

The Environment Agency's Episode Analysis Protocol

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What is an Air Pollution Episode?

“Measured levels of NO₂, PM₁₀, SO₂, benzene or 1,3-butadiene at levels above defined trigger values”

Based on air quality objectives

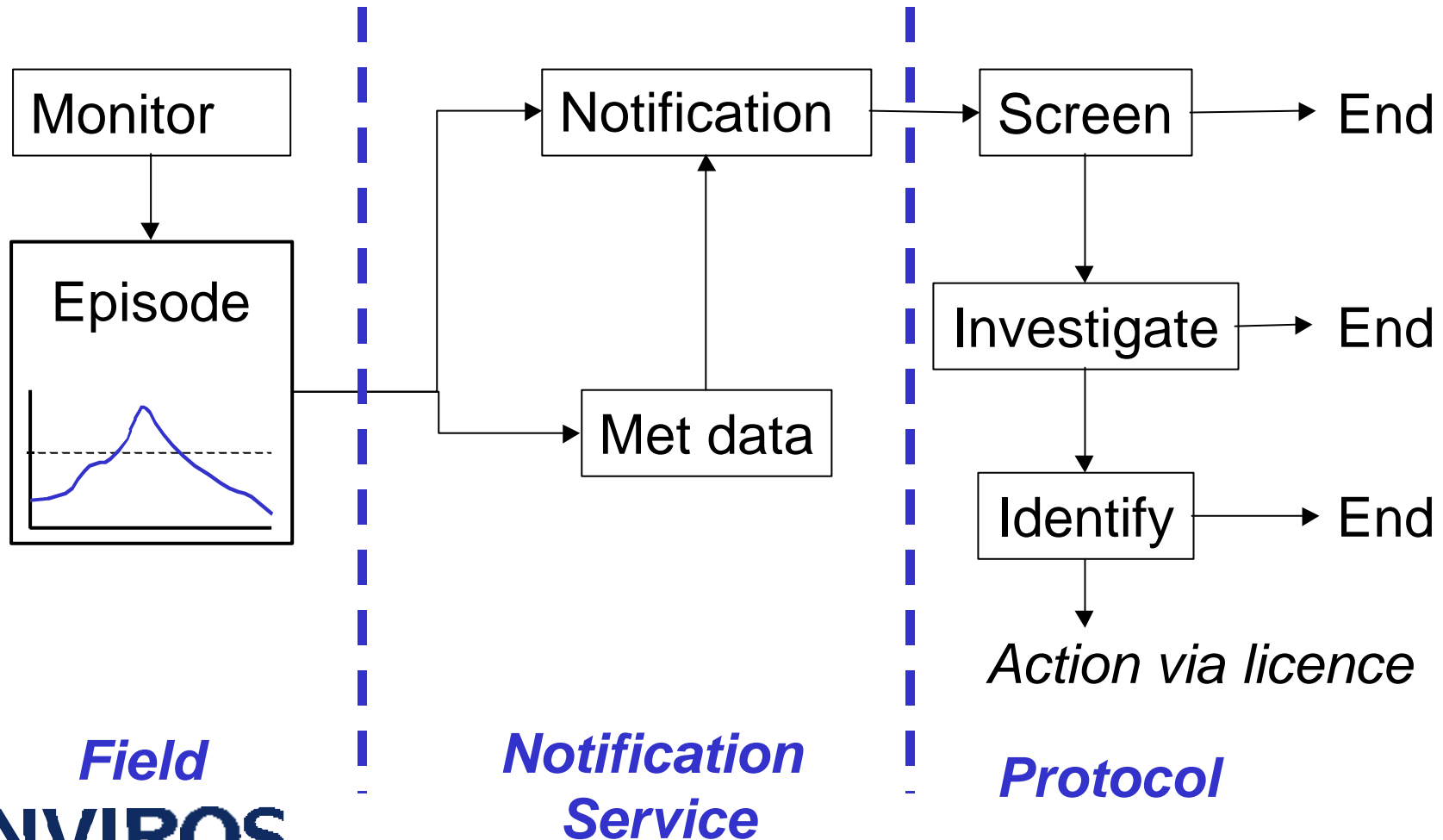
At a DEFRA national network station



What did the Agency want?

- > The Agency is using a range of tools to ensure that Air Quality Objectives are achieved.
- > If AQO limit values are exceeded:
 - > Need to be made aware;
 - > Need to know the contribution from regulated processes
 - > Need to be in a position to take action if necessary
- > Agency wanted a **rapid, robust, consistent** episode analysis tool

The Episode Analysis Protocol



Contributors

- > Project sponsored by HMIP / Environment Agency
- > Original system developed by Air Quality Consultants
- > Monitoring network funded by DEFRA
- > Notification service provided by NETCEN/ Meteorological Office
- > System reviewed and upgraded by Enviros

New The Episode Analysis Protocol

Accentuate the positive

- > The concept
- > “Decision Tree”
- > Background information on episodes
- > Ownership via named individual
- > Inspector judgement

Eliminate the negative

- > Fewer stages
- > Screen out irrelevant episodes
- > Faster initial evaluation; less paperwork
- > Direct link to Air Quality Objectives

Revising the Protocol

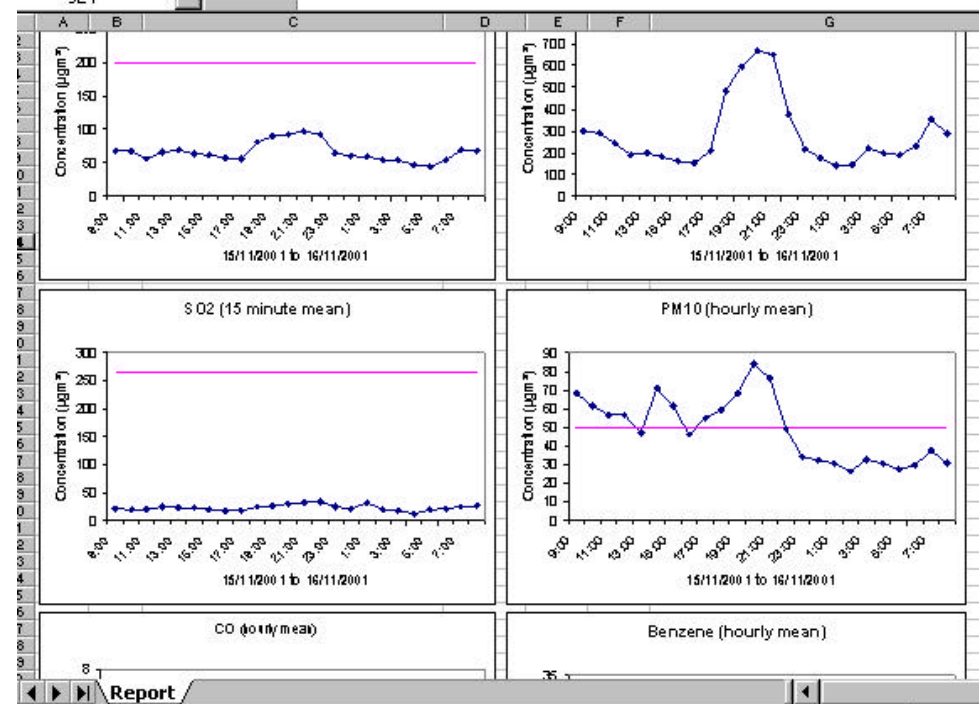
- > Consultation
- > Trial run of existing system
- > Established principles for new system
- > Design, test, prepare documentation
- > Roll out and launch of new system
- > Training course and phone/ email support

- > *Rapid screening - especially traffic and instrument failure*
- > *Email based*
- > *Robust - doesn't eliminate potentially significant episodes*
- > *Linked to AQOs*
- > *3 stages*
- > *Clear documentation*
- > *Positive launch and ongoing support*

What's in the Protocol?

> Stage 1 - Initial Screening

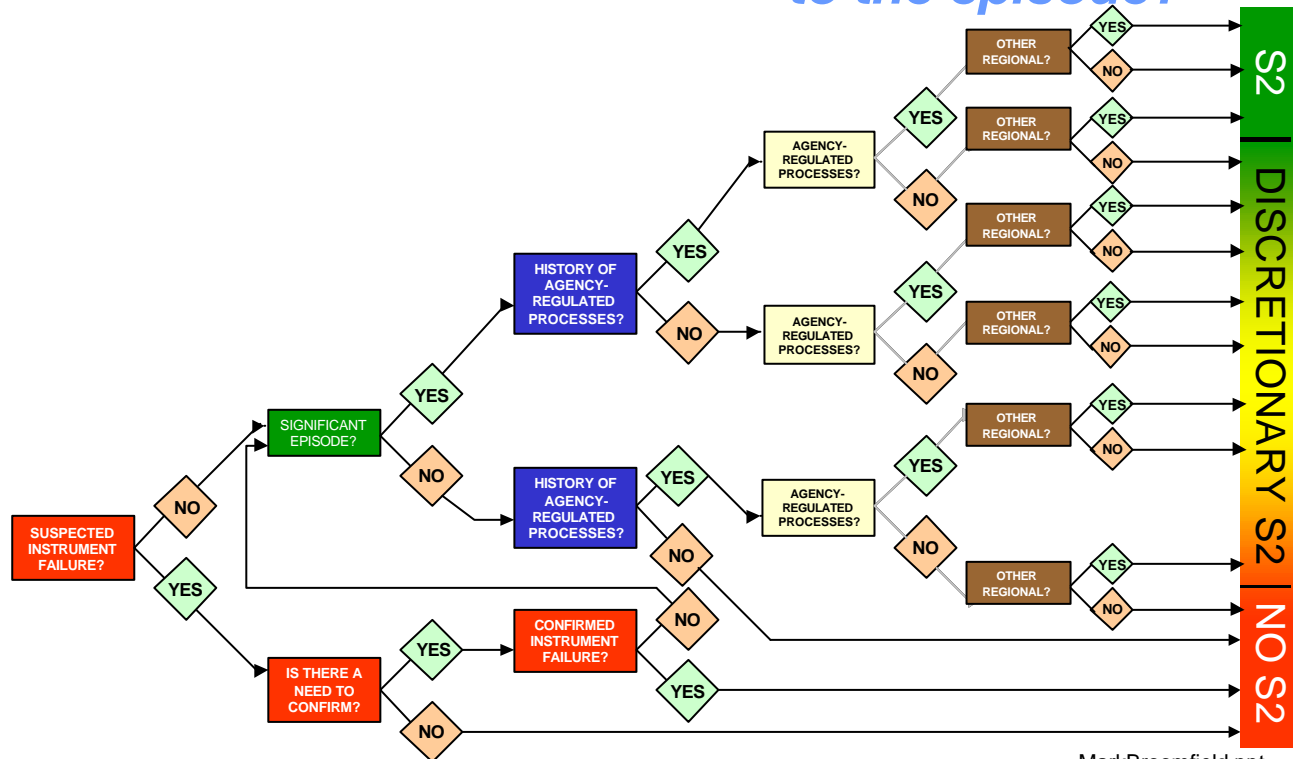
Could Agency-regulated processes have contributed to the episode?



What's in the Protocol?

> Stage 1 - Initial Screening

Could Agency-regulated processes have contributed to the episode?



What's in the Protocol?

> **Stage 1 - Initial Screening**

Could Agency-regulated processes have contributed to the episode?

> **Stage 2 - Source investigation**

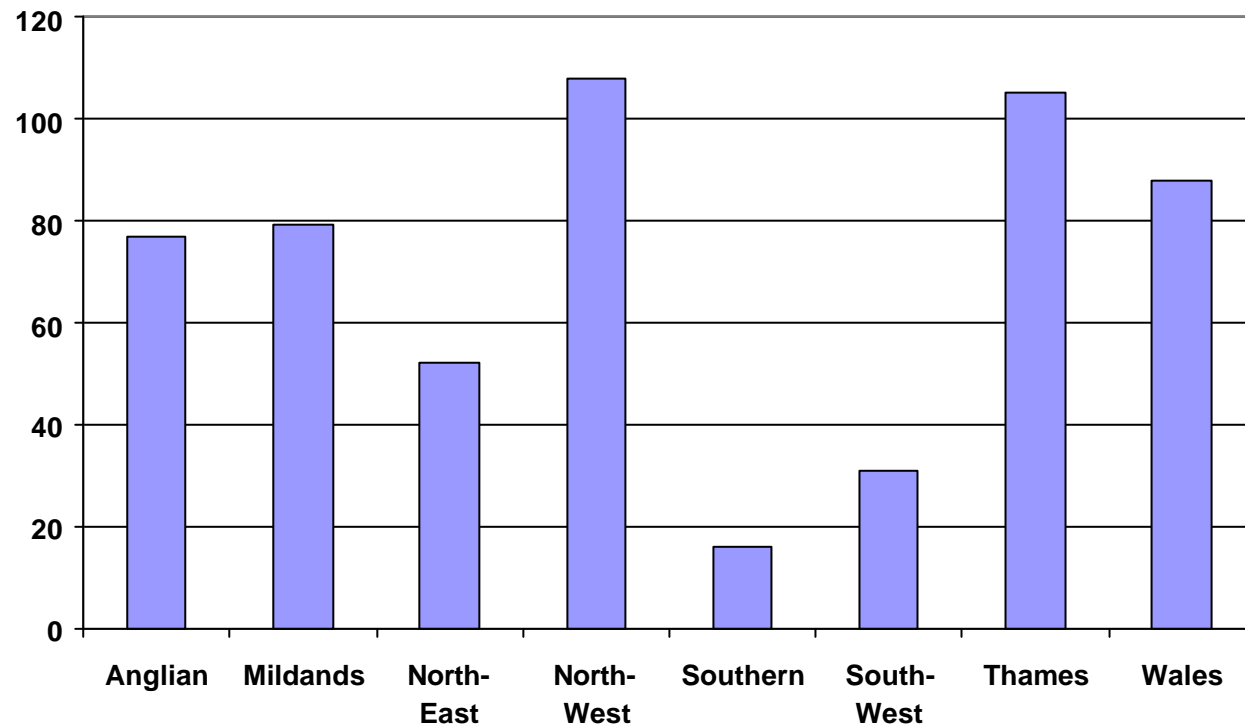
Are one or more Agency-regulated processes likely to have contributed to the episode?

> **Stage 3 - Source Identification**

Identification of any Agency-regulated processes which contributed to the episode

The Episode Analysis Protocol in Practice

> 556 notifications in 2001



The Episode Analysis Protocol in Practice

- > 556 notifications in 2001
- > Most notifications for traffic
- > User survey
- > Episodes in East Midlands
- > National episodes
- > EAP highlights the issue; draws data together



- > Stage 1 : Spreadsheet, email system, auto graphs and electronic reports: **(very) useful**
- > Stage 2(3) : Useful, but not much experience
- > Documentation: clear and useful
- > Improvements? More information on processes, other regions, data quality

National PM₁₀ Episode, May 2000

- > 10-11 May 2000: Birmingham, Manchester, Nottingham, Sheffield, Scunthorpe, South Wales
- > PM₁₀ levels above 50 µg/m³ for over 48 hours
- > Low visibility, possibly due to sulphate aerosol (SO₂ also elevated in Nottingham). No single process likely to be the cause
- > Met Office advised of a possible contribution from Saharan dust
- > Stage 3 investigation “when resources permit”

The Episode Analysis Protocol

Conclusions

- > An air quality management tool for the Environment Agency
- > Particular focus as 2004/5 approaches
- > No plans for further development within the Agency
- > Of interest to other bodies - e.g. regional air quality forums?
- > Putting data to work

Acknowledgements

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