



Scottish Executive



AQ Web

Next Generation
Air Quality Monitoring
& Data Management Technology

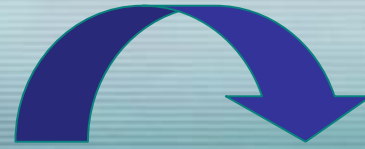


Introduction



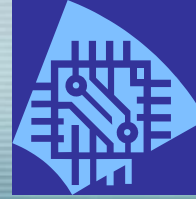
- Most air quality monitoring sites have a vast assortment of equipment and data loggers making it more difficult & expensive to integrate data into a central database
- Many manufacturers use bespoke data formats tying users into their systems.
- Most LA site data is collected once or twice a day due to high telephone dial up costs.
- Sharing Data is often difficult and costly

Analogue ...



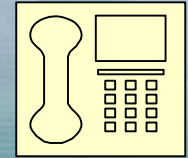
- Many older monitors output data in analogue format and have no internal storage
- This makes loggers necessary to convert the data and transmit it over phone lines
- Communication is essentially one way from site to centre

Or Digital ...



- Newer monitors produce digital data and most have internal storage
- Loggers are not always required but can be useful to collate data from different monitors
- Remote communication with monitors is often possible

What about Communications?



- Older communications used dial up modems via hard wired telephone lines
- More recently wireless networks offer GSM dial up capability
- Now GPRS and 3G and ADSL (broadband) offer “always on” and high speed capability

Typical Costs of AQ Data System



- Modem at Site £ 400
- Logger at Site £1,500
- Software at Site £1,500
- Modem at Centre £ 400
- Software at Centre £2,500
- Total Capital £6,300
- Plus call costs e.g.
 - 24 per day @ 10p each = £2.40 per day
 - Times 365 = £ 876

Wouldn't It Be Nice, IF ?

- You could get data all the time –
ON LINE
- **Many people** could access the data
simultaneously
- **NO** bespoke data formats
- **Two way remote** communications and
diagnostics
- Automatic **WEB** Publication

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AQ Web - A New Way!



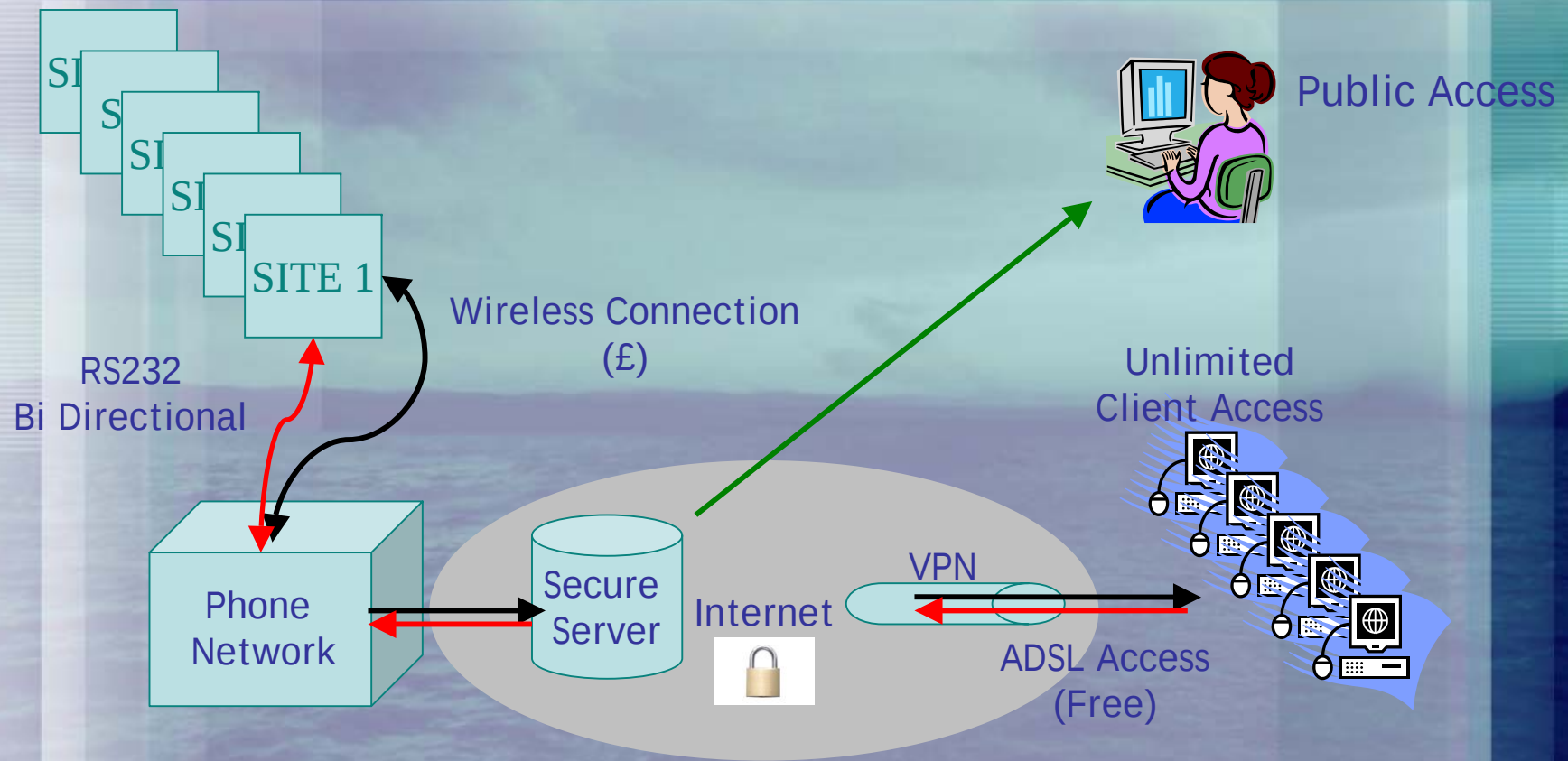
- AQ Web allows **existing** AQ stations to be updated to internet capability.
- Web Logger takes analogue or digital from **ANY** monitor
- Transmits data to **Web Server**
- Client access to web server at **ADSL speed**
- **Publication** engine on server

How Does It Work ?



- AQ Web Logger communicates with station monitors and transmits to web server using GPRS or 3G
- Web server stores and backs up data in SQL database
- Client PC(s) are updated with data at regular intervals
- Web pages update from web server
- Optional reports package provides “on demand” reports as required

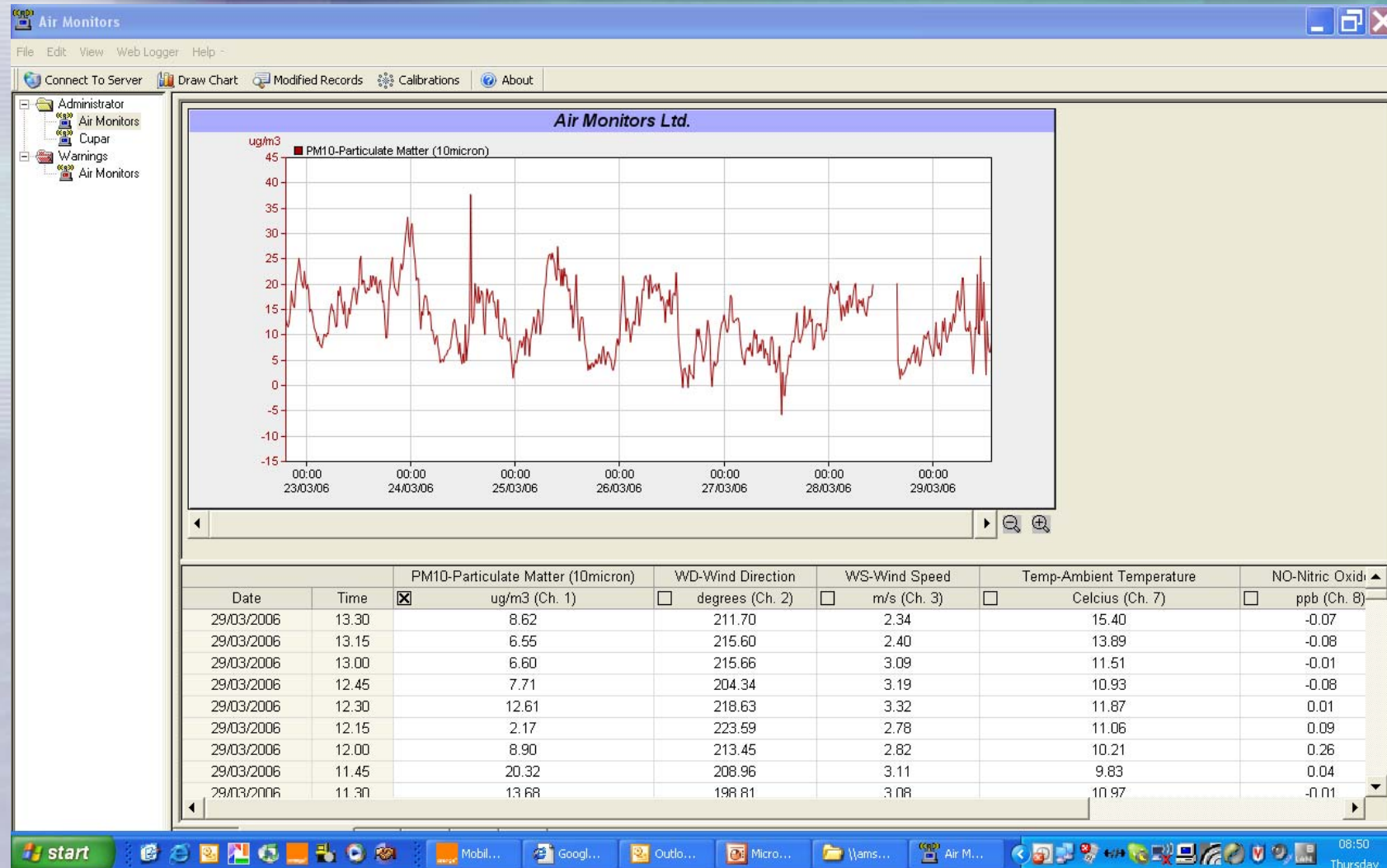
Schematic



A stylized illustration of a person with brown hair, wearing a white shirt and brown pants, plugging a black cable into a large, light blue computer monitor. The monitor has a glowing blue square on its screen. The background is a bright yellow-green gradient.

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Client Interface - Home Screen



Client Interface -Setup Screen

Air Monitors

File Edit View Web Logger Help

Connect To Server Draw Chart Modified Records Calibrations About

Administrator
Air Monitors
Cupar
Warnings
Air Monitors

Web Logger

Web Logger: AIR MONITORS SIM I.P. Address: 172 . 16 . 23 . 25 Web Logger Port No.: 23001 Sample Time: 15 Min

Display Web Page: ☒ Web Page Name: AIR MONITORS DEMO GSM No.: Web Page Header And Footer

Channel	Enable	Data Channel	Type	Label	Team / Analyser			Analogue		Alarm Settings			Average
					Station	Channel No	Register	Channel	Scaling	Enable	Min.	Max.	
1	☒	☒	Team	PM10	4	K0	8	1	Scale	☐	0.00	0.00	☒
2	☒	☒	Team	WD	4	K0	115	1	Scale	☐	0.00	0.00	☒
3	☒	☒	Team	WS	4	K0	116	1	Scale	☐	0.00	0.00	☒
4	☐	☐	Team	PM2.5	4	K0	40	1	Scale	☐	0.00	0.00	☐
5	☐	☐	Team	WS	4	K0	147	1	Scale	☐	0.00	0.00	☐
6	☐	☐	Team	WD	4	K0	149	1	Scale	☐	0.00	0.00	☐
7	☒	☒	Team	Temp	4	K0	130	1	Scale	☐	0.00	0.00	☒
8	☒	☒	Thermo 42i	NO	42	NO	0	1	Scale	☐	0.00	0.00	☒
9	☒	☒	Thermo 42i	NO2	42	NO2	0	1	Scale	☐	0.00	0.00	☒
10	☒	☒	Thermo 42i	NOx	42	NOX	0	1	Scale	☐	0.00	0.00	☒
11	☐	☐	Team	NO			0	1	Scale	☐	0.00	0.00	☐
12	☐	☐	Team	NO			0	1	Scale	☐	0.00	0.00	☐
13	☐	☐	Team	NO			0	1	Scale	☐	0.00	0.00	☐

Calculated Channels

Channel	Enable	Label	First Channel	Calculation	Second Channel	Units	Alarm
21	☒	NO2	10	Minus	8	ug/m3	☐
22	☐	NO	0	Add	0	degrees	☐
23	☐	NO	0	Add	0	m/s	☐
24	☐	NO	0	Add	0	ug/m3	☐

Record Verified

Average Channels

☐ Flag Invalid Data Valid Count: 10 %

Zero And Span

☐ Zero Readings Freq: 0 Day(s) Hour: 0

☐ Span Readings Freq: 0 Day(s) Hour: 0

Purge In: 1 Active: 1 Purge Out: 1

Update Record Cancel

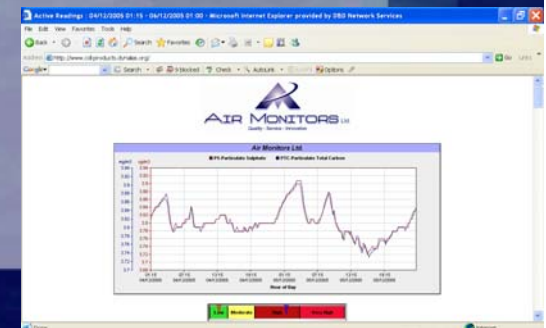
29/03/2006 11:30 13 RR 198 R1 3.08 10.97

NO-Nitric Oxide
ppb (Ch. 8)
-0.07
-0.08
-0.01
-0.08
0.01
0.09
0.26
0.04
-0.01

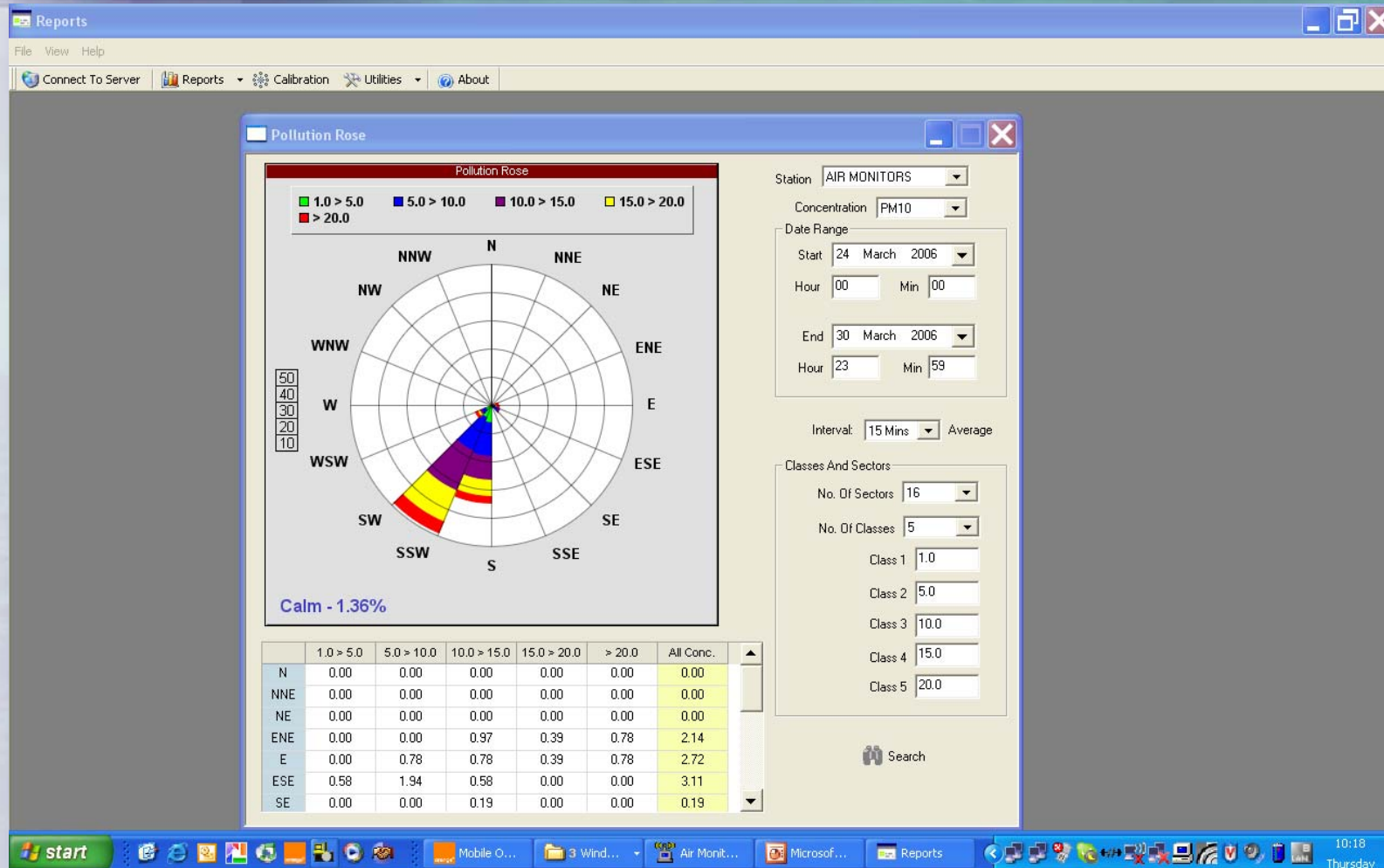
AQ Web - Server Database



- AQ Web server manages communication with all AQ Web loggers in a network
- Central database of all AQ data
- Handles AQ Web Reporter queries
- Serves ALL AQ Web Central Website(s)
- Provides long term archive of AQ Data
- Back up of ALL network data



Server Database





Live Demo

Cupar, Bonnygate

Bonnygate



AQ Web - Benefits



- ✓ AQ data that comes to you automatically
 - ✓ No dial up
- ✓ Standard data format
- ✓ No phone call costs (Flat fee GPRS)
- ✓ Faster communications
- ✓ Remote Control & Diagnostics
- ✓ Central database for ALL network sites
- ✓ Comprehensive QA/QC Tools
- ✓ More Frequent Web Publishing
- ✓ Dynamic Web Reports

Pilot Sites

- Volunteers
- Installed by end of April
 - Run until September
- Parallel access with existing systems – no disruption
- Open SQL Database Format
 - UTMC, GIS import

AQ Web



Today's
wireless communications
and internet technology
for
Tomorrows
Air Quality Monitoring

Thank You !

Contact either;
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bryan@airmonitors.co.uk



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