VISTAS Meteorological Modeling

July 29, 2003

Ad Hoc Meteorological Modeling Meeting

Des Plaines, IL

Mike Abraczinskas

North Carolina Division of Air Quality

VISTAS

- **Collaborative effort established to initiate and coordinate activities associated with the management of regional haze, visibility and other air quality issues in the Southeast.**

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Meteorological Modeling Goals

- Develop an evaluation plan
- Recommend sensitivities needed to determine the "optimal" MM5 configuration for annual modeling
- Perform and evaluate sensitivities
- Perform and evaluate annual run

Sensitivity episodes

- January 2 – 20, 2002
- July 13 – 27, 2001
- July 13 – 21, 1999

Choice of episode periods was based on:

- Availability of robust AQ databases
- Full AQ cycle (clean-dirty-clean)
- Availability of meteorological data
- Air quality and meteorological regime

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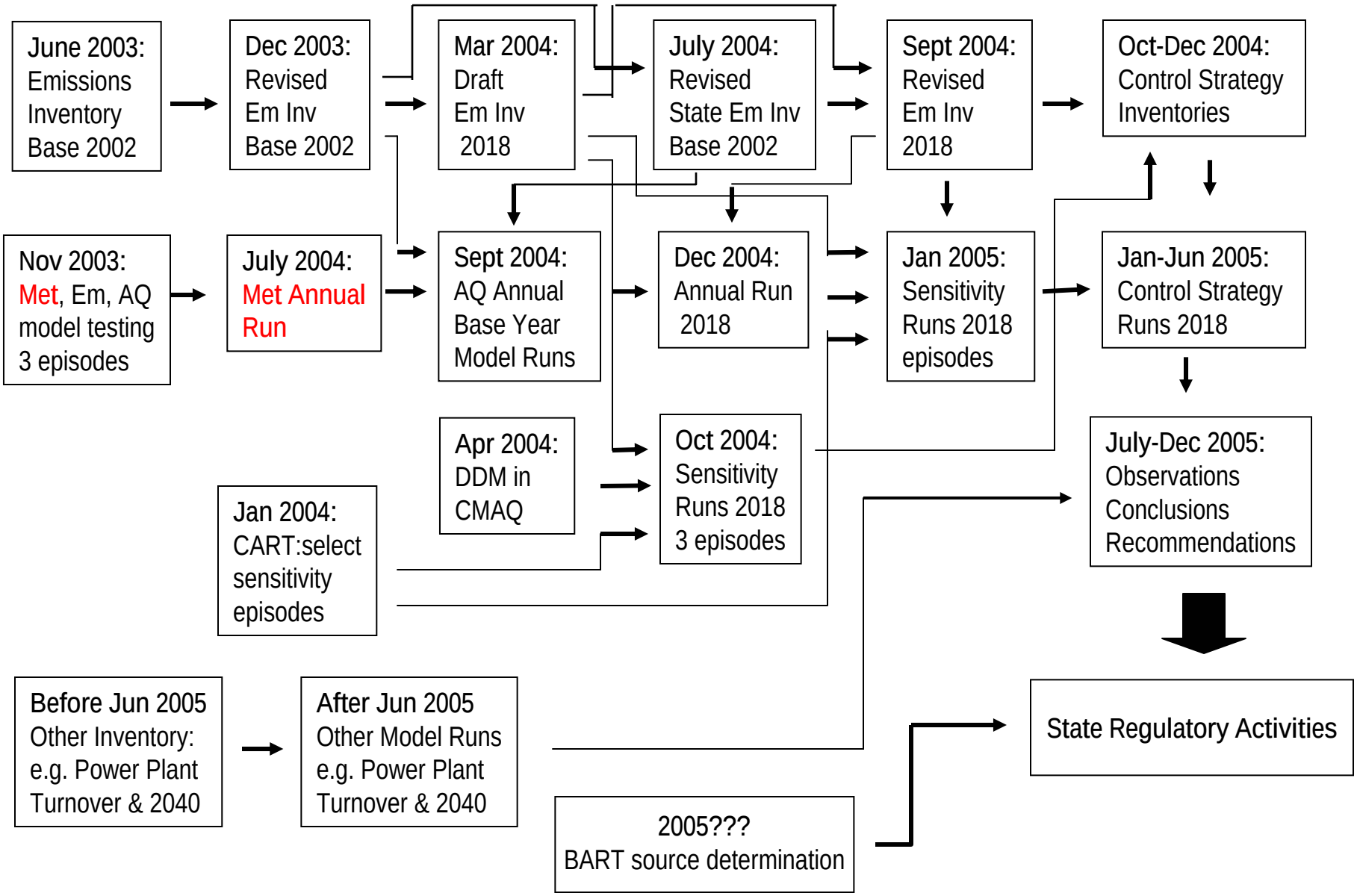
Due date	Run	Domain	Vert layers	Soil Model	PBL	Cloud	Microphysics	Input SST	SST Treatemt	FDDA	Evaluation period
06/13/03	1a	36km 12km	34	P-X	ACM	KF2	Mixed phase	ETA	Constant	Standard	Jan 2 - Jan 20, 2002
07/21/03	1b	36km 12km	34	P-X	ACM	KF2	Mixed phase	ETA	Constant	Standard	July 13 - July 27, 2001
07/03/03	1c	36km 12km	34	P-X	ACM	KF2	Mixed phase	ETA	Constant	Standard	July 13 - July 21, 1999
8/1/003	2a	36km 12km	34	NOAH	MRF	KF2	Mixed phase	ETA	Constant	Standard	Jan 2 - Jan 20, 2002
10/08/03	2b	36km 12km	34	NOAH	MRF	KF2	Mixed phase	ETA	Constant	Standard	July 13 - July 27, 2001
09/08/03	2c	36km 12km	34	NOAH	MRF	KF2	Mixed phase	ETA	Constant	Standard	July 13 - July 21, 1999
08/12/03	3a	36km 12km	34	Multi-layer	Blackadar (w/ Ziliti)	KF2	Mixed phase	ETA	Constant	Standard	Jan 2 - Jan 20, 2002
10/20/03	3b	36km 12km	34	Multi-layer	Blackadar (w/ Ziliti)	KF2	Mixed phase	ETA	Constant	Standard	July 13 - July 27, 2001
09/15/03	3c	36km 12km	34	Multi-layer	Blackadar (w/ Ziliti)	KF2	Mixed phase	ETA	Constant	Standard	July 13 - July 21, 1999
08/21/03	4a	36km 12km	34	NOAH	ETA M-Y	KF2	Mixed phase	ETA	Constant	Standard	Jan 2 - Jan 20, 2002
10/29/03	4b	36km 12km	34	NOAH	ETA M-Y	KF2	Mixed phase	ETA	Constant	Standard	July 13 - July 27, 2001
09/22/03	4c	36km 12km	34	NOAH	ETA M-Y	KF2	Mixed phase	ETA	Constant	Standard	July 13 - July 21, 1999
	5a	36km 12km									Jan 2 - Jan 20, 2002
	5b	36km 12km									July 13 - July 27, 2001
	5c	36km 12km									July 13 - July 21, 1999

Reserved for "best and final" configuration if it is determined that some combination of the above configurations is desired.

VISTAS Meteorological, Emissions and Air Quality Modeling Deliverables



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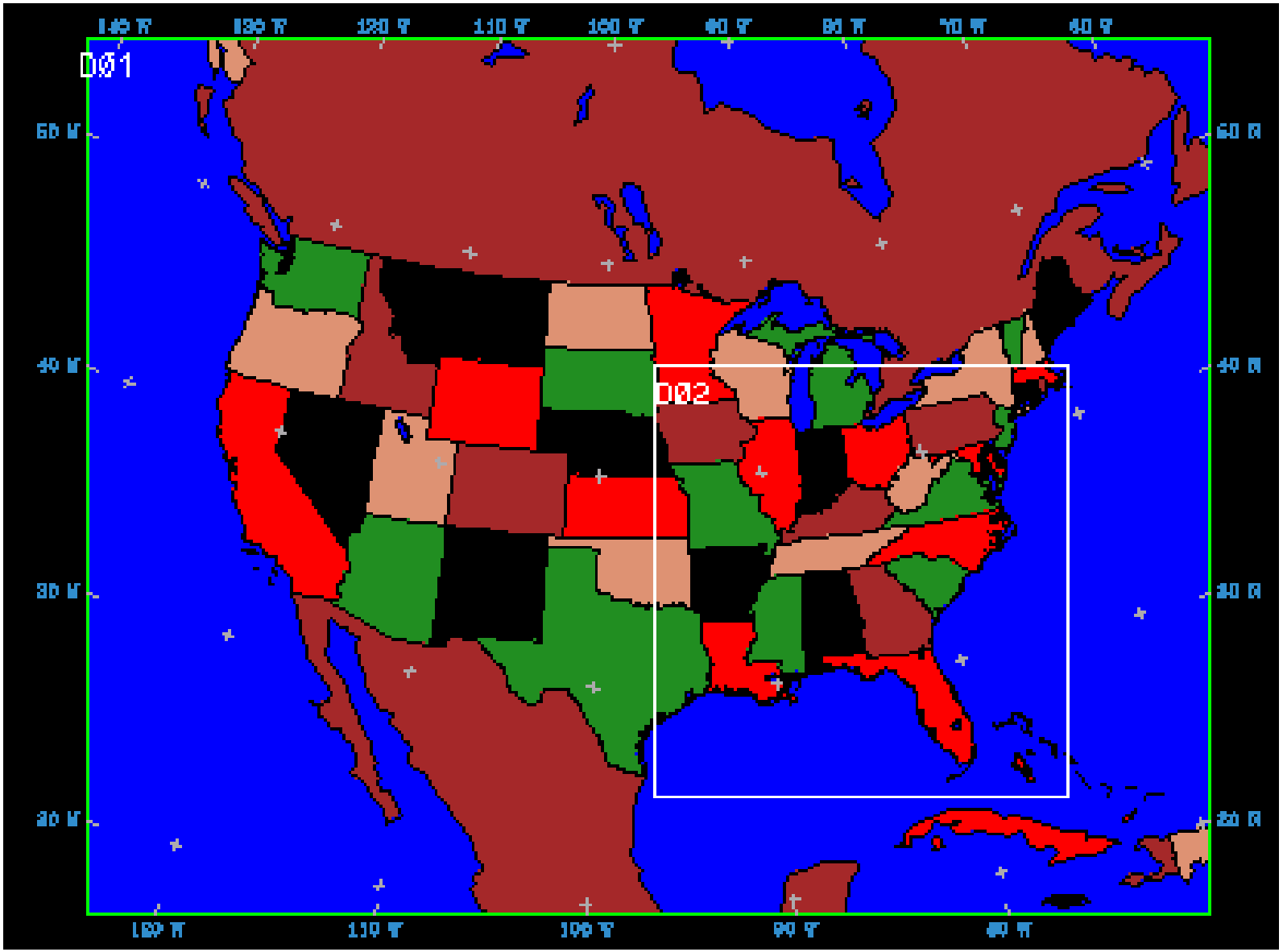

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MM5 Layer	Sigma	Pres(mb)	Height(m)	Depth(m)
34	0.000	10000	14662	1841
33	0.050	14500	12822	1466
32	0.100	19000	11356	1228
31	0.150	23500	10127	1062
30	0.200	28000	9066	939
29	0.250	32500	8127	843
28	0.300	37000	7284	767
27	0.350	41500	6517	704
26	0.400	46000	5812	652
25	0.450	50500	5160	607
24	0.500	55000	4553	569
23	0.550	59500	3984	536
22	0.600	64000	3448	506
21	0.650	68500	2942	480
20	0.700	73000	2462	367
19	0.740	76600	2095	266
18	0.770	79300	1828	259
17	0.800	82000	1569	169
16	0.820	83800	1400	166
15	0.840	85600	1235	163
14	0.860	87400	1071	160
13	0.880	89200	911	158
12	0.900	91000	753	78
11	0.910	91900	675	77
10	0.920	92800	598	77
9	0.930	93700	521	76
8	0.940	94600	445	76
7	0.950	95500	369	75
6	0.960	96400	294	74
5	0.970	97300	220	74
4	0.980	98200	146	37
3	0.985	98650	109	37
2	0.990	99100	73	36
1	0.995	99550	36	36
0	1.000	100000	0	--SURF--

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- **VISTAS main web site:**

  http://vistas-sesarm.org/

- **VISTAS Technical Meteorological web site:**

  http://www.emc.mcnc.org/projects/VISTAS/vistas.html

- **VISTAS Technical Emissions and Air Quality web site:**

  http://pah.cert.ucr.edu/vistas/

Michael.Abraczinskas@ncmail.net

919-715-3743