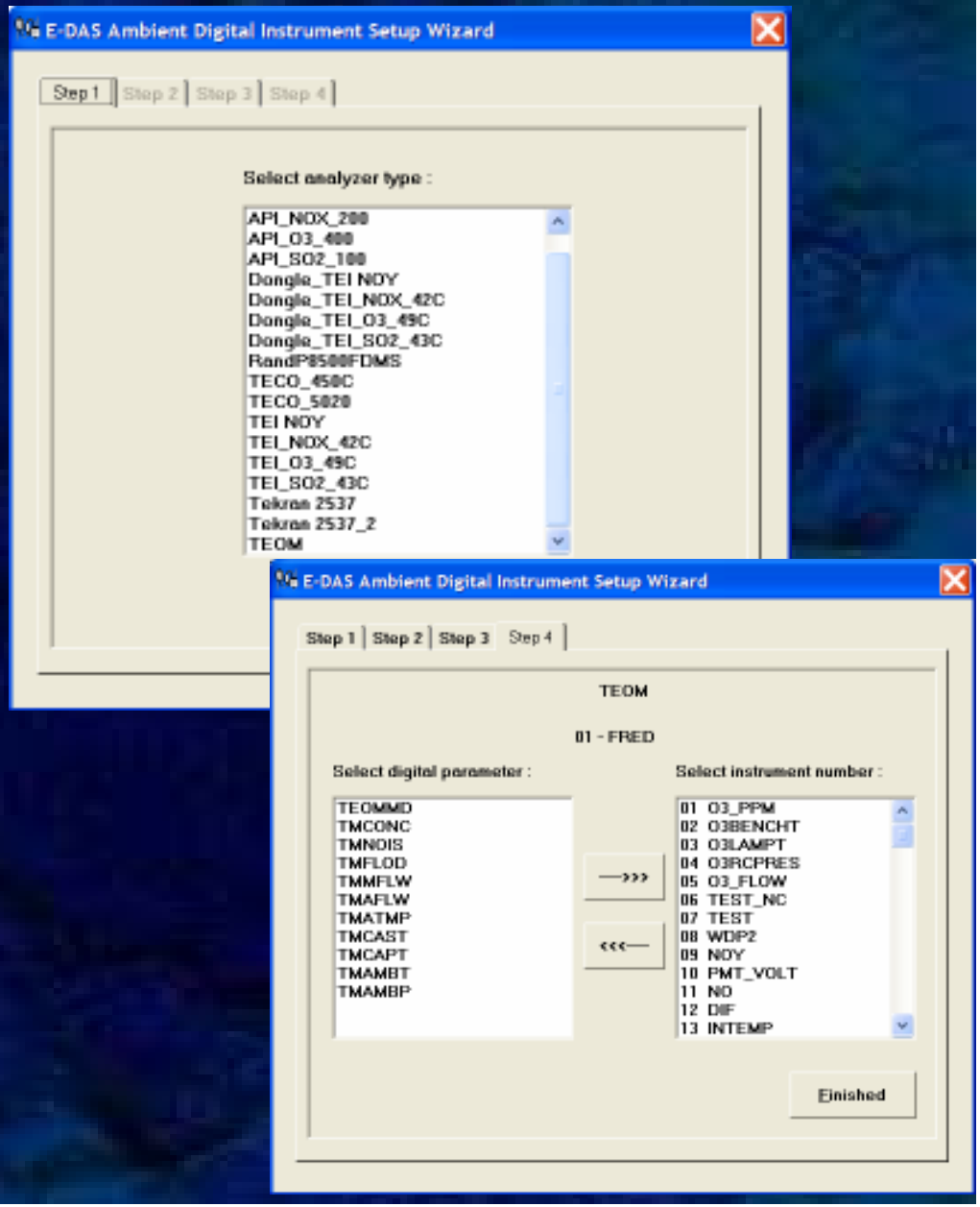
Agilaire LLC

www.agilairecorp.com

Your Partner For Ambient Technologies and Solutions

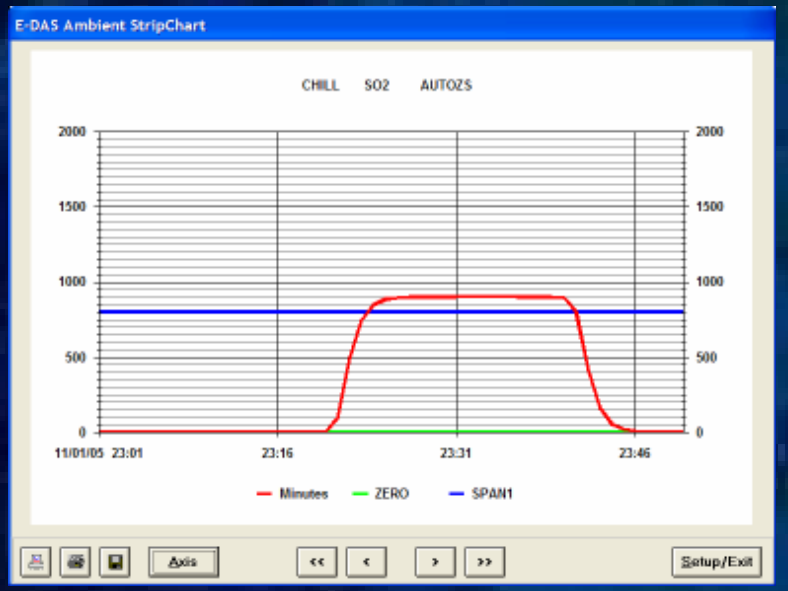
Let Me Take A Minute To Dispel A Myth

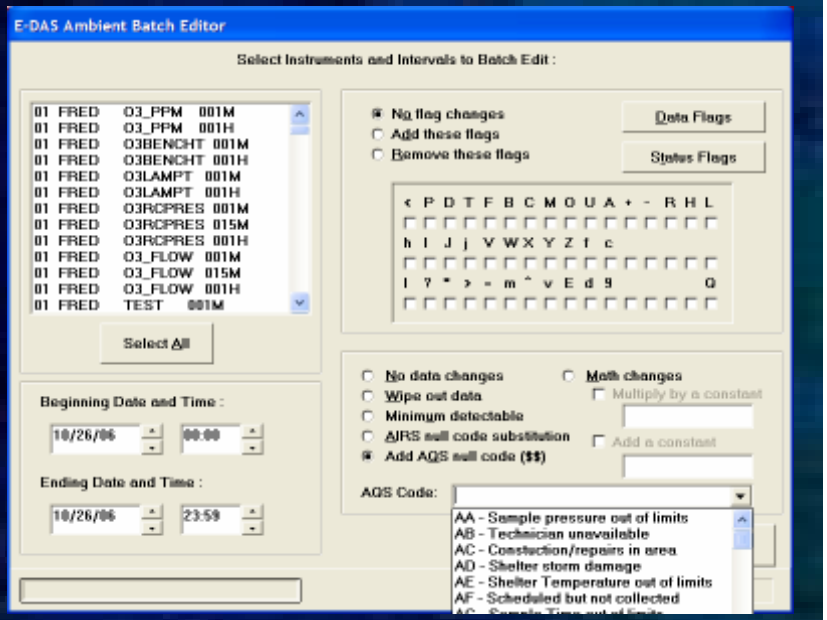
- Can the ESC (Agilaire) Logger do digital data acquisition?
  - YES!
- Can I do this with my 8816?
  - YES!
- Since the logger is limited to roughly 3 ports, can I multidrop several instruments to the same port?
  - Yes
  - Should allow a logger to manage 10-12 instruments
  - Time skew setting is *eliminated* 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)

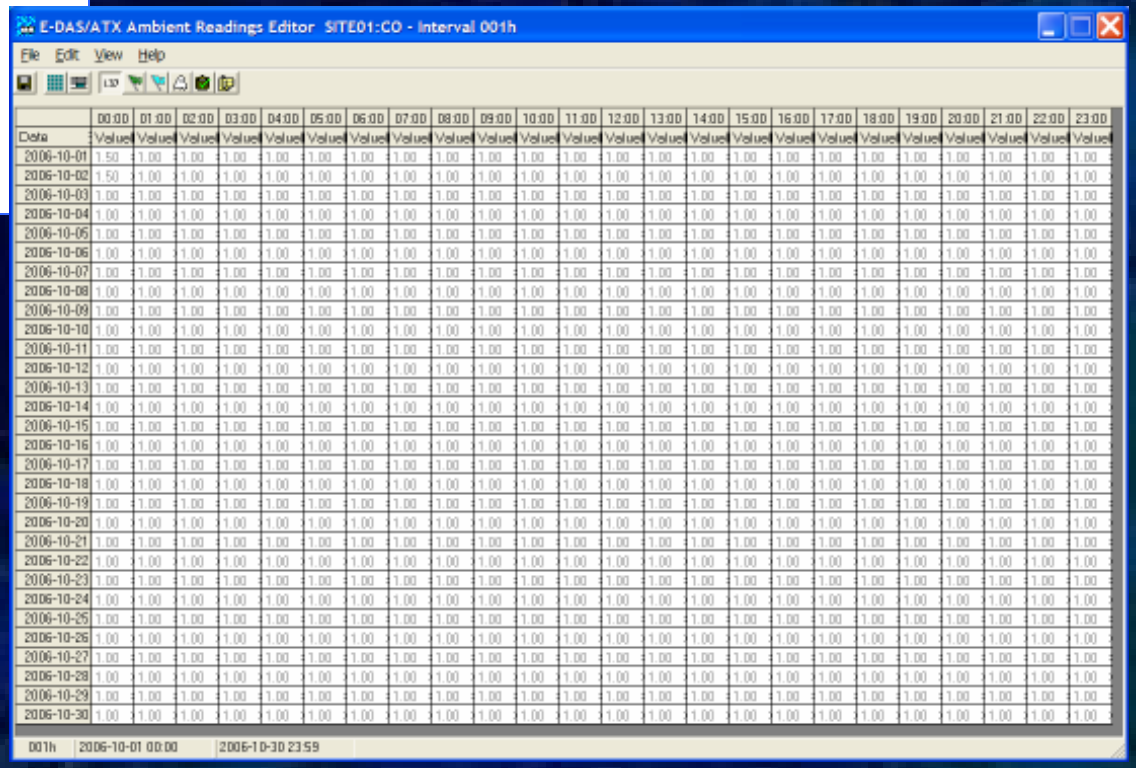
- Calibration Control Chart
- Dynamic DNS (DDNS/DHCP) Polling Support
- Updated Digital Instrument Drivers for more instruments
  - Thermo I-Series
  - Tekran Hg
  - Optec NGN-2A, Sunset Labs
- AQS Null Code Pick List
- Expand AirNow parameter limit from 100 to 300 parameters





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 Challenge (Us and Industry)

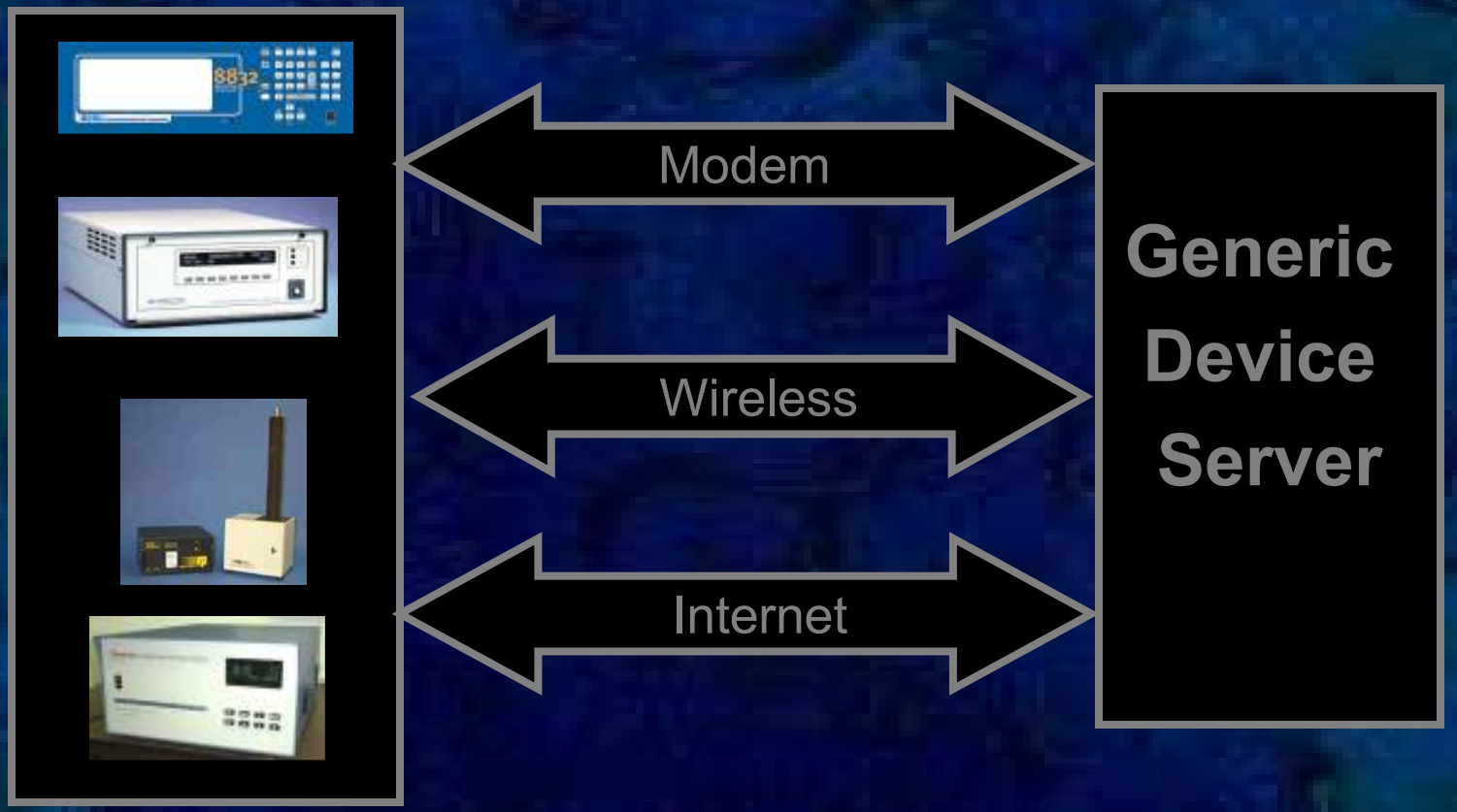
All existing Ambient Air Data Acquisition Systems are based on an architecture that assumes all data comes through a site data logger

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

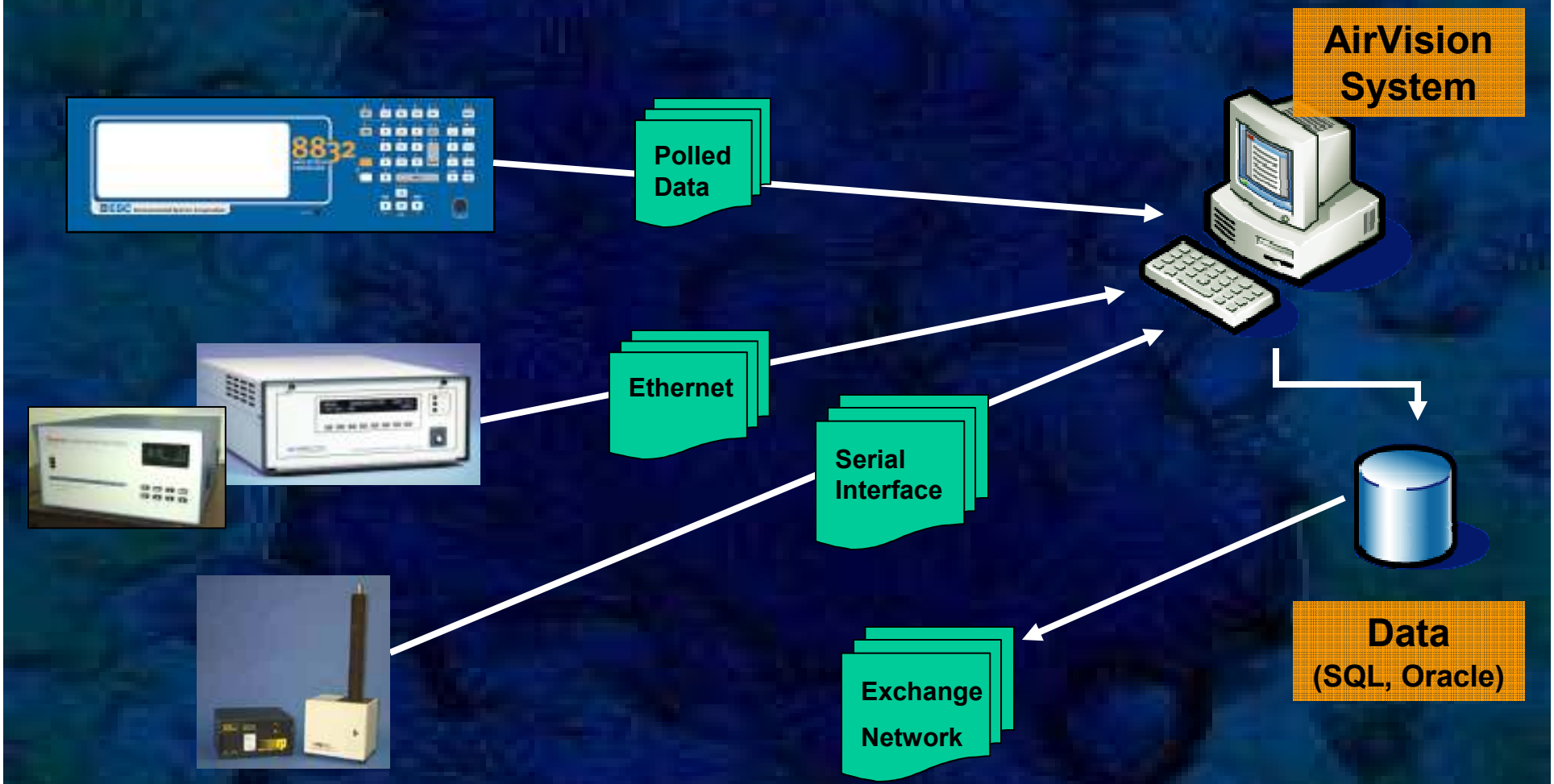
What we really need..



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,
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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,
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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,
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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

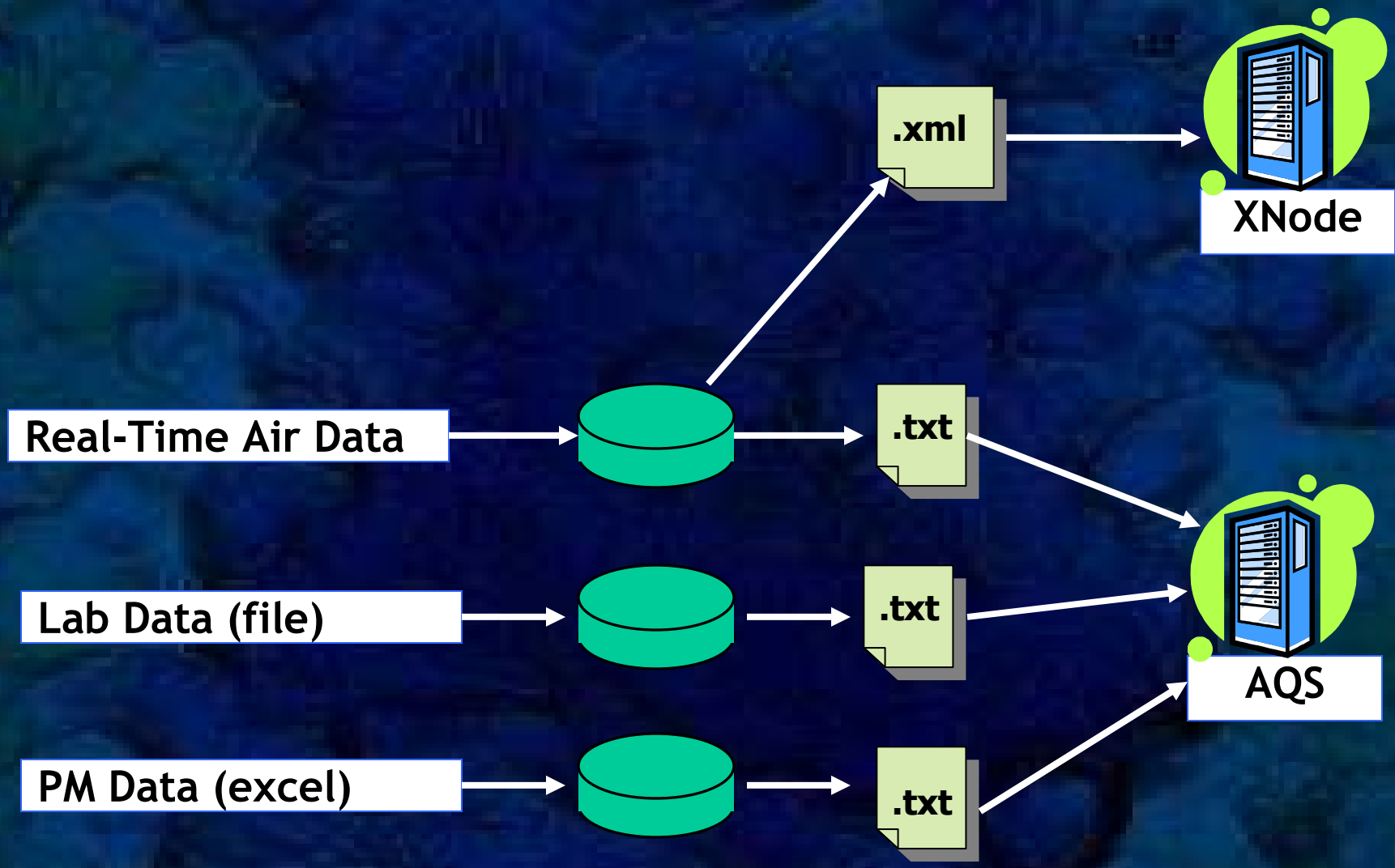
File Edit View Insert Format Tools Data Window ACT

D4 fx 4.332

	A	B	C	D	E	F
1	SampleID	ethylene	acetylene	ethane	propylene	propane
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



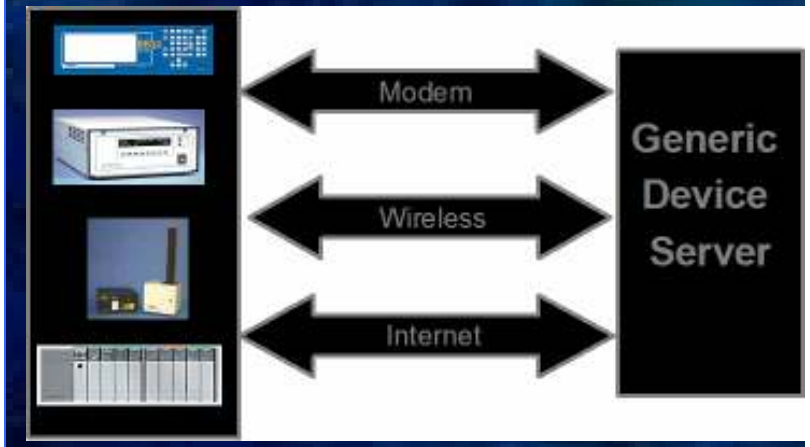
A Solution

Using the same “Open Driver” approached 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

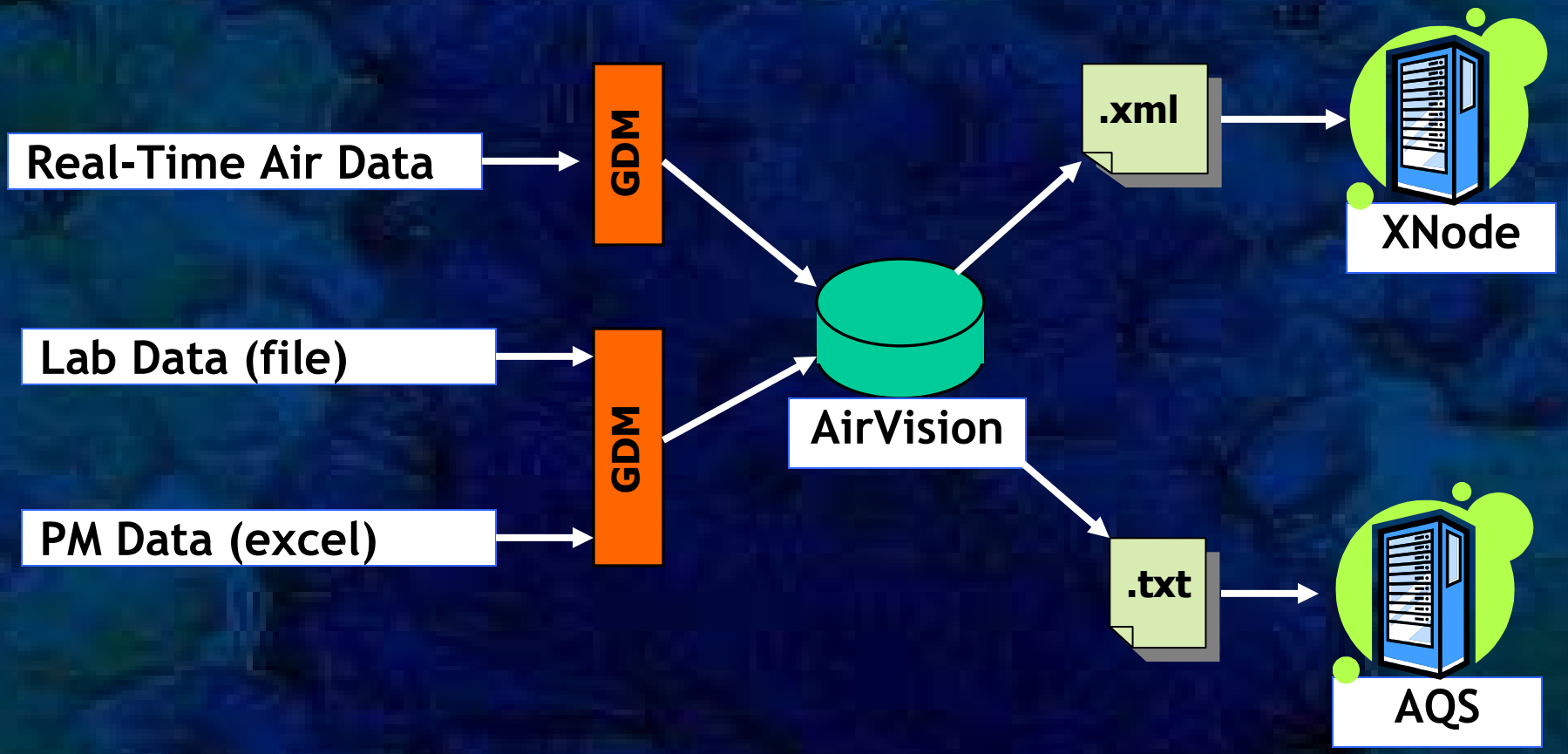
New drivers can be designated by the user when new file types appear or variations occur (common with air toxics data)

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



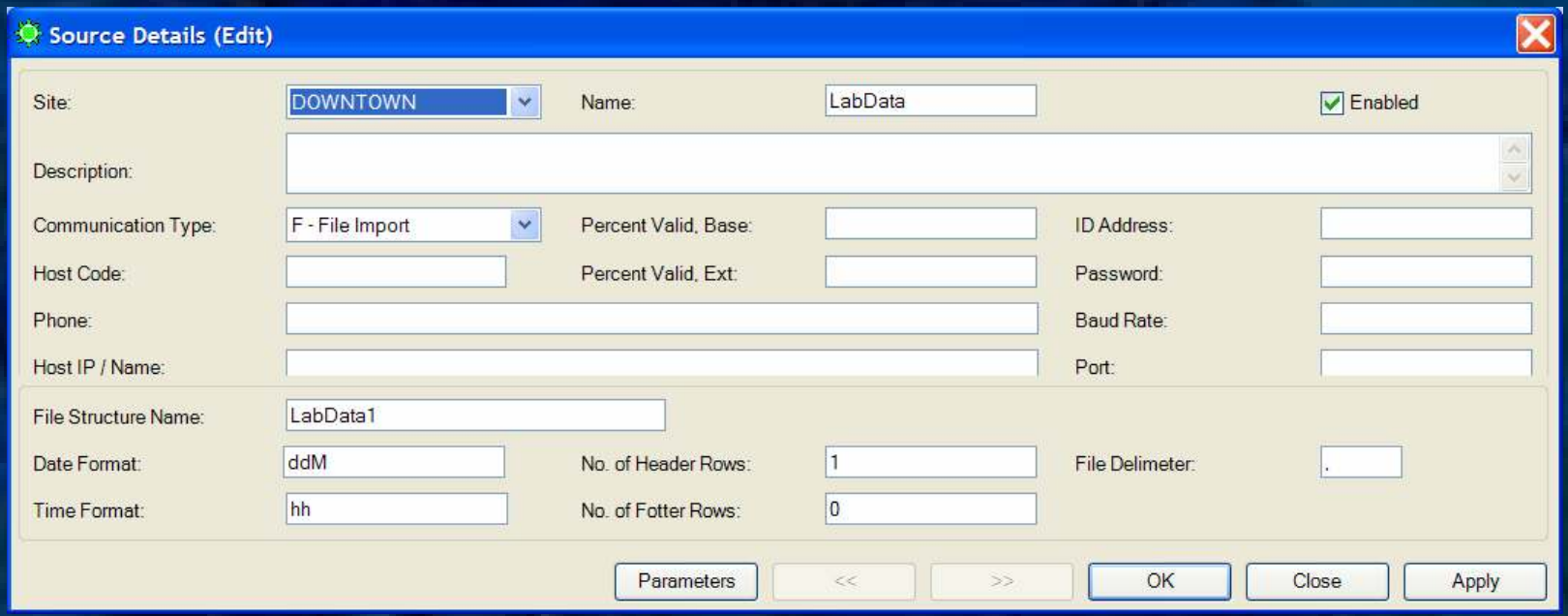
SDAPCD Project Specifics

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

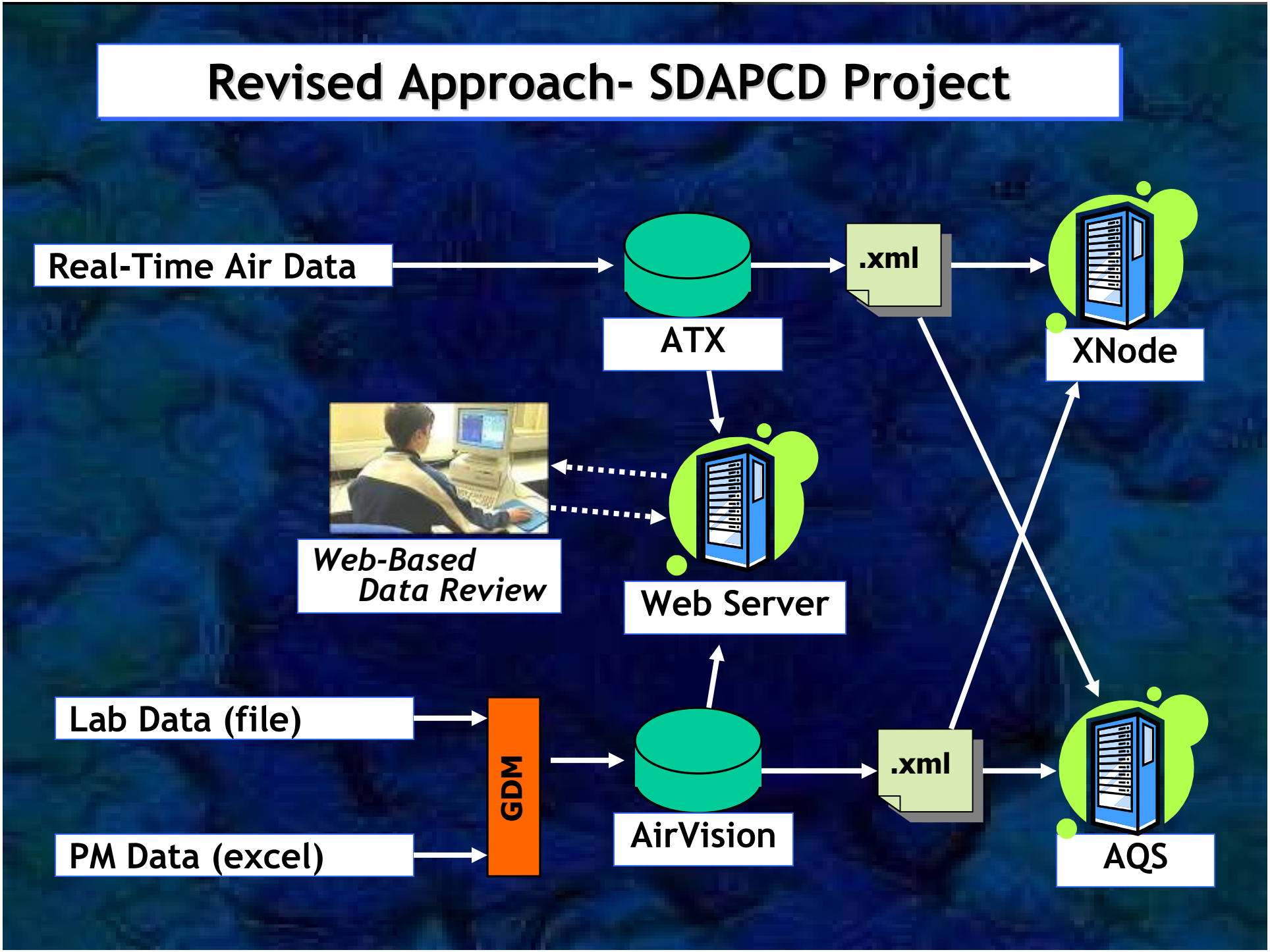
Utilize new architecture for air toxics and PM data, with PM files collected manually

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



Revised Approach- SDAPCD Project



Stand-Alone Architecture For Lab Data (Any Agency)

Optional

Web-Based Data Review

Web Server

Thick Client Data Review

XNode

Lab Data (file)

PM Data (excel)

GDM

AV Lite

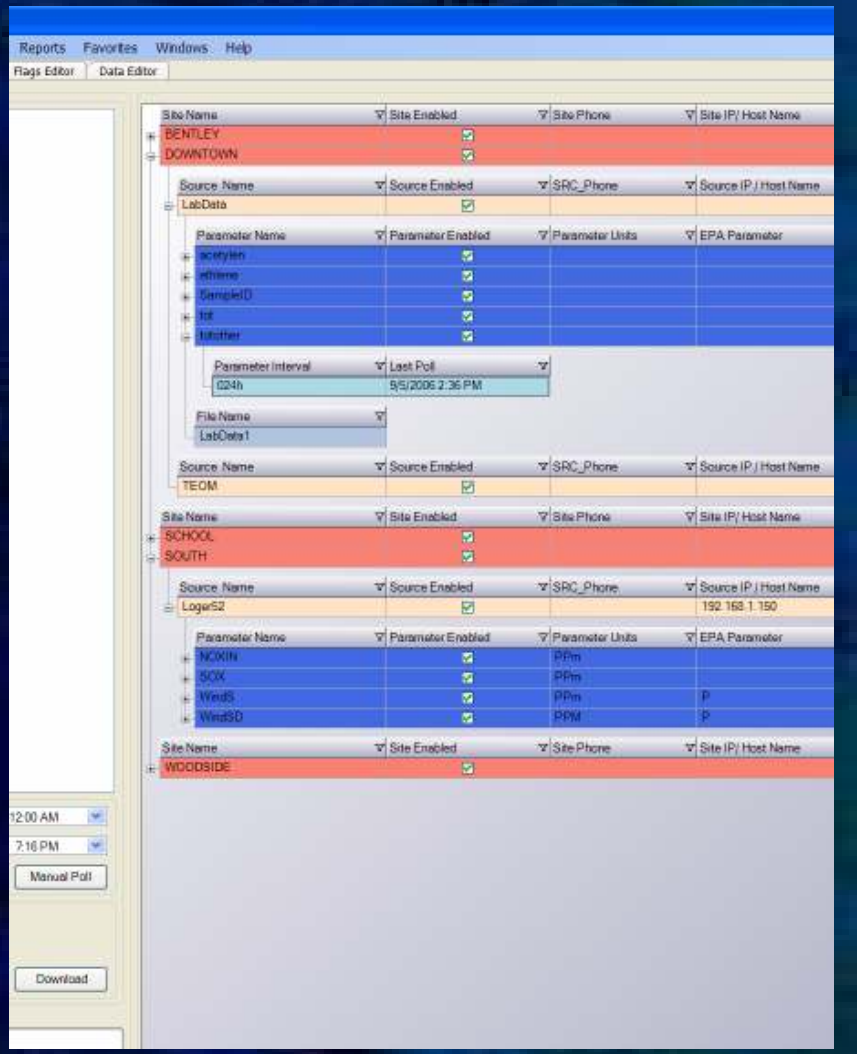
.xml

AQS

But That's Just Scratching AirVision™ 's Surface

AirVision™ will offer:

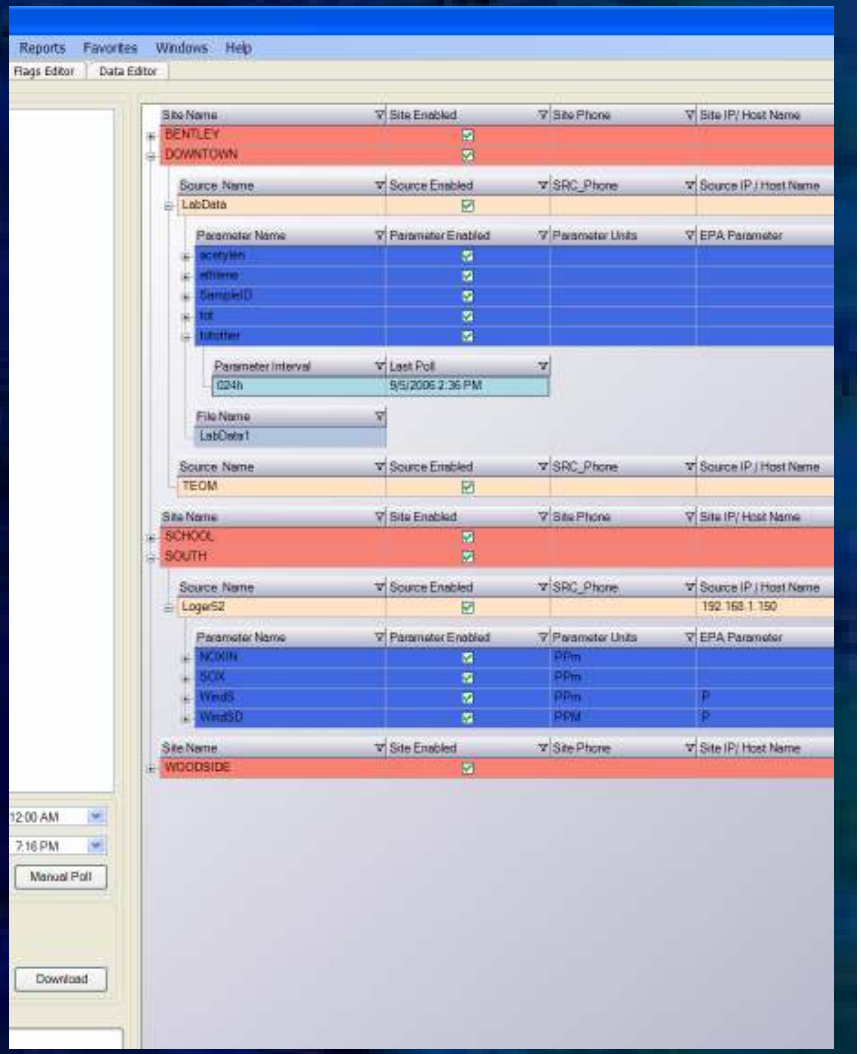
- Support for more and more data sources, evolving as the industry evolves
- Editor and report "save as" Favorites
- Post-processing Plug-Ins:
  - Automated data "grading"
  - (e.g., "at site NORTH if temperature is < 72 degrees and ozone > 50 ppb, mark with quality code '6')
- Automated data corrections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



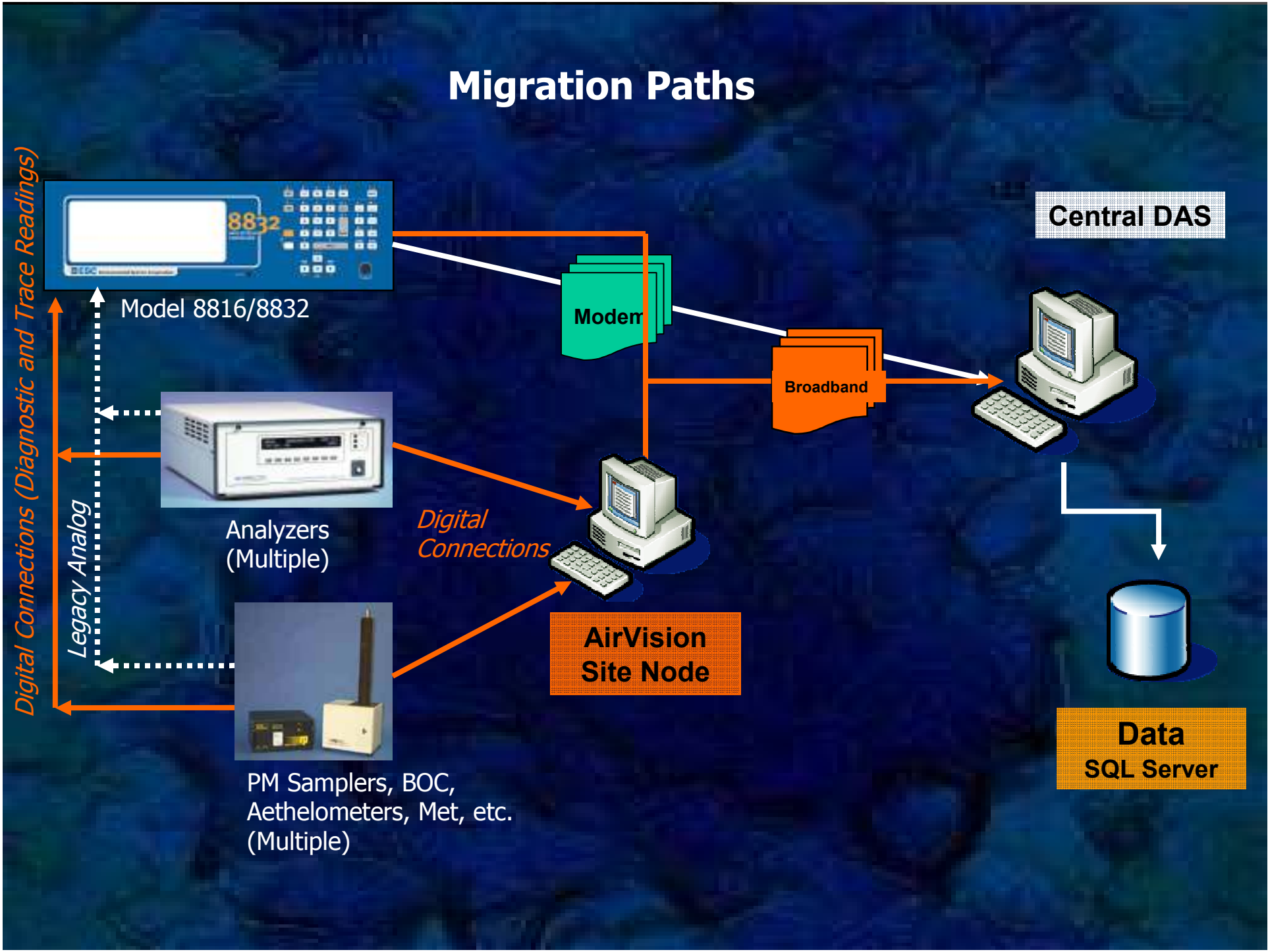
But That's Just Scratching AirVision™ 's Surface

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

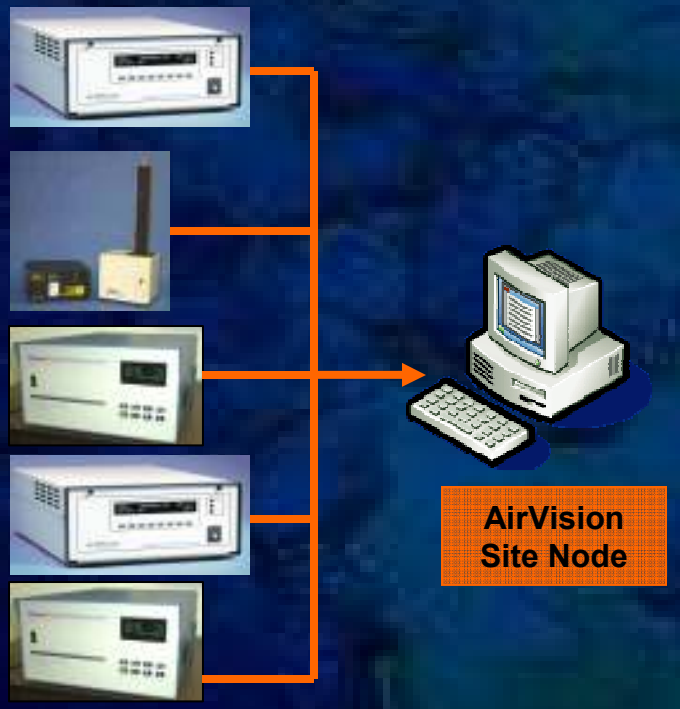


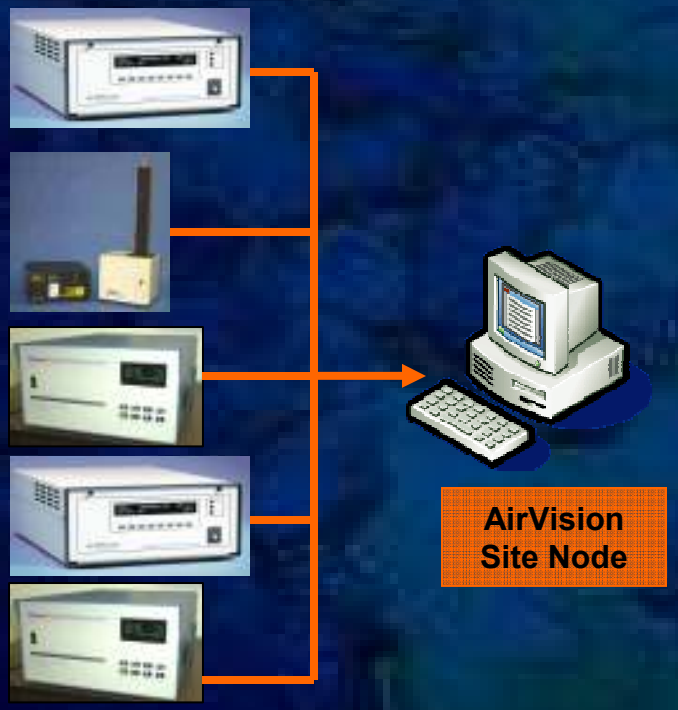
Migration Paths



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