

NWS REQUEST FOR CHANGE FORM

1. WSH TRACKING NUMBER DRG RC 10990	1A. REV LEVEL	2. DATE RECEIVED 10/19/07
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PART A - COVER SHEET

This form is in three parts. Submitters must complete unshaded blocks in Part A, and as much of Part B and C as possible. If there is no specific required change date, enter 60 days from date submitted. Address questions to NWS Change Management at (301) 713-1373. Submit change requests to the NWSRC mailbox (External: NWSRC@noaa.gov).

3. ORIGINATOR OFFICE NWS/OST/MDL	4. SUBMITTING AUTHORITY Name: Rebecca Cosgrove Routing Code: W/OST22	5. COGNIZANT TECHNICAL INDIVIDUAL Name: Rebecca Cosgrove Routing Code: W/OST22 Phone: 301-713-0023 x124	6. ORIGINATOR TRACKING NUMBER MDL2007-08	7. DATE SUBMITTED October 18, 2007
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8. SYSTEMS AFFECTED BY CHANGE <input type="checkbox"/> ASOS <input checked="" type="checkbox"/> AWIPS <input type="checkbox"/> CSSA <input type="checkbox"/> CRS <input checked="" type="checkbox"/> DATA PRODUCTS <input type="checkbox"/> EMWIN <input type="checkbox"/> NEXRAD <input type="checkbox"/> RRS <input type="checkbox"/> OTHER (specify)	9. ORD IDENTIFIER
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10. TITLE OF CHANGE
Add Global Forecast System (GFS)-based gridded Model Output Statistics (MOS) guidance for Alaska

11. CATEGORY OF CHANGE <input checked="" type="checkbox"/> RC <input type="checkbox"/> PECP <input type="checkbox"/> ECP	12. TYPE OF CHANGE <input type="checkbox"/> DOCUMENTATION ONLY <input type="checkbox"/> HARDWARE <input checked="" type="checkbox"/> SOFTWARE <input checked="" type="checkbox"/> DATA
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13. SITES AFFECTED
all

14. STATEMENT OF REQUIREMENT, PROBLEM, OR DEFICIENCY OF EXISTING SYSTEM
To support the NDFD, forecasters must produce accurate forecasts on a high-resolution grid in an optimal manner, using guidance available on a grid at a resolution comparable to that used in the WFO forecast process. The current GFS-based MOS guidance is only available in Alaska at specific sites. The IFPS ISST has recommended the development of MOS guidance in gridded format. This project has been approved through Stage 5 of OSIP as project 05-006.

15. KNOWN OR PROPOSED SOLUTION
MDL will produce GFS-based gridded MOS guidance for Alaska for temperature, dew point temperature, maximum and minimum temperature, relative humidity, wind speed and direction, 6- and 12-hr probability of precipitation, and 3-, 6- and 12-hr probability of thunderstorms. More elements will be added at a future date. The guidance will be available on a roughly 3km polar stereographic grid covering the same expanse as the NDFD Alaska grid. More information about the gridded MOS products is available at <http://www.weather.gov/mdl/synop/gmos.html>. The attached document outlines the headers for these products and contains a list of the explicit headers that must be added to the switching directory by Data Management.

The guidance, encoded in GRIB2, will be sent from the NCEP CCS via the SBN to AWIPS, decoded by the GRIB2 decoder, and then ingested into GFE and the volume browser. These products are slated for Application Release 8.3. AWIPS software requirements have been accepted and documented in DCS3460. We anticipate these products to add roughly 100MB of data to the SBN twice per day at approximately 4:30 – 5:30Z and 16:30 – 17:30Z.

Prior to the official SBN implementation date we will need to send test GRIB2 files to the testNCF.

16. ALTERNATE SOLUTIONS
none

17. REQUIRED CHANGE DATE Feb 26, 2008 for SBN transmission	18. RATIONALE FOR REQUIRED CHANGE DATE We need to transmit sample data to the testNCF during the month of December. Feb 26, 2008 for official SBN transmission corresponds to 120 advance notice for new WMO headers. - December 4, 2007 for testNCF	19. PRIORITY <input checked="" type="checkbox"/> ROUTINE <input type="checkbox"/> URGENT <input type="checkbox"/> EMERGENCY
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DRG/CCB/PMC/CMB DECISION

20. DECISION AUTHORITY AND IMPACT LEVEL	<input type="checkbox"/> PMC or NWS CMB DECISION REQUIRED	<input type="checkbox"/> CCB LEVEL ONLY	<input type="checkbox"/> FAST TRACK	<input type="checkbox"/> MAJOR CHANGE	<input type="checkbox"/> MINOR CHANGE
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21. CCB LEVEL DECISION	<input checked="" type="checkbox"/> APPROVED	<input type="checkbox"/> DISAPPROVED	SIGNATURE Anthony Robinson
	<input type="checkbox"/> RECOMMEND APPROVAL	<input type="checkbox"/> REFERRED TO OSIP	DATE SIGNED 11/13/07

FOR USE ONLY WHEN PMC or NWS CMB DECISION REQUIRED

22. PMC OR NWS CMB DECISION	<input type="checkbox"/> APPROVED	<input type="checkbox"/> DISAPPROVED	SIGNATURE/DATE
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PART A - DATA PRODUCTS SUPPLEMENT

This information is required for Data Products submissions.

3. INTERNAL NWS USE ONLY
 YES NO

4. PRODUCT SOURCE
NCEP CCS

5. AWIPS DATA TYPE
Grids (GRIB2)

6A. NOTIFICATION		6B. CHANGE NOTICE NUMBER		6C. ISSUE DATE		6D. TEST DATE		6E. IMPLEMENT DATE	
SBN/NOAAPort		10990				12/4/07		2/26/08	
EMWIN									
NWWS									

7. NODE ID	8. AWIPS ID NNNXXX	9. WMO HEADER	10. ADD REV DEL	11. SEAS Y/N	12. CHAR PER MSG	13. FREQUENCY	14. NWSTG DISTR
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Please see attached documents for complete header and product size/projection information

	(wind direction)	LBRxxx KWBQ	Add	N	180K/grid	Twice daily	SBN/NOAAPORT
	(wind speed)	LCRxxx KWBQ	Add	N	180K/grid	Twice daily	SBN/NOAAPORT
	(12-hr POP)	LDRxxx KWBQ	Add	N	250K/grid	Twice daily	SBN/NOAAPORT
	(temp)	LERxxx KWBQ	Add	N	180K/grid	Twice daily	SBN/NOAAPORT
	(dewpoint)	LFRxxx KWBQ	Add	N	180K/grid	Twice daily	SBN/NOAAPORT
	(max temp)	LGRxxx KWBQ	Add	N	180K/grid	Twice daily	SBN/NOAAPORT
	(min temp)	LHRxxx KWBQ	Add	N	180K/grid	Twice daily	SBN/NOAAPORT
	(6-hr tstm)	LJRxxx KWBQ	Add	N	250K/grid	Twice daily	SBN/NOAAPORT
	(RH)	LRRxxx KWBQ	Add	N	250K/grid	Twice daily	SBN/NOAAPORT
	(6-hr POP)	LURxxx KWBQ	Add	N	250K/grid	Twice daily	SBN/NOAAPORT
	(12-hr tstm)	LXRxxx KWBQ	Add	N	250K/grid	Twice daily	SBN/NOAAPORT
	(3-hr tstm)	LYRxxx KWBQ	Add	N	250K/grid	Twice daily	SBN/NOAAPORT

WMO Headings for Gridded MOS Products

- WMO headings have the format of T₁T₂A₁A₂ii CCCC
1. The CCCC for all gridded MOS product WMO headings is **KWBQ**.
 2. The T₁ for all gridded MOS products based on the global model is **L**.
 3. The T₂ represents the weather element type designator. The following values are used for a T₁ = **L**.
When feasible, these values match those used for the NDFD WMO headers.
Values for T₂ are:

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A = sky cover
 B = wind direction at sensor height (nominally, 10 m)
 C = wind speed at sensor height (nominally, 10 m)
 D = probability of precipitation (12 h)
 E = temperature at sensor height (nominally, 2 m)
 F = dewpoint temperature at sensor height (nominally, 2 m)
 G = daytime maximum temperature at sensor height (nominally, 2 m)
 H = nighttime minimum temperature at sensor height (nominally, 2 m)
 I = quantitative precipitation (6 h)
 J = thunderstorms (6 h)
 K = severe weather (6 h)
 L = precipitation type
 M = precipitation characteristics
 N = precipitation occurrence
 O = obstruction to vision
 P = visibility
 Q = ceiling height
 R = relative humidity
 S = snowfall amount (24 h)
 T = apparent temperature
 U = probability of precipitation (6 h)
 V = quantitative precipitation (12 h)
 W = wind gusts
 X = thunderstorms (12 h)
 Y = thunderstorms (3 h)
 Z = unassigned

4. The A₁ designates the geographical area. The following designators follow the conventions established in the NDFD WMO headers.

A = Puerto Rico
R = Alaska
 S = Hawaii
 T = Guam
 U = CONUS

5. The A₂ and ii follow the convention established in the NDFD. These three characters together represent the day and hour (UTC) for which the product is valid. The following convention for A₂ and ii is used for the gridded MOS products:

A = Day 0; ii = hour (0-23)
 B = Day 1; ii = hour (0-23)
 C = Day 2; ii = hour (0-23)
 D = Day 3; ii = hour (0-23)
 E = Day 4; ii = hour (0-23)
 F = Day 5; ii = hour (0-23)
 G = Day 6; ii = hour (0-23)
 H = Day 7; ii = hour (0-23)
 I = Day 8; ii = hour (0-23)
 J = Day 9; ii = hour (0-23)

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Table 1. WMO headers and product sizes for Alaska gridded MOS products. The headers shown are for the elements we will begin disseminating on March 4, 2008. Information for the other elements will be added as they become available.

Element	Header	No. of grids per cycle	First/Last Proj./Time Increment (hr)	Bytes per grid/cycle
Wind Direction	LBRA _{2ii}	63	6/192/3	180K/12M
Wind Speed	LCRA _{2ii}	63	6/192/3	180K/12M
PoP (12h)	LDRA _{2ii}	30	18/192/6	250K/7.5M
Temperature	LERA _{2ii}	63	6/192/3	180K/12M
Dew Point	LFRA _{2ii}	63	6/192/3	180K/12M
Daytime Max	LGRA _{2ii}	8(00Z) 7(12Z)	24/192/24 36/180/24	180K/1.5M 180K/1.3M
Nighttime Min	LHRA _{2ii}	7(00Z) 8(12Z)	36/180/24 24/192/24	180K/1.3M 180K/1.5M
Tstm. Prob. (6h)	LJRA _{2ii}	31	12/192/6	250K/7.75M
Relative Humidity	LRRRA _{2ii}	63	6/192/3	250K/16M
PoP (6h)	LURA _{2ii}	31	12/192/6	250K/7.75M
Tstm. Prob. (12h)	LXRA _{2ii}	30	18/192/6	250K/7.5M
Tstm. Prob. (3h)	LYRA _{2ii}	26	9/84/3	250K/6.5M

Table 2. WMO headers for gridded MOS Alaska products to be transmitted initially on the SBN.

Element	Header Category	Product Headers
Wind Direction	LBRA _{2ii}	LBRA18 LBRA21 LBRB00 LBRB03 LBRB06 LBRB09 LBRB12 LBRB15 LBRB18 LBRB21 LBRC00 LBRC03 LBRC06 LBRC09 LBRC12 LBRC15 LBRC18 LBRC21 LBRD00 LBRD03 LBRD06 LBRD09 LBRD12 LBRD15 LBRD18 LBRD21 LBRE00 LBRE03 LBRE06 LBRE09 LBRE12 LBRE15 LBRE18 LBRE21 LBRF00 LBRF03 LBRF06 LBRF09 LBRF12 LBRF15 LBRF18 LBRF21 LBRG00 LBRG03 LBRG06 LBRG09 LBRG12 LBRG15 LBRG18 LBRG21 LBRH00 LBRH03 LBRH06 LBRH09 LBRH12 LBRH15 LBRH18 LBRH21 LBRI00 LBRI03 LBRI06 LBRI09 LBRI12 LBRI15 LBRI18 LBRI21 LBRJ00
Wind Speed	LCRA _{2ii}	LCRA18 LCRA21

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		LCRB00 LCRB03 LCRB06 LCRB09 LCRB12 LCRB15 LCRB18 LCRB21 LCRC00 LCRC03 LCRC06 LCRC09 LCRC12 LCRC15 LCRC18 LCRC21 LCRD00 LCRD03 LCRD06 LCRD09 LCRD12 LCRD15 LCRD18 LCRD21 LCRE00 LCRE03 LCRE06 LCRE09 LCRE12LCRE15 LCRE18 LCRE21 LCRF00 LCRF03 LCRF06 LCRF09 LCRF12 LCRF15 LCRF18 LCRF21 LCRG00 LCRG03 LCRG06 LCRG09 LCRG12 LCRG15 LCRG18 LCRG21 LCRH00 LCRH03 LCRH06 LCRH09 LCRH12 LCRH15 LCRH18 LCRH21 LCRI00 LCRI03 LCRI06 LCRI09 LCRI12 LCRI15 LCRI18 LCRI21 LCRJ00
PoP (12 h)	LDRZ98	LDRB06 LDRB12 LDRB18 LDRC00 LDRC06 LDRC12 LDRC18 LDRD00 LDRD06 LDRD12 LDRD18 LDRE00 LDRE06 LDRE12 LDRE18 LDRF00 LDRF06 LDRF12 LDRF18 LDRG00 LDRG06 LDRG12 LDRG18 LDRH00 LDRH06 LDRH12 LDRH18 LDRI00 LDRI06 LDRI12 LDRI18 LDRJ00
Temperature	LERZ98	LEA18 LERZ21 LERB00 LERB03 LERB06 LERB09 LERB12 LERB15 LERB18 LERB21 LERC00 LERC03 LERC06 LERC09 LERC12 LERC15 LERC18 LERC21 LERD00 LERD03 LERD06 LERD09 LERD12 LERD15 LERD18 LERD21 LERE00 LERE03 LERE06 LERE09 LERE12 LERE15 LERE18 LERE21 LERF00 LERF03 LERF06 LERF09 LERF12 LERF15 LERF18 LERF21 LERG00 LERG03 LERG06 LERG09 LERG12 LERG15 LERG18 LERG21 LERH00 LERH03 LERH06 LERH09 LERH12 LERH15 LERH18 LERH21 LERI00 LERI03 LERI06 LERI09 LERI12 LERI15 LERI18 LERI21 LERJ00
Dew Point	LFRZ98	LFRA18 LFRA21 LFRB00 LFRB03 LFRB06 LFRB09 LFRB12 LFRB15 LFRB18 LFRB21 LFRC00 LFRC03 LFRC06 LFRC09 LFRC12 LFRC15 LFRC18 LFRC21 LFRD00 LFRD03 LFRD06 LFRD09 LFRD12 LFRD15

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		LFRD18 LFRD21 LFRE00 LFRE03 LFRE06 LFRE09 LFRE12 LFRE15 LFRE18 LFRE21 LFRF00 LFRF03 LFRF06 LFRF09 LFRF12 LFRF15 LFRF18 LFRF21 LFRG00 LFRG03 LFRG06 LFRG09 LFRG12 LFRG15 LFRG18 LFRG21 LFRH00 LFRH03 LFRH06 LFRH09 LFRH12 LFRH15 LFRH18 LFRH21 LFRI00 LFRI03 LFRI06 LFRI09 LFRI12 LFRI15 LFRI18 LFRI21 LFRJ00
Daytime Max	LGRZ98	LGRC00 LGRD00 LGRE00 LGRF00 LGRG00 LGRH00 LGRI00 LGRJ00
Nighttime Min	LHRZ98	LHRB12 LHRC12 LHRD12 LHRE12 LHRF12 LHRG12 LHRH12 LHRI12
Tstm. Prob. (6h)	LJRZ98	LJRB00 LJRB06 LJRB12 LJRB18 LJRC00 LJRC06 LJRC12 LJRC18 LJRD00 LJRD06 LJRD12 LJRD18 LJRE00LJRE06 LJRE12 LJRE18 LJRF00 LJRF06 LJRF12 LJRF18 LJRG00 LJRG06 LJRG12 LJRG18 LJRH00 LJRH06 LJRH12 LJRH18 LJRI00 LJRI06 LJRI12 LJRI18 LJRJ00
Relative Humidity	LRRZ98	LARRA18 LARRA21 LARRB00 LARRB03 LARRB06 LARRB09 LARRB12 LARRB15 LARRB18 LARRB21 LARRC00 LARRC03 LARRC06 LARRC09 LARRC12 LARRC15 LARRC18 LARRC21 LARRD00 LARRD03 LARRD06 LARRD09 LARRD12 LARRD15 LARRD18 LARRD21 LARRR00 LARRR03 LARRR06 LARRR09 LARRR12 LARRR15 LARRR18 LARRR21 LARRF00 LARRF03 LARRF06 LARRF09 LARRF12 LARRF15 LARRF18 LARRF21 LARRG00 LARRG03 LARRG06 LARRG09 LARRG12 LARRG15 LARRG18 LARRG21 LARRH00 LARRH03 LARRH06 LARRH09 LARRH12 LARRH15 LARRH18 LARRH21 LARRI00 LARRI03 LARRI06 LARRI09 LARRI12 LARRI15 LARRI18 LARRI21 LARRJ00
PoP (6h)	LURZ98	LURB00 LURB06 LURB12 LURB18 LURC00 LURC06 LURC12 LURC18 LURD00 LURD06 LURD12 LURD18 LURE00 LURE06 LURE12 LURE18 LURF00 LURF06 LURF12 LURF18 LURG00 LURG06 LURG12 LURG18 LURH00 LURH06 LURH12 LURH18

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		LURI00 LURI06 LURI12 LURI18 LURJ00
Tstm. Prob. (12h)	LXRZ98	LXRB06 LXRB12 LXRB18 LXRC00 LXRC06 LXRC12 LXRC18 LXRD00 LXRD06 LXRD12 LXRD18 LXRE00 LXRE06 LXRE12 LXRE18 LXRF00 LXRF06 LXRF12 LXRF18 LXRG00 LXRG06 LXRG12 LXRG18 LXRH00 LXRH06 LXRH12 LXRH18 LXRI00 LXRI06 LXRI12 LXRI18 LXRJ00
Tstm. Prob. (3h)	LYRA _{2ii}	LYRA21 LYRB00 LYRB03 LYRB06 LYRB09 LYRB12 LYRB15 LYRB18 LYRB21 LYRC00 LYRC03 LYRC06 LYRC09 LYRC12 LYRC15 LYRC18 LYRC21 LYRD00 LYRD03 LYRD06 LYRD09 LYRD12 LYRD15 LYRD18 LYRD21 LYRE00 LYRE03 LYRE06 LYRE09 LYRE12