

Bay Area AQMD Data Collection Network

Data Acquisition Systems (DAS)

Data Management System (DMS)

Current System Status

- Analog-only datalogger technology
- Modem/polling data collection (serial polling, long-distance calls)
- DOS-based data management system
- No graphical editing/QC tools
- Obsolete data reporting formats

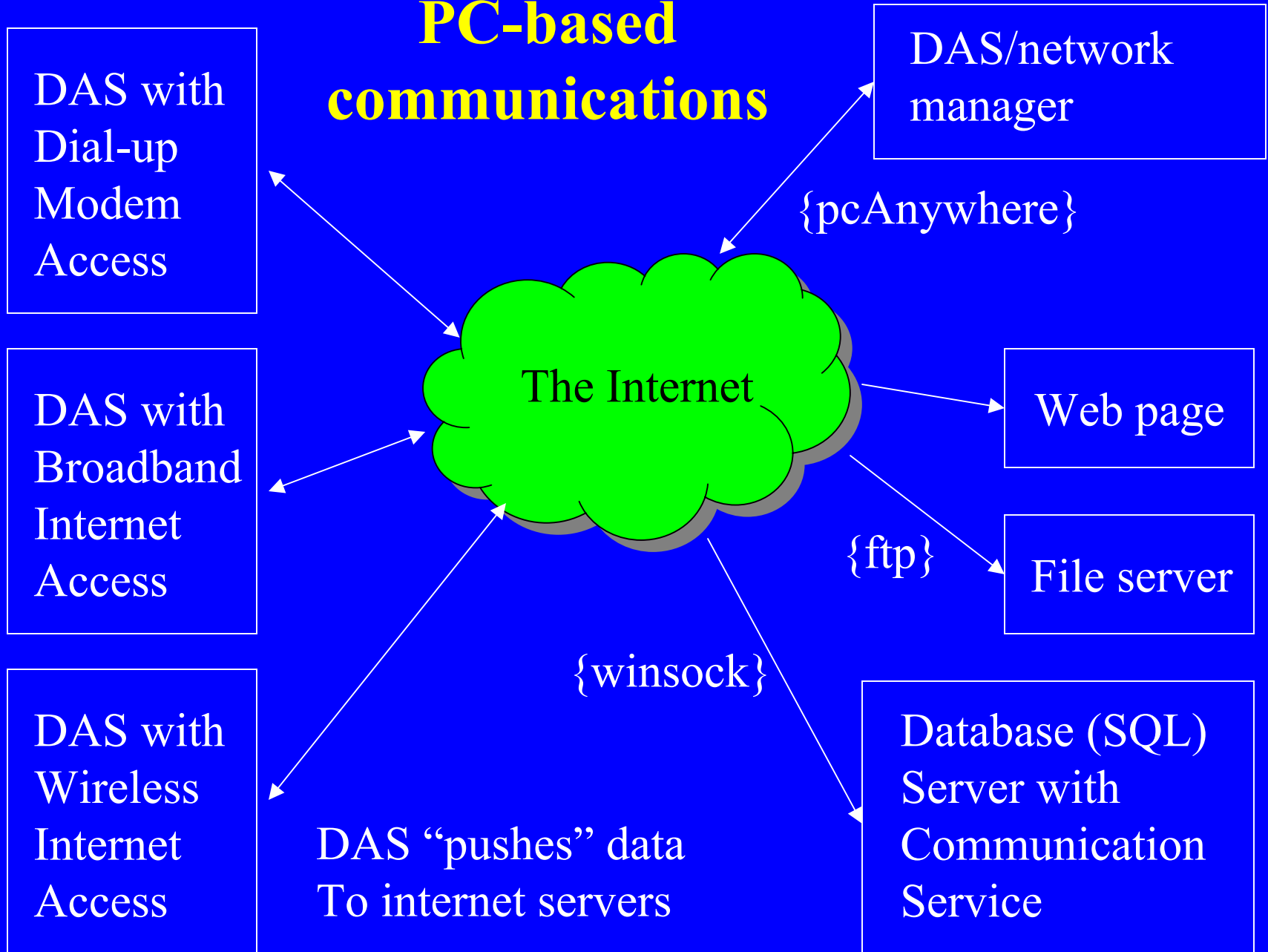
Data Acquisition Requirements

- Data collection from new, computer-based monitors (TECO “C”, TAPI “E” series)
- Record instrument diagnostics for auto QC
- Data collection from real-time speciation instruments (R&P 8400N/S, 5400)
- “Push” data delivery for real-time uses
- 1-min data resolution for facility monitoring/public health response/analysis

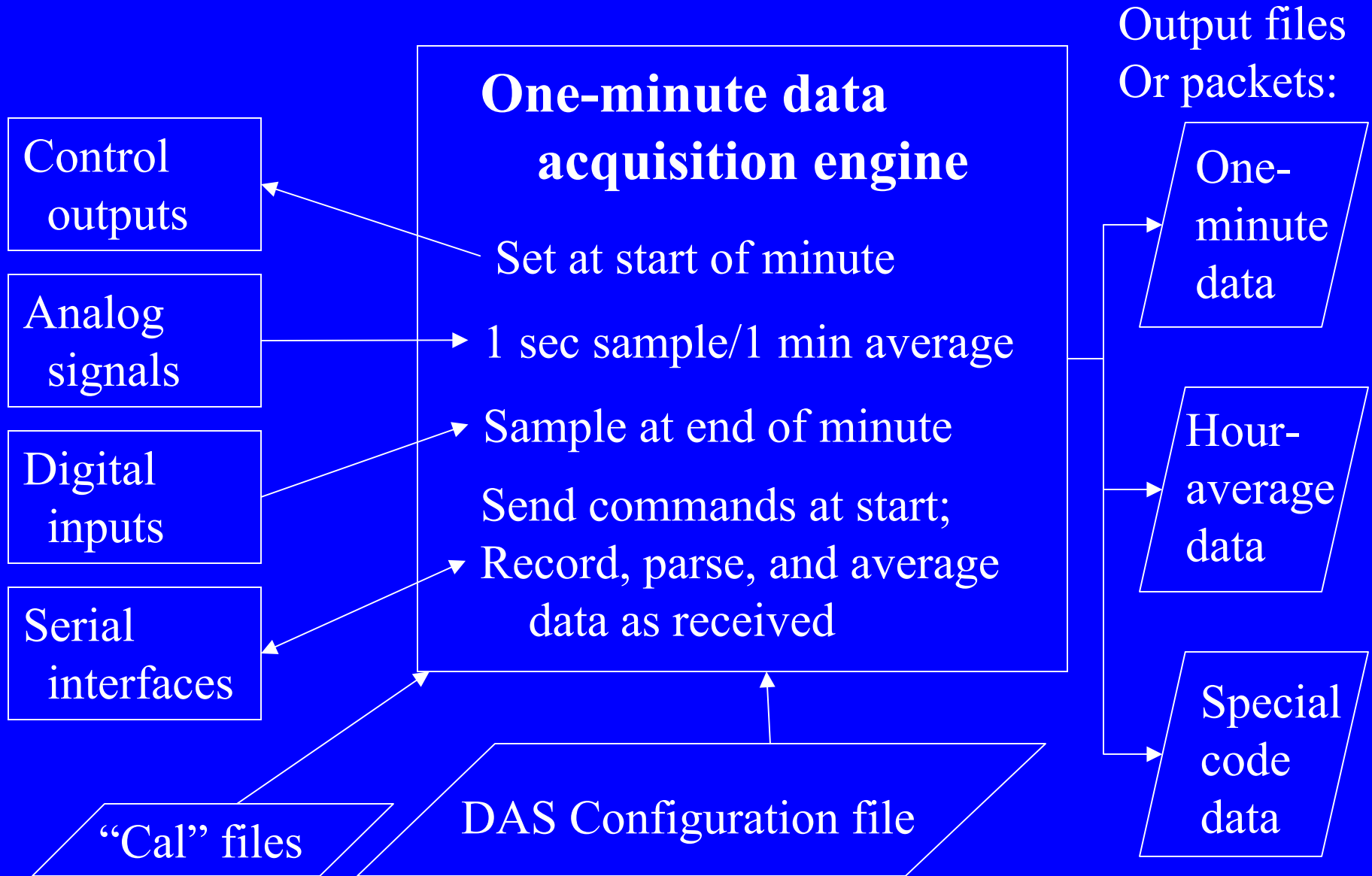
New DAS Environment

- Inexpensive, stable, Windows PC-based DAS (from CARB PM field study)
- Broadband internet service at field sites (for BAAQMD)
- Powerful, flexible connectivity tools to monitoring equipment and the internet
- Remote DAS/instrument management
- 1-min data electronic strip charts

PC-based communications



DAS Software Architecture



DAS Monitor Display

AQDAS Main
21:46:38
05/14/2002

Air Quality Data Acquisition System

Stop AQDAS

Chan ID	Ch	Instrument	Value	Or	Units	Graph
CO	A0	CO	3.662109	0	ppbm	0
O3	S2	O3	M	9	ppb O3	
O3 flaA	S2	O3	M	9	FlaA cod	
O3 Aint	S2	O3	M	9	Hz	
O3 Bint	S2	O3	M	9	Hz	
O3 benT	S2	O3	M	9	dea C	
O3 lmpT	S2	O3	M	9	dea C	
O3 OlmpT	S2	O3	M	9	dea C	
O3 floA	S2	O3	M	9	LPM	
O3 floB	S2	O3	M	9	LPM	
O3 pres	S2	O3	M	9	mm Hg	
SO2	A1	SO2	1.220703	0	ppb	0
NOx	A2	NOx	2.441406	0	ppb	0
NO2	A3	NOx	14.648437	0	ppb	0
sta T	A4	staT	1.098633	0	dea C	
O3a	A5	O3a	40.283203	0	ppb	0

CO(ppbm) 8 Days -

SO2(ppb) 1 Day -

NO(ppb) 8 Hrs -

NO2(ppb) 2 Hrs -

O3a(ppb)

Clear

ZOOM

3 Hrs -

1 Hr -

10 Min -

2 Min -

Clear A

ZOOM

Logging OFF

3 Hrs -

1 Hr -

10 Min -

2 Min -

Clear B

ZOOM

Logging OFF

Rly	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Ct	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Calibration **OFF**

Manual Calibrator

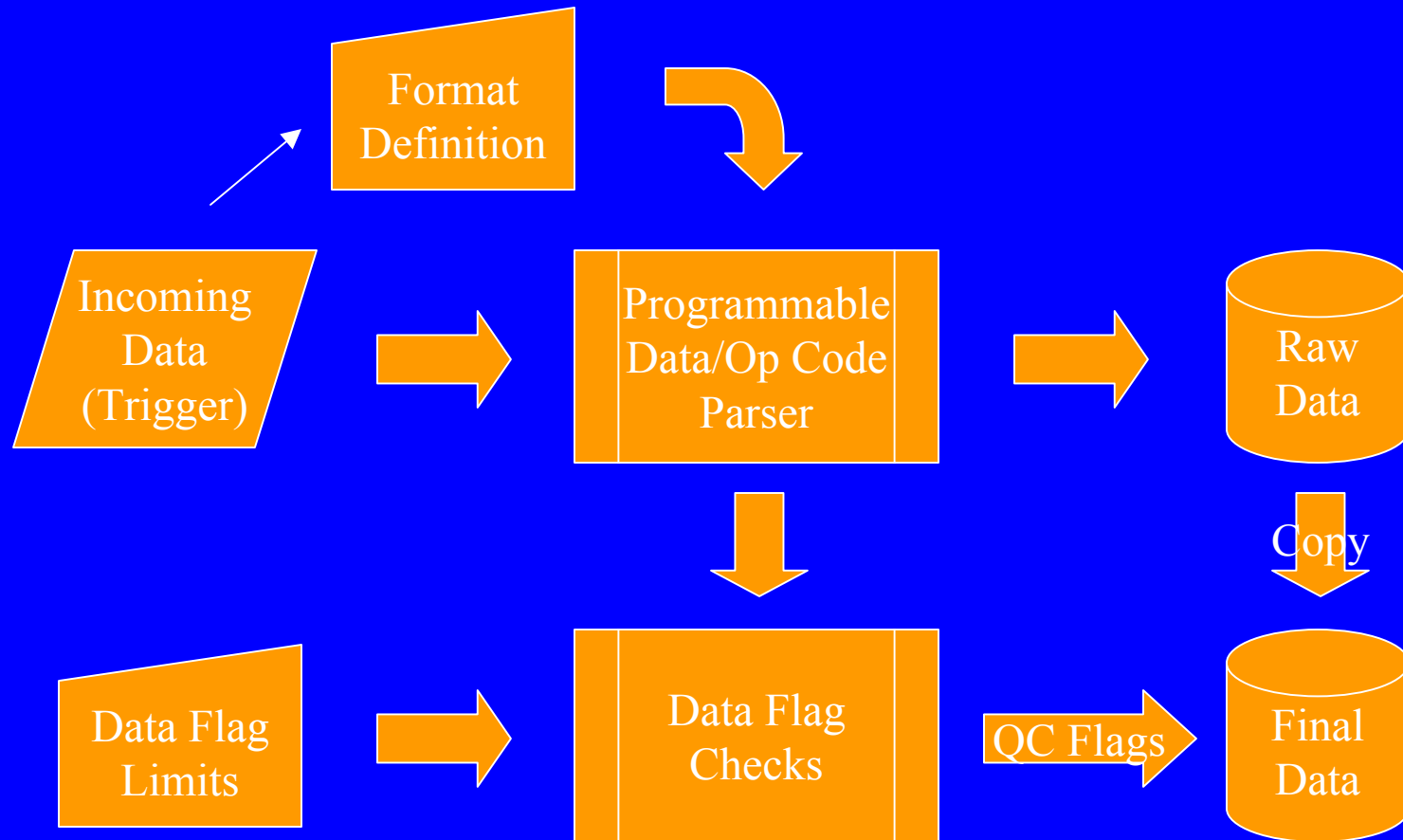
Digital Inputs
0

Start
Aqdas072601
Main.vi
AQDAS Main
21:46

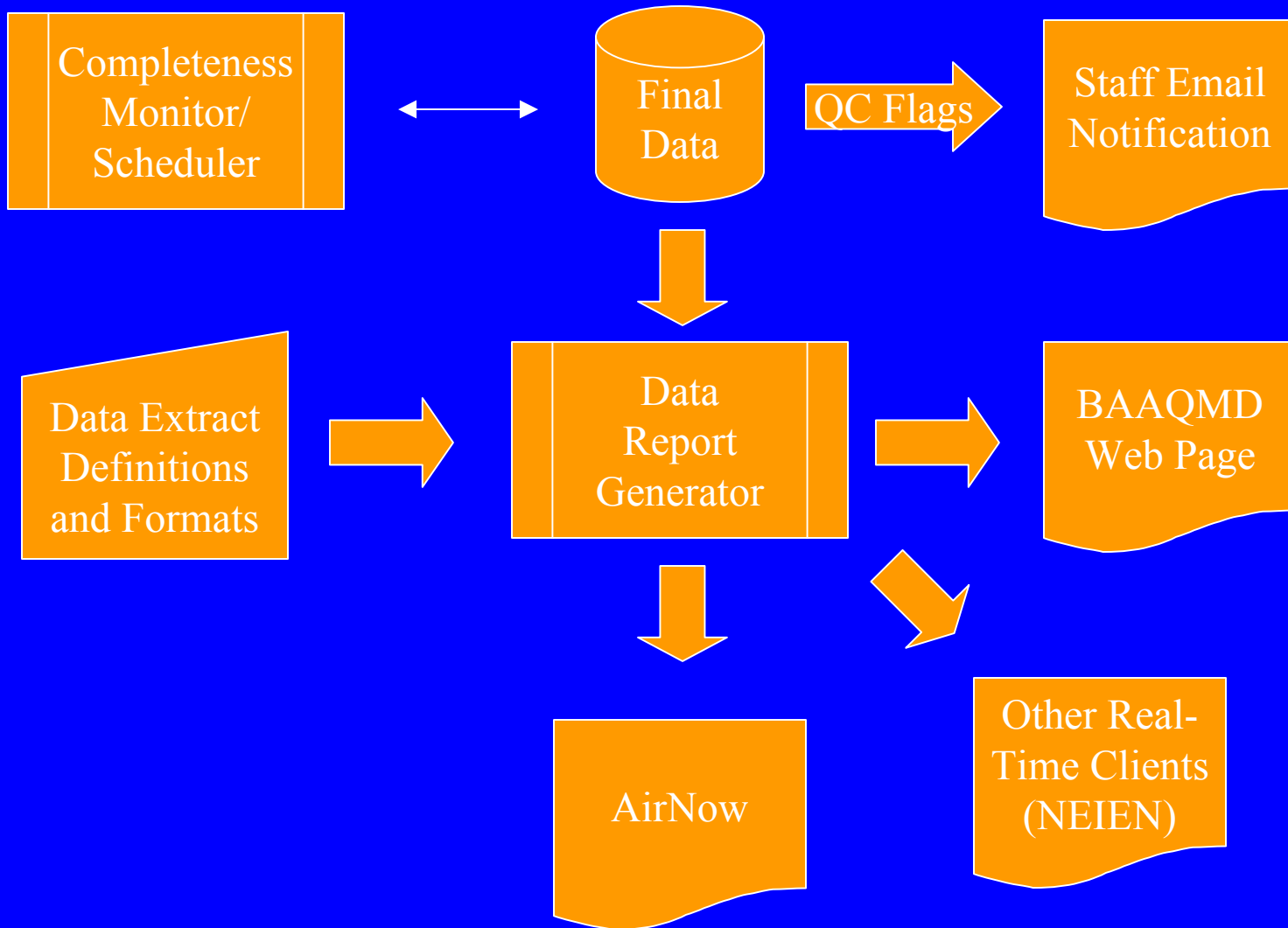
New Data Management System

- Local data storage/control
- SQL Server 2000 relational database
- Hour and/or Minute data records
- Temporary storage and purging of diagnostic data
- Design based on BAAQMD internal requirements, AQS, and AirNow

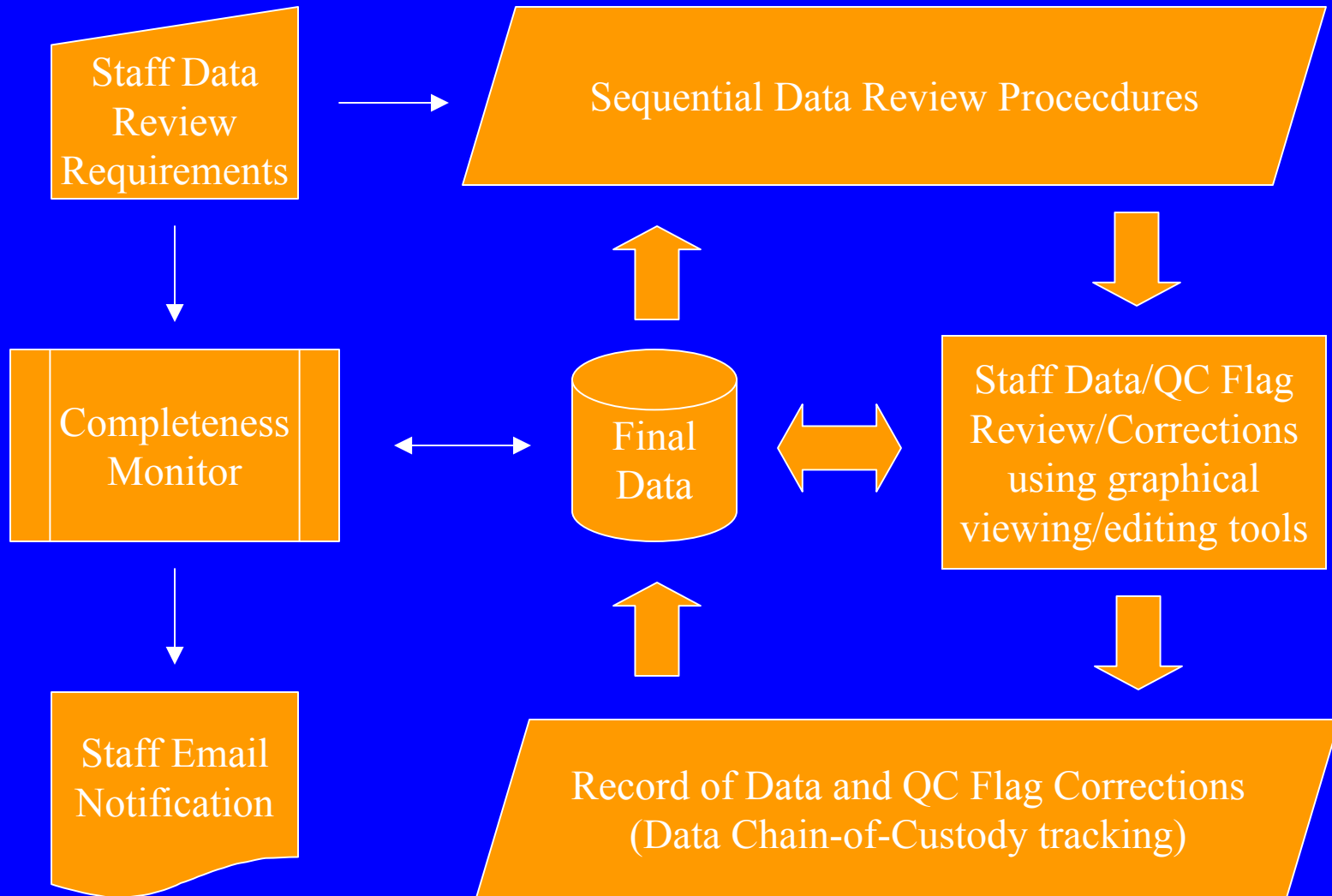
Automated DMS Data Ingest



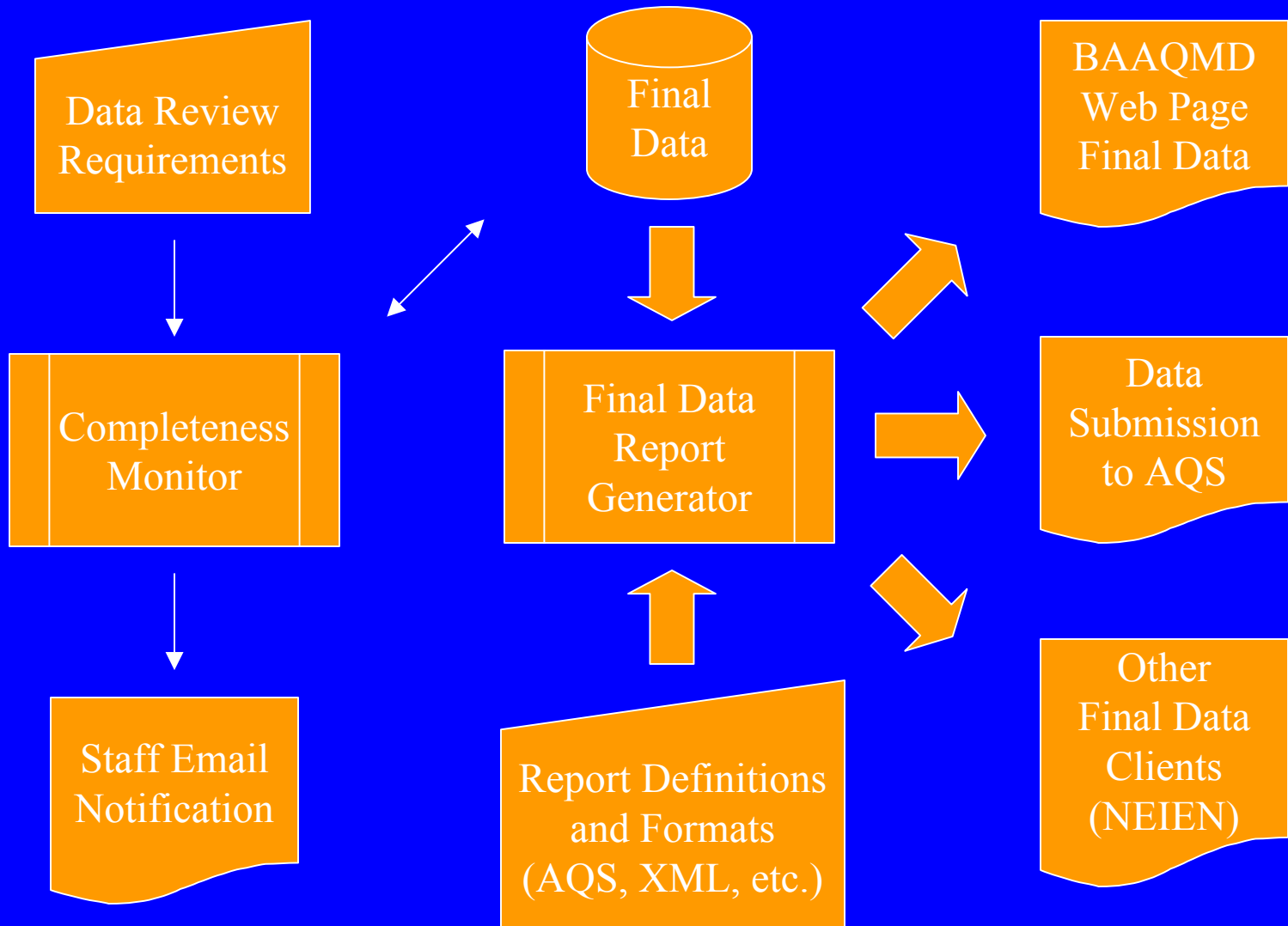
Automated DMS Data Extract



DMS Data Review



DMS Final Data Reporting



Deployment Timeline

- DAS testing in 2003, deploy in 2004
- Basic DMS design/development completed by July 2004 deployment
- Parallel test deployment at another AQMD
- Enhanced DMS development (NEIEN connectivity, XML submissions to CDX/AQS) by end of 2005
- Submittal to EPA for other S/L/T use

Funding Sources

- BAAQMD local funding (staff, network, test facilities)
- EPA Region IX 103 Grant
- National Environmental Information Exchange Network (NEIEN) Readiness Grant