice (Tom) is better than the previous English Male voice (Craig) in terms of quality and understandability. All OAT sites also were impressed by the quality of the Spanish voice (Javier). All OAT sites judged the Donna voice as improved and adequate but inferior to the Tom voice voice.

e. <u>Verify the VIP Build 3.0.1 preprocessor and dictionary files, from the previous VIP and into the new and separate files for each voice type, are manageable and reliably integrated</u>.

The OAT sites successfully performed preprocessor and/or dictionary work on the new

and updated VIP voices. All OAT sites were able to create and/or update preprocessor and dictionaries easily using the new VIP GUI. The WFO SGX and WFO MFL are currently only testing the Spanish messages on their test spare channels. The WFO SJU site is using Javier for their operational broadcast with minimal work on the preprocessor and dictionary files.

f. Verify the transfer tone processing remains functional for selected OAT sites.

The WFO SGX and WFO MFL successfully tested the transfer tone functionality from the actual transmitter site to their respective WFO offices. The transfer tone functionality was updated in the CRS Build 9.0; it will not have any time gap in between the 1800 Hertz (Hz) to 2400 Hz tone transition for primary to secondary power switching and vice versa. The WFO SGX site initially had some inconsistent results and had to perform additional mechanical tests before verifying the CRS test tone functionality is operational and stable.

5.0 Recommendations

Based on the review of the OAT results in Sections 1.0 and 2.0, and the conclusions from Section 4.0, **the CRS Build 9.0/VIP Build 3.0.1 OAT TRG recommends national deployment of CRS Build 9.0/VIP Build 3.0.1 with the workarounds identified in the open TTRs.**

PART II: CRS Build 9.0/VIP Build 3.0.1 OAT Description

1.0 Background

This section contains background information about the CRS/VIP system under test, the test objectives for the CRS Build 9.0/VIP Build 3.0.1, and a description of the CRS/VIP systems evaluated. More detailed information can be found in the CRS System Administrator's Manual and the CRS Site Operator's Manual.

1.1 Prior Testing

The NWS conducted CRS and VIP systems integration testing at WSH. The NWS conducted the System Test (ST) of CRS Build 9.0/VIP Build 3.0.1 at WSH from March 24, 2003 to April 18th. There were a total of 22 TTRs generated during the ST including 11 CRS-related problems and 11 VIP-related problems. All VIP-related TTRs are **Closed**. Four CRS TTRs (203, 208, 211, and 212) are currently considered **Watch** items since they were not reproducible; and three CRS TTRs (206, 209, and 213) remain **Open** pending further OPS23 actions. The rest of the CRS TTRs were **Closed**. Refer to the CRS Build 9.0/VIP Build 3.0.1 System Test Report document, dated May 2003, for more information of the system test activities and current ST TTRs and their corresponding status.

1.2 Test Objectives and Criteria

The overall objective of the OAT was to verify the CRS Build 9.0/VIP Build 3.0.1 provided reliable, timely, and understandable NWR transmissions of NWS products in an operational environment using AWIPS. The test objectives, as outlined from the CRS Build 9.0/VIP Build OAT Test Plan document, dated April 2003, are listed below with the success criteria:

a. <u>Verify the Installation Instructions for the installation of CRS Build 9.0 and the VIP Build 3.0.1 software are complete and accurate.</u>

   CRITERIA: The CRS Build 9.0/VIP Build 3.0.1 installation instructions were understandable and could be used by site personnel, independently of the test team members or WSH support personnel, to install, configure and operate CRS Build 9.0 and VIP Build 3.0.1.

b. <u>Verify, in an operational environment, successful operation of the CRS Build 9.0 and the VIP Build 3.0.1 software.</u>

   CRITERIA: The CRS Build 9.0/VIP Build 3.0.1 was successfully operational and stable during broadcast of messages using the new and updated VIP Build 3.0.1 voices.

c. <u>Verify required CRS documents, updated for CRS Build 9.0 and VIP Build 3.0.1 software, are adequate.</u>

   CRITERIA: The CRS Build 9.0/VIP Build 3.0.1 documents were correctly updated for CRS Build 9.0 and VIP Build 3.0.1.

d. Verify the VIP Build 3.0.1 products, for both English and Spanish languages, are clearly pronounced.

   CRITERIA: The VIP Build 3.0.1 successfully converted incoming messages using the English and Spanish language products and these messages were subsequently broadcasted and pronounced clearly.

e. Verify the VIP Build 3.0.1 preprocessor and dictionary files, from the previous VIP and into the new and separate files for each voice type, are manageable and reliably integrated.

   CRITERIA: The VIP Build 3.0.1 preprocessor and dictionary files were easily integrated and updated from previous VIP files.

f. Verify the transfer tone processing remains functional for selected OAT sites.

   CRITERIA: The updated transfer tone processing in the CRS Build 9.0 software remains functional and operational.

1.3 CRS Build 9.0/VIP Build 3.0.1 Enhancements and Modifications under Test

The new CRS Build 9.0 contained 23 modifications including a new off-line tone generation capability, one modified database backup and recovery window capability, two security updates, and 19 bug fixes The CRS Build 9.0 Release Notes are found in Attachment E.

The new VIP Build 3.0.1 contained 22 changes including 5 major and 17 minor changes. Major changes to the VIP Build 3.0.1 include the inclusion of the Spanish language audio conversion capability, incorporation of new speech engine for a new English voice type (Tom), an improved English female voice (Donna), and new Spanish male voice (Javier). The VIP Build 3.0.1 Release Notes are found in Attachment F.

1.4 Test Sites and Configurations

The three WFO field offices selected by the NWS for the OAT are listed in Table 3 with descriptive data.

Table 3 - CRS Build 9.0/VIP Build 3.0.1 OAT Test Sites and Configurations

Site	ID	Configuration	Transmitters	Formatters
WFO San Diego, CA	SGX	Large	4 operational 1 spare	Updated CAFÉ Espresso
WFO Miami, FL	MFL	Large	4 operational 1 spare	CAFÉ
WFO San Juan, PR	SJU	Typical	2 operational	CAFÉ

2.0 Test Conduct

The CRS Build 9.0/VIP Build 3.0.1 was delivered to the test sites as a complete package including software and documentation. WSH Test Teams (see Table 4) traveled to the WFO SGX and WFO MFL on April 22, 2003, and to the WFO SJU on April 29th to support the initial installation and testing. The team witnessed the CRS Build 9.0/VIP Build 3.0.1 installation and provided technical assistance when required.

At each test site, the CRS and VIP was used in normal operations 24 hours a day, 7 days a week. The use of the VIP Spanish voice was a gradual introduction to Spanish voice message processing whether they were scheduled on test spare channels (SGX and MFL) or on operational transmitters (SJU).

The OAT started with a short meeting between WSH Test Teams and their respective OAT site WFO focal points regarding scheduled tests, introduction to the new and updated voices, general testing conduct, and the scheduled TRG meetings. The OAT then proceeded with the verification of the site's receipt and installation of the complete CRS Build 9.0/VIP Build 3.0.1 software package. The WSH Test Team (see Table 4) assisted their respective OAT test sites for 3 days of initial operations. The OAT sites performed their scheduled tests including transfer tones verification (SGX and MFL), remote audio ftp using the mp3 file format (SGX), MP switchovers, message input and output using the new VIP voices, VIP preprocessor and dictionary files update, and the site routine weekly tests.

The test site personnel recorded errors found during the OAT and the WSH personnel generated and completed the TTRs to document problems. Site personnel continued evaluating CRS and VIP during routine operations through May 22, 2003. A new CRS Build 9.0 was sent on May 15th for the Spanish umlaut character display (TTR #220) and the Station ID unlink problem (TTR #221). All OAT sites agreed the reinstallation and the Spanish umlaut display was successfully verified. Ron Quillen, of the National Weather Service Training Center (NWSTC), was also given the new CRS Build 9.0 and he subsequently retested and verified the “Station ID unlink” fix.

2.1 Problem Documentation and Classification

Test site personnel documented all CRS problems by completing CRS TTRs (Attachment C). The TTRs were reviewed by the OAT TRG during weekly conference calls. The Test Review Group classified the documented CRS problems using the following classifications:

a. **Critical Deficiency** - A repeatable problem severely affects CRS operations and services; no work-around exists.

   ACTION: *The TRG recommends suspension of the test to the VIP Program Manager and the CRS Software Manager. If suspended, the test resumes when the VIP Program Manager and the CRS Software Manager approve a proposed corrective action. When an approved corrective action is implemented, system testing and regression testing may be required before resuming the OAT*.

b. **Urgent Deficiency** - A repeatable problem significantly affects CRS operations and services; however, a work-around exists.

   ACTION: *The test continues with the current system using a work-around until a permanent fix is available. Once the VIP Program Manager and the CRS Software Manager approve the fix, only those test areas affected by the problem will be retested. System testing of the fix is required before implementation in the OAT sites*.

c. **Routine Deficiency** - A repeatable minor problem does not significantly affect CRS operations and services.

   ACTION: *The test continues with the current system; approved work-arounds may be implemented. Routine deficiencies are submitted by the TRG to the VIP Program Manager and the CRS Software Manager for adjudication*.

d. **Watch Item** - A random or one-time, non-repeatable problem with a potentially significant affect on NWR operations and services.

   ACTION: *The TRG monitors test activities for recurrence of the problem; if recurrence is documented, the TRG considers re-categorizing the problem*.

e. **Potential Enhancement** - Identifies a new requirement.

   ACTION: *The TRG forwards the potential enhancement to the VIP Program Manager and the CRS Software Manager for adjudication. The VIP Program Manager and the CRS Software Manager may then forward the potential enhancement to the OPS23 Software Branch as a Request for Change*.

Though the OAT Test Plan did not include descriptions of how to classify the status of problems (TTRs), the terms “Closed”and “Open” as used in this report are defined as follows:

Closed: TTRs are resolved and no further action is required to complete the OAT. The item might have been fixed in a patch or in a new build. The fixes may have been incorporated into the individual test sites or into a test build of the software. The fixes may still require further coordination action to implement and verify in the final software build for national deployment.

Open: TTRs are those on which developmental work is ongoing. The problem is scheduled for correction, but the work has not been accomplished and will be included in a future software release.

2.2 Test Personnel

A combination of personnel from WSH, regions and the test sites (see Table 4) conducted the OAT and comprised the TRG that reviewed and classified the TTRs. The Office of Operational Systems, Field Systems Operations Center, Test Evaluation Branch (OPS24) was responsible for the management of the OAT. The WSH Test Team was composed of personnel from OPS24 and from the Office of Operational Systems, Field Systems Operations Center, Software Branch (OPS23).

Table 4 - CRS Build 9.0/VIP Build 3.0.1 OAT Test Personnel

SGX	MFL	SJU
Mike Lauderdale WFO ESA Miguel Miller WFO Operations Bert Viloria (OPS24) Harry Tran (OPS24) Sung Vo (OPS23)	Albertha Mosley WFO Operations Phillip Judd WFO ESA Jae Lee (OPS24) Warrick Moran (OPS23)	Rachel Gross WFO Operations Bert Gordon WFO ESA Mary Buckingham (OPS24) Nancy Helderman (OPS23)

2.3 Test Schedule

The OAT started on April 22, 2003 at WFO SGX and WFO MFL, and on April 29th at WFO SJU. The OAT, at the WFO SJU site, was delayed a week due to schedule conflicts of key site personnel when the extension of the CRS Build 9.0/VIP Build 3.0.1 ST caused the rescheduling of the OAT. In addition, severe weather conditions, at the WFO SJU site, would have prevented testing the week before in any case.

The schedule included:

- One day for initial on-site meeting and CRS Build 9.0/VIP Build 3.0.1 installation

- One day to perform transfer tone test (at WFO SGX and WFO MFL), remote audio ftp (at WFO SGX only), MP switchover, message input and broadcast, and preliminary VIP dictionary and/or preprocessor files update. The WFO SGX and WFO MFL limited their Spanish message broadcast on their spare channels. The WFO SJU actually broadcasted, in addition to their English products, Spanish messages, converted by the new VIP Build 3.0.1, on their operational transmitters.

- One day to perform the routine weekly tests and assess the stability of the installed software.

- Three (at SJU) to four (at SGX and MFL) weeks of operational evaluation.

The TRG conference calls were held weekly starting from the OAT Readiness review on April 17, 2003. The OAT ended on May 22, 2003.

Attachment A - CRS Build 9.0/VIP Build 3.0.1 OAT Test Review Group

Name/Organization	Function	Phone	Voting Member
Jerald Dinges (OPS24)	Test Review Group Chair	301-713-0326 x160	✔
Bert Viloria (OPS24)	OAT Test Director	301-713-0326 x131 *FAX:* 301-713-0912	
Mary Buckingham (OPS24)	OAT Support	301-713-0326 x137	
Harry Tran (OPS24)	OAT Support	301-713-0326 x105	
Jae Lee (OPS24)	OAT Support	301-713-0326 x158	
Joel Nathan (OPS23)	CRS Software Manager	301-713-0191 x119	✔
Larry Lehmann (OST11)	VIP Program Manager	301-713-3391 x166	✔
Mark McInerney (OST23)	VIP Software Developer	301-713-0056 x185	
Jeff Earl (OPS12)	Maintenance Assurance	301-713-1833 x162	
Harvey Thurm (ER1)	Eastern Region Program Manager	516-244-0124	✔
Mike Mach (SR)	Southern Region Program Manager	817-978-2631	✔
Greg Noonan(CR4)	Central Region Program Manager	816-891-7734 x705	✔
Craig Schmidt (WR1)	Western Region Program Manager	801-524-4000	✔
Per Pedersen (AR41)	Alaska Region Program Manager	907-271-3462	✔
Jay DelCano (PR11)	Pacific Region Program Manager	808-532-6427	✔
WFO San Diego, CA (SGX) Dan Keeton Miguel Miller Michael Lauderdale, ESA	Focal Points [Input To Region Prog. Manager] *MIC* *Operations* *Hardware*	 858-675-8700 858-675-8700	
WFO Miami, FL (MFL) Rusty Pfost Albertha Mosley Phillip Judd, ESA	Focal Points [Input To Region Prog. Manager] *MIC* *Operations* *Hardware*	 305-229-4502 305-229-4505	
WFO San Juan, PR (SJU) Israel Matos Rachel Gross, SOO Bert Gordon, ESA	Focal Points [Input To Region Prog. Manager] *MIC* *Operations* *Hardware*	 787-253-4586 x224 787-253-4502	

Attachment B - CRS Build 9.0/VIP Build 3.0.1 OAT Installation Test Site Comments and Recommendations

Communications Equipment Software Note 4 - CRS and VIP Installation
Based on OAT test site inputs

Page number	Paragraph number	OAT Site	Comments
A-2	1.1.3	MFL	Bold entire line: Before proceeding with… for installation safety
A-2	1.1	SJU	Add step 11. Note the IP addresses for the VIP, 0MP, 5MP, as1, and as2 entries in the 0MP/etc/hosts file. Look up the AWIPS IP address for as1f.
A-5	3.2.2	MFL	Bold last line: *If it is determined that the IP addresses in /etc/inet/hosts (preinstalled by the CRS software contractor at the factory) …* for emphasis to avoid confusion.
A-5	3.2.2	MFL	Additional bullets for yes and no response: *p3 Display a list of all valid CRS site Ids? (default: y)* *An affirmative response (y) results in …* *A negative response (n) results in …* for readability.
A-6	3.2.2	MFL	Additional bullets for yes and no response: *p5 Clean out (reset) log files? (default: y)* *An affirmative response (y) to this prompt results in the resetting …* *A negative response (n) results in no changes to the CRS …* for readability.
A-6	3.2.2	MFL	Additional bullets for yes and no response: *p6 Change CRS system date and time? (default: n)* *An affirmative response (y) to this prompt results in a sequence of additional prompts beginning …* *A negative response (n) results in no changes to the current …* for readability.
A-9	3.4	MFL	Swap section 3.4 with section 3.3 Reduce confusion, Readability: The reading of section 3.4 prior to 3.3 (which causes a system shutdown) is a better sequence for installer sanity.
A-10	3.5.3.c	MFL	Make an additional step for the following phrase: *Repeat steps a and b.* for readability. Since the repeat is another logical step, allow it to be standalone.

Page number	Paragraph number	OAT Site	Comments
A-12	6.6	SJU	They should be told to identify this diskette (VIP OS Restore #3) by VIP B3 and the date so it cannot be confused later with the old restore diskette since the old diskette is marked exactly the same. This site could not locate the old diskette and will run the risk at some point of being able to confuse it if it should be found and other sites might also run the same risk.
A-15	8.1.17	MFL	Add the following after step b: Hit <cr> to continue Additional step found during installation
A-16	8.1.30	SJU	Suggest an instruction be added to save the /etc/hosts file with a date extension as insurance against irreversible mistakes.
A-17	8.1.48-49	MFL	Change procedure to the following: *Click the KDE Gear icon in the lower left area of the screen to access the system menu. Select system->user* *Within the user dialog select the crs user, the click the edit user icon* *Click password …and enter the same crs user password used for 0mp* *Click OK to exit the change password screen and OK again to exit the edit user screen* *Select File->Save from the main window of the user dialog.* Repeat for root password New password checker built into passwd command will not accept most of the passwords used by CRS sites.
A-17	8.1.49	MFL	Root password on VIP does not have to match root password on 0MP for operational reasons.
A-17	8.2 Note 2	MFL	Change VIP 3.0.1 to VIP 3.0
A-17	8.2.50	SJU	Should be deleted since step 24 already has them logged in as root.
A-17	8.2.51	SJU	Has a typo: "/ect/hosts" should be "/etc/hosts"
A-20	9.1.6	MFL	Move last sentence to after step 9: *Click Close to remove the Porting Instructions window.* Invalid step: We were not able to close the Porting Instructions window until the VIPv2.0 Pre-Processor/Substitution Dictionary Port window was closed.

Attachment C - CRS Build 9.0/VIP Build 3.0.1 OAT Test Trouble Reports

Defect No: 215
Date Entered: 4/28/2003 Product: OAT
Entered by: Lee, Jae Component: VIP

Status: Open, assigned to McInerney, Mark Resolution:
Type: System Deficiency Priority: Urgent Severity: System Up, w/workaround
Disposition: Open - Reviewed
Reference:

Summary: Speechify servers slow to start adding delay time when idle for a while
Release Notes:
Workaround: A workaround attempt to have VIP keep-alive message processed in a cron job was found by OPS23 group to be NOT viable since it could interfere with a current VIP clipboard play request.

--- Reported By ---
Found by: Lee, Jae Date Found: 4/28/2003
Version Found: VIP 3.0.1
Description: This problem was first discussed by Mark McInerney at the ST Readiness meeting on 3/18/03.
Mark informed the group of known VIP related problems including this problem - An idle TTS server will add a couple seconds to the first TTS conversion.

The group was not sure of operational impact. At Miami, we noticed two different results due to this problem. First, the VIP could add 30 - 40 seconds of delay time. This could be potential problem for watch and/or warning products. Second, if the VIP takes longer than 60 seconds (Max VIP timeout value) for conversions, the VIP timeouts and messages are synthesized by DECtalk.
Reproduced: Sometimes
Steps to Reproduce:
User's Computer Configuration
Other Hardware and Software:
Attachments: none

CRS Location:
Transmitters:
Seen Elsewhere?:
TRG Review:

--- History ---
Assigned to: McInerney, Mark Date Assigned: 5/19/2003
Assigned by: Viloria, Bert
Notes: Per OAT Conference call on May 15, 2003.

Created by: Lee, Jae
Date of creation: 4/28/2003 Creation method: Add Defect window Last modified by: Viloria, Bert
Date of last modification: 5/19/2003

Defect No: 216
Date Entered: 4/30/2003 Product: OAT
Entered by: Viloria, Bert Component: VIP

Status: Closed (Fixed) Resolution: Documentation Change
Type: System Deficiency Priority: Routine Severity: System Up, w/workaround
Disposition: Open - Not Reviewed
Reference: VIP Load Sec 8.2, Step 8

Summary: VIP Load - Error on Gateway IP Address Entry
Release Notes:
Workaround:

--- Reported By ---
Found by: Viloria, Bert Date Found: 4/30/2003
Version Found: VIP 3.0.1
Description: While configuring the VIP Build 3.0.1 during installation, an error message was displayed when Section 8.2, Step 8 was performed to enter a Gateway IP address within the VIP Setup Wizard. This IP address is required for the VIP audio FTP capability. NOTE: This field has NOT been tested during the System Test.

The error message displayed "Cannot open /etc/hosts file" and the install software did not allow the setup to proceed. The workaround was to leave the Gateway IP address field blank and proceed to install without the optional data. After finishing initial setup, the /etc/hosts file was manually updated as root user. Using the VIP GUI, the Systems Settings->Options Menu->Audio FTP configuration menu option, this audio FTP is selected and this capability was enabled. This optional feature was then tested at the San Diego WFO site and was deemed operational.

Update: 5/19/03
After performing retests and adding additional software installation procedures to allow the /etc/hosts file for update, the entry of a value for the Gateway IP address field, during the VIP setup Wizard processing, has proceeded without displaying any error dialog. The updated VIP software installation includes new Steps 50-51 to correct the privileges on the /etc/hosts file to allow file update.
Reproduced:
Steps to Reproduce:
User's Computer Configuration
Other Hardware and Software:
Attachments: none

CRS Location:
Transmitters:
Seen Elsewhere?:
TRG Review:

--- History ---
Fixed by: Nathan, Joel Result: Fix and close Date Fixed: 5/19/2003
Version Fixed: CRS 9.0 Fixed Resolution: Documentation Change Hours to Fix: ?
Affects Documentation: Yes Affects Test Plan: No
Notes: After performing retests and adding additional software installation procedures to allow the /etc/hosts file for update, the entry of a value for the Gateway IP address field, during the VIP setup Wizard processing, has proceeded without displaying any error dialog.

The updated VIP software installation includes new Steps 50-51 to correct the privileges on the /etc/hosts file to allow file update.

Created by: Viloria, Bert
Date of creation: 4/30/2003 Creation method: Add Defect window Last modified by: Viloria, Bert
Date of last modification: 5/19/2003

Defect No: 217
Date Entered: 4/30/2003 Product: OAT
Entered by: Viloria, Bert Component: CRS Software

Status: Open, assigned to Nathan, Joel Resolution:
Type: System Deficiency Priority: Routine Severity: Watch Item
Disposition: Open - Reviewed
Reference:

Summary: Initial streamcopy failed - subsequent retries are successful.
Release Notes:
Workaround:

--- Reported By ---
Found by: Viloria, Bert Date Found: 4/30/2003
Version Found: CRS 9.0
Description: During the OAT in San Diego WFO, it was observed, per the CP_VC.log, that most VIP conversions were failing on the initial streamcopy. All messages however were subsequently retried for streamcopy and broadcasted with no problems. Mike Lauderdale, from the San Diego WFO, had tried to change the t-connectors and LAN bridge, but the results have been mixed. Sometimes, messages will streamcopy without failure on the first try and sometimes it still fails. However, all messages are successfully streamcopied and subsequently broadcasted.

Update: 5/19/03
Mark Lauderdale has performed MP switchover tests to isolate where the initial streamcopy originates and consistently occurs. To date, the intial streamcopy problem still occurs on both MPs and no additional testing has been performed by either San Diego WFO and OPS23.

Reproduced:
Steps to Reproduce:
User's Computer Configuration
Other Hardware and Software:
Attachments: none

CRS Location:
Transmitters:
Seen Elsewhere?:
TRG Review:

--- History ---
Assigned to: Nathan, Joel Date Assigned: 5/19/2003
Assigned by: Viloria, Bert

Created by: Viloria, Bert
Date of creation: 4/30/2003 Creation method: Add Defect window Last modified by: Viloria, Bert
Date of last modification: 5/19/2003

Defect No: 218
Date Entered: 5/5/2003 Product: OAT
Entered by: Viloria, Bert Component: VIP

Status: Open, assigned to McInerney, Mark Resolution:
Type: System Deficiency Priority: Urgent Severity: System Up, w/workaround
Disposition: Open - Reviewed
Reference:

Summary: Non-Spanish VIP installation does not check for Spanish messages
Release Notes:
Workaround: According to Larry Lehmann (5/19/03):

"...This TTR will be handled procedurally for now until the software can be improved to prevent usage of the Spanish translation. Sites are told in the installation procedure who we hold Spanish licenses for and Joel has agreed to also inform them not to use the Spanish if they are not on he list (via e-mail he sends wrt to installation.) We already have agreement to include the Spanish in deliveries to sites that will not be using it..."

--- Reported By ---
Found by: Viloria, Bert Date Found: 5/5/2003
Version Found: VIP 3.0.1
Description: A VIP installation was performed using a non-Spanish site ID (e.g., PHI for Philadelphia). The installation was successful. English messages were properly converted and subsequently broadcasted in CRS. However, when Spanish messages were sent to CRS and FTP'ed to VIP, the VIP also converted the Spanish messages and FTP'ed them back to CRS where they were broadcasted.

Updated: 5/19/03
See workaround notes.
Reproduced:
Steps to Reproduce:
User's Computer Configuration
Other Hardware and Software:
Attachments: none

CRS Location:
Transmitters:
Seen Elsewhere?:
TRG Review:

--- History ---
Assigned to: McInerney, Mark Date Assigned: 5/19/2003
Assigned by: Viloria, Bert

Created by: Viloria, Bert
Date of creation: 5/5/2003 Creation method: Add Defect window Last modified by: Viloria, Bert
Date of last modification: 5/19/2003

Defect No: 219
Date Entered: 5/5/2003 Product: OAT
Entered by: Viloria, Bert Component: VIP

Status: Open, assigned to McInerney, Mark Resolution:
Type: System Deficiency Priority: Routine Severity: System Up, w/no workaround
Disposition: Open - Reviewed
Reference:

Summary: VIP does not pronounce the 'J', 'I', 'A' even though they are listed on the Spanish list of phonemes
Release Notes:
Workaround: Update: 5/1/03
Larry Lehmann had indicated that the Spanish Table of Phonemes in the VIP GUI is OUTDATED.
The following sound representations listed below shall be used when creating special pronunciations in the local dictionary.

Vowels
.
Symbol Example Words
i igual
e este
u uve
o oso
a agua

Consonants

Symbol Example Words
p parte, apagar
b basta, hubo
t toma, atar
d dar, nada
k coger, irak
g goma, haga
C coche, chico
f flaco, afuera
s si, casa
z mismo, desde
S Washington, shampoo [foreign words only)
j jota, gente
m mano, amor
n no, mano
N España
l loco, algo
L milla, llueve
r arena, pero
R ropa, perro
w fuera, deuda
y oigo, tiesto

Larry Lehmann added that the workaround is to use this table until the documentation and GUI can be corrected.

--- Reported By ---
Found by: Viloria, Bert Date Found: 5/5/2003
Version Found: VIP 3.0.1
Description: During the OAT testing in Miami FL, the uppercase characters 'J', 'I', and 'A' were not pronounced. These characters were used during the update of the Spanish local library and are listed on the Spanish list of phonemes from the VIP GUI.

Update: 5/19/03
Larry Lehmann had indicated that Mark McInerney will be addressing this TTR and is working on a schedule to resolve this issue. The current workaround is to use an updated list of Spanish Phonemes (see workaround description Update: 5/1/03).
Reproduced:
Steps to Reproduce:
User's Computer Configuration
Other Hardware and Software:
Attachments: none

CRS Location:
Transmitters:
Seen Elsewhere?:
TRG Review:

--- History ---
Assigned to: McInerney, Mark Date Assigned: 5/19/2003
Assigned by: Viloria, Bert

Created by: Viloria, Bert
Date of creation: 5/5/2003 Creation method: Add Defect window Last modified by: Viloria, Bert
Date of last modification: 5/19/2003

Defect No: 220
Date Entered: 5/5/2003 Product: OAT
Entered by: Viloria, Bert Component: CRS Software

Status: Closed (Fixed) Resolution:
Type: System Deficiency Priority: Routine Severity: System Up, w/no workaround
Disposition: Open - Reviewed
Reference:

Summary: Special character requiring the 'umlaut' in Spanish is NOT allowed in CRS and VIP.
Release Notes:
Workaround:

--- Reported By ---
Found by: Viloria, Bert Date Found: 5/5/2003
Version Found: CRS 9.0
Description: During the OAT testing in Miami FL, the Spanish messages required the 'umlaut' (two dots over the character) to further distinguish some Spanish words. The current CRS and VIP special character methodology only allows the regular character, the accented, and the tilde special character.

Update: 5/19/03
A new CRS Build 9.0 CD has been created by OPS23 in order to allow the Spanish special umlaut character (ü) to be entered in CRS. Software installation procedures will be updated for the VIP installation in order to allow the umlaut entry.

Reproduced:
Steps to Reproduce:
User's Computer Configuration
Other Hardware and Software:
Attachments: none

CRS Location:
Transmitters:
Seen Elsewhere?:
TRG Review:

--- History ---
Assigned to: Nathan, Joel Date Assigned: 5/19/2003
Assigned by: Viloria, Bert

Fixed by: Viloria, Bert Result: Fix and close Date Fixed: 5/22/2003
Version Fixed: CRS 9.0 Fixed Resolution: Hours to Fix: ?
Affects Documentation: No Affects Test Plan: No
Notes: Update: 5/22/03
The OAT sites have confirmed that the umlaut character is now being displayed and available to be buffered for character entry.

Created by: Viloria, Bert
Date of creation: 5/5/2003 Creation method: Add Defect window Last modified by: Viloria, Bert
Date of last modification: 5/22/2003

Defect No: 221
Date Entered: 5/9/2003 Product: OAT
Entered by: Viloria, Bert Component: CRS Software

Status: Closed (Fixed) Resolution:
Type: System Deficiency Priority: Urgent Severity: System Up, w/workaround
Disposition: Open - Reviewed
Reference:

Summary: ECR 775 fix caused CRS to be operational even though Station ID links are NULL and/or removed.
Release Notes:
Workaround:

--- Reported By ---
Found by: Viloria, Bert Date Found: 5/9/2003
Version Found: CRS 9.0
Description: The ECR 775 fix for unlinked Station IDs with their corresponding transmitters allowed the CRS system to continue operational state. The schedule for the transmitter with the unlinked Station ID did not proceed to broadcast any messages anymore, including new incoming messages. The transmitter remained in a disabled mode.

Update: 5/19/03
A new CRS Build 9.0 CD has been created by OPS23 in order to disallow CRS from becoming operational if there are NO Station ID links to a configured transmitter. The WFO site will have to recompile their CRS database, using a previously saved and accurate ASCII database file, in order to correct the Station ID link problems.
Reproduced:
Steps to Reproduce:
User's Computer Configuration
Other Hardware and Software:
Attachments: none

CRS Location:
Transmitters:
Seen Elsewhere?:
TRG Review:

--- History ---
Assigned to: Nathan, Joel Date Assigned: 5/19/2003
Assigned by: Viloria, Bert

Fixed by: Viloria, Bert Result: Fix and close Date Fixed: 5/22/2003
Version Fixed: CRS 9.0 Fixed Resolution: Hours to Fix: ?
Affects Documentation: No Affects Test Plan: No
Notes: Update 5/22/03
It has been confirmed by Joel Nathan (OPS23) that this fix has been tested and verified by Ron Quillen at the training center.

Created by: Viloria, Bert
Date of creation: 5/9/2003 Creation method: Add Defect window Last modified by: Viloria, Bert
Date of last modification: 5/22/2003

Attachment D - CRS Build 9.0/VIP Build 3.0.1 OAT Questionnaires

WFO San Diego, CA OAT Questionnaire

Name & Title: Michael Lauderdale ESA
OAT Test Dates: April 22-April 24, 2003
Formatters Used: Updated Café Espresso

1- Excellent **4-Deficient**
2-Good **5-Does Not Apply**
3-Satisfactory

Statement	1	2	3	4	5	N/A
CRS ingest of AWIPS products using listed formatter(s).			X			
Installation of CRS Build 9.0/VIP Build 3.0.1 software (including accuracy of installation notes).		X				
CRS ability to successfully send products to NWR transmitters.		X				
NWR transmitters successfully transmitted CRS products.		X				
The quality of the CRS Build 9.0/VIP Build 3.0.1 audio.	X					
CRS operations with NWRSAME tones.		X				
CRS operations with ROAMS.		X				
CRS operations with transfer tones (*at Miami and San Diego sites only*).		X				
English-language products were voiced at an audible level.	X					
English-language products were understandable.	X					
English-language products were syntactically correct.		X				
Spanish-language products were voiced at an audible level.	X					
Spanish-language products were understandable.	X					
Spanish-language products were syntactically correct.	X					
Spanish-language products, including trailers, were broadcasted as scheduled.		X				
VIP Build 3.0.1 English and Spanish dictionaries and preprocessor files creation and update.		X				
The CRS Build 9.0/VIP Build 3.0.1 operators or forecasters workload.		X				
The CRS Build 9.0/VIP Build 3.0.1 maintenance workload.		X				
CRS Build 9.0/VIP Build 3.0.1 operations under non-severe weather conditions.		X				
CRS Build 9.0/VIP Build 3.0.1 operations under severe weather conditions.						X
Overall, CRS Build 9.0/VIP Build 3.0.1 is suitable for general implementation.		X				

WFO Miami, FL OAT Questionnaire

Name & Title: **Phillip Judd ESA**
OAT Test Dates: **April 22-April 28, 2003**
Formatters Used: Café

1-Excellent **4-Deficient**
2-Good **5-Does Not Apply**
3-Satisfactory

Statement	1	2	3	4	5	N/A
CRS ingest of AWIPS products using listed formatter(s).		X				
Installation of CRS Build 9.0/VIP Build 3.0.1 software (including accuracy of installation notes).		X				
CRS ability to successfully send products to NWR transmitters.	X					
NWR transmitters successfully transmitted CRS products.	X					
The quality of the CRS Build 9.0/VIP Build 3.0.1 audio.	X					
CRS operations with NWRSAME tones.	X					
CRS operations with ROAMS.	X					
CRS operations with transfer tones (*at Miami and San Diego sites only*).	X					
English-language products were voiced at an audible level.		X				
English-language products were understandable.	X					
English-language products were syntactically correct.	X					
Spanish-language products were voiced at an audible level.		X				
Spanish-language products were understandable.	X					
Spanish-language products were syntactically correct.		X				
Spanish-language products, including trailers, were broadcasted as scheduled.	X					
VIP Build 3.0.1 English and Spanish dictionaries and preprocessor files creation and update.		X				
The CRS Build 9.0/VIP Build 3.0.1 operators or forecasters workload.		X				
The CRS Build 9.0/VIP Build 3.0.1 maintenance workload.		X				
CRS Build 9.0/VIP Build 3.0.1 operations under non-severe weather conditions.	X					
CRS Build 9.0/VIP Build 3.0.1 operations under severe weather conditions.	X					
Overall, CRS Build 9.0/VIP Build 3.0.1 is suitable for general implementation.	X					

WFO San Juan, PR OAT Questionnaire

Name & Title: **Vidal Santiago Meteorological Technician**
OAT Test Dates: **April 29-May 1, 2003**
Formatters Used: Café

1-Excellent **4-Deficient**
2-Good **5-Does Not Apply**
3-Satisfactory

Statement	1	2	3	4	5	N/A
CRS ingest of AWIPS products using listed formatter(s).	X					
Installation of CRS Build 9.0/VIP Build 3.0.1 software (including accuracy of installation notes).	X					
CRS ability to successfully send products to NWR transmitters.	X					
NWR transmitters successfully transmitted CRS products.	X					
The quality of the CRS Build 9.0/VIP Build 3.0.1 audio.		X				
CRS operations with NWRSAME tones.	X					
CRS operations with ROAMS.						X
CRS operations with transfer tones (*at Miami and San Diego sites only*).						X
English-language products were voiced at an audible level.	X					
English-language products were understandable.		X				
English-language products were syntactically correct.		X				
Spanish-language products were voiced at an audible level.	X					
Spanish-language products were understandable.		X				
Spanish-language products were syntactically correct.		X				
Spanish-language products, including trailers, were broadcasted as scheduled.	X					
VIP Build 3.0.1 English and Spanish dictionaries and preprocessor files creation and update.		X				
The CRS Build 9.0/VIP Build 3.0.1 operators or forecasters workload.		X				
The CRS Build 9.0/VIP Build 3.0.1 maintenance workload.		X				
CRS Build 9.0/VIP Build 3.0.1 operations under non-severe weather conditions.	X					
CRS Build 9.0/VIP Build 3.0.1 operations under severe weather conditions.				X		
Overall, CRS Build 9.0/VIP Build 3.0.1 is suitable for general implementation.		X				

Attachment E - CRS Build 9.0 Release Notes

These notes document the new features and bug fixes incorporated into CRS Build 9.0 Engineering Change Request (ECR) numbers have been provided to reference a formally documented problem which has been resolved by this build.

1. **New off-line tone generation capability** - The off-line tone generator provides the user the capability to transmit tones (NWRSAME, Alert, and Transfer) repeatedly without scheduling messages. It allows Electronics Technicians (ETs) to modify the duration of tones to facilitate amplitude adjustment necessary for proper transmitter alignment. To use this capability, the CRS must be up and operational and the specific transmitter to be adjusted must be disabled via the Transmitter Configure window.

   To use the off-line tone capability, the operator must click on the **Maintenance** menu and then select **WRSAME Tone Generator**. This will result in the display of the **CRS Tone Maintenance Utility** window. From the window you can select from three buttons across the top of the window to transmit **SAME Tones**, **Alert Tones**, or **Transfer Tones**. Each tone's amplitude may be adjusted from 1 to 99, and the duration may be from 1 to 30 seconds. A button is provided to force transmission of the tone. Once the ET decides on the proper amplitude, a button is provided to dynamically save the new amplitude in the transmitter configuration and download it to the appropriate DECtalk card. Buttons are also provided to backup and restore the displayed settings to and from a file. This new window is available to both *admin* and *maint* users. More details on the off-line tone generation capability may found in the new Section 3.6.2.5.13 of the Site Operator's Manual (SOM).

   ECR 772 - Closed.

2. **CRS does not retry for streamcopy failures of Voice Recorded messages** - The CRS streamcopy process is responsible for properly delivering CRS wave files (CRS recorded messages and VIP messages) across all the CRS processors. For any voice recorded message, a streamcopy error (failure to successfully send the message to all processors) is considered fatal. These streamcopy failures are not uncommon and may occasionally occur as a result of a momentary glitch on the CRS network. For voice recorded messages, when the streamcopy error occurs, error code 268 is generated with a pop-up dialogue box that informs the user:

   Streamcopy client (CP_DIadc) failed config/copy

   However, the operator is not able to re-record that message, and the cp_di process will exit causing all other processes to terminate and CRS on the MPs to go down. CRS will automatically restart, and as long as there are no uncorrectable database errors, it will restart quickly enough that it is not even noticeable, since the FEPs will continue to

   broadcast. If there is an uncorrectable database error, CRS will appear to bounce, and the database must be recovered.

This problem only occurs for the processing of voice recorded messages. VIP messages are allowed 3 retries in the event of a streamcopy failure, which for occasional network glitches is sufficient to ensure a successful copy to all the processors. If the retries do not work, the same fatal error occurs. The cp-di software has been modified to handle streamcopy errors for voice recorded messages so that the operator can re-record the message. When the error occurs, a new message has been appended to the pop-up dialogue box described above:

Please retry Manual Voice Recording

The software will then allow the user to re-record the message. Just as for VIP messages, 3 retries are allowed before cp_di exits.

ECR 791 - Closed.

3. **VIP message processing during MP switch causes database corruption** - When VIP message handling processing is started, a database table entry is made for that message. The database is not completed for that message until the VIP processing is complete and the *.Pv component file is placed in the database and copied to all the other processors. CRS Build 8.5 included the correction of ECR 768, "Database Corruption Caused by CRS Startup Process and VIP Message Handling". Prior to Build 8.5, CRS initialization caused messages flagged for VIP processing to start their processing before the CRS database was validated and verified by db_vv. As a result, it was possible for db_vv to find a missing component for a VIP message still being processed. This resulted in the "bouncing" effect of CRS going down and trying to come back up until the VIP *.Pv component file for the message was finally stored in the database.

   The correction of this problem (ECR 768) included in Build 8.5 was to prevent VIP message processing from beginning until CRS was operational by delaying the start of VIP message processing until at least one FEP was operational. An MP switch results in the stop/start of the CRS application on the MPs, but CRS remains operational on the FEPs. Therefore, VIP processing begins immediately and before the db_vv database validation and verification has occurred. Consequently, the pre-Build 8.5 problem of database corruption during initialization while processing VIP messages may still occur during the MP switch process.

   Build 9.0 changes the design to begin various state variables to ensure that VIP message processing begins only when the FEPs are reported operational, not configured, down, failed, or configured in a backup state. This will allow the VIP processing to start only after the db_vv database validation and verification has occurred during CRS MP startup, regardless of whether the FEPs have restarted.

   ECR 777 - Closed.

4. **Weather Message Record followed by an overriding Weather Message Record before the initial Weather Message has been successfully saved results in a CRS software failure** - When an operator records a Weather Message and subsequently

clicks on the Save hot key to save it into the CRS database, he is supposed to wait until he receives notice that it has been successfully stored before continuing. However, if the operator incorrectly attempts to record over the first message before it is saved, he will cause the CRS software to crash.

The software has been modified to generate the following error dialogue when the operator clicks on Record for the second Weather Message:

Saving previous record is still in progress. please wait...

This will prevent the operator from making the fatal error.

ECR 782- Closed.

5. **Broadcast Cycle Watch/Warning Expire Functions Improperly on Initial Broadcast** - Watch and warning messages are required to broadcast at least once before they may be replaced or expired. If a watch/warning is broadcasting for the first time and an operator attempts to expire it using the Broadcast Cycle Expire capability, the message will continue to broadcast, as it should. However, when the initial broadcast of the watch/warning is completed, and the operator would reasonably expect to be able to expire the message, he is unable to do so. The expired message will continue to broadcast until the program is re-assigned.

   This problem is caused because db_sh changes the status from active to inactive, but nothing is done to modify the schedule. Therefore, ps_ss does not change the schedule. The solution is to have db_sh notify ps_ss that the status has changed from active to inactive. Therefore, the message will be removed from the Broadcast Cycle following the Broadcast Cycle Expire.

   ECR 783 - Closed.

6. **NWRSAME tones cause subsequent amplitude reduction of wave files until the next text message is processed by DECtalk** - This problem has existed since the early days of CRS, but has not caused significant impact until addition of VIP message handling. This problem only affects wave files, including manually recorded messages and VIP messages. Prior to VIP, most messages were text, which would reset the volume to the normal value. Now that most message are VIP wave files, the affects will last longer. The volume reduction will probably last until the STATIONID message resets it.

   An error has been fixed in the re-setting of the volume for wave files following the generation of NWRSAME tones.

   ECR 643 - Closed.

7. **DB_VV checks for components that are not linked to in the Block 5 transmitter definitions and removes files from the database, while leaving the table entries** -

The db_vv verify software is responsible for validating all CRS database files for verification of consistency across separate processors. This check includes component files associated with station ids, keep alives, and interrupts, which are defined in the ASCII configuration file (Blocks 2, 3, and 4 respectively) used to initialize the CRS. If any of the aforementioned components are not linked to a transmitter in Block 5 of the ASCII file, the db_vv verify software removes them by running the CRS “garbage collector”. However, the table entries remain. This results in an error if the operator tries to display the contents of one of these components. More importantly, when the gui_2ascii software runs to create an ASCII file equivalent of the stored database, it will fail because of the existence of a database table entry with no corresponding component. This could have serious consequences if a site needs to reload the database from the latest ASCII database file.

The solution is to prevent the garbage collector from removing the component files. Therefore all validation checks in functions designed to send components to individual processors will be removed. All components associated with Blocks 2, 3, and 4 will be validated.

ECR 775 - Closed.

8. **The ADD Transmitter utility deletes the BLOCK 7B Spanish Trailers** - The ADD Transmitter utility is used to expand the number of defined CRS channels in association with a NWR Transmitter expansion. The BLOCK 7B Spanish Trailers are used only by sites wishing to generate canned Spanish watch/warning information. Therefore, this problem was not widely experienced. The ADD Transmitter utility does not look for non-numerical characters in the block name. When it was written, Block 7B did not exist. Consequently, when it copies all the blocks from the original ASCII database file to the new one, it doesn’t copy BLOCK 7B.

   ADD Transmitter has been modified to retrieve the entire block name instead of the block number (numeric only). The name is stored in a global array for future reference. All software used to reference a particular block will read from the new global array instead of simply adding an integer into the BLOCK#.ASC string.

   ECR 774 - Closed.

9. **The CRS application installer script allows the user the option of not entering the crs user password that is used for VIP communications.** - The /crs/bin/ftp.ksh script includes the crs user password. This password is used for ftp communications with the VIP and must agree with the crs user password defined on the VIP. If not, VIP messages will not be processed on the VIP with the improved voice and will default to the old DECtalk voice. The CRS software installer script installs a ftp.ksh script that uses a default crs user password of “nws2000". Additionally, the installer script includes an optional script that queries the user for the crs user password to replace “nws2000" in the ftp.ksh script. The installer currently has the option of not entering the crs user password. It is critical that each time CRS software is installed that the installer enter his specific crs user password. Otherwise, unless his crs user password is “nws2000", he will not be able to communicate with the VIP.

The CRS software installer script has been modified to force the user to enter the crs password. Previously the script asked the following question, which required a user response:

Change embedded crs user password in /crs/bin/ftp.ksh?

Now the script generates the following statement in its place:

Enter password for the crs user in CRS system:

The if statement which previously processed the user's answer has been removed. The new script will allow for three attempts to enter the correct crs user password. Failures will consist of a blank entry, an entry with a value of fewer than 3 characters, and an entry that does not match the crs password on a configured processor.

ECR 780 - Closed.

10. **Activity Log Display Problems** - The **Activity Log** window allows operators to display error and transmit log information. The number of days of activity log information is site configurable from 1 to 62. Operators may display all logging information (error or transmit) or a subset determined by a date/time window. Both the **ALL** and **DATE/TIME** options have the same error associated with them. If there is more than one day of logging information to be displayed, the current day's logging information can not be displayed. When the software encounters the normal end of table flag for each day, it does not treat it as a normal occurrence. It treats it as an error and halts processing. The software has been corrected to go on to the next day's table.

    ECR 698 - Closed.

11. **Transmitter Switching Problems** - Depending on system activity, the Transmitter Configure Primary/Secondary Transfer capability may generate as much as a 3-second delay between the two sets of tones that would be sufficient to cause the transmitter to go off the air.

    The work around for this long standing problem was to use the ACP Transfer Tones capability from Backup Live. The problem has been solved by sending both tone commands in a single text buffer. This allows for the precise control of transmitter tone separation.

    ECR 597 - Closed.

12. **SSO Right Mouse Click Needs Updating** - Clicking on the right mouse button produces a menu of Synthetic Speech Override (SSO) options. This menu was generated in the original SSO implementation and has not been updated. Since then, two options have been updated that are not represented on the SSO right mouse click menu: Transmit (broadcast live like EEO) and SSO Retry, which was added with VIP.

The SSO right mouse click menu has been updated to include Transmit and SSO Retry.

ECR 776 - Closed.

13. **EO Auto Schedule Abort Failure** - Emergency Override (EO) has two modes of operation: Normal and Auto Schedule. In the Normal mode of operation, at the end of the live broadcast the operator is presented with a display of choices to schedule, save, or delete the message broadcast. With the Auto Schedule mode of operation, the message is automatically scheduled and no such display is presented following the live broadcast. In the Normal mode of operation, if the operator decides to abort the EO session during initialization, he may do so with no problem. However, attempting the abort in the Auto Schedule mode of operation causes the affected transmitters to stop broadcasting. The only way to recover from this error is to stop and restart CRS.

    The problem in the Auto Schedule mode of operation was the failure of the software to call the EO terminate routine like it is in the Normal mode of operation. The software has been corrected to include this call.

    ECR 665 - Closed

14. **Activity Log Copy to Diskette Anomaly** - The Activity Log window allows the operator to save a displayed log file to diskette. However, if the diskette already contains a previously saved log file, the software will generate an error message and not perform the save function.

    The problem was a result of the software attempting to overwrite the existing file. The software has been corrected to overwrite the existing file.

    ECR 701 - Closed.

15. **DECtalk Dictionary Backup/Restore To/From Diskette** - Currently the DECtalk database dictionary files may only be backed up/recovered to/from diskette manually. The System Administration Manual (SAM) provides documentation and recommendations for backing up the DECtalk dictionary files to diskette. The SAM recommends using a tar format for the backup/restore functions and provides sample scripts. Even though most messages are converted to wave files via the VIP, the DECtalk dictionaries must still be kept up to date, since they are backup system in case of VIP failure.

    A new option has been added to the **Database Backup/Restore** window available from the **Maintenance** menu. The new option allows the operator to backup/restore the database dictionary files to/from diskette. Details of this modified capability may be found in Section 3.6.2.5.12 of the SOM.

    ECR 711 - Closed.

16. **No DST Option Display Problem** - In the Transmitter Configure window, the Amplitudes and Voice Parameters buttons cover up the NO DST option when there are

just a few transmitters configured.

The problem is a result of the minimum height of the Transmitter Configure window being too small. It has been expanded from 416 to 500 pixels.

ECR 742 - Closed.

17. **No Audible Alarm When VIP I/F Becomes Inoperative** - There is no audible alarm or Alert Monitor message when the VIP interface goes down.

    When the VIP interface goes down, three audible beeps will sound.

    ECR 743 - Closed.

18. **System Slows When Log Level Set to 1** - CRS logs exist for all CRS processes. These logs are valuable in evaluating CRS performance and analyzing problems and failures. The log level for each executable may be set to 1, 2, 3, 4, or 5. By default the log levels are set to 5, which provides the least detailed information. On occasion the CRS help desk may ask sites to increase the log level to provide more detailed information in analyzing a system problem. The highest log level, log level 1, in several processes may generate so much information on the MPs that the system response time greatly lengthens and overall system performance is tremendously degraded.

    This problem is caused simply because the log files on the MPs become so big that when a new entry needs to be written, it takes the system a huge amount of time to find the end of the file. A new cron job will run every 6 hours (03Z, 09Z, 15Z, 21Z) to monitor the size of the log files on the MPs. When a log file becomes 3 megabytes in file size, it will be renamed “*.log_n”, where n is an integer from 0 to 9. A new “*.log” file will be created and new entries will be posted to it. When all 10 “*.log_n” files have been used, the cron job will begin at “0" again. Once a day at 00Z, the old cron job will continue to clean out the logs no matter what size they are. Since most sites will never have a log file accumulate more than 3 megabytes in one day, they will store 10 days of old logs. The least amount of old logging activity that a site could store is 2.5 days worth. The “*.logx” file will no longer be updated on the MPs. The logging on the FEPs will remain as before.

    ECR 779 - Closed

19. **Non-Processing of Received Weather Message** - AWIPS messages ftp’d to CRS are retrieved from the CRS directory /crs/data/CP/awips by the cp_ai process. On occasion, cp_ai is told by the operating system that a received file is 0 bytes in length. When this happens, cp_ai generates an Alert Monitor message that the received message has a format error and places it in the /crs/data/CP/recovery directory. Since the actual received message is all there, the operator is able to retrieve the message via the Weather Message Correction window and save it manually into the database.

    The cp_ai software was modified to add a check on a 0-byte file size to wait and retry. This will give the operating system enough time to generate the correct file size. This

problem was detected by WFO Lincoln, IL during the CRS Build 8.5/VIP Build 2.0.2 Operational Acceptance Test. This patch was installed on December 5, and they have not experienced the problem since.

ECR 778 - Closed

20. **Add Spanish Special Characters** - The following special Spanish characters need to be supported: “n” with the tilde, all vowels (a, e, I, o, u) with the accent that goes from upper right to lower left, and the “u” with an umlaut (two dots). These must be supported in both upper and lower cases. Even though the VIP has the primary responsibility for providing the special Spanish character capability in the dictionaries, the CRS DECtalk voice remains the backup system when the VIP fails. Therefore, the CRS dictionary must support the special Spanish character set as well.

The software has been modified to allow entry of the special Spanish characters using the left “Windows” key (the one between the *Ctrl* and *Alt)* as a shift for the letters to form the special Spanish characters. This “shift” key plus the letter character will generate the desired special Spanish character. Since the “u” must be available with both the “accent” and the “umlaut”, the “windows” key plus “u” will yield the “u” with accent, and the “Windows” key plus “;” (semi-colon key) will yield the “u” with umlaut. This is the same capability that is being programmed into the VIP software. In CRS the following windows will support the display of the special Spanish characters: **Word Pronunciation**, **Weather Message**, **Weather Message Correction**, and **Message Components**. The character may only be entered in a Unix shell window. From there they may be cut and pasted into the appropriate CRS window. Operators should observe the following procedure to enter the special Spanish characters:

a. Type characters in the appropriate CRS window until one of the special Spanish characters is required.

b. Open a **Unix shell** window from the **Maintenance** window.

c. In the **Unix shell** window, hold down the left “Windows” key. For uppercase characters, also hold down the shift key. While the key(s) are held, type the desired character (a, e, I, o, u, n, ;). You may wish to type all the characters if you anticipate making several entries.

d. In the **Unix shell** window, use the mouse to highlight the character that you wish to paste into the CRS window.

e. Click on the CRS window and make sure the cursor is where you want to insert the character. Click both mouse buttons together to paste in the special Spanish character.

f. Repeat steps 3 through 5 as needed.

ECR 787 - Closed

21. **Disable UnixWare 7.1 Sendmail Capability on the MPs** - The NOAA CIO directed the patching or disabling of the Unix sendmail capability on all NOAA systems because of a security vulnerability. The sendmail daemon is currently disabled on the MPs as an emergency action implemented on March 6, 2003. However, if a new hard drive is installed with the UnixWare 7.1 operating system, the manual procedure to disable sendmail must be performed again. Therefore, the disabling of sendmail needs to be made a permanent part of the CRS software installation procedure. An update script will be executed as part of the CRS Build 9.0 installation that will patch the operating system and disable the sendmail function on the MPs.

    ECR 789 - Closed

22. **Disable UnixWare 2.03 Smtpd Capability on the FEPs** - The NOAA CIO directed the patching or disabling of the Unix sendmail capability on all NOAA systems because of a security vulnerability. The UnixWare version 2.03 operating system utilizes a related capability called smtpd. The UnixWare version 2.03 operating system is very old and no longer supported, which probably explains why the CIO directive did not address the smtpd capability. However, it is prudent and wise to disable the sendmail capability permanently in the CRS software installation procedure. An update script will be executed as part of the CRS Build 9.0 installation that will disable the smtpd function on the FEPs.

    ECR 788 - Closed

23. **Processor State Always Configured at CRS Start Up, Regardless of Physical Configuration** - The CRS start up software (ss_up) is supposed to set the state of each processor according to its actual physical configuration. That is, if the processor does not exist or is failed, it will not be configured. However, in reality ss_up does not check the physical configuration, and all processors are configured. Prior to Build 9.0, this caused no operational problems. However, Build 9.0 now checks the state variables to ensure that VIP message processing begins only when the FEPs are reported operational, not configured, down, failed or configured in a backup state. See the description for number 3 above (ECR 777.) Therefore, sites that have fewer than the maximum number of FEPs (Typical 1-4 and Large 5-8), will not initialize properly. Because the CRS software thinks that all the FEPs are configured, it will wait for all the FEPs to come up even if they are not all physically there. The CRS Status icon will flash forever, and CRS will not come up.

    The ss_up binary has been modified to initialize all processors to Fail with handshake off if it is unable to ping from the Master MP. Therefore, if a site has fewer than the maximum number of FEPs, the software will no longer be confused by a non-configured FEP that it thinks is configured.

    ECR 792 - Closed

Attachment F - VIP Build 3.0.1 Release Notes

I. Major 3.0.1 Changes

1. **Update Speechworks Application to Speechify 2.1.5 for Spanish voice.**

    a. Adds Volume Control - an original VIP requirement.

    b. Adds Rate Control - an original VIP requirement.

    c. Allows use of Spanish voice - an original VIP requirement.

2. **Update male voice corpus**

3. **Update female voice corpus**

4. **Update Linux Operating System to 7.3. Required for Speechify 2.1.5**

5. **Accommodate 3 dictionaries settings (ENG male, female, Spanish in local dictionary users interface**.

    a. Added Button Bar with Save and Exit, Add, Edit, Delete, Find, Switch voice, Play, Stop Play buttons. Functions will operate for specific voice selected.

    b. Create popup add, edit, find, windows.

    c. Added toggle for voice type selection to option menu

    d. Add status bar at bottom to indicate play back selections (male/female/Spn, and 16 or 10 Khz)

    e. Remove red X for exit

II. Minor 3.0.1 Changes

1. **Modify function to scan CRS message header to differentiate between English and Spanish message. Header follows CRS header specification**.

2. **Removed voice Narration from all Help Menus**.

3. **Separate and develop 3 dictionaries functions in VipServer and VIPplay binary files dictionary users interface.**

    a. Added Button Bar with Save and Exit, Add, Edit, Delete, Find, Switch voice, Play, Stop Play buttons. Functions will operate for specific voice

selected.

b. Create popup add, edit, find, windows.

c. Added toggle for voice type selection to option menu

d. Add status bar at bottom to indicate play back selections (male/female/Span, and 16 or 10 Khz)

e. Remove red X for exit.

4. **Separate and develop 3 preprocessor functions.**

5. **Accommodate 3 preprocessor settings (ENG male/female, SPN) in pre-processor users interface**

   a. Added Button Bar with Save and Exit, Add, Edit, Delete, Find, Switch voice, Play. Stop play buttons. Functions will work for specific voice selected.

   b. Create popup add, edit, find windows.

   c. Added toggle for voice type selection to options menu.

   d. Add status bar at bottom to indicate play back selections (voice/sample:rate) (male/female/Span.and:16 or 10 Khz)

   e. Removed red X for exit.

6. **Modify TTS clipboard to include Spanish and allow playback in different voices, with or without use of dictionary and/or preprocessor; and at choice of sample rate.**

   a. Add Button Bar with Play, Stop, Voice selection buttons

   b. Add Status bar at bottom of window with 6 fields

      i. Voice

      ii. Volume percentage

      iii. Rate percentage

      iv. Local dictionary on or off

      v. Preprocessor on or off

      vi. Sample rate 16 or 10

7. **Modify error logging**

    a. Included time-date tag to data

    b. Added log types

        i. Application Server

        ii. Text Products

        iii. Maintenance

        iv. VIP Server

        vi. Text-to-speech

    c. Include in Spanish error logs

8. **Modify VIPplay to Play Spanish voice type**

    a. Preprocessor

    b. Dictionary

    c. Clipboard

    d. Log

9. **Modify VIP Audio Play window**

    a. Remove red X for exit

    b. Remove Forward/Back buttons

10. **Modify “VIP” window. (Main application window)**

    a. Removed voice type selection from window

    b. Removed “Upgrade VIP” from Help Menu

11. **Modified “VIP System Settings” window**

    a. Rearranged layout

    b. Added Volume and Rate/Speed Controls for each voice

    c. Removed Users name entry

d. Added FTP configuration option under Option Menu and removed from main window

e. Added choice of verbose TTS and/or VIP logs

f. Added Save & Exit, and Cancel buttons

12. **Remove CRS porting function**

13. **Add installation Wizard**

14. **Add function to support porting VIP2.0 dictionary to VIP3.0.1**

15. **Add Spanish Phonemic table**

16. **Disable Linux “SendMail” function**

17. **Include mp3 format for audio ftp**

VIP 3.0.1 Updates to Correct TTRs Found During System Test

TTR 193 - **The list of VIPv2.0 Processor window was not updated when uploaded from floppy.**

TTR 194 - **The following error message: " Can't read tmp.dic. No such variable" was displayed after completion of 2.0.2 local dictionary check.**

TTR 198 - **Restore from a floppy under Local Dict Manager does not work**.

TTR 200 - **Cannot save Donna's Current Substitution Dictionary to floppy Disk.**

TTR 201 - **Restore Current Substitution Dictionary from floppy does not work for all voices.**

TTR 202 - **VIP is incorrectly saving new entries for both preprocessor and dictionary to wrong voice types.**

TTR 204 - **Pre-processor dictionary got corrupted when it was saved with a Port window open**.

TTR 205 - **VIP Help Menu option does not work**.