Technnology Planning and Integration Office (TPIO)

United States Department of Commerce
National Oceanic and Atmospheric Administration

NOAA Program Observation Requirements Document (PORD)

Consolidated Observation Requirements List (CORL)

NOAA Program Observation Requirements Document (PORD)

FINAL with Requirements Validation Version 1.1

FY 2009

Commerce and Transportation Goal

Marine Weather Program (CT-MWX)

July 7, 2009[1]

[1] PORD Document Date reflects date for publication of this [FINAL with Requirements Validation]
CORL Data was downloaded at [07-07-2009 11:17:50]

Table of Contents

Signatures ..... **ii**
Observation Requirement Validation ii
Observation Requirement Verification iii

1. Program Summary **1**

2. Observation Requirements Summary **1**
2.1 Observation Requirements by Priority 1
2.2 Observation Requirements by Discipline 2
2.3 Observation Requirements by Type 3

3. Observation Requirements Mapping to Performance Measures **4**

4. Status of Program List **5**

Appendix A Marine Weather Program, Observation Requirements **A-1**

Appendix B CT-MWX, Priority-1 Requirements Validation **B-1**
Appendix B.1 Validation Documents Submitted B-1
Appendix B.2 Validation Documents Mapping to Observation Requirements B-1
Appendix B.3 Validation Assessment for Priority-1 Requirements B-3

List of Figures

Figure 1: CT-MWX Observation Requirements by Priority (%) 2
Figure 2: CT-MWX Observation Requirements by Discipline. 3
Figure 3: CT-MWX Observation Requirements by Type. 3

List of Tables

Table 1: CT-MWX Observation Requirements Mapping to Performance Measures 4
Table 2: CT-MWX Observation Requirement Attributes Remaining [blank] or [tbs] 5
Table B-1: Validation Documents provided to support Priority- Requirements B-1
Table B-2: Validation Document Mapping to Observation Requirement B-1
Table B-3: Level of Validation for each Priority 1 Requirement Attribute B-3

Signatures

Observation Requirement Validation

NOSC Endorsement

The NOSC has received the Marine Weather Program's Observation Requirements with Goal Lead and Line Office concurrence, and is satisfied with the Level-of-Validation provided for the Priority-1 Requirements.

Mary Kicza Co-Chair, NOSC	9-14-09 Date	✓ Endorsed
Jack Hayes Co-Chair, NOSC	9-14-09 Date	✓ Endorsed

Goal Lead and Line Office Concurrence

The Program Manager's Supervisor and Marine Weather Program's Goal Team Lead concur with the Observation Requirements and are satisfied with the Level-of-Validation provided for the Priority-1 Requirements.

Steven Barnum Goal Lead, Commerce and Transportation Goal	7/9/09 Date	✓ Concurred
Donald Berchoff Director, Office of Science and Technology	9/16/09 Date	✓ Concurred

Program Manager Validation

The Marine Weather Program Manager has validated the Priority-1 Observation Requirements by providing the Documentation listed in Appendix B as evidence of a substantiated basis for each of the 5 Key Attributes of those requirements.

Ming Ji Program Manager, Marine Weather Program	7/9/09 Date	✓ Validated

Observation Requirement Verification

The Program Manager, with Program Membership concurrence, has verified that the Marine Weather Program's Observation Requirements, as documented in the CORL and reproduced in this document, comprise the Marine Weather Program's Threshold and Objective level requirements for environmental observations, and are ready for Validation.

Program Manager Verification

Ming Ji
Program Manager, Marine Weather Program

7/09/09
Date

✓
Verified

Program Membership Concurrence

Richard May

7/9/09
Date

✓
Concurred

1. Program Summary

The National Oceanic and Atmospheric Administration (NOAA) Marine Weather Program (MWX) issues operational marine weather warnings and forecasts to ensure the safety of marine transportation operations, a critical link in world commerce. The MWX program serves a broad marine user community, including commercial shipping, commercial and recreational fishing, and recreational boating. The program also provides on-demand forecasts and information services for search and rescue and response to hazard materials (HAZMAT) spills on the high seas internationally and in the offshore regions adjacent to the U.S. The MWX program services are a critical element of NOAA and NWS operational responsibilities to protect life and property, enhance the Nation's economic benefits and protect the environment. Operational services provided by the MWX program fulfill U.S. responsibilities in the interests of commerce, transportation, and homeland security under Executive Order 12234 (Enforcement of the Convention for the Safety of Life at Sea).

The MWX operational products are produced by NOAA's Ocean Prediction Center (OPC), NOAA's Tropical Prediction Center (TPC), Honolulu Weather Forecast Office of the National Weather Service (NWS) Pacific Region, and the Anchorage and Juneau Weather Forecast Offices in the NWS Alaska Region. These operational units originate and issue maritime warnings and forecasts, continually monitor and analyze maritime data, provide guidance in text and graphic formats, and quality control marine observations globally from ships and buoys prior to being assimilated into computer model guidance. Operational support to MWX entities comes from the NOAA National Data Buoy Center and NOAA Environmental Satellite and Data Information Service. The NOAA Environmental Modeling Center provides atmosphere and ocean (wave) model guidance to support MWX operations.

For additional information see the National Marine Forecast Page at http://www.nws.noaa.gov/om/marine/home.htm.

2. Observation Requirements Summary

The **Marine Weather** Program of NOAA's Commerce and Transportation Goal requires a total of 31 environmental observation requirements to address its mission. The following graphs provide a breakdown of these requirements by mission Priority, environmental Discipline and Type.

Total Records: 31

2.1 Observation Requirements by Priority

The Marine Weather program's observation requirements are distributed among priority levels as follows:

22 = **Priority 1, Mission Critical:** Cannot meet operational mission objectives without this data.
7 = **Priority 2, Mission Optimal:** Data not critical but would provide significant improvement to operational capability.
2 = **Priority 3, Mission Enhancing:** Needed to enhance state of knowledge / assess potential for operational capability.

The following chart provides the distribution of the Marine Weather program's requirements by priority.

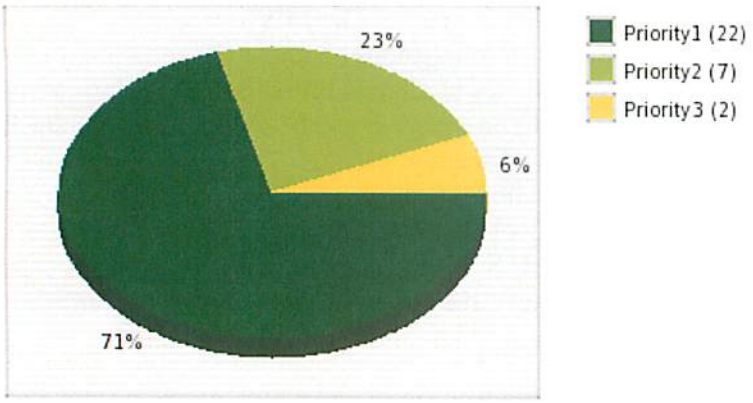

Figure 1: CT-MWX Observation Requirements by Priority (%)

2.2 Observation Requirements by Discipline

The Marine Weather program's observation requirements are distributed among environmental disciplines as follows:

14 = Atmosphere
0 = Biosphere
0 = Cryosphere
0 = Human Dimensions
0 = Terrestrial Hydrosphere
0 = Land Surface
17 = Oceans
0 = Solid Earth
0 = Spectral/Engineering
0 = Sun-earth Interactions

The following chart provides the distribution of the Marine Weather program's requirements by discipline.

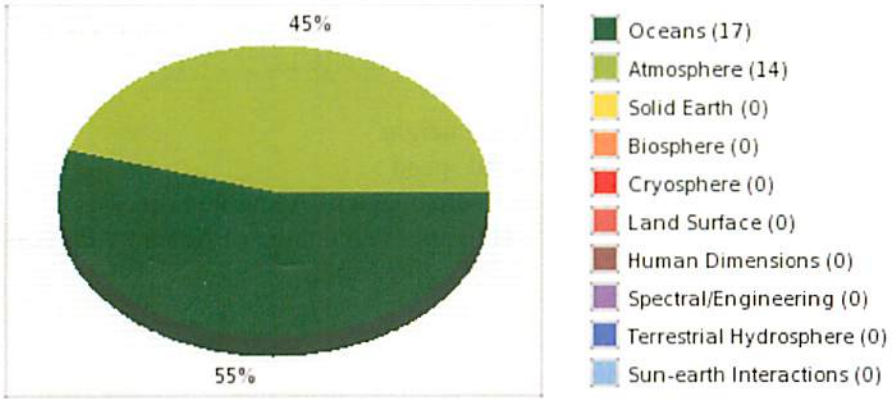

Figure 2: CT-MWX Observation Requirements by Discipline.

2.3 Observation Requirements by Type

The Marine Weather program's observation requirements are distributed among types as follows:

0 = Biological
0 = Chemical
31 = Physical
0 = Social
0 = Socio-economic

The following Chart gives the distribution of the Marine Weather program's requirements by type.

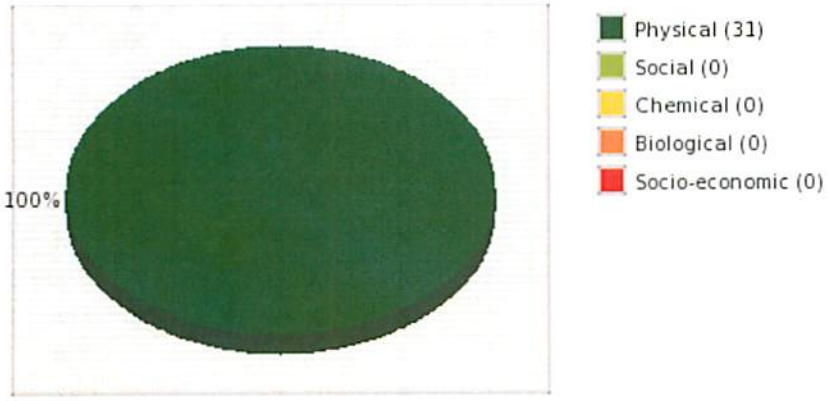

Figure 3: CT-MWX Observation Requirements by Type.

3. Observation Requirements Mapping to Performance Measures

The following table provides the listing of observation requirements for the **Marine Weather** Program of NOAA's Commerce and Transportation Goal by GPRA and Corporate (NOAA) Performance Measures, and Regional Collaboration Priorities (RC).

GPRA-1: CT-MWX Accuracy of forecast for wave height
GPRA-2: CT-MWX Accuracy of forecast for wind speed
GPRA-3: WW-LFW, CT-MWX Marine Winds - Percentage of Accurate Forecasts
GPRA-4: WW-LFW, CT-MWX Marine Wave Heights - Percentage of Accurate Forecasts

RC-1: Hazard Resilient Coastal Communities
RC-2: Integrated Ecosystem Assessments
RC-3: Integrated Water Resource Services

Table 1: CT-MWX Observation Requirements Mapping to Performance Measures

Requirement	Priority	GPRA				RC		
		1	2	3	4	1	2	3
Air Temperature: Surface	1	X	X			X		
Imagery: Cloud	1	X	X	X	X	X		
Ocean Surface Current: Direction	1	X	X	X	X	X	X	X
Ocean Surface Current: Direction, EEZ	1	X	X	X	X	X	X	X
Ocean Surface Current: Speed	1	X	X	X	X	X	X	X
Ocean Surface Current: Speed, EEZ	1	X	X	X	X	X	X	X
Ocean Waves: Direction	1	X			X	X	X	X
Ocean Waves: Height	1	X			X	X		
Ocean Waves: Period	1	X			X	X		
Ocean Waves: Significant Wave Height	1	X			X	X	X	X
Sea Level Pressure: EEZ	1	X	X	X	X	X		
Sea Level Pressure: Global	1	X	X	X	X	X		
Sea Surface Temps	1	X	X	X	X	X	X	X
Sea Surface Temps: EEZ	1	X	X	X	X	X	X	
Sea Surface Wind Gusts: All Weather	1	X	X	X	X			
Sea Surface Wind Gusts: EEZ, All Weather	1	X	X	X	X			
Sea Surface Winds: Direction, All Weather, EEZ	1	X	X	X	X	X	X	
Sea Surface Winds: Direction, All Weather, Global	1	X	X	X	X	X	X	
Sea Surface Winds: Speed, All Weather, EEZ	1	X	X	X	X	X	X	
Sea Surface Winds: Speed, All Weather, Global	1	X	X	X	X	X	X	
Visibility: Offshore	1	X				X		
Visibility: Offshore, EEZ	1	X				X		
Air Temperature: Profiles	2		X	X		X		
Sea Ice: Edge	2							
Sea Ice: Extent	2					X		

Requirement	Priority	GPRA				RC		
		1	2	3	4	1	2	3
Sea Surface Height	2					X		
Visibility: Coastal	2					X		
Water Vapor: Imagery	2		X	X		X		
Water Vapor: Profiles	2		X	X				
Cloud Base Height	3					X		
Lightning Detection	3					X		

4. Status of Program List

As shown in Appendix A, each NOAA Observation Requirement is further specified by spatial, temporal and accuracy related attributes at both Threshold and Objective levels. The following table provides the attribute completion status of the observation requirements list for the Marine Weather Program. All attributes at the Priority-1/Threshold Level must be completed to allow for observation gap analyses to be conducted.

Table 2: CT-MWX Observation Requirement Attributes Remaining [blank] or [tbs]

Priority	Threshold	Objective
1	27	181
2	64	64
3	23	24
Total	**114**	**269**

Appendix A Marine Weather Program, Observation Requirements

Key: V=value, U=units, W=weight

Observation Requirement	Obs Req Prty	T/O	Geo Cov		Vert Range				Vert Res			Horiz Res			Meas Range				Msmnt Accy			Smplng intvl			Data Ltncy			Long Stab		
			V	W	Low	High	U	W	V	U	W	V	U	W	Low	High	U	W	V	U	W	V	U	W	V	U	W	V	U	W
Air Temperature: Surface	1	T	Hemi US	10	Sfc	2.5	km	15	na	na		20	km	15	210	320	K	10	1	K	10	1	hr	10	10	min	10	2	%	5
		O	Hemi US	10	Sfc	2.5	km	15	na	na		10	km	15	210	320	K	10	0.1	K	10	1	hr	10	5	min	10	2	%	5
Imagery: Cloud	1	T	Hemi US	25	0	500	hPa	10	na	na	0	4	km	15	0	100	%	10	na	na	0	30	min	15	1	min	10	2	%	5
		O	Global	25	0	300	hPa	10	na	na		0.5	km	15	0	100	%	10	na	na		5	min	15	1	min	10	2	%	5
Ocean Surface Current: Direction	1	T	Hemi US	15	na	na	na	0	na	na	0	25	km	20	0	360	deg	10	10	deg	20	1	day	10	1	hr	10	2	%	5
		O	Hemi US		na	na	na		na	na		tbs	tbs		tbs	tbs	tbs		tbs	tbs		tbs	tbs		tbs	tbs		tbs	tbs	
Ocean Surface Current: Direction, EEZ	1	T	EEZ US	15	na	na	na	0	na	na	0	10	km	20	0	360	deg	10	10	deg	20	1	hr	10	1	hr	10	2	%	5
		O	EEZ US		na	na	na		na	na		tbs	tbs		tbs	tbs	tbs		tbs	tbs		tbs	tbs		tbs	tbs		tbs	tbs	
Ocean Surface Current: Speed	1	O	Hemi US	15	na	na	na	0	na	na	0	25	km	20	0	5	m/sec	10	0.1	m/sec	20	1	day	10	1	hr	10	2	%	5
		O	Hemi US	15	na	na	na		na	na		2.5	km	20	0	5	m/sec	10	0.1	m/sec	20	1	hr	10	15	min	10	2	%	5
Ocean Surface Current: Speed, EEZ	1	T	EEZ US	15	na	na	na	0	na	na	0	10	km	20	0	5	m/sec	10	0.1	m/sec	20	1	hr	10	1	hr	10	2	%	5
		O	EEZ US		na	na	na		na	na		tbs	tbs		tbs	tbs	tbs		tbs	tbs		tbs	tbs		tbs	tbs		tbs	tbs	
Ocean Waves: Direction	1	T	Hemi US	15	na	na	na	0	na	na	0	20	km	20	0	360	deg	10	10	deg	20	1	hr	10	15	min	10	2	%	5
		O	Hemi US	15	na	na	na		na	na		10	km	20	0	360	deg	10	1	deg	20	1	hr	10	15	min	10	2	%	5
Ocean Waves: Height	1	T	Hemi US	15	na	na	na	0	na	na	0	20	km	20	0	40	m	10	0.5	m	20	1	hr	10	1	hr	10	2	%	5
		O	Hemi US	15	na	na	na		na	na		10	km	20	0	40	m	10	0.1	m	20	1	hr	10	1	hr	10	2	%	5
Ocean Waves: Period	1	T	Hemi US	15	na	na	na	0	na	na	0	20	km	20	1	25	sec	10	1	sec	20	1	hr	10	15	min	10	2	%	5
		O	Hemi US	15	na	na	na		na	na		10	km	20	1	25	sec	10	0.1	sec	20	1	hr	10	15	min	10	2	%	5
Ocean Waves: Significant Wave Height	1	T	Hemi US	15	na	na	na	0	na	na	0	50	km	20	0	40	m	10	0.5	m	20	1	hr	10	1	hr	10	2	%	5
		O	Hemi US	15	na	na	na		na	na		10	km	20	0	40	m	10	0.1	m	20	1	hr	10	1	hr	10	2	%	5
Sea Level Pressure: EEZ	1	T	EEZ US	10	na	na	na	0	na	na	0	15	km	10	882	1080	hPa	20	0.2	hPa	25	15	min	10	15	min	10	2	%	5
		O	EEZ US	10	na	na	na		na	na		2.5	km	10	882	1080	hPa	20	0.2	hPa	25	15	min	10	15	min	10	2	%	5
Sea Level Pressure: Global	1	T	Global Ocean	10	na	na	na	0	na	na	0	15	km	10	882	1080	hPa	20	0.2	hPa	25	1	hr	10	15	min	10	2	%	5
		O	Global		na	na	na		na	na		tbs	tbs		tbs	tbs	tbs		tbs	tbs		tbs	tbs		tbs	tbs		tbs	tbs	

Observation Requirement	Obs Req Prty	T/O	Geo Cov		Vert Range				Vert Res			Horiz Res			Meas Range				Msmnt Accy			Smplng intvl			Data Ltncy			Long Stab		
			V	W	Low	High	U	W	V	U	W	V	U	W	Low	High	U	W	V	U	W	V	U	W	V	U	W	V	U	W
Sea Surface Temps	1	T	Hemi US	15	na	na	na	0	na	na	0	4	km	20	271	313	K	10	0.5	K	20	6	hr	10	15	min	10	2	%	5
		O	Hemi US		na	na	na		na	na		tbs	tbs		tbs	tbs	tbs		tbs	tbs		tbs	tbs		tbs	tbs		tbs	tbs	
Sea Surface Temps: EEZ	1	T	EEZ US	15	na	na	na	0	na	na	0	1	km	20	271	313	K	10	0.5	K	20	1	hr	10	15	min	10	2	%	5
		O	EEZ US	15	na	na	na		na	na		1	km	20	271	313	K	10	0.1	K	20	1	hr	10	15	min	10	2	%	5
Sea Surface Wind Gusts: All Weather	1	T	Hemi US		na	na	na		na	na		5	km		tbs	tbs	tbs		1.0	m/sec		6	hr		tbs	tbs		tbs	tbs	
		O	Hemi US		na	na	na		na	na		tbs	km		tbs	tbs	tbs		tbs	m/sec		tbs	hr		tbs	tbs		tbs	tbs	
Sea Surface Wind Gusts: EEZ, All Weather	1	T	EEZ US		na	na	na		na	na		2.5	km		tbs	tbs	tbs		1.0	m/sec		1	hr		tbs	tbs		tbs	tbs	
		O	EEZ US		na	na	na		na	na		tbs	km		tbs	tbs	tbs		tbs	m/sec		tbs	hr		tbs	tbs		tbs	tbs	
Sea Surface Winds: Direction, All Weather, EEZ	1	T	EEZ US	10	10	10	m	5	na	na	0	2.5	km	20	0	360	deg	20	10	deg	15	1	hr	10	1	hr	10	2	%	5
		O	EEZ US		na	na	na		na	na		tbs	tbs	20	tbs	tbs	tbs		tbs	tbs		tbs	tbs		tbs	tbs	10	tbs	tbs	
Sea Surface Winds: Direction, All Weather, Global	1	T	Global Ocean	10	10	10	m	5	na	na	0	5	km	20	0	360	deg	20	10	deg	15	6	hr	10	1	hr	10	2	%	5
		O	Global Ocean	10	na	10	m	5	na	na		2.5	km	20	0	360	deg	20	10	deg	15	6	hr	10	15	min	10	2	%	5
Sea Surface Winds: Speed, All Weather, EEZ	1	T	EEZ US	10	10	10	m	5	na	na	0	2.5	km	20	0	75	m/sec	20	1	m/sec	15	1	hr	10	1	hr	10	2	%	5
		O	EEZ US		na	tbs	tbs		tbs	tbs		tbs	tbs		tbs	tbs	tbs		tbs	tbs		tbs	tbs		tbs	tbs		tbs	tbs	
Sea Surface Winds: Speed, All Weather, Global	1	T	Global Ocean	10	10	10	m	5	na	na	0	5	km	20	0	75	m/sec	20	1	m/sec	15	6	hr	10	1	hr	10	2	%	5
		O	Global Ocean	10	10	10	m	5	na	na		2.5	km	20	0	75	m/sec	20	0.5	m/sec	15	6	hr	10	1	hr	10	2	%	5
Visibility: Offshore	1	T	Hemi US	20	na	na	na	0	na	na	0	10	km	15	0	10	km	10	0.5	km	10	3	hr	10	1	hr	10	2	%	5
		O	Hemi US	20	na	na	na		na	na		2	km	15	0	10	km	10	0.2	km	10	3	hr	10	1	hr	10	2	%	5
Visibility: Offshore, EEZ	1	T	EEZ US	20	na	na	na	0	na	na	0	2	km	15	0	10	km	10	0.1	km	10	1	hr	10	1	hr	10	2	%	5
		O	EEZ US		na	na	na		na	na		tbs	tbs		tbs	tbs	tbs		tbs	tbs		tbs	tbs		tbs	tbs		tbs	tbs	
Air Temperature: Profiles	2	T	EEZ US		0	5	km		500	m		10	km		210	320	K		1	K		1	hr		3	hr		tbs	tbs	
		O	Hemi US		0	5	km		50	m		10	km		210	320	K		0.1	K		1	hr		3	min		tbs	tbs	
Sea Ice: Edge	2	T	EEZ US	0	0	0	na	0	na	na	0	10		0	na	na		0	10		0	1	day	0	1	day	0	tbs		0
		O	Offshore	0	0	0	na	0	na	na	0	5	km	0	na	na	na	0	5	%	0	12	hr	0	12	hr	0	tbs	tbs	0
Sea Ice: Extent	2	T	EEZ US		0	0	na		na			5			na	na			5			1	day		1	day		tbs		
		O	Offshore		0	0	na		na	na		2	km		na	na	na		1	%		12	hr		12	hr		tbs	tbs	
Sea Surface Height	2	T	Global Ocean		0	15	m		na	na		na	na		0	15	m		0.1	cm		1	day		1	hr		tbs	tbs	
		O	Global		0	15	m		na	na		na	na		0	15	m		0.1	cm		1	day		1	hr		tbs	tbs	

Observation Requirement	Obs Req Prty	T/O	Geo Cov		Vert Range				Vert Res			Horiz Res			Meas Range				Msmnt Accy			Smplng Intvl			Data Ltncy			Long Stab		
			V	W	Low	High	U	W	V	U	W	V	U	W	Low	High	U	W	V	U	W	V	U	W	V	U	W	V	U	W
Visibility: Coastal	2	T	Coastal US		0	0	na		na			4			0	10			0.5			1	hr		1			tbs		
		O	Offshore		0	100	m		10	m		2	km		0	10	km		0.2	km		1	hr		1	hr		tbs	tbs	
Water Vapor: Imagery	2	T	Global		1000	250			na			2			na	na			na			5	min		30			tbs		
		O	Global		1000	250	mb		na	na		0.5	km		na	na	na		na	na		5	min		30	min		tbs	tbs	
Water Vapor: Profiles	2	T	EEZ US		1000	250			150	m		5			tbs	tbs			tbs			1	hr		1			tbs		
		O	Global		1000	250	mb		100	m		5	km		tbs	tbs	tbs		tbs	tbs		1	hr		1	hr		tbs	tbs	
Cloud Base Height	3	T	EEZ Global		Sfc	850			0.5			2			na	na			0.1			15	min		1			tbs		
		O	Offshore		Sfc	700	mb		0.5	km		2	km		na	na	na		0.1	km		15	min		1	min		tbs	tbs	
Lightning Detection	3	T	Hemi US		0	top of clouds	km		tbs	tbs		4			tbs	tbs	tbs		5	km		10	sec		1			tbs		
		O	Global		0	top of clouds	tbs		tbs	tbs		0.5	km		tbs	tbs	tbs		25	km		10	sec		tbs	tbs		tbs	tbs	

Appendix B CT-MWX, Priority-1 Requirements Validation

Appendix B.1 Validation Documents Submitted

The following Validation Documents have been submitted in support of the Marine Weather Program's Priority-1 Observation Requirements.

Table B-1: Validation Documents provided to support Priority- Requirements

#	Validation Document Title	Document Type
1	WMO Manual on Marine Meteorological Services, Vol 1	Technical Manual
2	Requirements of numerical weather prediction for observations of oceans	Review of Requirements
3	WMO Manual on the Global Data-Processing and Forecasting System	Technical Manual
4	Initial GOES-8/9 Assessment Report, 10/22/98	Assessment Report
5	A Coastal Theme for the IGOS Partnership, Report of the Coastal Theme Team, Jan 2006	Technical Report
6	A National Operational Wave Observation Plan, Prepared for the Interagency Working Group on Ocean Observations, March 2009	Planning Document
7	The Integrated Strategic Design Plan for the Coastal Ocean Observations Module of the Global Ocean Observing System	Planning Document
8	NOAA Operational Satellite Ocean Surface Vector Winds Requirements Workshop Report, Jun 5-7, 2006	Workshop Report
9	QuickSCAT Follow-On Mission: User Impact Study Report	Study Report
SME	Memo from Subject Matter Experts	SME Memo

Appendix B.2 Validation Documents Mapping to Observation Requirements

Marine Weather Program and Technology Planning and Integration Office (TPIO) representatives worked jointly to identify references to validate both the need for an observation requirement and its specific measurement attributes. These validation documents support one or more of the Priority-1 Requirements as shown in Table B-2 below. For occurrences where validation documents could not be identified, Program Subject Matter Experts (SME) justifications are provided.

Table B-2: Validation Document Mapping to Observation Requirement

Observation Requirement	Priority	Document[s] Submitted
Air Temperature: Surface	1	1, 2, 3, SME
Imagery: Cloud	1	1, 4
Ocean Surface Current: Direction	1	1, 5, 7, SME
Ocean Surface Current: Direction, EEZ	1	1, 5, 7, SME
Ocean Surface Current: Speed	1	1, 3, 5

Ocean Surface Current: Speed, EEZ	1	1, 3, 5
Ocean Waves: Direction	1	1, 5, 6
Ocean Waves: Height	1	1, 5, 6
Ocean Waves: Period	1	1, 2, 6, SME
Ocean Waves: Significant Wave Height	1	1, 2, 6
Sea Level Pressure: EEZ	1	1, 7, SME
Sea Level Pressure: Global	1	1, 3, 7, SME
Sea Surface Temps	1	1, 2, 5
Sea Surface Temps: EEZ	1	1, 2, 3, 5
Sea Surface Wind Gusts: All Weather	1	1, SME
Sea Surface Wind Gusts: EEZ, All Weather	1	1, SME
Sea Surface Winds: Direction, All Weather, EEZ	1	1, 3, 5, 8, 9
Sea Surface Winds: Direction, All Weather, Global	1	1, 2, 3, 5, 8, 9
Sea Surface Winds: Speed, All Weather, EEZ	1	1, 3, 5, 8, 9
Sea Surface Winds: Speed, All Weather, Global	1	3, 5, 8, 9
Visibility: Offshore	1	1, SME
Visibility: Offshore, EEZ	1	1, SME

Appendix B.3 Validation Assessment for Priority-1 Requirements

Marine Weather Program and TPIO representatives worked jointly to review the submitted documentation, and identify the "level of validation" for the Threshold value of each of the five key attributes of each Priority-1 Observation Requirement.

Table B-3: Level of Validation for each Priority 1 Requirement Attribute

Parameters	Attribute Validated				
	Geographic Coverage	Vert Range	Horizontal Resolution	Meas Acc	Sampling Interval
Air Temperature: Surface	Hemi US	na	20 km	1 K	1hr
Imagery: Cloud	Hemi US	na	4.0 km	na	30 min
Ocean Surface Current: Direction	Hemi US	na	25 km	10 deg	1 day
Ocean Surface Current: Direction, EEZ	EEZ US	na	10 km	10 deg	1 hr
Ocean Surface Current: Speed	Hemi US	na	25 km	0.1 m/sec	1 day
Ocean Surface Current: Speed, EEZ	EEZ US	na	10 km	0.1 m/sec	1 hr
Ocean Waves: Direction	Hemi US	na	20 km	10 deg	1 hr
Ocean Waves: Height	Hemi US	na	20 km	0.5 m	1 hr
Ocean Waves: Period	Hemi US	na	20 km	1.0 sec	1 hr
Ocean Waves: Significant Wave Height	Hemi US	na	50 km	0.5 m	1 hr
Sea Level Pressure: EEZ	EEZ US	na	15 km	0.2 hPa	15 min
Sea Level Pressure: Global	Global Ocean	na	15 km	0.2 hPa	1 hr
Sea Surface Temps	Hemi US	na	4 km	0.5 K	6 hr
Sea Surface Temps: EEZ	EEZ US	na	1 km	0.5 K	1 hr
Sea Surface Wind Gusts: All Weather	Hemi US	na	5 km	1.0 m/sec	6 hr
Sea Surface Wind Gusts: EEZ, All Weather	EEZ US	na	2.5 km	1.0 m/sec	1 hr
Sea Surface Winds: Direction, All Weather, EEZ	EEZ US	na	2.5 km	10 deg	1 hr
Sea Surface Winds: Direction, All Weather, Global	Global Ocean	na	5 km	10 deg	6 hr
Sea Surface Winds: Speed, All Weather, EEZ	EEZ US	na	2.5 km	1.0 m/sec	1 hr
Sea Surface Winds: Speed, All Weather, Global	Global Ocean	na	5 km	1.0 m/sec	6 hr
Visibility: Offshore	Hemi US	na	10 km	0.5 km	3 hr
Visibility: Offshore, EEZ	EEZ US	na	2 km	0.1 km	1 hr

Legend: Level of Validation

Direct Validation Documentation Submitted	
Associated Validation Documentation Submitted	
SME Consensus Validation Documentation Submitted	
Not Validated	
Attribute not applicable	