AWC Ensemble Product Needs
28 May 2004

	FUNCTIONALITY	CENTRALLY MADE PRODUCTS	LOCALLY GENERATED PRODUCTS
1	Mean of selected members	Trop Height Trop Temp Freezing level Cloud amount Visibility Ceiling Cloud Top Conv. Cld. Amount Conv. Cld. Speed Max Wind Level Max Wind Speed 10 m Wind	
2	Spread of selected members	Trop Height Trop Temp Freezing level Cloud amount Visibility Ceiling Cloud Top Conv. Cld. Amount Conv. Cld. Speed Max Wind Level Max Wind Speed 10 m Wind	
3	Median of selected members		
4	Lowest value in selected members	Cloud amount	
5	Highest value in selected members	Cloud amount	
6	Range between lowest and highest values in selected members		
7	Univariate exceedance probabilities for a selectable threshold value	Jet Stream >80kt for 18K, 34K, and 45Kft. Jet Stream> 100 kt for 18K, 34K, and 45Kt Prob of Icing at 00,03,06,09,12,15,18, 24Kft. Prob of Icing within 00-24Kft. Prob of clear, scat, broken, overcast clds. Prob of VFR, MVFR, IFR, LIFR. Prob of light turb every 3Kft Sfc to 45Kft. Prob of mod turb every 3Kft Sfc to 45Kft. Prob of sev turb every 3 Kft Sfc to 45Kft. Prob of mod turb between Sfc and 18Kft. Prob of mod turb between 18K and 45Kft. Prob of vert wind shear Sfc-2Kft >10kt, >20kt.	

		Prob of 10 m wind > 10, 20, or 30kt.	
8	Multivariate (up to 5) exceedance probabilities for a selectable threshold value		
9	Forecast value associated with selected univariate percentile value		
10	Tracking center of maxima or minima in a gridded field (eg - low pressure centers)		
11	Objective grouping of members		
12	Plot Frequency / Fitted probability density function at selected location and time (lower priority)		
13	Plot Frequency / Fitted probability density function plot as a function of forecast lead time, at selected location (lower priority)		

HPC Ensemble Product Needs
28 May 2004 (updated 2005)

All products listed should be NA domain for both global and regional ensemble EXCEPT...

MEAN and SPREAD of QPF, 500mb height, 500mb avor, 850 avor, pmsl which should be on a scale large enough to cover BOTH the western hemisphere north of 0 lat - **and south of 0 lat (for South America).**

All products in 6h increments to 84h and then 12h to 192h.

	FUNCTIONALITY	CENTRALLY MADE PRODUCTS	LOCALLY GENERATED PRODUCTS
1 (H) W	Mean of selected members	Hght: 250, 500, 700, 850 Tmpk: 500, 700, 750, 800, 850, 900, BL Wind: 250, 500, 700, 850, BL RH: 500-900mb mean layer VV: 500-700mb mean layer AVOR: 500, 850 pmsl QPF PW CAPE CIN LI Theta – E (sfc)	
2 (H) W	Spread of selected members	500 hght pmsl QPF BL temp	
3	Median of selected members		
4 (M) W	Lowest value in selected members	Snow accum ZR accum QPF MOS Max T MOS Min T MOS PoP 12h	
5 (M) W	Highest value in selected members	As in 4	
6 (L) W	Range between lowest and highest values in selected members	As in 4	
7 (H) W	Univariate exceedance probabilities for a selectable threshold value	Snow: 1”, 4”, 8” 12” ZR: .01”, .10” .25” .50” QPF .50” 1”, 2” 3” 5” Most probable ptype	
8 (M)	Multivariate (up to 5) exceedance probabilities for a selectable	BL < 0 and QPF > 0	

	threshold value		
9 (M)	Forecast value associated with selected univariate percentile value	67% for QPF, S, ZR	
10 (M) W	Tracking center of maxima or minima in a gridded field (eg – low **pressure centers)**	Pmsl low	
11 (H)	Objective grouping of members	500mb heights pmsl	
12	Plot Frequency / Fitted probability density function at selected location and time (lower priority)		
13	Plot Frequency / Fitted probability density function plot as a function of forecast lead time, at selected location (lower priority)		
14 (H) W	Spaghetti plots	200, 300, 500 height, pmsl 850 0C isotherm BL 0C isotherm QPF .01, .25.; .5; 1; 2; 3; 4 (6hr and 24h) Snow 1" 2" 4" 6" 8" 12" 18" 24" (6h and 24h) ZR .01", .1"; .25"; .5" ; 1" (6h and 24h)	

OPC Ensemble Product Needs
28 May 2004

6 hourly
domain - Northern Hemisphere
Global (for High Seas) and SREF (Offshore waters)
Highest available resolution

	FUNCTIONALITY	CENTRALLY MADE PRODUCTS	LOCALLY GENERATED PRODUCTS
1	Mean of selected members	MSLP U and V at 10 m, 925 mb, 850 mb, 700 mb, 500 mb, 300 mb, 250 mb, 200 mb Z at 850 mb, 700 mb, 500 mb T at 925 mb, 850 mb, 700 mb, 500 mb, 300 mb, 250 mb, and 200 mb	
2	Spread of selected members	MSLP Wind speed at 10 m, 925 mb, 850 mb, 500 mb, and 200 mb Z at 850 mb, 700 mb, 500 mb	
3	Median of selected members	MSLP Z at 500 mb Wind speed at 10m	
4	Lowest value in selected members	MSLP Z at 500 mb Wind speed at 10 m	
5	Highest value in selected members	MSLP, 500 hPa, Wind speed at 10m sig. wave height, visibility	
6	Range between lowest and highest values in selected members	MSLP, 500 hPa, Wind speed at 10m, sig. wave height	
7	Univariate exceedance probabilities for a selectable threshold value	Wind speed at 10 m; thresholds 20, 34, 50, and 64 kt, Sig. wave height at various values	
8	Multivariate (up to 5) exceedance probabilities for a selectable threshold value	10m winds, sig. wave height, visibility, TSTORM potential	
9	Forecast value associated with selected univariate percentile value	Wind speed at 10 m; approx. 25^{th}, 50^{th}, 75^{th}, and 90^{th} percentiles	
10	Tracking center of maxima or minima in a gridded field (eg - low pressure centers)	Minima and maxima in MSLP Maxima in 850 mb relative vorticity, wind speed at 10m, sig. wave height	
11	Objective grouping of members	By: lows/troughs/minima and highs/ridges/maxima in: MSLP 850 mb relative vorticity Z at 500 mb	
12	Plot Frequency / Fitted probability	10m winds, sig. wave heights, visibility	

	density function at selected location and time (lower priority)		
13	Plot Frequency / Fitted probability density function plot as a function of forecast lead time, at selected location (lower priority)	10m winds, sig. wave heights, visibility	

SPC Ensemble Product Needs
28 May 2004 (updated 2005)

Products are requested for both regional (SREF, 3-hourly output out to 87 hrs on 40 km grid) and global (12-hourly output out to 10 days on 1x1 lat/lon grid) ensembles.

(S) = spaghetti (i.e., every member in the output gempak file for display in nmap2 at spc)

WEB	FUNCTIONALITY	CENTRALLY MADE PRODUCTS	LOCALLY GENERATED PRODUCTS
w	GENERAL/MULTIPLE PROGRAMS Mean of selected members Spread of selected members Median of selected members Lowest value in selected members Highest value in selected members	SYNOPTIC FIELDS: H1000, M925, H850, H700, H500, H300 MB Hhght statistics (S) Htmpc statistics(S) Hdwpc statistics(S) Hwind statistics (vector and magnitude) (S) Havor statistics Hrelh statistics(S) Homeg statistics	Note: Spaghetti is easily displayable in nmap2 by adjusting the contouring
w		PMSL Hpmsl statistics(S) Mpmsl <= 1000 mb Mpmsl <= 980 mb Mpmsl <= 960 mb Mpmsl <= 1000 mb	
w		PRECIP WATER Hpwtr statistics(S) Mpwtr >= 25 mm Mpwtr >= 38 mm Mpwtr >= 50 mm	
w		2 METER TEMPS (degF) Htmpf statistics(S) Htmpf >= 60 degF Mtmpf >= 70 degF Ltmpf >= 80 degF Ltmpf >= 90 degF	
w		2 METER DEW POINT Hdwpf statistics (S) Hdwpf >= 45 degF Hdwpf >= 50 degF Hdwpf >= 55 degF Hdwpf >= 60 degF Hdwpf >= 65 degF Hdwpf >= 70 degF	
w		850 TEMP Htmpc statistics(S) Mtmpc <= 2 degC Mtmpc <= 0 degC	

		Mtmpc <= -2 degC	
w		850 MB DEW POINT Hdwpc statistics(S) Mdwpc >= 8 degC Mdwpc >= 12 degC Mdwpc >= 16 degC	
w		10 METER WINDS (S) Hwind (component and total magnitude) statistics Lmag(wind) >= 10 mph Hmag(wind) >= 20 mph Hmag(wind) >= 30 mph Mmag(wind) >= 40 mph	
w		850 MB WINDS (S) Mwind (component and total magnitude) statistics Lmag(wind) >= 20 kts Mmag(wind) >= 30 kts Hmag(wind) >= 40 kts Hmag(wind) >= 50 kts	
w		700 MB WINDS (S) Mwind (component and total magnitude) statistics Lmag(wind) >= 20 kts Lmag(wind) >= 30 kts Lmag(wind) >= 40 kts Lmag(wind) >= 50 kts Lmag(wind) >= 60 kts	
w		500 MB WINDS (S) Hwind (component and total magnitude) statistics Lmag(wind) >= 30 kts Lmag(wind) >= 40 kts Mmag(wind) >= 50 kts Lmag(wind) >= 60 kts Mmag(wind) >= 75 kts Lmag(wind) >= 90 kts	
w		300 MB WINDS (S) Hwind (component and total magnitude) statistics Lmag(wind) >= 50 kts Lmag(wind) >= 75 kts Mmag(wind) >= 100 kts Mmag(wind) >= 125 kts Mmag(wind) >= 150 kts	
w		700 MB OMEGA Homeg statistics Lomeg <= -1 (x10-3)pa/s Homeg <= -3 (x10-3)pa/s Homeg <= -5 (x10-3)pa/s Homeg <= -7 (x10-3)pa/s Homeg <= -9 (x10-3)pa/s	
w		3 HOUR TOTAL PRECIPITATION (stratiform and convective)	

		Hp03m statistics(S) Hp03m >= .01" Mp03m >= .05" Mp03m >= .10" Mp03m >= .25" Lp03m >= .50" Lp03m >= 1.0" Hc03m statistics Hc03m >= .01" Mc03m >= .05" Mc03m >= .10" Mc03m >= .25" Lc03m >= .50" Lc03m >= 1.0"	
w		6 HOUR TOTAL PRECIPITATION (stratiform and convective) Mp06m statistics(S) Mp06m >= .01" Mp06m >= .10" Mp06m >= .25" Lp06m >= .50" Lp06m >= 1.0" Lp06m >= 1.5" Mc06m statistics Mc06m >= .01" Mc06m >= .10" Mc06m >= .25" Lc06m >= .50" Lc06m >= 1.0" Lc06m >= 1.5"	
w		12 HOUR TOTAL PRECIPITATION (stratiform and convective) Mp12m statistics(S) Mp12m >= .01" Mp12m >= .10" Mp12m >= .25" Lp12m >= .50" Lp12m >= 1.0" Lp12m >= 2.0" Lp12m >= 3.0" Mc12m statistics Mc12m >= .01" Mc12m >= .10" Mc12m >= .25" Lc12m >= .50" Lc12m >= 1.0" Lc12m >= 2.0" Lc12m >= 3.0"	
w		24 HOUR TOTAL PRECIPITATION (stratiform and convective) Mp24m statistics Mp24m >= .01"	

		Mp24m >= .10" Mp24m >= .25" Lp24m >= .50" Lp24m >= 1.0" Lp24m >= 2.0" Lp24m >= 3.0" Mc24m statistics Mc24m >= .01" Mc24m >= .10" Mc24m >= .25" Lc24m >= .50" Lc24m >= 1.0" Lc24m >= 2.0" Lc24m >= 3.0"	
w		48 HOUR TOTAL PRECIPITATION (stratiform and convective) Lp48m statistics Lp48m >= .10" Lp48m >= .25" Lp48m >= .50" Lp48m >= 1.0" Lp48m >= 2.0" Lp48m >= 3.0" Lp48m >= 5.0" Lc48m statistics Lc48m >= .10" Lc48m >= .25" Lc48m >= .50" Lc48m >= 1.0" Lc48m >= 2.0" Lp48m >= 3.0" Lc48m >= 5.0"	
w	**THUNDER/SEVERE PROGRAM** Mean of selected members Spread of selected members Median of selected members Lowest value in selected members Highest value in selected members	LIFTED INDEX Hlift statistics(S) Hlift <= 0 degC Hlift <= -1 degC Hlift <= -2 degC Hlift <= -4 degC Hlift <= -6 degC Hlift <= -8 degC	
		K index Mkind statistics(S) Mkind >= 25 Mkind >= 30 Mkind >= 35	
w		SURFACE CAPE Hcape statistics(S) Mcape >= 50 j/kg Hcape >= 150 j/kg Hcape >= 250 j/kg Hcape >= 500 j/kg Hcape >= 1000 j/kg Hcape >= 1500 j/kg Hcape >= 2000 j/kg	

		Hcape >= 2500 j/kg Hcape >= 3000 j/kg Hcape >= 4000 j/kg	
		SURFACE CIN Hcin statistcs Hcin >= -25 j/kg Hcin >= -50 j/kg Mcin >= -75 j/kg Mcin >= -100 j/kg	
		SURFACE LCL Mlcl statistcs Mlcl <= 750 meters Mlcl <= 1000 meters Mlcl <= 1250 meters Mlcl <= 1500 meters	
		SURFACE LFC Mlfc statistcs	
w		MOST UNSTABLE CAPE (prefer to 300 or even 500 mb AGL) Hmucape statistics(S) Mmucape >= 50 j/kg Hmucape >= 150 j/kg Hmucape >= 250 j/kg Hmucape >= 500 j/kg Hmucape >= 1000 j/kg Hmucape >= 1500 j/kg Hmucape >= 2000 j/kg Hmucape >= 2500 j/kg Hmucape >= 3000 j/kg Hmucape >= 4000 j/kg	
		MOST UNSTABLE CIN Hmucin statistcs Hmucin >= -25 j/kg Hmucin >= -50 j/kg Mmucin >= -75 j/kg Mmucin >= -100 j/kg	
		MOST UNSTABLE LCL Mmulcl statistcs Lmulcl <= 750 meters Lmulcl <= 1000 meters Lmulcl <= 1250 meters Lmulcl <= 1500 meters	
		MOST UNSTABLE LFC Mmulfc statistcs	
w		MIXED LAYER CAPE Hmlcape statistics (S) Hmlcape >= 500 j/kg Hmlcape >= 1000 j/kg Hmlcape >= 1500 j/kg Hmlcape >= 2000 j/kg Hmlcape >= 2500 j/kg Hmlcape >= 3000 j/kg	

		MIXED LAYER CIN Hmlcin statistics Hmlcin >= -25 j/kg Hmlcin >= -50 j/kg Mmlcin >= -75 j/kg Mmlcin >= -100 j/kg	
		MIXED LAYER LCL Hmllcl statistics(S) Mmllcl <= 750 meters Mmllcl <= 1000 meters Mmllcl <= 1250 meters Mmllcl <= 1500 meters	
		MIXED LAYER LFC Mmllfc statistcs	
		700-500 mb LAPSE RATE M75lr statistics M75lr >= 7 degC M75lr >= 7.5 degC M75lr >= 8 degC M75lr >= 8.5 degC M75lr >= 9 degC	
		6 KM VERTICAL SHEAR H6kvs statistcs(S) M6kvs >= 20 kts H6kvs >= 30 kts H6kvs >= 40 kts H6kvs >= 50 kts	
		EFFECTIVE SHEAR...LPL to .5 EL Meshr statistics(S) Meshr >= 20 kts Meshr >= 30 kts Meshr >= 40 kts Meshr >= 50 kts Meshr u-component statistics Meshr v-component statistics	
		BRN SHEAR Lbrnshr statistics L20 <= brnshr <= 140	
w		0 to 1 KM STORM RELATIVE HELICITY H1khl statistics(S) H1khl >= 50 j/kg H1khl >= 100 j/kg H1khl >= 150 j/kg H1khl >= 200 j/kg	
w		0 to 3 KM STORM RELATIVE HELICITY H3khl statistics(S) H3khl >= 100 j/kg H3khl >= 150 j/kg H3khl >= 200 j/kg H3khl >= 250 j/kg	

		H3khl >= 300 j/kg H3khl >= 400 j/kg H3khl >= 500 j/kg	
w		CRAVEN BROOKS SIG SVR (CAPE X SHEAR) Hcbss statistics(S) Mcbss >= 10000 m^3/s^3 Mcbss >= 20000 m^3/s^3 Mcbss >= 30000 m^3/s^3 Mcbss >= 50000 m^3/s^3 Mcbss >= 70000 m^3/s^3	
w		SPC SIGNIFICANT TORNADO PARAMETER Msigt statistics(S) Msigt >= 0.5 Msigt >= 1 Msigt >= 2 Msigt >= 3 Msigt >= 5 Msigt >= 7 Msigt >= 9	
w		SPC SUPERCELL COMPOSITE PARAMETER Msccp statistics(S) Msccp >= 1 Msccp >= 2 Msccp >= 3 Msccp >= 5 Msccp >= 7 Msccp >= 9	
		DOWNDRAFT CAPE Ldcape statistics Ldcape >= 500 j/kg Ldcape >= 1000 j/kg Ldcape >= 1500 j/kg Ldcape >= 2000 j/kg Ldcape >= 2500 j/kg	
		SPC DERECHO PARAMETER Ldecho statistics Ldecho >= 1 Ldecho >= 2 Ldecho >= 3 Ldecho >= 5 Ldecho >= 7	
		SPC CLOUD PHYSICS THUNDER PARAMETER Mcptp statistics(S) Mcptp >= 1	
w	**FIRE WEATHER PROGRAM** Mean of selected members Spread of selected members Median of selected members	2 METER RELH Hrelh statistics(S) Mrelh <= 40 pct Mrelh <= 35 pct Mrelh <= 30 pct	

	Lowest value in selected members Highest value in selected members	Hrelh <= 25 pct Hrelh <= 20 pct Hrelh <= 15 pct Hrelh <= 10 pct L15 <= relh <= 30 pct L30 <= relh <= 45 pct	
w		FOSBERG FIRE WX Hfosb statistics(S) Hfosb >= 50 Hfosb >= 60 Hfosb >= 70 Hfosb >= 75 Mfosb >= 80 Mfosb >= 85 Lfosb >= 90	
		SPC LOWER ATMOSPHERIC FIRE WX INDEX Llasi statistics Llasi >= 5 Llasi >= 7 Llasi >= 9	
w		HAINES FIRE WX INDEX Mhain statistics Lhain >= 5 Lhain >= 6	
		SPC DRY THUNDERSTORM PARAMETER Ldryt statistics Ldryt >= 1 Ldryt >= 2	
w	**WINTER WEATHER PROGRAM** Mean of selected members Spread of selected members Median of selected members Lowest value in selected members Highest value in selected members	1000-500 MB THICKNESS Hthck statistics(S) Mthck <= 546 dm Mthck <= 540 dm Mthck <= 534 dm Mthck <= 528 dm Mthck <= 522 dm	
w		PRECIPITATION TYPE Hptypeb statistics (most likely, etc.) (S) Hptype = 1 (rain) Hptype = 2 (snow) Hptype = 3 (mix) Hptype = 4 (ice)	
		MOIST POTENTIAL VORTICITY Lmistab statistics Lmistab probabilities	
		FRONTOGENESIS IN THE SAME LAYER AS MOIST PV	

		Lfrontogenesis statistics Lfrontogenesis function >= 1	
		CLOUD TOP TEMPERATURE Ltsat statistics Ltsat >= -8 degC L-8 <= tsat <= -12 degC Ltsat <= -12 degC	
		DENDRITIC GROWTH LAYER DEPTH Ldend statistics Ldend >= 50 mb Ldend >= 100 mb Ldend >= 150 mb	
	Additional Fields in Distributed GEMPAK File to aid in assessing predictability	M RMOP M Climatological mean 500 mb heights M Climatological variance in 500 mb heights	

TPC Ensemble Product Needs
28 May 2004

All of the following apply primarily to the global ensemble. However, we would be interested in seeing the same products from the regional ensemble.

Lead time: All available taus out to at least 132 hours from global output

Domain: global

	FUNCTIONALITY	CENTRALLY MADE PRODUCTS	LOCALLY GENERATED PRODUCTS
1	Mean of selected members	MSLP U and V at 10 m, 925 mb, 850 mb, 700 mb, 500 mb, 300 mb, 250 mb, 200 mb Z at 850 mb, 700 mb, 500 mb T at 925 mb, 850 mb, 700 mb, 500 mb, 300 mb, 250 mb, and 200 mb Significant wave height (if available)	
2	Spread of selected members	MSLP Wind speed at 10 m, 925 mb, 850 mb, 500 mb, and 200 mb Z at 850 mb, 700 mb, 500 mb	
3	Median of selected members	MSLP Z at 500 mb Wind speed at 10 m	
4	Lowest value in selected members	MSLP Z at 500 mb Wind speed at 10 m Visibility	
5	Highest value in selected members	MSLP Z at 500 mb Wind speed at 10 m Significant wave height	
6	Range between lowest and highest values in selected members	MSLP Wind speed at 10 m Significant wave height	
7	Univariate exceedance probabilities for a selectable threshold value	Wind speed at 10 m; thresholds 20, 34, 50, and 64 kt	
8	Multivariate (up to 5) exceedance probabilities for a		

	selectable threshold value		
9	Forecast value associated with selected univariate percentile value	Wind speed at 10 m; approx. 25^{th}, 50^{th}, 75^{th}, and 90^{th} percentiles	
10	Tracking center of maxima or minima in a gridded field (eg - low pressure centers)	Minima and maxima in MSLP Maxima in 850 mb relative vorticity	
11	Objective grouping of members	By: lows/troughs/minima and highs/ridges/maxima in: MSLP 850 mb relative vorticity Z at 500 mb	
12	Plot Frequency / Fitted probability density function at selected location and time (lower priority)		
13	Plot Frequency / Fitted probability density function plot as a function of forecast lead time, at selected location (lower priority)		