

MEMORANDUM OF AGREEMENT

among the
Department of Commerce
Department of Defense
and
Department of Transportation
for
Interagency Operation
of the
Weather Surveillance Radar-1988, Doppler (WSR-88D)

Approved 24 Mach 2008

CONTENTS

	<u>Page</u>
ACRONYMS AND ABBREVIATIONS.....	iv
DEFINITION OF TERMS.....	v
1. PURPOSE.....	1
2. BACKGROUND.....	2
A. NEXRAD Program Council	2
B. NEXRAD Program Management Committee	2
C. Radar Operations Center	3
D. Technical Advisory Committee	3
E. WSR-88D Sites	3
F. Federal Meteorological Handbook Number 11, Doppler Radar Meteorological Observations.....	4
3. POLICY.....	4
4. UNIT RADAR COMMITTEE.....	4
A. Membership	5
B. Functions	5
C. Responsibilities and Limitations of Authority	7
D. Equitable Apportionment of Costs	8
5. FOCAL POINTS.....	9
6. DEPARTMENT OF COMMERCE RESPONSIBILITIES.....	9
A. National Weather Service	9
B. Office of the Federal Coordinator for Meteorology	10
7. DEPARTMENT OF DEFENSE RESPONSIBILITIES.....	10
8. DEPARTMENT OF TRANSPORTATION RESPONSIBILITIES.....	11
9. PERIOD OF AGREEMENT AND MODIFICATION/TERMINATION.....	11

10. CONTACTS.....	13
11. OTHER PROVISIONS.....	13
SIGNATORIES.....	14
APPENDIX A PROCEDURES FOR COORDINATING WSR-88D MAINTENANCE OUTAGES WITH ASSOCIATED PRINCIPAL USERS	15
APPENDIX B CONTACTS.....	17

ACRONYMS AND ABBREVIATIONS

AFWA	Air Force Weather Agency
ARTCC	Air Route Traffic Control Center
CCB	Configuration Control Board
CONUS	Conterminous United States
DoC	Department of Commerce
DoD	Department of Defense
DoT	Department of Transportation
FAA	Federal Aviation Administration
FMH No. 11	Federal Meteorological Handbook Number 11
MCC	Maintenance Control Center
MOA	Memorandum of Agreement
MSCF	Master System Control Function
NAS	National Airspace System
NEXRAD	Next Generation Weather Radar
NPC	NEXRAD Program Council
NPMC	NEXRAD Program Management Committee
NSSL	National Severe Storms Laboratory
NWS	National Weather Service
OCONUS	Outside the Conterminous United States
OFCM	Office of the Federal Coordinator for Meteorology
ROC	Radar Operations Center
TAC	Technical Advisory Committee
URC	Unit Radar Committee
USAF	United States Air Force
U.S.C.	United States Code
WSR-88D	Weather Surveillance Radar-1988, Doppler

DEFINITION OF TERMS

Associated Principal User - A Principal User with dedicated communications to a Weather Surveillance Radar-1988, Doppler (WSR-88D) system.

Focal Point - A representative within a Principal User Agency who is the point of contact for WSR-88D operational issues.

Network Site - A Department of Commerce (DoC) conterminous U.S. (CONUS) WSR-88D system, except at the National Reconditioning Center, National Weather Service (NWS) Training Center, National Severe Storms Laboratory (NSSL) and Radar Operations Center (ROC), that continuously collects, collates, and makes available radar data and products in accordance with Federal Meteorological Handbook Number 11 (FMH No. 11) Part A, System Concepts, Responsibilities, and Procedures and such agreements as may be made among the Principal Users.

Non-Associated Principal User - A Principal User who has only Non-Associated User access (e.g., dial-in communications, communications other than a direct connection) to a WSR-88D system.

Non-Network Site - A Department of Defense (DoD) or Department of Transportation (DoT) Outside the CONUS (OCONUS) WSR-88D system.

A DoD OCONUS WSR-88D continuously collects, collates, and makes available radar data and products in support of the DoD in accordance with FMH No. 11 Part A. The sites also provide support to the DoC and DoT by providing access to weather radar data.

A DoT OCONUS WSR-88D continuously collects, collates, and makes available radar data and products in support of the Federal Aviation Administration's (FAA) en route weather radar coverage in accordance with FMH No. 11 Part A. The sites also provide support to the DoC and DoD by providing access to weather radar data.

Observer - A non-voting Principal User representative at a Unit Radar Committee (URC) meeting.

Principal User - The NWS, DoD (U.S. Air Force (USAF) and Marine Corps are considered as one Principal User), and the FAA.

Supplemental Site - A DoD WSR-88D system in the CONUS, except the training units at Keesler Air Force Base. These DoD sites in the CONUS continuously collect, collate, and make available radar data and products in support of the DoD in accordance with FMH No. 11

Part A. The sites also provide assistance to NWS offices and the FAA by providing access to weather radar data.

Unit Radar Committee - A committee formed at WSR-88D sites where there is more than one Associated Principal User.

Unit Radar Committee Member - The Associated Principal User agency representative for a WSR-88D system on the URC. This member shall vote on WSR-88D system operational issues, coordinate with, and represent the interests of other Principal User(s) from their respective agency at URC meetings.

WSR-88D System - The summation of all hardware, software, facilities, communications, logistics, training, and staff, together with operating, training, and maintenance procedures. The system includes network, supplemental, and non-network sites, both in the CONUS and OCONUS.

WSR-88D Unit - Composed of a Doppler weather radar, computers, workstations, and communications to link the components and distribute the products.

MEMORANDUM OF AGREEMENT
among the
Department of Commerce
Department of Defense
and
Department of Transportation
for
Interagency Operation
of the
Weather Surveillance Radar-1988, Doppler (WSR-88D)

WHEREAS, each of the signatories is responsible for the operation of a number of WSR-88D units, and

WHEREAS, authority is granted for this agreement under the provisions of 15 U.S.C. ' 313; 49 U.S.C. ' 44720(b); 10 U.S.C. ' 8062; and the Department of Commerce's Joint Project Authority, 15 U.S.C ' 1525,

NOW THEREFORE, the parties mutually agree to the following terms and conditions:

1. PURPOSE

This Memorandum of Agreement (MOA) among the Department of Commerce (DoC), the Department of Defense (DoD), and the Department of Transportation (DoT) prescribes the triagency policies for mutual support among WSR-88D Principal Users. The responsibilities of the departments required to implement the policies are also defined in this agreement. The Federal Meteorological Handbook for Doppler Radar Meteorological Observations, Number 11 (FMH No. 11) Part A, System Concepts, Responsibilities, and Procedures, states the procedures and standards of operation for the WSR-88D system for the Principal Users.

The NEXRAD Program is necessary and essential to further the mission of the Principal Users of the WSR-88D (DoC, DoD, and DoT). The WSR-88D meets the common weather radar needs of the triagencies. These weather radar data are needed to perform or support their activities.

These activities include warning of hazardous weather and flash flood prediction, predicting weather conditions, ensuring safety of flight, protecting base resources, and planning military missions.

The triagencies have determined the NEXRAD Program cannot be done at all or done as effectively without the participation of each agency. Congress has supported the triagency nature of the NEXRAD Program since the inception of the program in 1979. The resultant common weather radar has been more cost effective in terms of research and development, and deployment. The cost effective nature has continued in the operational phase of the NEXRAD Program through the

consolidation of supply and reconditioning efforts, and life cycle support.

This MOA updates and supersedes the MOA, same title, dated June 2004 the NEXRAD Program Management Committee (NPMC) approved in September 2004.

2. BACKGROUND

The Next Generation Weather Radar (NEXRAD) Program is a joint DoC, DoD, and DoT effort that led to the development and installation of an advanced Doppler weather radar system -- the WSR-88D. The three departments acquired and deployed this system to replace the majority of their aging weather radars and as a major upgrade of previous capability. Through the application of Doppler radar capabilities and computer algorithms, the WSR-88D was developed to detect wind velocity and improve detection of precipitation, severe thunderstorms, and tropical cyclones; increase weather warning lead times; enhance the safety and efficiency of the National Airspace System (NAS); and provide automated exchange of digital weather radar data. The following triagency organizations have been established to facilitate the operation of the WSR-88D system.

A. NEXRAD Program Council (NPC). The NPC provides overall policy, management guidance, and resource commitments for the NEXRAD Program and approves those items identified in the NEXRAD Joint Program Development Plan as higher authority decisions. The NPC will act as final approval authority for any unresolved program and configuration management problems referred by the Chairman of the NPMC at the request of any NPMC member. Voting members are: Assistant Administrator for Weather Services, National Oceanic and Atmospheric Administration (DoC); Director of Weather (USAF/A30-W), (DoD); and the Program Director for Aviation Weather, Federal Aviation Administration (DoT). The NPC is chaired by the Office of the Federal Coordinator for Meteorology (OFCM) as a non-voting member. NPMC representation is provided by the National Weather Service (NWS) Office of Operational Systems Director who is Chairman of the NPMC. The OFCM also provides the Executive Secretary to the NPC. As of November 1997, the NPC has retired as an active body and delegated its responsibilities to the NPMC. The NPC Charter remains in effect, and under extenuating circumstances the NPC could be reassembled.

B. NEXRAD Program Management Committee (NPMC). The NPMC is a triagency committee. The primary role of NPMC members is to make higher authority decisions for each agency throughout the operational life of the WSR-88D equipment. The NPC has delegated its authority to the NPMC to act as the final arbiter on major policy and financial issues. The NPMC provides triagency guidance and management oversight of the WSR-88D system during its operational life cycle. The NPMC is responsible for decisions involving changes and modifications, and new

work which require authority to expend significant Radar Operations Center (ROC) resources.

Voting members of the NPMC are the Director of the Office of Science and Technology, NWS; Director, Strategic Plans and Programs, Air Force Weather Agency (AFWA); and the Manager of System Engineering, Terminal Services, Federal Aviation Administration (FAA). The NPMC is chaired by the Director of the NWS Office of Operational Systems. The NWS Office of Climate, Water and Weather Services provides the Executive Secretary to the NPMC. Operational support representation is provided by the Director, ROC. The NWS Program and Plans Division Chief, Office of Science and Technology represents the NEXRAD Product Improvement Program. Further details on the NPMC are contained in the NPMC Charter.

C. Radar Operations Center (ROC). Operational support for all deployed WSR-88D units is the responsibility of the triagency ROC located in Norman, Oklahoma. The ROC provides centralized radar operations support, field assistance, software maintenance, and engineering support; and special depot-level support (e.g., bull gear replacement) of the WSR-88D units deployed by the three Principal Users. The ROC performs systematic and coordinated analyses of the day-to-day operations and maintenance of WSR-88D units to determine the need for improvement, and for providing both immediate and long-term support during the WSR-88D life cycle. The ROC analyzes, develops, tests, and evaluates proposed changes to the WSR-88D hardware/software configuration, materials, techniques, procedures, and may approve minor changes. The ROC is responsible for implementation of approved hardware, software, and documentation changes. In addition, the ROC operates and maintains a WSR-88D system to assist in the ROC's life cycle support and improvement responsibilities.

D. Technical Advisory Committee (TAC). The TAC is a triagency committee established to address technical needs and issues related to the operational use and evolution of the WSR-88D system. The TAC consists of up to 16 members: a non-voting chairperson, a non-voting executive secretary, up to 12 voting agency representatives (up to 4 per agency), and 2 voting members-at-large. Further details on the TAC are contained in the TAC Charter.

E. WSR-88D Sites. Each WSR-88D unit is categorized as either a network, supplemental, or non-network site. Together, they satisfy the weather mission needs of the Principal Users.

All DoC units in the conterminous United States (CONUS), except at the National Reconditioning Center, NWS Training Center, National Severe Storms Laboratory, and ROC, are considered network sites. A network site continuously collects, collates, and makes available radar data and products in accordance with FMH No. 11 Part A and such agreements as may be made among the Principal Users.

All CONUS DoD units, except the training units at Keesler Air Force Base, are supplemental sites. A supplemental site continuously collects, collates, and makes available radar data and products in support of the DoD in accordance with FMH No. 11 Part A and such agreements as may be made among the Principal Users.

A non-network site is a DoD or DoT OCONUS WSR-88D unit that continuously collects, collates, and makes available radar data and products in support of the DoD in accordance with FMH No. 11 Part A and such agreements as may be made among the Principal Users.

F. Federal Meteorological Handbook Number 11, Doppler Radar Meteorological Observations. The FMH No. 11 provides standards and procedures for the triagency management and operation of the WSR-88D units. The responsibilities of the network, supplemental, and non-network sites are specified in FMH No. 11 Part A.

3. POLICY

This MOA sets forth policies and ground rules for the activities of the Unit Radar Committees (URC). The URCs shall be coordinating committees composed of a single member for a particular WSR-88D unit from each of the Associated Principal Users. The Principal Users are DoC NWS, DoD (U.S. Air Force (USAF) and Marine Corps are considered as one Principal User), and DoT FAA.

The WSR-88D system is vital to the operations of each Principal User Agency. Therefore, the WSR-88D units shall be operated to satisfy the integrated needs of all three agencies. Each agency shall endeavor to support, to the maximum extent possible, the data, product, and operational requirements of the others, consistent with the capabilities and mission priorities of each agency. Policies set forth in this MOA shall be adhered to by each agency, using the procedures and responsibilities as described in FMH No. 11 Part A.

By this MOA, access to data and products from WSR-88D units is granted by the operating agencies to the Principal Users.

4. UNIT RADAR COMMITTEE (URC)

Where there is more than one Associated Principal User Agency of a particular WSR-88D unit, a committee shall be formed, herein referred to as a URC. The goal of the URC shall be to meet the radar information needs of the Principal Users. The URC shall address operational concerns in support of Principal User requirements at that WSR-88D unit. The extent of support provided shall be consistent with each agency's mission needs and shall not violate any higher-level agreements. The URC shall ensure operation of a WSR-88D unit in

accordance with those procedures provided in FMH No. 11 Part A and all other properly authorized system documents.

The URCs shall meet in person or via teleconference calls a minimum of twice a year and as often as necessary to conduct business. At URC meetings, WSR-88D operational issues shall be resolved only by unanimous vote of the URC members for that WSR-88D unit. Each Associated Principal User Agency member shall have equal voice in decisions of the URC. A Principal User may have up to four non-voting observers at a URC meeting.

The WSR-88D Hotline is willing to participate, by phone, in URC meetings as a resource of technical information to help answer questions or resolve problems more quickly. Contact the WSR-88D Hotline, 1-800-643-3363, in advance of the URC meeting to schedule participation.

A. Membership. The URCs shall be established to meet the local radar information needs of the Principal Users. The individual URC is to serve as the coordinating committee for the particular WSR-88D unit. The URC shall be composed of one voting member of each Associated Principal User Agency connected to the unit. A member of a URC shall represent the interests of all users of the WSR-88D unit from the member's respective agency. The member that is the manager of the Master System Control Function (MSCF), or designee, shall be the chairperson of the URC. The URCs should solicit attendance of a representative from the radar maintenance section. The functions, responsibilities, and limitations of the URC are defined in sections 4.B. and 4.C. and their respective subparagraphs.

B. Functions. Functions of the URC shall include:

1. Providing a forum for addressing the operational needs of Principal Users.
 - a. Associated Principal Users, by definition, will be represented on their URC and shall present their needs directly to their URC.
 - b. A Non-Associated Principal User whose agency has membership on a particular URC shall request consideration for support from the agency member of that URC.
 - c. For a WSR-88D site where the Non-Associated Principal User's Agency is not represented, the Non-Associated Principal User shall be advised to contact the appropriate agency focal point for that site for consideration of a request for operational support (refer to Section 5, Focal Points).

2. Coordinating joint standard operating procedures for the unit within the constraints of FMH No. 11 Part A, this agreement, and all related interagency agreements.
3. Identifying operational and data quality issues.
4. Referring issues from paragraph 3 (above) to their respective agency focal points that cannot initially be resolved by unanimous vote of the URC members for that WSR-88D unit.

After receiving guidance from their respective focal points, the URC shall re-address the issue and obtain resolution by unanimous vote of the members. If resolution still cannot be obtained, the URC members shall seek further guidance from their focal points. The URC shall continue to work to resolve the issue and gain unanimous agreement by vote. If several attempts to resolve the issue fail and the URC determines that no progress is being made, a URC-coordinated package documenting the issue shall be forwarded through appropriate agency channels to the WSR-88D Configuration Control Board (CCB) for resolution. If the CCB cannot resolve the issue, the issue shall be forwarded to the NPMC for resolution.

5. Providing recommendations for operational enhancements, through appropriate agency channels, for WSR-88D Configuration Management review and action.
6. Coordinating values for site-adaptable parameters for which it has change authority (defined in WSR-88D Handbook Volume 4, RPG; and Volume 3, RDA).
7. Coordinating preventive maintenance and modification implementation schedules that may impact radar operations with URC members and the URC Chairperson(s) of adjacent WSR-88D units which may provide coverage during these outage periods. The URC Chairperson (or representative) will notify all Associated Principal Users of scheduled downtime using the procedures in Appendix A.
8. Notifying Associated Principal Users of unscheduled outages. The URC Chairperson (or representative) will notify all Associated Principal Users of the estimated return to service time using the procedures in Appendix A.
9. Notifying the associated FAA Air Route Traffic Control Center (ARTCC) Maintenance Control Center (MCC) whenever the WSR-88D is outside calibration tolerance and upon return to operating standards. The URC Chairperson (or representative) will notify the Associated Principal Users of this situation via a Free Text Message.

10. Notifying Associated Principal Users of known persistent airborne chaff that could be misinterpreted by users who are not trained forecasters. The URC Chairperson (or representative) will notify the Associated Principal Users of this situation via a Free Text Message.

C. Responsibilities and Limitations of Authority.

1. Routine Operations

Each agency URC member is empowered to make committee-level decisions within the authority delegated by the member's respective agency.

Once a unanimous decision has been made, the URC has the authority to effect implementation of that decision.

2. Emergency Operations

The manager, or designee, of the agency operating the MSCF shall have the authority to make any short-term, URC-level changes, including those requested by other Principal Users, which, in the manager's judgment, are necessary for the protection of life or property. The manager, or designee, shall notify the other Associated Principal Users of the change as soon as possible.

The situation shall be discussed at the next meeting of the URC to determine what action shall be taken in the future if a similar situation were to occur.

3. Chairperson's Responsibilities

The URC Chairperson's responsibilities include the following:

- a. Administer the preparation of agreements made within the URC.
 - b. Schedule and chair all meetings of the URC.
 - c. Prepare meeting agenda and minutes and provide one copy to each Principal User Agency member.
 - d. Arrange for a meeting place and/or teleconference for URC meetings.
5. Provide an electronic copy of the URC meeting minutes to the Radar Operations Center WSR-88D Hotline (NEXRAD.Hotline@noaa.gov).

- f. Ensure the operation of the MSCF is within the terms of the FMH No. 11 Part A, this agreement, and any other appropriate interagency agreements.
- g. Coordinate scheduled or routine unit maintenance activities with Associated Principal Users.

4. Members' Responsibilities

The URC members shall take appropriate actions to ensure compliance with URC-established procedures for activities within their purview. They shall advise their agency of activities through normal channels. Requests for assistance in resolution of any interagency issues that might arise shall be made to their respective agency focal points. The URC members shall coordinate with and represent the interests (including requests for operational support) of other principal users (which includes Non-Associated Principal Users) from their respective agency.

- a. A member receiving a request from a Non-Associated Principal User from the member's agency shall present that request to the URC at their next meeting. If warranted, the member shall ask the URC Chairperson to call a special meeting to consider the request. Subsequent to the meeting, the member shall advise the requesting Non-Associated Principal User of the decision of the URC.
- b. As required, prepare information on unresolved issues for presentation to the CCB, through their agency's channels, for resolution.
- c. Each agency should notify their respective Non-Associated Principal Users of scheduled URC meeting dates and solicit input regarding agenda items. Following the URC meeting, that agency should provide a copy of the meeting minutes to their Non-Associated Principal Users.

D. Equitable Apportionment of Costs. The costs of this project concerning the URCs are equitably apportioned based on use of a radar unit. The costs of the URC are generally in-kind costs of the agencies designated employees and include: the costs of the agencies' employees attending meetings or teleconferences, monitoring the radar unit, coordinating joint standard operating procedures for the unit, identifying operational issues such as scheduling outages, and coordinating maintenance and other business associated with the use and maintenance of the radar units.

5. FOCAL POINTS

Each agency shall designate one or more focal points for WSR-88D operational issues or requests for operational support, as referred by a URC member or by a Non-Associated Principal User not represented on a particular URC. The focal point shall coordinate the issues within that individual's agency and interact with other agency focal points to propose a resolution to issues. (See Appendix B for list of current agency focal points.) This coordination shall consider established regional and national policy by the particular agency pertaining to resolution of service requirements and configuration management issues. Upon determination of a proposed resolution to an issue, the focal point shall advise the referring URC member or the unrepresented Non-Associated Principal User of that determination. In the case of a request from an unrepresented Non-Associated Principal User, and where the focal point supports the request, the request shall be forwarded to the chairperson of the particular URC for consideration by the committee and the requesting user advised that the request was forwarded. If the focal point does not support the request, that focal point shall so inform the requesting user.

6. DEPARTMENT OF COMMERCE (DoC) RESPONSIBILITIES

A. The DoC, via the NWS Office of Operational Systems has management responsibility for the ROC and for operational support of all deployed WSR-88D units. The Office Of Operational Systems also has overall management responsibility for the NEXRAD Program except for those management decisions delegated to the NWS Director, Office of Science and Technology, as the DoC representative on the NPMC. The NWS Office of Science and Technology has management responsibility over the NEXRAD Product Improvement Program.

The DoC, via the NWS Director, Office of Operational Systems, has Designated Approval Authority responsibility for all deployed WSR-88D units. The Office of Operational Systems shall ensure the WSR-88D is properly accredited in accordance with the National Institute of Standards and Technology Guide for Certification and Accreditation of Federal Information Systems in a manner consistent with DoC, DoT, and DoD security policy.

The DoC via the NWS will manage all DoC WSR-88D network sites through its National and Regional Headquarters in a manner consistent with existing and planned NWS operational weather systems.

The NWS shall provide radar data from their WSR-88D units to other Principal Users, as requested, consistent with capabilities and mission priorities of each Principal User Agency.

The NWS will operate the MSCF for all WSR-88D units (except the DoD units in Korea, Azores, Japan, and at Vandenberg AFB, CA) except

during maintenance operations. Operations of the MSCFs will be in a manner consistent with the mission priorities of the DoT and DoD.

The NWS shall designate one member to each appropriate URC. The NWS URC member, or designee, shall attend all URC meetings for their WSR-88D unit.

The NWS shall designate a focal point for each network and supplemental site with which NWS personnel will interact. This focal point will ensure that appropriate NWS Non-Associated Principal Users are informed of a given URC's meeting dates, their input regarding agenda items is solicited, and a copy of the meeting minutes is distributed to them in a timely fashion.

All logistics/supply costs for fielded WSR-88D equipment will be paid by the operating agency, subject to the availability of funds.

B. Office of the Federal Coordinator for Meteorology (OFCM). The OFCM has responsibility, assigned by the Interdepartmental Committee for Meteorological Services and Supporting Research, for the Federal Meteorological Handbooks. Thus, the OFCM is responsible for the development, maintenance, and publication of FMH No. 11 using its interagency coordination infrastructure.

7. DEPARTMENT OF DEFENSE (DoD) RESPONSIBILITIES

The DoD, via the USAF, will manage the DoD WSR-88D supplemental sites through appropriate command headquarters in a manner consistent with existing and planned DoD operational systems and shall provide support to network sites as outlined in FMH No. 11 Part A.

The USAF shall provide radar data from their WSR-88D units to other Principal Users, as requested, consistent with the capabilities and mission priorities of each Principal User Agency.

The USAF, while operating the MSCF to perform maintenance on the CONUS DoD WSR-88D units, will do so in a manner consistent with the mission priorities of the DoT and DoC.

The USAF shall designate one member to each appropriate URC.

The USAF URC member, or designee, shall attend all URC meetings for their WSR-88D unit.

The USAF shall designate a focal point for each network and supplemental site with which USAF personnel will interact.

All logistics/supply costs for fielded WSR-88D equipment will be paid by the operating agency, subject to the availability of funds.

8. DEPARTMENT OF TRANSPORTATION (DoT) RESPONSIBILITIES

The DoT, via the FAA, will manage all DoT WSR-88D non-network sites through its headquarters in a manner consistent with existing and planned FAA operational systems and shall provide support to network and supplemental sites as outlined in FMH No. 11 Part A.

As requested, the FAA shall provide radar data from their WSR-88D units to other Principal Users, consistent with the capabilities and mission priorities of each Principal User Agency.

The FAA, while operating the MSCF to perform maintenance on DoT WSR-88D units, will do so in a manner consistent with the mission priorities of the DoD and DoC.

The FAA shall designate one member to each appropriate URC.

The FAA URC member, or designee, shall attend all URC meetings for their WSR-88D unit.

The FAA shall designate a focal point for each network and supplemental site with which FAA personnel will interact.

All logistics/supply costs for fielded WSR-88D equipment will be paid by the operating agency, subject to the availability of funds.

9. PERIOD OF AGREEMENT AND MODIFICATION/TERMINATION

This MOA shall become effective on the date of the last approval signature.

The NPMC will review this MOA at least once every three years to determine whether it should be revised, renewed, or cancelled. Additional reviews will be conducted as directed by the NPMC. This MOA may be amended at any time by the NPMC. The latest date of review or amendment constitutes the new effective date unless some later date is specified.

Termination for cause or program completion shall require a termination review to consider the elements negotiated in this MOA. The terminating agency shall notify the other agencies, in writing, of the required termination, within a time frame to permit orderly transfer of support, and not less than two years in advance of the termination. In the event this MOA is terminated, each agency shall be solely responsible for the payment of any expenses it has incurred. This MOA is subject to availability of funds.

10. CONTACTS

The contacts of each party to this agreement are listed in Appendix B. The agencies agree that if there is a change regarding the information concerning the contacts, the agency making the change will notify the other agency contacts in writing of such change.


11. OTHER PROVISIONS

Nothing herein is intended to conflict with current DoC, DoD, or DoT directives. If the terms of this agreement are inconsistent with existing directives of any of the agencies entering into this agreement, then those portions of this agreement which are determined to be inconsistent shall be invalid; but the remaining terms and conditions not affected by the inconsistency shall remain in full force and effect. At the first opportunity for review of the agreement, all necessary changes will be accomplished by either an amendment to this agreement or by entering into a new agreement, whichever is deemed expedient to the interest of all parties.

Should disagreement arise on the interpretation of the provisions of this agreement, or amendments and/or revisions thereto, that cannot be resolved at the operating level, the area(s) of disagreement shall be stated in writing by each party and presented to the other party for consideration. If agreement on interpretation is not reached within thirty days, the parties shall forward the written presentation of the disagreement to respective higher officials for appropriate resolution.


SIGNATORIES

FOR THE DEPARTMENT OF COMMERCE:

Approved 
Frank P. Kelly
Director, Office of Science and
Technology (Acting), NOAA/NWS

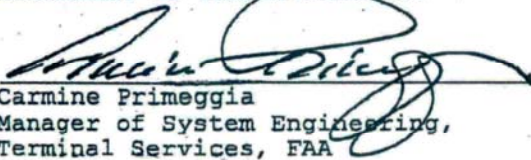
Date 3/5/2008

FOR THE DEPARTMENT OF DEFENSE:

Approved 
Harold A. Elkins, Col, USAF
Director, Strategic Plans and Programs
Headquarters Air Force Weather Agency

Date 12 MAR 08

FOR THE DEPARTMENT OF TRANSPORTATION:

Approved 
Carmine Primeggia
Manager of System Engineering,
Terminal Services, FAA

Date 3/24/08

PROCEDURES FOR
COORDINATING WSR-88D MAINTENANCE OUTAGES WITH
ASSOCIATED PRINCIPAL USERS

1. SCHEDULED OUTAGES

IF POSSIBLE, AT LEAST 24 HOURS PRIOR TO OUTAGE

- A. The NEXRAD electronics technician will coordinate the outage with the National Weather Service Lead Forecaster. (At Vandenberg AFB, the technician will coordinate the outage with the 30th Weather Squadron radar duty forecaster.)
- B. The Unit Radar Committee Chairperson or designated representative will notify the NEXRAD agency users associated with the radar of the outage by Free Text Message from the WSR-88D MSCF. The message will provide the proposed start and stop times for the preventative maintenance action.

DAY of OUTAGE

- A. If there is a cancellation or change in plans, the Unit Radar Committee Chairperson or designated representative will notify the NEXRAD agency users associated with the radar by Free Text Message.
- B. Shortly before the start of the outage, the Unit Radar Committee Chairperson or designated representative will send a Free Text Message to the NEXRAD agency users associated with the radar informing/reminding them of the preventative maintenance action and the anticipated start and stop times.
- C. Just prior to taking the radar off line, the NEXRAD electronics technician or the MSCF operator will disconnect the narrowband communication lines.
- D. If during the maintenance action the NEXRAD electronics technician determines more time is needed to complete the action than was originally scheduled, he/she will notify the Lead Forecaster. (At Vandenberg AFB, the technician will coordinate the outage with the 30th Weather Squadron duty forecaster.) The Unit Radar Committee Chairperson or designated representative will then notify all NEXRAD agency users associated with the radar of the updated completion time via Free Text Message, if possible.

2. UNSCHEDULED OUTAGES

If the RPG is still operational, the Unit Radar Committee Chairperson or designated representative will send a Free Text Message to the NEXRAD agency users associated with the radar and provide an estimated return to service time. If the time changes substantially, the notification should be repeated, if possible.

3. ALL OUTAGES

To prevent the inadvertent distribution of invalid base data and products to external users, the technician or engineer, when making any repairs to the WSR-88D that could negatively affect the calibration of the radar or introduce anomalies into the system, shall operate the radar with all (Radar Product Generator and Base Data Distribution System) external communications disabled until personnel verify the radar products are being generated within specifications.

Examples of changes that could potentially affect the operation of the system include but are not limited to hardware component replacements, realignments, retuning, changing of adaptable parameters, regeneration and selection of clutter bypass maps, loading of new software builds during beta testing or during normal software loads, preventive maintenance activities, general remedial maintenance, etc.

The intent of this caution is to avoid the unintentional distribution of products to end users which contain incorrectly calibrated information, incorrectly derived algorithm products, or any anomalies such as test patterns, spikes, spokes, interference, or obviously invalid non-meteorological data that could be misinterpreted by users who are not trained forecasters.

APPENDIX B

CONTACTS
Updated (7/23/10)

Radar Operations Center/Department of Commerce/National Weather Service

Tim Crum
W/OPS4
1200 Westheimer Drive
Norman, OK 73069
Phone: 405-573-8888
E-mail: Tim.D.Crum@noaa.gov

Department of Defense/Air Force Weather Agency

Ricky Keil
HQ AFWA/A8F
101 Nelson Drive
Bldg. 185
Offutt AFB, NE 68113-1023
Phone: DSN 271-3023, Commercial 402-294-3023
E-mail: Ricky.Keil.Ctr@offutt.af.mil

Department of Transportation/Federal Aviation Administration

Dennis Roofe
FAA/ROC Liaison, NEXRAD Team Lead
FAA AJW-14A
1200 Westheimer Drive
Norman, OK 73069
Phone: 405-573-8819; Cell phone: 405-820-9650
E-mail: dennis.r.roofe@noaa.gov or: dennis.roofe@faa.gov