



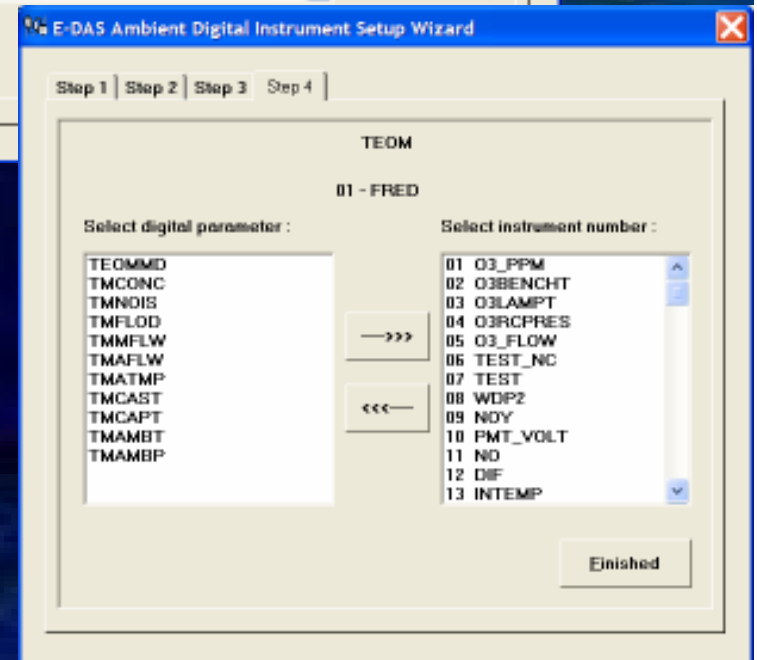
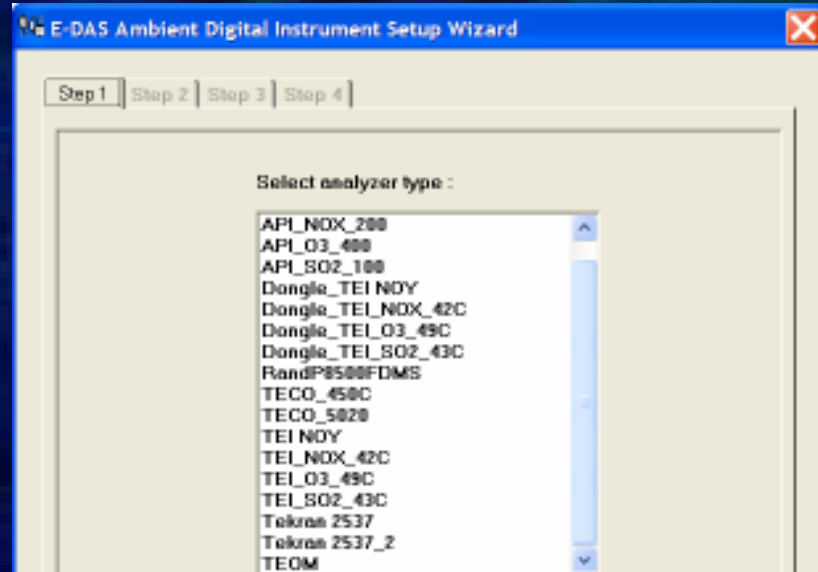
Agilaire LLC

www.agilairecorp.com

**Your Partner For Ambient
Technologies and Solutions**

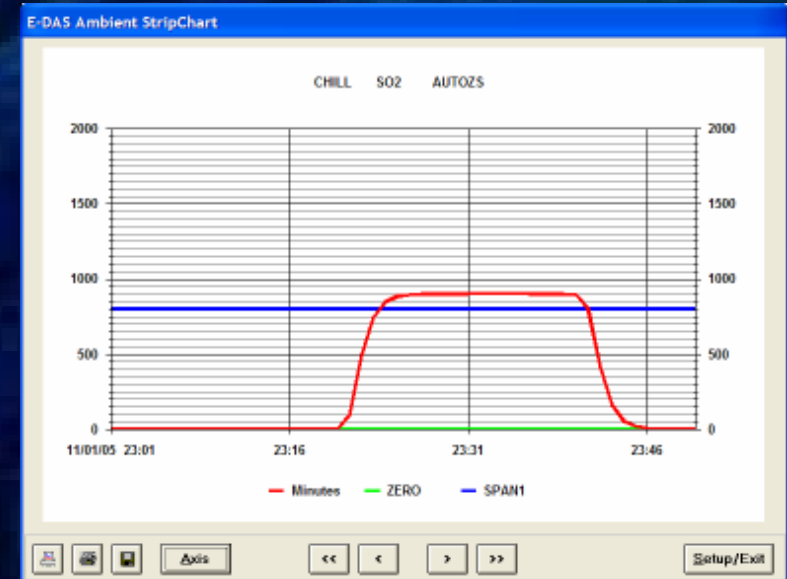
Let Me Take A Minute To Dispel A Myth

- Can the ESC (Agilaire) Logger do digital data acquisition?
 - YES!
- Can I do this with my 8816?
 - YES!
- Since the logger is limited to roughly 3 ports, can I multidrop several instruments to the same port?
 - Yes
 - Should allow a logger to manage 10-12 instruments
 - Time skew setting is *eliminated* with E-DAS 5.51 software
- We will be posting templates for NCore sites on our web site in December.



E-DAS 5.51 Update (Released)

- ❖ Calibration Control Chart
- ❖ Dynamic DNS (DDNS/DHCP) Polling Support
- ❖ Updated Digital Instrument Drivers for more instruments
 - ❖ Thermo I-Series
 - ❖ Tekran Hg
 - ❖ Optec NGN-2A, Sunset Labs
- ❖ AQS Null Code Pick List
- ❖ Expand AirNow parameter limit from 100 to 300 parameters



E-DAS Ambient Batch Editor

Select Instruments and Intervals to Batch Edit :

01 FRED	O3_PPM	001M
01 FRED	O3_PPM	001H
01 FRED	O3BENCHT	001M
01 FRED	O3BENCHT	001H
01 FRED	O3LAMP	001M
01 FRED	O3LAMP	001H
01 FRED	O3RCPRES	001M
01 FRED	O3RCPRES	015M
01 FRED	O3RCPRES	001H
01 FRED	O3_FLOW	001M
01 FRED	O3_FLOW	015M
01 FRED	O3_FLOW	001H
01 FRED	TEST	001M

Select All

Beginning Date and Time : 10/26/06 00:00

Ending Date and Time : 10/26/06 23:59

No flag changes
 Add these flags
 Remove these flags

Data Flags
States Flags

< P D T F B C M O U A + - R H L
h i j v w x y z i c
! ? * > = m ^ v e d 9 Q

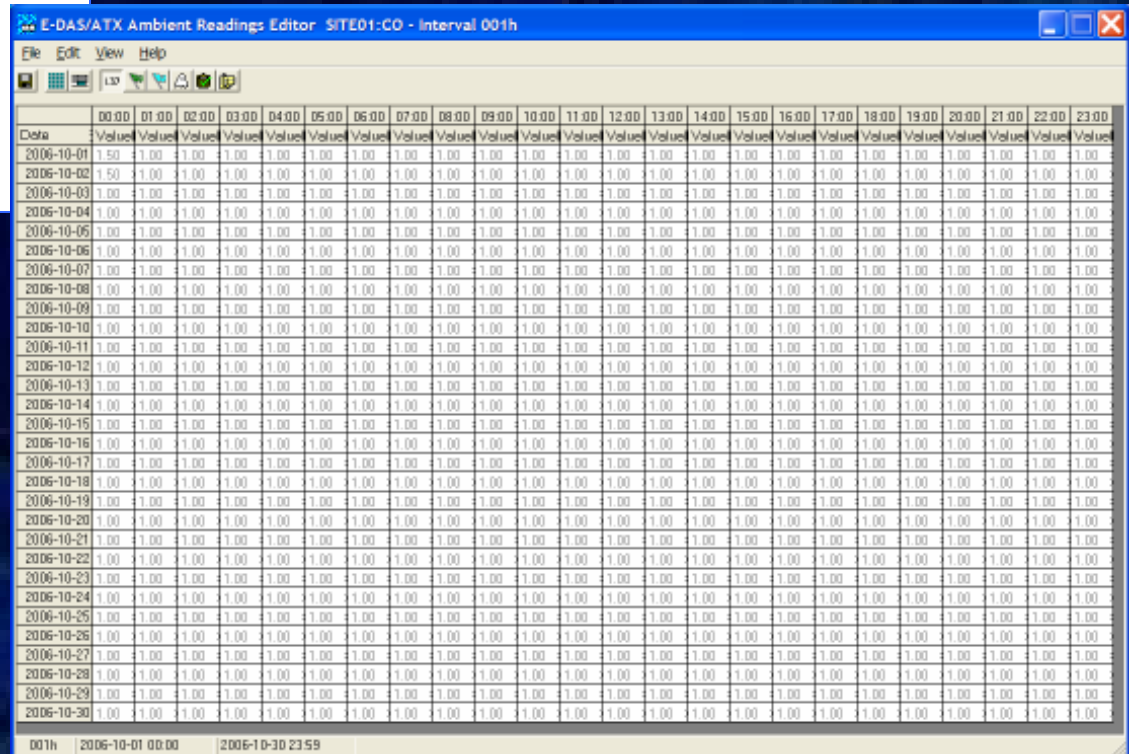
No data changes
 Wipe out data
 Minimum detectable
 ΔIRS null code substitution
 Add AQS null code (**)

Math changes
 Multiply by a constant
 Add a constant

AQS Code: AA - Sample pressure out of limits
AB - Technician unavailable
AC - Construction/repairs in area
AD - Shelter storm damage
AE - Shelter Temperature out of limits
AF - Scheduled but not collected
AG - Sample Transport Limit

ATX 4.1 Update (in QA)

- ❖ Matrix Data Editor
- ❖ XML Reporting for Exchange Network
- ❖ Calibration Data Editor
- ❖ Support for GSI and Rolling Average Channel Types



The screenshot displays the 'E-DAS/ATX Ambient Readings Editor' window for 'SITE01:CO - Interval 001h'. The interface includes a menu bar (File, Edit, View, Help) and a toolbar. The main data area is a grid with the following structure:

Data	00:00	01:00	02:00	03:00	04:00	05:00	06:00	07:00	08:00	09:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00
2006-10-01	1.50	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
2006-10-02	1.50	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
2006-10-03	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
2006-10-04	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
2006-10-05	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
2006-10-06	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
2006-10-07	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
2006-10-08	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
2006-10-09	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
2006-10-10	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
2006-10-11	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
2006-10-12	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
2006-10-13	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
2006-10-14	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
2006-10-15	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
2006-10-16	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
2006-10-17	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
2006-10-18	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
2006-10-19	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
2006-10-20	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
2006-10-21	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
2006-10-22	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
2006-10-23	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
2006-10-24	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
2006-10-25	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
2006-10-26	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
2006-10-27	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
2006-10-28	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
2006-10-29	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
2006-10-30	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

001h | 2006-10-01 00:00 | 2006-10-30 23:59

The Challenge (Us and Industry)

All existing Ambient Air Data Acquisition Systems are based on an architecture that assumes all data comes through a site data logger

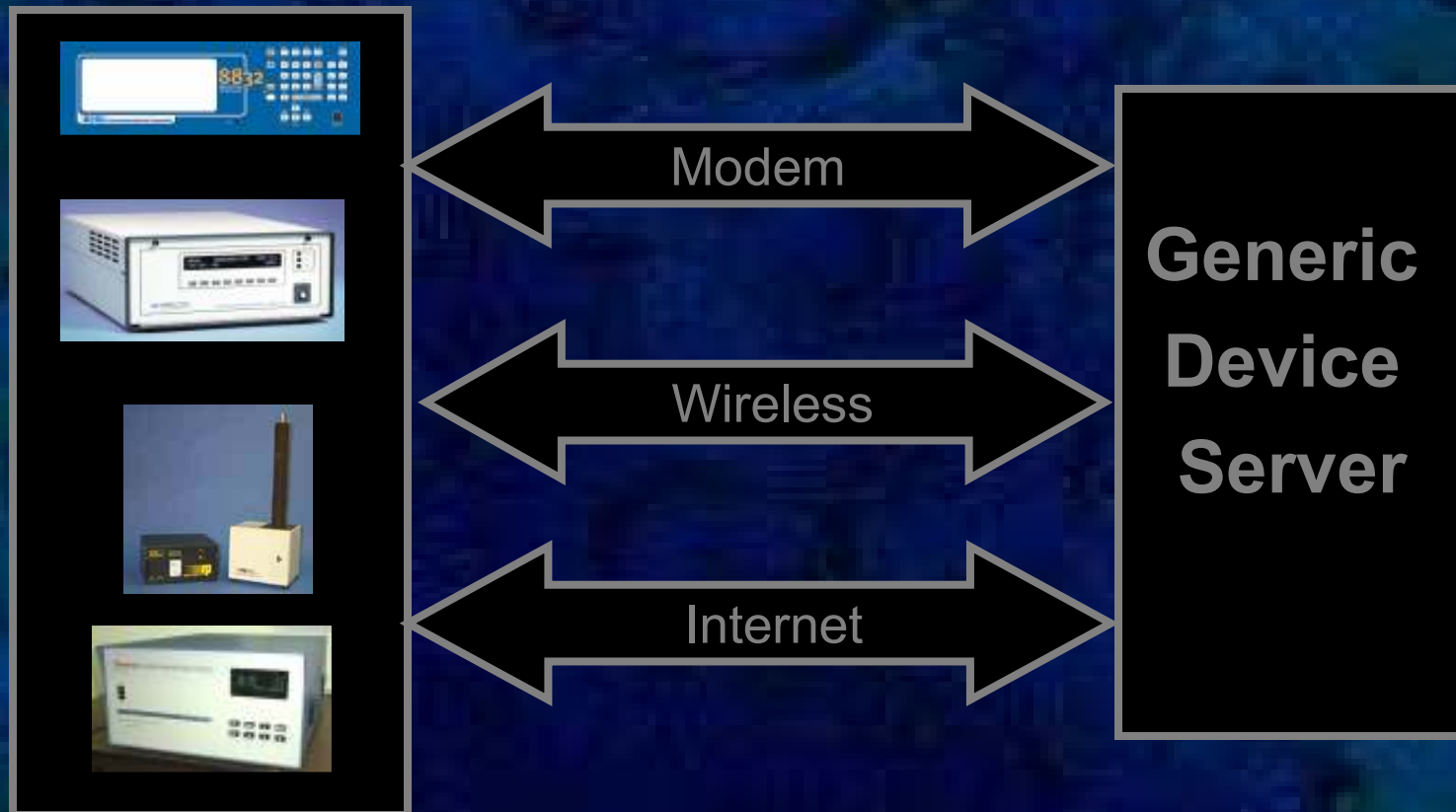
Current data flow requirements no longer fit this model, such as:

- ❖ PM sampler manually collected data
- ❖ Air toxics lab results
- ❖ Single analyzer sites

Sharing this data with the Exchange Network (XML format) would be nice, too



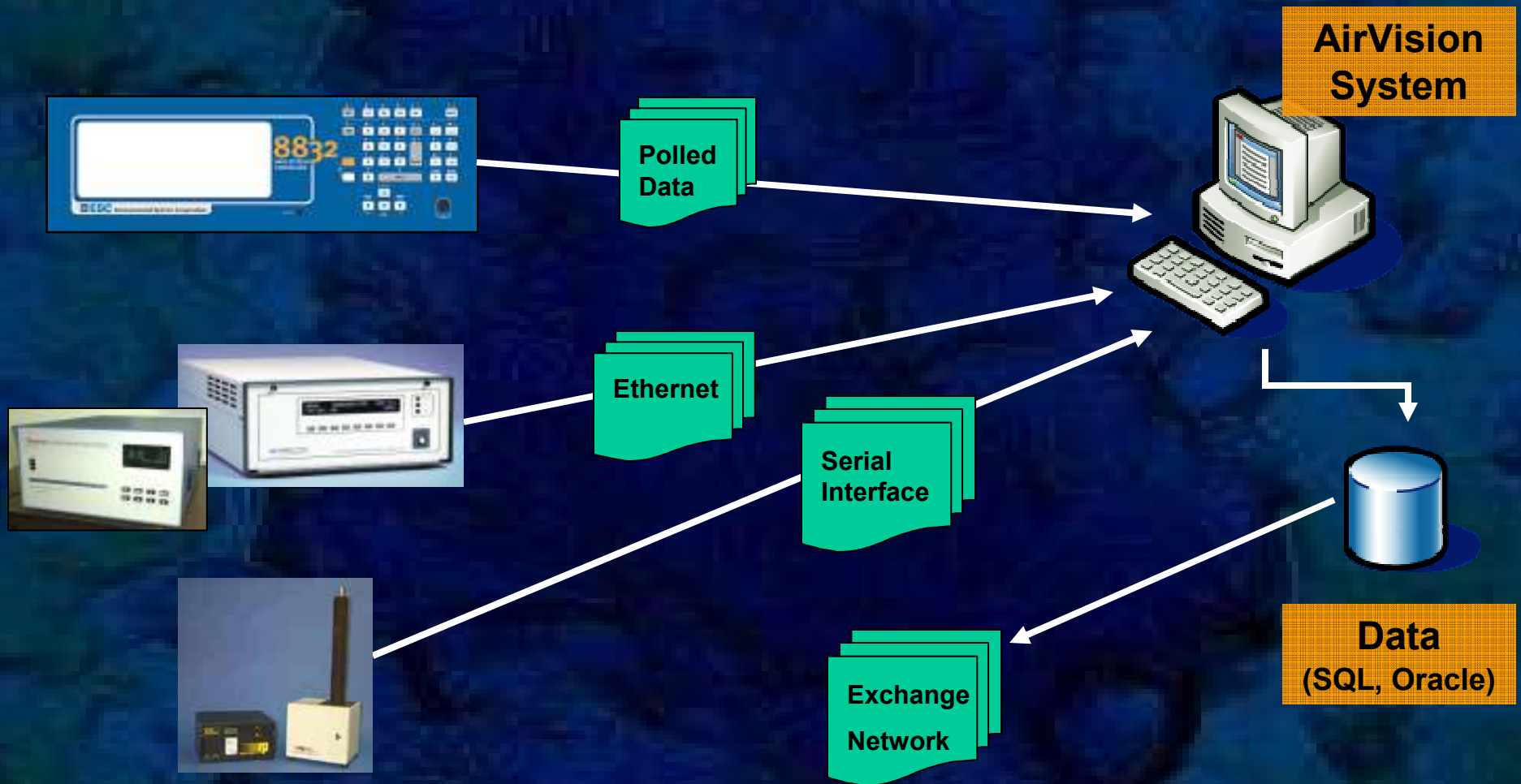
What we really need..



Is a system that takes a generic view of “collecting data.” It could be polling a logger, sending protocol-specific commands to an analyzer, transferring a file from a PM sampler, or even querying a remote lab database or Exchange Network server

It should be expandable and have a standard API

And That's Exactly What We're Doing With **AirVision™**



Let's Take One Case (the hardest one):

PM Sampler Data, Lab Filter and Air Toxics Data Files

```
ebam - Notepad
File Edit Format View Help
(%) , BV(V) , FT(C) , Alarm
05-AUG-2005 16:10:00 , -0.000 , -0.000 , 4.7 , 2.6 ,
05-AUG-2005 16:20:00 , -0.001 , -0.000 , 9.6 , 0.3 ,
05-AUG-2005 16:30:00 , -0.005 , -0.000 , 16.7 , 0.3 ,
05-AUG-2005 16:40:00 , 0.006 , -0.000 , 16.7 , 0.3 ,
05-AUG-2005 16:50:00 , 0.005 , -0.000 , 16.7 , 0.3 ,
05-AUG-2005 17:00:00 , -0.005 , -0.005 , 16.7 , 0.3 ,
05-AUG-2005 17:10:00 , 0.012 , -0.005 , 16.7 , 0.3 ,
05-AUG-2005 17:20:00 , 0.016 , -0.005 , 16.7 , 0.3 ,
05-AUG-2005 17:30:00 , 0.002 , -0.005 , 16.7 , 0.3 ,
05-AUG-2005 17:40:00 , -0.002 , -0.005 , 16.7 , 0.3 ,
05-AUG-2005 17:50:00 , -0.005 , -0.005 , 16.7 , 0.3 ,
05-AUG-2005 18:00:00 , 0.003 , -0.000 , 16.7 , 0.3 ,
05-AUG-2005 18:10:00 , 0.001 , -0.000 , 16.7 , 0.3 ,
05-AUG-2005 18:20:00 , 0.009 , -0.000 , 16.7 , 0.3 ,
05-AUG-2005 18:30:00 , -0.005 , -0.000 , 16.7 , 0.3 ,
05-AUG-2005 18:40:00 , 0.010 , -0.000 , 16.7 , 0.3 ,
```

Met One

Microsoft Excel - ExampleDataOutput

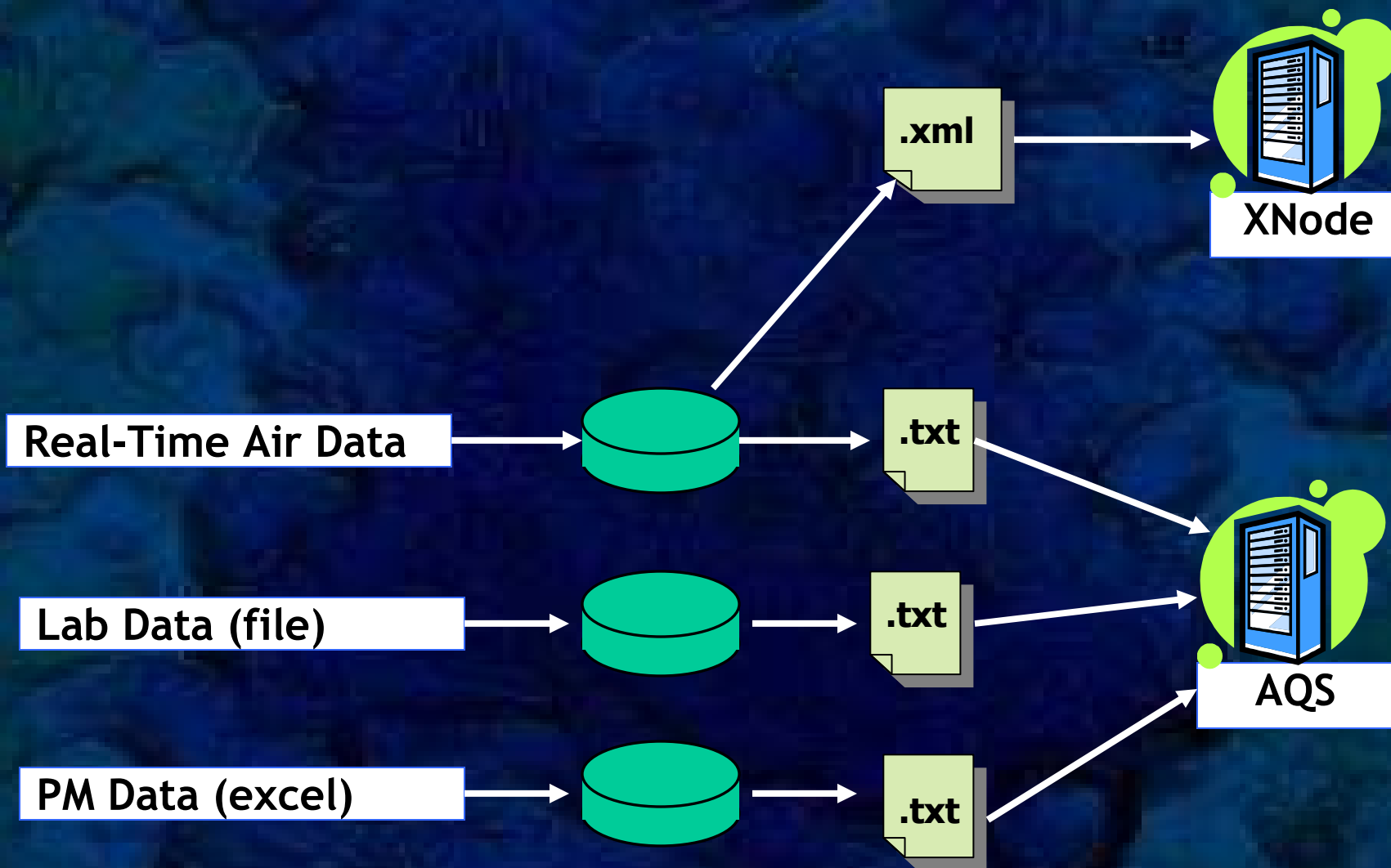
File Edit View Insert Format Tools Data Window ACT

D4 4.332

	A	B	C	D	E	F	
1	SampleID	ethylene	acetylene	ethane	propylene	propane	isol
2	15YS0024	8.7	6.0	6.6	4.2	8.3	
3	21YS0024	2.7	1.7	3.3	1.5	4.6	
4	27YS0024	5.4	4.0	4.3	2.7	5.9	
5	02US0024	7.0	5.8	5.1	3.2	8.0	
6	08US0024	2.1	1.5	3.0	1.0	3.0	
7	14US0024	4.6	3.6	4.0	1.9	5.0	
8	20US0024	4.0	2.5	4.1	1.9	6.3	
9	26US0024	3.9	2.7	4.0	1.7	6.0	

Air Toxics Samples

Current Approach



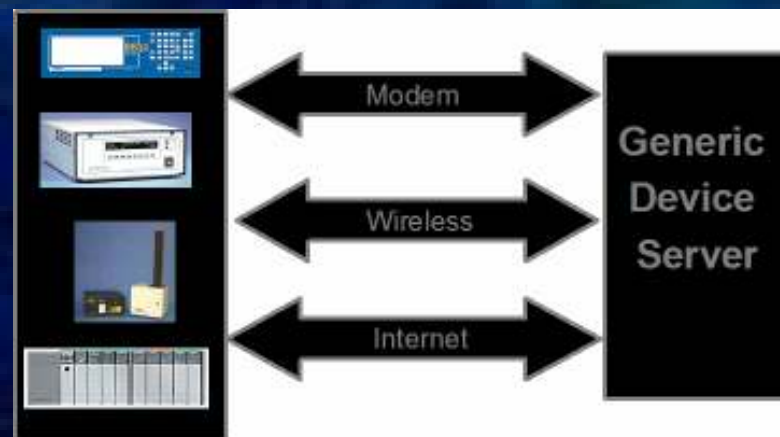
A Solution

Using the same “Open Driver”
approach used by E-DAS for
serial/network interfaces to
analyzers, we can create a single tool
that consults a “driver” for each
type of file import

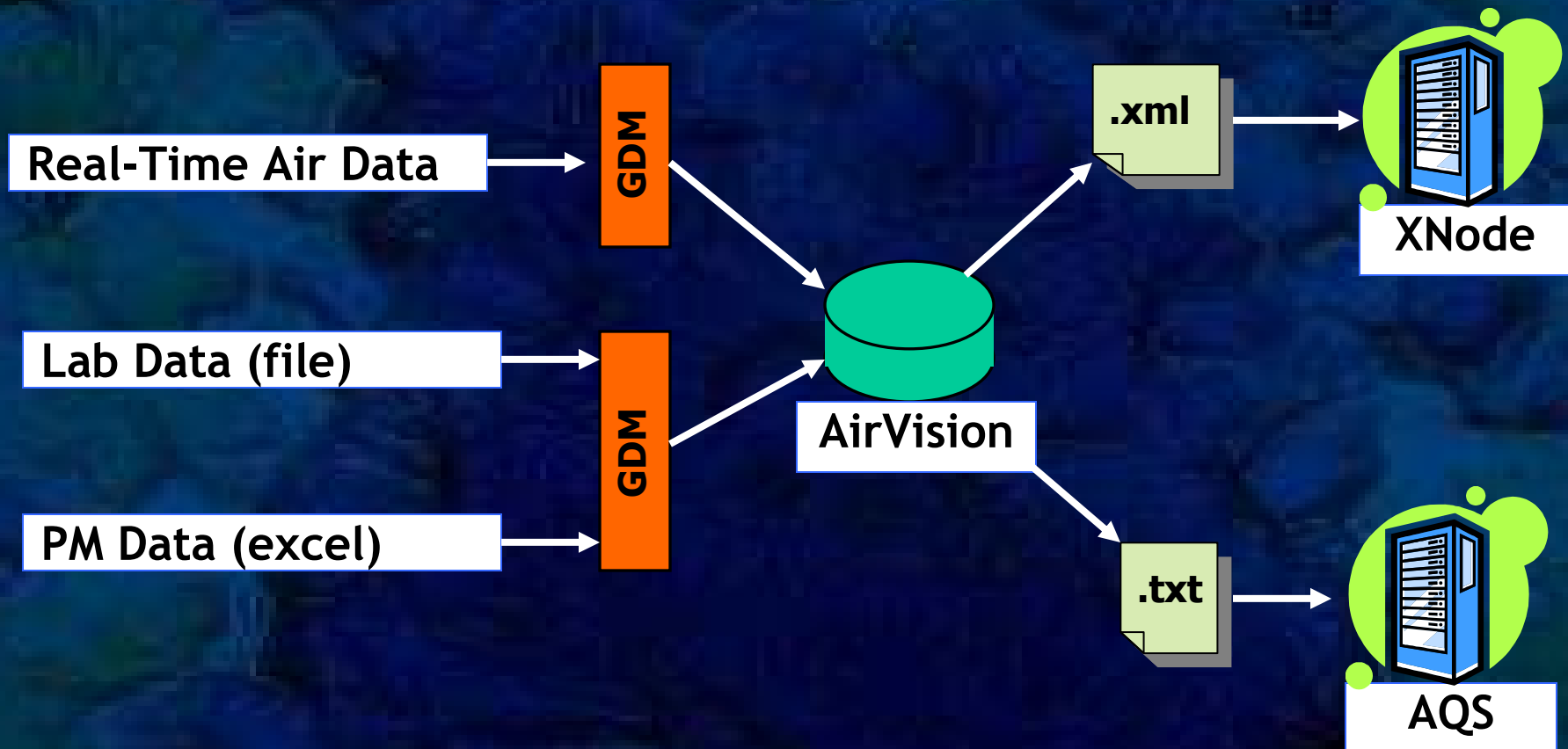
New drivers can be designated by the
user when new file types appear or
variations occur (common with air
toxics data)

New software doesn't have to be
developed as new file types come
available

Coupled with an automated file transfer
system from remote samplers (or FTP
for lab data), the whole process can
be automated



Idealized Approach- AirVision



SDAPCD Project Specifics

Retain existing architecture (for now) for real-time data coming into ATX

Utilize new architecture for air toxics and PM data, with PM files collected manually

File submission and review through web-based tool

Coupled with an automated file transfer system from remote samplers (or FTP for lab data), the whole process eventually can be automated

Source Details (Edit)

Site: Name: Enabled

Description:

Communication Type: Percent Valid, Base: ID Address:

Host Code: Percent Valid, Ext: Password:

Phone: Baud Rate:

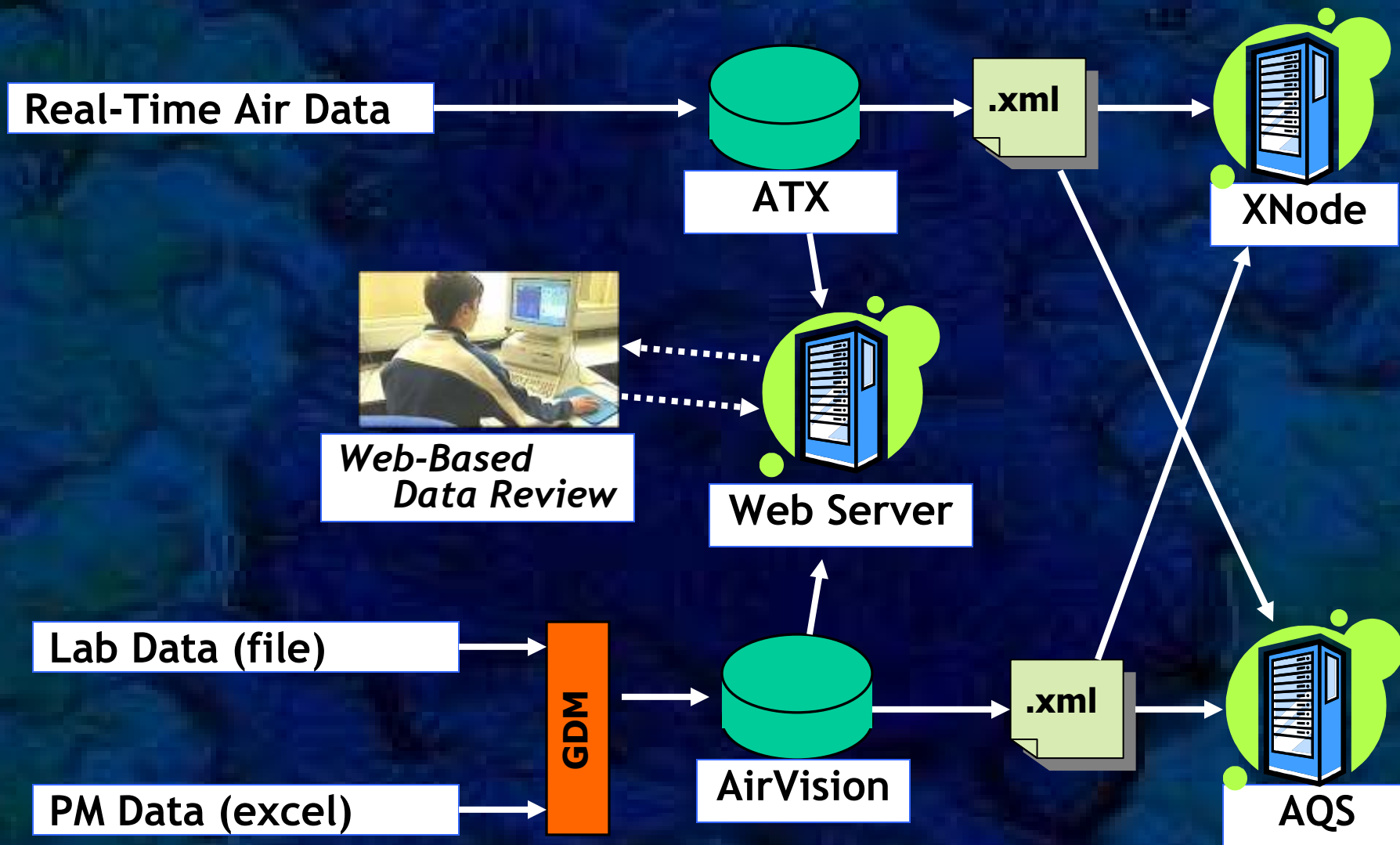
Host IP / Name: Port:

File Structure Name:

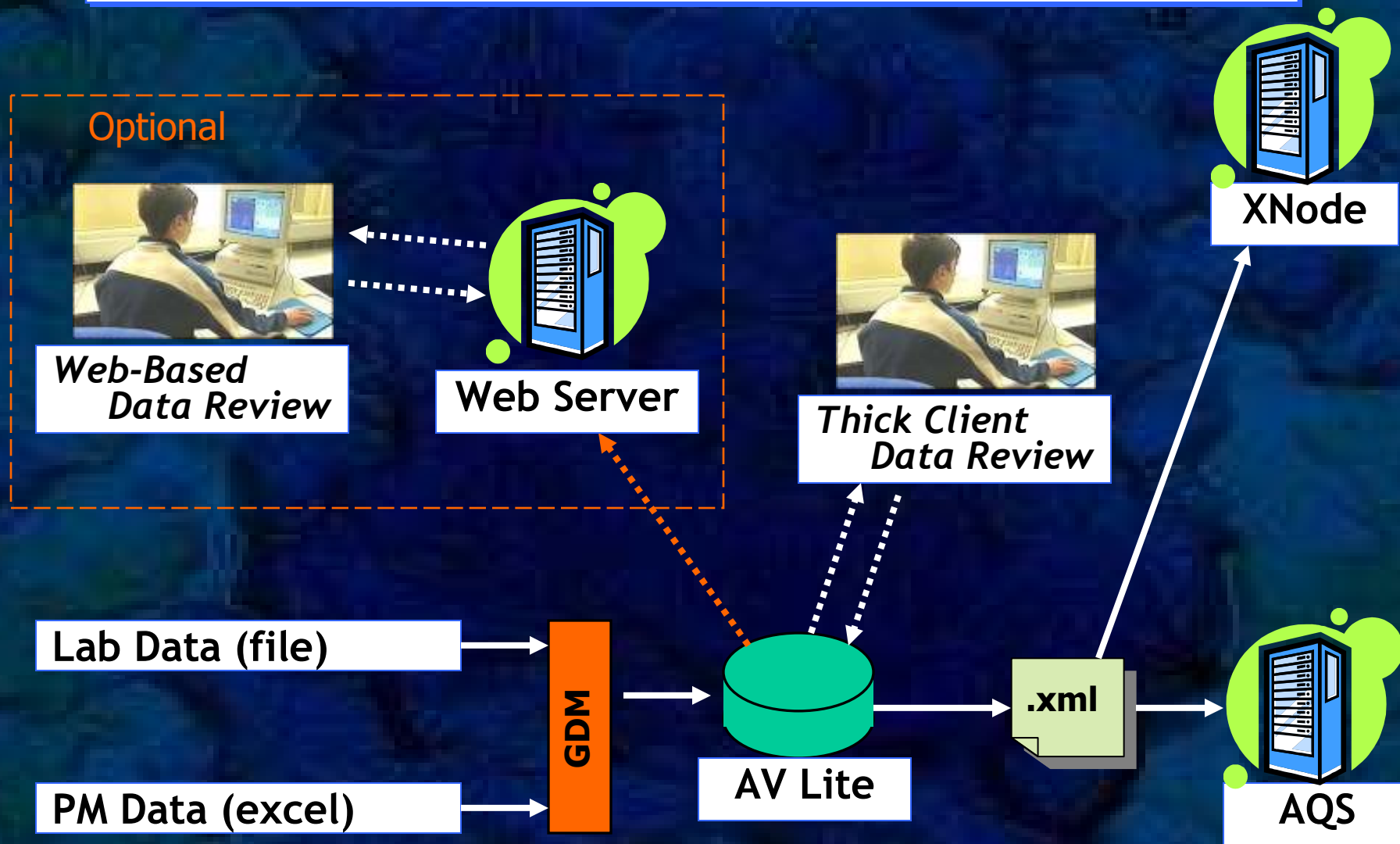
Date Format: No. of Header Rows: File Delimiter:

Time Format: No. of Footer Rows:

Revised Approach- SDAPCD Project



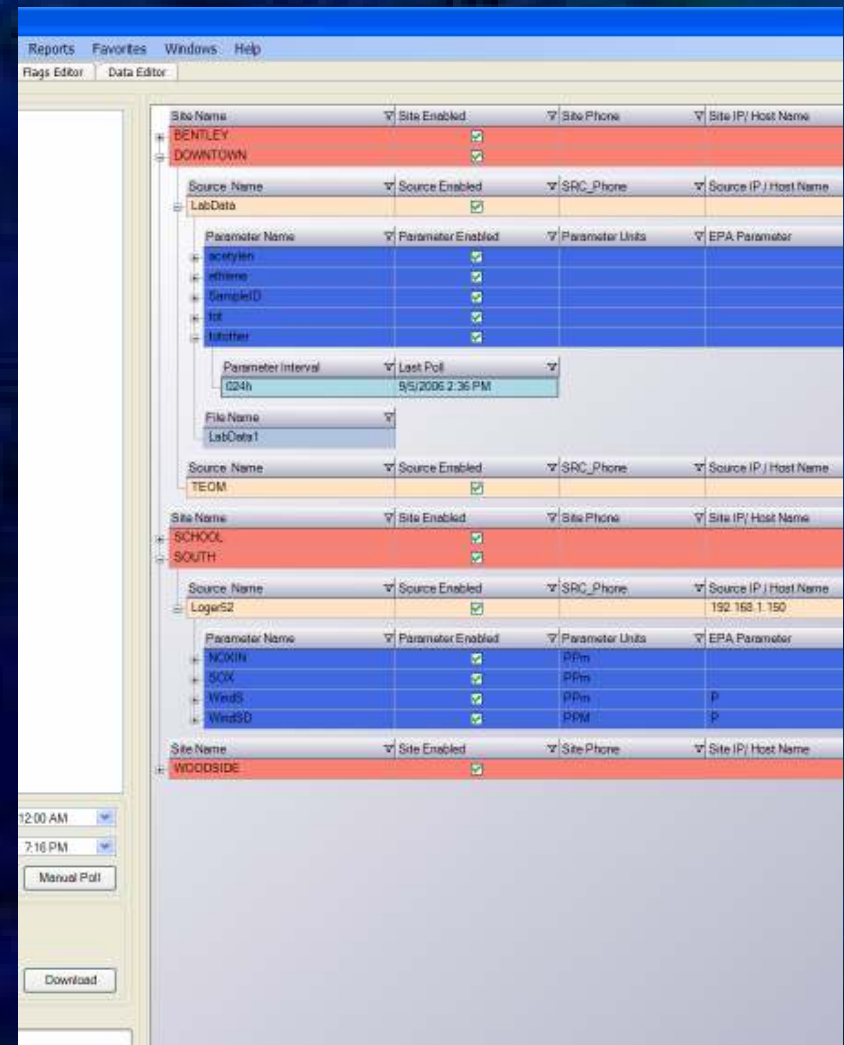
Stand-Alone Architecture For Lab Data (Any Agency)



But That's Just Scratching **AirVision™** 's Surface

AirVision™ will offer:

- ❑ Support for more and more data sources, evolving as the industry evolves
- ❑ Editor and report “save as” Favorites
- ❑ Post-processing Plug-Ins:
 - ❑ Automated data “grading”
 - ❑ (e.g., “at site NORTH if temperature is < 72 degrees and ozone > 50 ppb, mark with quality code ‘6’)
- ❑ Automated data corrections before or after web/AirNow publishing



But That's Just Scratching **AirVision™** 's Surface

AirVision™ will offer:

- ❑ SQL and Oracle DBS options
- ❑ Ad hoc / web reporting using SQL Reporting Services
- ❑ Full PARS Data Management
- ❑ Integrated Inventory and Preventative Maintenance Management Module

The screenshot displays the AirVision software interface, which is a web-based data management tool. The interface features a menu bar at the top with options like 'Reports', 'Favorites', 'Windows', and 'Help'. Below the menu bar, there are tabs for 'Flags Editor' and 'Data Editor'. The main content area is a hierarchical tree view showing data for three sites: BENTLEY DOWNTOWN, SCHOOL SOUTH, and WOODSIDE. Each site has a 'Source Name' field, a 'Source Enabled' checkbox, and a 'SRC_Phone' field. Underneath each source, there are 'Parameter Name' fields, 'Parameter Enabled' checkboxes, 'Parameter Units', and 'EPA Parameter' codes. For example, under BENTLEY DOWNTOWN, parameters include 'Acetylen', 'Ethylene', 'SampleID', 'TSP', and 'Nitroben'. A 'Parameter Interval' dropdown is set to 'Last Poll' with a value of '5/5/2006 2:35 PM'. A 'File Name' field shows 'LabData1'. At the bottom left, there are time selection dropdowns for '12:00 AM' and '7:16 PM', a 'Manual Poll' button, and a 'Download' button.

Migration Paths

Digital Connections (Diagnostic and Trace Readings)



Model 8816/8832



Analyzers
(Multiple)



PM Samplers, BOC,
Aethelometers, Met, etc.
(Multiple)

Legacy Analog

Digital Connections

AirVision Site Node

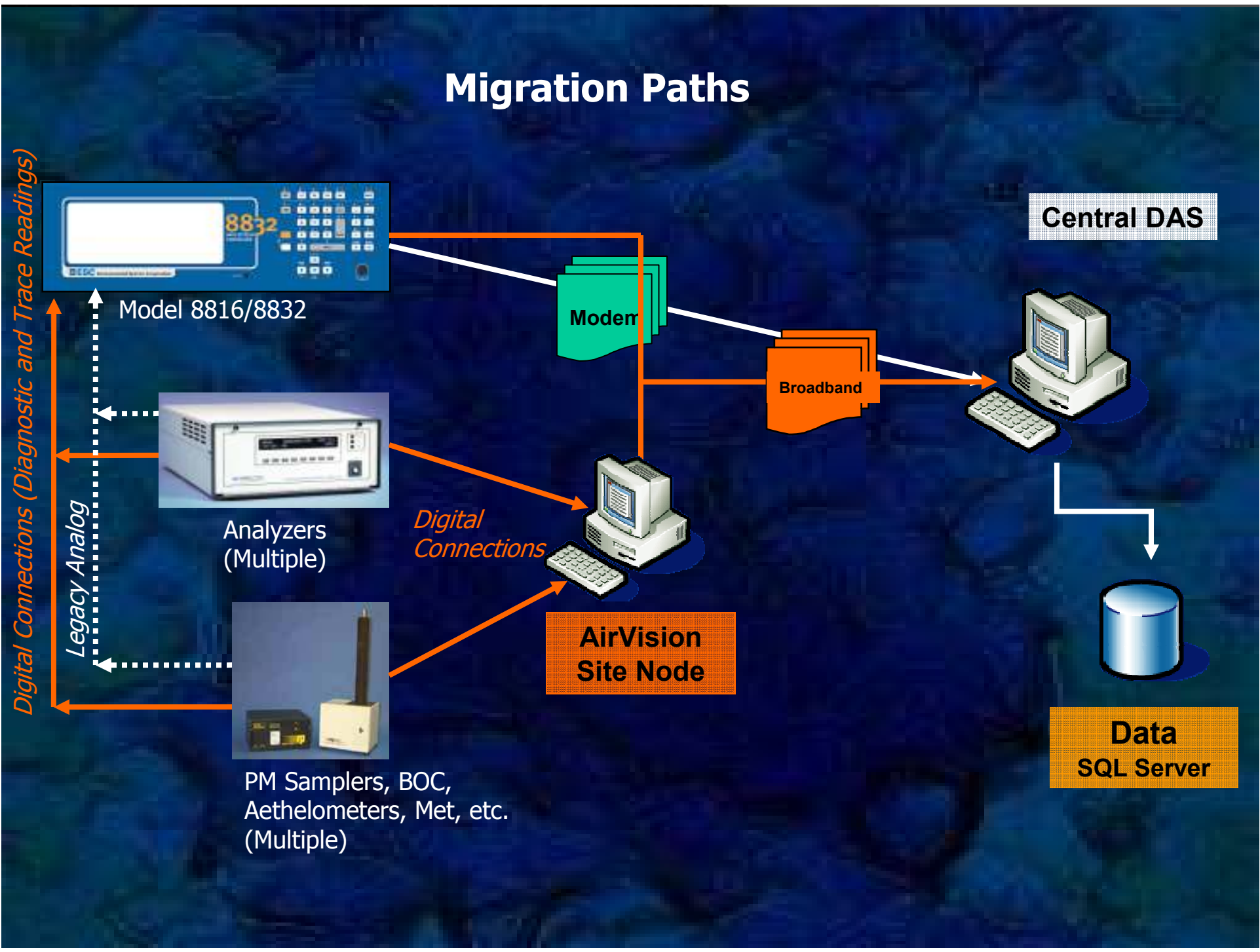
Modem

Broadband

Central DAS

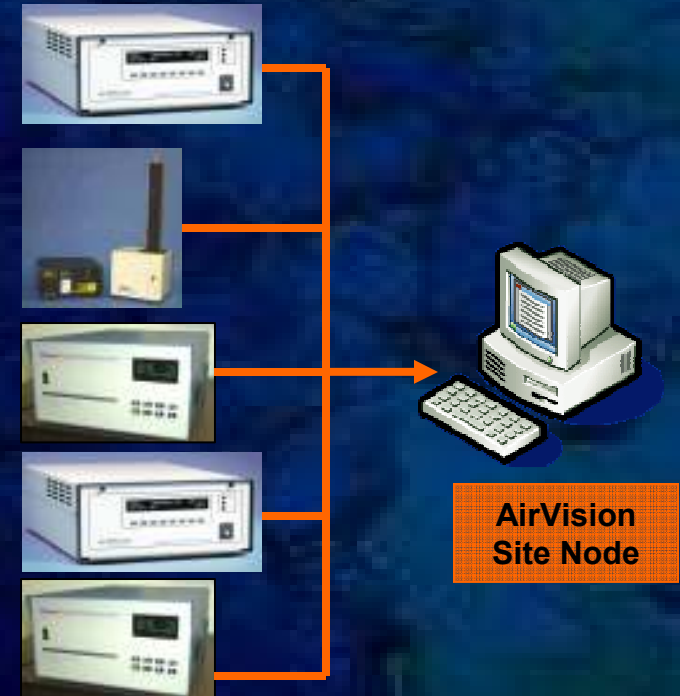


Data SQL Server



Challenge With PC Nodes As Real-Time Collectors

- ❑ Windows is NOT a deterministic real-time multitasking system like embedded data loggers
 - ❑ Task priority problems or hangups can affect overall data collection rate
 - ❑ Windows wasn't designed to manage 20-odd serial COM tasks at once in a time critical manner
- ❑ Power failure effects on intermediate data buffers / files in progress
- ❑ Time from power restoration to full data acquisition restart



In closing...

- ❑ We've put together ~ 30 customer interviews in the design for AirVision, bringing together key ideas from several 'power users' in the industry
- ❑ Existing products will continue to be enhanced
 - ❑ Adoption period of 5 years?
- ❑ Contact us /consult web site with any questions about digital data logging

