

Weather support for Athens Olympic Games 2004 using Web Based technology









Olympic Venues





•Detailed 48Hours forecasts every 3 hours for each Olympic Venue.

Temperature	Relative Hum.	Pressure	Wind Speed & Dir
WBGT	Precipitation Amount	Weather Cond.	

•General forecast for today and tomorrow for all venues four times per day.

•Five days forecast twice a day.

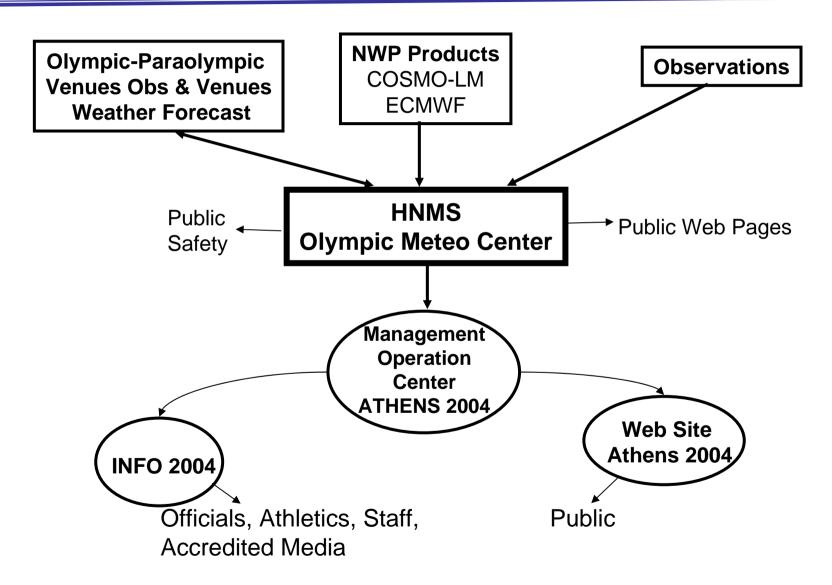
•Forecast of WBGT index twice a day.

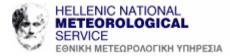
•Warnings for severe weather conditions (Strong winds and Thunderstorms).

•Current weather conditions every 10 minutes.



Data Flow Diagram



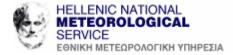


Data Formulation Requirements

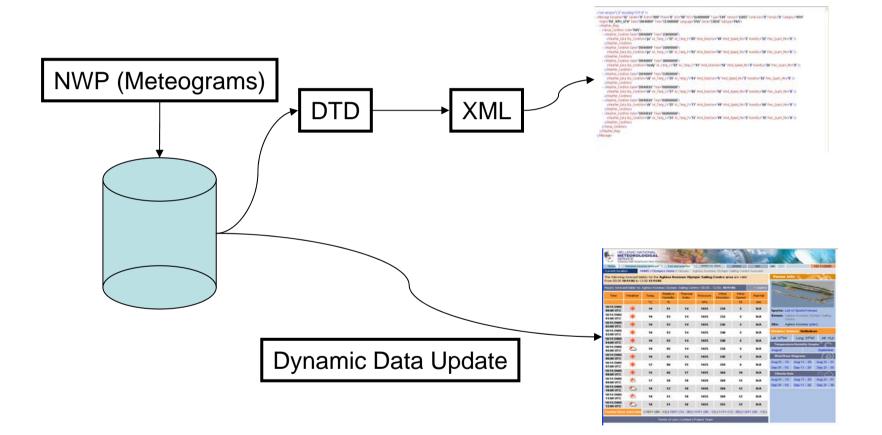
•XML Format

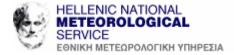
•Printer Friendly Format

•Multilanguage

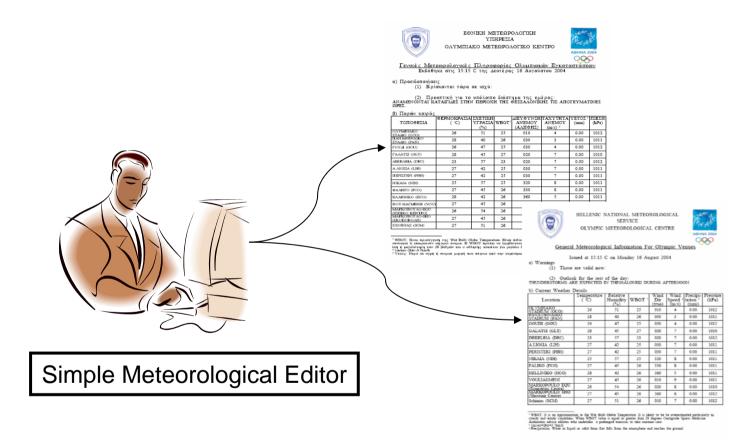


First Solution



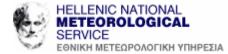


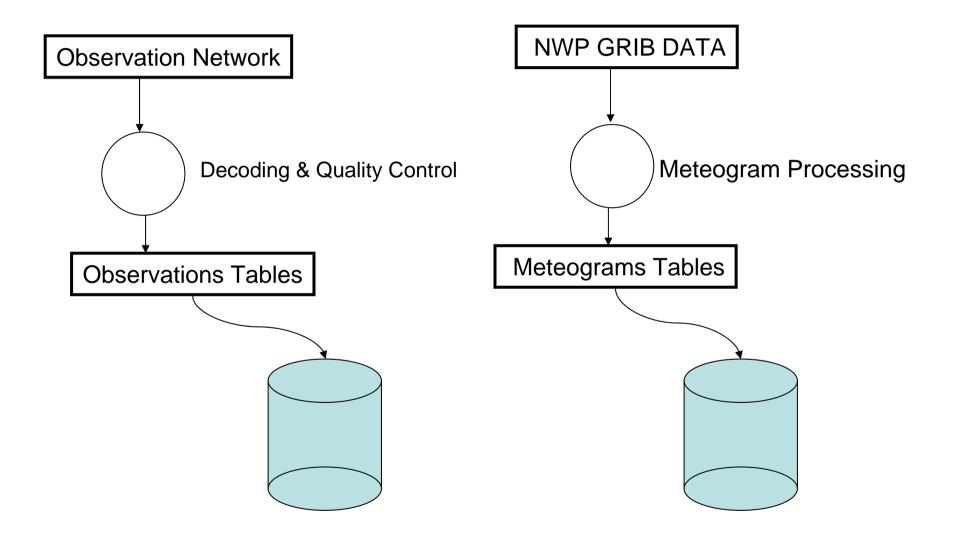
First Solution



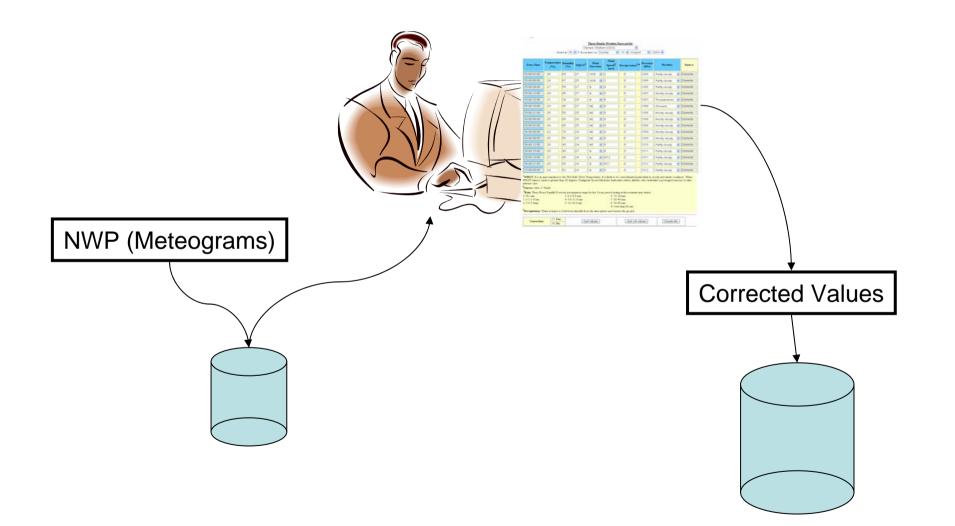


- Initial production
- Archiving
- Production
- Creation
- Management
- Control





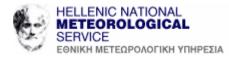






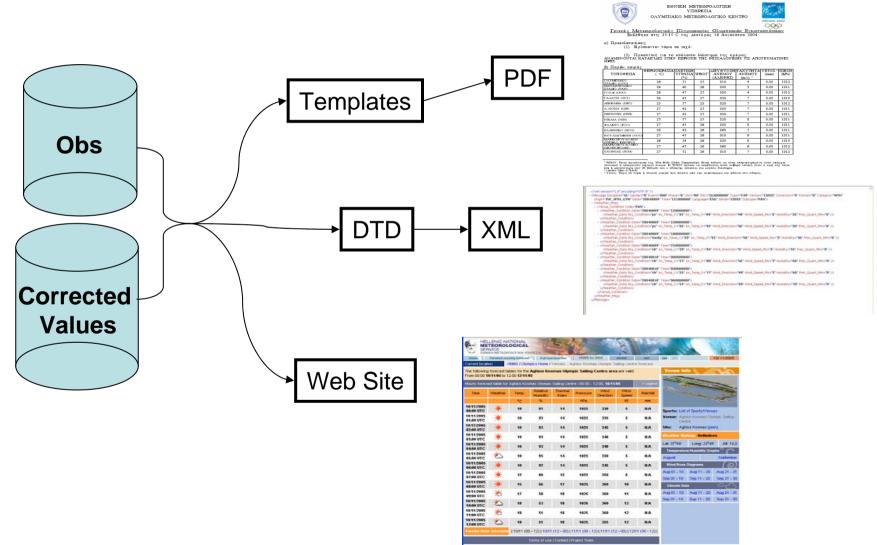
Three Hourly Weather Forecast for								
	Olympic Sta	adium (OCO)		*				
Issued at 00 🖌 C (.	local time) on	Sunday	✓ 15 ✓	August	~	2004 🔽		

Date-Time	Temperature (⁰ C)	9 Humidity (%)	wbgt ¹	Wind Direction	Wind Speed ² (m/s)	Precipi-tation		ressure (hPa)	Weather		Source						
15-08 03:00	26	65	27	VRB 💌	2	0	10	008	Partly cloudy	۷	Correcte						
15-08 06:00	24	67	25	VRB 💌	3	0	10	008	Partly cloudy	*	Correcte						
15-08 09:00	27	55	27	N 💌	4	0	10	008	Partly cloudy	*	Correcte						
15-08 12:00	29	45	27	N 💌	5	0	10	007	Mostly cloudy	*	Correcte						
15-08 15:00	31	38	28	N 💌	6	2	10	07	Thunderstorm	*	Correcte						
15-08 18:00	29	45	27	NE 💌	8	1	10	008	Showers	۷	Correcte						
15-08 21:00	26	50	25	NE 💌	8	0	10	008	Mostly cloudy	۷	Correcte						
16-08 00:00	25	60	26	NE 💌	8	0	10	008	Mostly cloudy	۷	Correcte						
16-08 03:00	24	65	25	NE 💌	8	0	10	009	Mostly cloudy	۷	Correcte						
16-08 06:00	22	70	24						Globe Temperatu								
16-08 09:00	25	55	25		BGT value is : treme care.	equal or greater	than 28	8 degree:	Centigrade Sports	s Me	dicine Authoritie	es advice athle	tes, who und	lertake :	a prolonged	exercise, t	o take
16-08 12:00	26	40	24		m/sec~2kts~												
16-08 15:00	29	40	27		Rain : Three H No rain	lours Rainfall: Fo		precipita : 6.0-8.9	tion range for the 3 mm	hou	r period ending : 6: 15-29		e time where				
16-08 18:00	27	45	26	N	0.1-2.9 mm 3.0-5.9mm			9.0-11. 12-14.9			7: 30-49 8: 50-80						
16-08 21:00	25	50	24	N 4-								han 80 mm					
17-08 00:00	24	52	24	N -	recipitation:	Water in liquid o	or Solid	l form th	at falls from the atm	losph	here and reaches	the ground.					
	1	1	1		Correctio	on: O Ye No			Get values			Get LM	l values		Create	; file	
				<	<back ma<="" td="" to=""><td>in page</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>Ē</td><td>ile Mana</td><td>ge >></td></back>	in page									Ē	ile Mana	ge >>



	Five	Days Ol	ympic	: Ve	enues V	<u>Veather Forecasts fo</u>	<u>r</u>
		[Olympic S			×	
	Issu	ed at 00 💌	C on T	hursd	lay 💌	12 💌 August 💌 2004 💌	
Day	a service serv	RATURE C)	WINI	D (N	(OON)	WEATHER	24 HOUR
Day	Min	Max	Dir	0	Spd ¹ (m/sec)	WEATHER	PRECIPI-TATION ^{2,3}
Friday 2004-08-13	23	35	VRB	~	3	Sky clear 💌	0
Saturday 2004-08-14	23	36	VRB	~	3	Sky Clear 🔹	0
Sunday 2004-08-15	24	31	N	~	5	Thunderstorms	2
Monday 2004-08-16	21	29	NE	~	8	Rain	1
Tuesday 2004-08-17	20	28	NE	~	5	Temporarily cloudy	0
¹ 1m/sec~2kts~3.7km/h ² Precipitation: Water in ³ Forecast rainfall range :	liquid or solid						
0: No rain 1: 0.1-2.9 mm		3: 6.0-8.9 mm 4: 9.0-11.9 mr				6: 15-29 mm 7: 30-49 mm	
2: 3.0-5.9mm		4: 9:0-11:9 mr 5: 12-14.9 mr			3	7: 50-49 mm 8: 50-80 mm 9: Over than 80 mm	
Correction:	O Yes	Get	values]		Get ECMWF values	Create file
< <back main="" p<="" td="" to=""><td><mark>⊙ No</mark> age</td><td></td><td></td><td>_</td><td></td><td></td><td>Manage >></td></back>	<mark>⊙ No</mark> age			_			Manage >>









ΕΘΝΙΚΗ ΜΕΤΕΩΡΟΛΟΓΙΚΗ ΥΠΗΡΕΣΙΑ ΟΛΥΜΠΙΑΚΟ ΜΕΤΕΩΡΟΛΟΓΙΚΟ ΚΕΝΤΡΟ



Γενικές Μετεωρολογικές Πληροφορίες Ολυμπιακών Εκδόθηκε στις 15:15 C της Δευτέρας 16 Αυγούστο

α) Προειδοποιήσεις

Βρίσκονται τώρα σε ισχύ:

(2) Προοπτική για το υπόλοιπο διάστημα της ημέρι ΑΝΑΜΕΝΟΝΤΑΙ ΚΑΤΑΙΓΙΔΕΣ ΣΤΗΝ ΠΕΡΙΟΧΗ ΤΗΣ ΘΕΣΣΑΛΟΝΙΚΗΣ ΩΡΕΣ.

es Transfer constant

τοποθέσια	<pre>BEPMOKPAΣIA (°C)</pre>	EXETIKH YTPAEIA (%)		ΔΙΕΥΘΥΝΣΗ ΑΝΕΜΟΥ (ΑΛΗΘΗΣ)	TA A
OAYMIIAKO STAAD (OOO)	26	51	25	010	
ΠΑΝΑΘΉΝΑΙΚΟ ΣΤΑΔΙΟ (PAN)	28	40	26	030	
(GOU)	26	47	25	030	
FAAATEI (GLT)	28	45	27	020	
SEKEAEIA (DEC)	23	57	23	020	
A.AIOEIA (LIH)	27	42	25	030	
DEPITTEPI (PBH)	27	42	25	030	
NIKAIA (NIH)	25	57	25	320	
PAAHPO (FCO)	27	45	26	330	
EAAHNIKO (HCO)	28	42	26	360	
BOYALAFMENH (VOU)	27	45	26	010	
MAPKOHOYAO-EQU (IIIIIKO KENTPO)	26	54	26	020	
MAPKOHOYAO-SHO (IKOHOBOAH)	27	45	26	360	
EXOINTAE (SCM)	27	51	26	010	

¹ WBGT: Είναι προσύγγιση της Wet Balb Gloke Temperature. Είναι πάθανό να είναι και συναι στο συνοφού ή επικρατούν ισχυροί όπομος. Η WBGT πράπει να λαμβάνεται πολό ασβαρά : ίση ή μηγελάτερη των 25 βαθμάνε και ο σύληκης ασκείται για μηγάλο διάστημα. ² Imber-2tu-3 Rindh ⁴ Υκτός: Νερό σε υγρή ή στορού μορφή που πάφτει από την επιρόσραιρα και φθάνα.

HELLENIC NATIONAL METEOROLOGICAL SERVICE

OLYMPIC METEOROLOGICAL CENTRE



General Meteorological Information For Olympic Venues

Issued at 15:15 C on Monday 16 August 2004

a) Warnings (1) Those are valid now:

(2) Outlook for the rest of the day: THUNDERSTORMS ARE EXPECTED IN THESSALONIKI DURING AFTERNOON.

b) Comment Weather Details

b) Current Weather I	Details						
Location	Temperature (°C)	Relative Humidity (%)	WBGT '	Wind Dir (true)	Wind Speed * (m/s)	Precipi- tation ³ (mm)	Pressure (hPa)
OLYMPIAKO STADIUM (OCO)	26	51	25	010	4	0.00	1012
PANATHINAIKO STADIUM (PAN)	28	40	26	030	3	0.00	1011
GOUDI (GOU)	26	47	25	030	4	0.00	1012
GALATSI (GLT)	28	45	27	020	7	0.00	1010
DEKELEIA (DEC)	23	57	23	020	7	0.00	1012
A.LIOSIA (LIH)	27	42	25	030	7	0.00	1011
PERISTERI (PBH)	27	42	25	030	7	0.00	1011
NIKAIA (NIH)	25	57	25	320	8	0.00	1011
FALIRO (FCO)	27	45	26	330	8	0.00	1011
HELLINIKO (HCO)	28	42	26	360	5	0.00	1011
VOULIAGMENI	27	45	26	010	9	0.00	1011
MARKOPOULO EQU (Equestrian Centre)	26	54	26	020	8	0.00	1010
MARKOPOULO SHO (Shooting Centre)	27	45	26	360	6	0.00	1012
Schinias (SCM)	27	51	26	010	7	0.00	1012

¹ WBGT: It is an approximation to the Wet Bulb Globe Temperature. It is likely to be be overestimated particularly in cloudy and windy conditions. When WBGT value is equal or greater than 28 degrees Centigrade Sports Medicine Authorities advice athletes who undertake a prolonged exercise, to take extreme care.

² lm/sec=2kts=3.7km/h Precipitation: Water in liquid or solid form that falls from the atmosphere and reaches the ground.

14



		Aahios Kos	mas Olvmpic	: Sailing Cent	re / 00:00 - 12:00, 10 /4	1/05	> Legend			-					
Time	Weather	Temp.	Relative Humidity	Thermal Index	Pressure Vind Direction	Wind	Rainfall		Laboratory of the	10 100					
		°C	%		hPa	Kt	mm		No and State	HC					
0/11/2005 0:00 UTC	*	10	91	14		NATIONAL	1-1	- Ho	B	1	PR Brit				
0/11/2005	*	10	93	14	SERVICE	ROLOGICAL		- 10	2	A SA	111	1			12
1:00 UTC 0/11/2005		40	93			COUNTRY FOR COUNT		orecast F	INMS for 2004	ATHOC	IOC	GR E	N	10	0/ 11/2005
2:00 UTC		10	93	14	Current location		npics Home / Xu					GIT			1112000
0/11/2005 3:00 UTC	*	10	93	14	Current observat					-	10/11/2005	Ven	ue Info 🐁	1	No.
0/11/2005 4:00 UTC	*	10	93	14	Weather	Iona, Aginoa r	osmas olymp	ic saming co	ilu c		10/11/2000				10122.1
0/11/2005	*	10	95	14	tation(s)	Weather	Temp.	Dew Point	Wind Dir.	Wind Speed	Wind Gust	-			
5:00 UTC 0/11/2005	~				Hellinikon (08:00)	*	14 °C	9°C	350	4 Kt		-			
6:00 UTC	*	10	92	14		_							and the state	al stand	is and Zand
0/11/2005 7:00 UTC	- 🔆	12	80	15	Current observat	ions: Aghios H	losmas Olymp	ic Sailing Ce	ntre AMS		22/09/2005				-un
0/11/2005		15	66	17	Weather tation(s)	Temp.	Dew Point	Wind Dir.	Wind Speed	Wind Gust	Rainfall	Sports	s: List of Sports	Nenues	
B:00 UTC	*				Aegina (08:30)	23 °C	15 ℃	360	4 Kt				Aghios Kosm		
9:00 UTC	25	17	58	18	Agios Kosmas	15 °C	9°C	Var	3 Kt				Centre		
0/11/2005 0:00 UTC	\sim	18	53	18)8:00) Alimos (08:00)			360	4 Kt			Site:	Aghios Kosm	as (plan)	j
)/11/2005 1:00 UTC	*	18	51	18	Flevopoula (08:50)	15 °C 17 °C	8 °C 13 °C	310	3 Kt			Foreca			
0/11/2005	*	18	51	18	Lavrion (08:00)	15 °C	9°C	010	17 Kt			Genera	alForecast.pdf		
2:00 UTC	\sim							0.0					sForecast.pdf		
velve Hou	ır intervals			a second a second second	1♪ Last 10 Observati							5DaysF	Forecast.pdf		
			Terms of use	e Contact P	ro [»] Detailed hourly for	ecast: 10/11 - 1	2/11 (meteogram	n from the LM-	COSMO HNMS	model)		Weath	er Station: He	llinikon	
					General forecast t	for Attiki						1			
							Terms of use	Contact Proie	t Team			Lat: 37	g.	23°45'	Alt: 10,
												Temp	perature/Humidi	ty Graph	s C
												August	t		Septembe
												Wind	I/Rose Diagram		(0)
												Aug 01	10 0.000	20	0.00 24 2
												Aug 01	-10 Aug 11	- 20 1	Aug 21 - 3



Weather Messaging System

Cli	ick here to	go back	Update List	Logging System		
Delete	Send	Index	5 Days Forecasts English	Description		
		1	5dENOAKA15_08_13.pdf	5 Days Forecast English OAKA		
Delete	Send	Index	5 Days Forecasts Greek	Description		
		1	5dGROAKA15_08_13.pdf	5 Days Forecast Greek OAKA		
Delete	Send	Index	3 Hours Forecasts English	Description		
		1	3HENGUDI15_08_03.pdf	3 Hour Forecast English GUDI		
		2	3HENLGRX15_08_03.pdf	3 Hour Forecast English LGRX		
		3	3HENNFIL15_08_06.pdf	3 Hour Forecast English NFIL		
		4	3HENLGTS15_08_06.pdf	3 Hour Forecast English LGTS		
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		2	3HGRLGRX15_08_03.pdf	3 Hour Forecast Greek LGRX		
		3	3HGRNFIL15_08_06.pdf	3 Hour Forecast Greek NFIL		
		4	3HGRLGTS15_08_06.pdf	3 Hour Forecast Greek LGTS		
Delete	Send	Index	General Forecasts English	Description		
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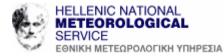
10th Workshop on Meteorological Operational Systems - November 2005



Forecasting Logging System

Logs For Thursday 🔽 15 💟 August 💟 2004 💟

Update List Click I	nere to go back e-Mail Sy	stem						
3 Hours Forecasts		1120						
5 Days Forecasts		280				TTTTTT	acosmas(commis.er)	wamenwartiti 200_ctctc.pu
General Forecasts		70				THENS	[spyros.capralos@spsec2004.culture.gr]	 WarnENATH15_08_1315.pd
Warnings		152				THENS	[pmkm_mc@hnms.gr]	WarnENATH15_08_1315.pc
Total Forecasts		1622				THENS	[kepp@gscp.gr]	WarnENATH15 08 1315.pc
Date-Time	Forecast Type	Receipent		File	name		[atterp @gr0p.gr] [attens2004@hnms.grD#EMY #/data/www/source/out/WamGRATH15_08_1315.pdf]	wallininini5_00_1515.po
Sun, 15 Aug 2004 00:00	3 Hour Forecast English OLYMPIC STADIUM	[Sportscommand@athens2004.com]	:	3HENOAKA	15_08_03.pdf	THENS THENS		WamGRATH15_08_1315.pd WamGRATH15_08_1315.pd
Sun, 15 Aug 2004 00:00	3 Hour Forecast English OLYMPIC STADIUM	[omk@hnms.gr]	1	3HENOAKA	15_08_03.pdf	THENS	[f.mouchli@spsec2004.culture.gr] [sxinias@hnms.gr]	WarnGRATH15_08_1315.po WarnGRATH15_08_1315.po
Sun, 15 Aug 2004 00:00	3 Hour Forecast English OLYMPIC STADIUM	[f.mouchli@spsec2004.culture.gr]	4	3HENOAKA	15_08_03.pdf	THENS	[akosmas@hnms.gr] [spyros.capralos@spsec2004.culture.gr]	WarnGRATH15_08_1315.p- WarnGRATH15_08_1315.p-
	3 Hour Forecast English		n, 17 Aug z	004 10:15	warning Greece		[pmkm_mc@hnms.gr]	WamGRATH15 08 1315.pc
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			in, 15 Aug 2		Warning Greece .		[kepp@gscp.gr]	WamGRATH15 08 1315.pc
			in, 15 Aug 2		5 Days Forecast I OLYMPIC STA	English	[athens2004@hnms.gr日#EMY #/data/www/source/out/5dENOAKA15_08_13.pdf]	
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		Su	ın, 15 Aug 2		5 Days Forecast I OLYMPIC STAI		[f.mouchli@spsec2004.culture.gr]	5dENOAKA15_08_13.pdf
					5 Davs Forecast 1	Fnolish		



Warnings Problem

Strong Wind Warning

Issued at 10 👱 : 59	C on	Friday	*	27	~ A	ugust	۷	2004	~	for the greater
		/	Athens area	a	*					

Kind of wind:	Direction:	Force (kts):	Time affected:
Strong 💌	N 💌	30 to 35	3 💌

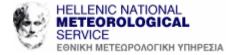
will affect the following Olympic Venues:

✓ OCO (Olympiako Stadium)	✓ PBH (Peristeri)	SHO (Markopoulo Sh.Centre)
✓ PAN (Panathinaiko Stadium)	✓ <u>NIH (Nikaia)</u>	SCM (Schinias)
GOU (Goudi)	🔲 <u>FCO (Faliro)</u>	HER (Heraklio)
GLT (Galatsi)	🔲 <u>HCO (Helliniko)</u>	□ <u>PAT (Patra)</u>
✓ DEC (Dekeleia)	📃 <u>VOU (Vouliagmeni)</u>	🗌 <u>THE (Thessaloniki)</u>
✓ LIH (Ano Liosia)	🗌 EQU (Markopoulo Eq.Centre)	UOL (Volos)

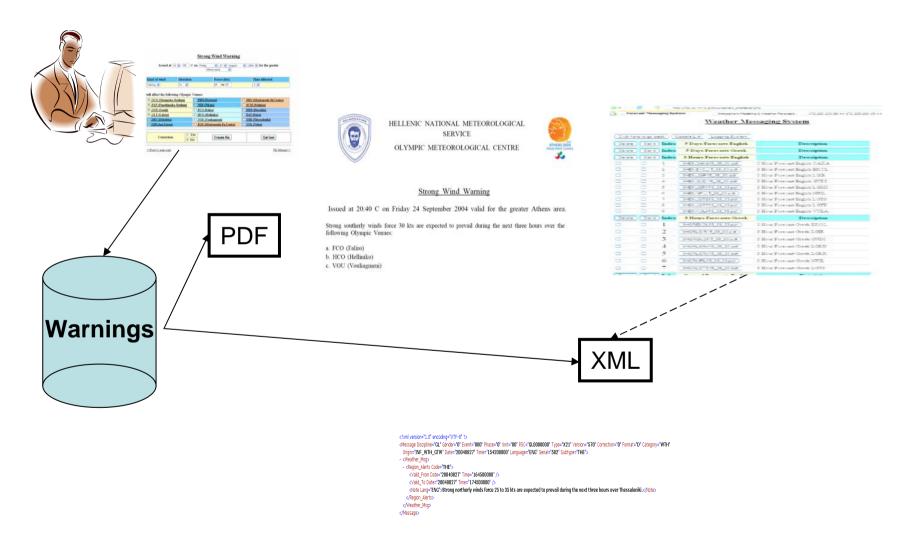
Correction:	O Yes O No	Create file	Get last

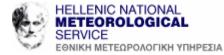
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<u>|File Manage>></u>



Warnings Problem





New Requirements

