SEIS-BASIS Template

SEIS Task Force Pilot phase instructions

Note
The example provided is under development and is currently being reviewed by the UK stakeholders. To aid the development of the database, they have kindly allowed us to circulate the material in an incomplete form. Any errors or omissions (etc.) are purely those of the research team.

Overview
This template provides the inputs for a baseline assessment of the operational capacity of EU Member States to acquire and manage data about the environment and turn it into information. It is split into 5 sections covering aspects such as details about the programme, organisations involved, measurements taken and the technology the programme uses.

Purple text presents model answers from a UK monitoring programme as a guide to the sort of information the template aims to gather. This information should be substituted with details from monitoring programmes in your selected themes

Most of the questions involve selecting between choices such as simple yes/no 'checkboxes'. Please use an "X" to mark the appropriate box. Other questions require numbers or text to be entered. Occasionally **hypertext** is requested to link to other sources, such as documents, webpages or other online resources.

Where possible, please respond in English.

Throughout the document all details requested have been numbered. Further guidance is available in a separate document.

1. Programme design and activities

This section collects basic details about the monitoring programme, including its title, a contact person, geographical coverage and other sources of information that describe the programme, as well as the composition of its monitoring sites.

Programme overview		
1	Title of the programme in your language	**UK Automatic Urban and Rural Network**
2	Title in English	**UK Automatic Urban and Rural Network**
3	Acronym/Abbreviation	**AURN**
4	Appropriate contact person and organisation (*name, organisation and e-mail address*)	
5	Programme's Geographical Coverage (country, region or other territory)	**United Kingdom**
6	Programme Duration- Start Year	**2008**
7	Programme Duration- End Year (or "ongoing")	**2013**

8	Short Description
-Within the UK, European legislation is adopted in different legal systems covering England, Wales, Northern Ireland and a separate system in Scotland. Air quality is a devolved policy issue. -This description focuses on the policy context within England and Wales, although a great deal of the activity is managed by DEFRA for the whole of the UK, including the AURN station network. -The AURN is currently the largest automatic monitoring network in the UK. 133 operating sites provide high-resolution hourly information on a range of pollutants. - The units of measurement noted below refer to the UK air quality objectives for protection of human health and refer to concentrations of pollutant over different time periods. Ecosystem objectives for Nitrogen Dioxide, Sulphur Dioxide and Ozone are not included in UK regulations at present. Measures for PM2.5 Particulates are currently being implemented for 2010 targets. - The focus of the work is to examine the physico-chemical properties of air quality, particularly in relation to human health. Ecological quality concerns relating to air quality, such as the monitoring of deposition and critical loads is conducted by the Centre for Ecology and Hydrology. -Details from the network are provided in near-real-time (NRT) for a range of uses, as well as ratified data being used for Reporting Obligations. -Network management, data capture and processing are carried out by Bureau Veritas under a contract with DEFRA. Quality Assurance and analysis are carried out by AEA Technology. Details are submitted to DEFRA for ministerial approval and AEA Technology then upload the results to the European Environment Agency (EEA) via European Environment Information and Observation Network (EIONET) and disseminate data (and related information) through a national web-based archive. -Notably, the local site operators include a large proportion of accredited stations managed by local government, who have a statutory duty to monitor air quality using their own funds, encouraged (and at times also financed) by DEFRA. Network expansion/substitution involves looking at possible local government sites as a first option. -Virtual connectivity between systems is closely coupled for monitoring activity but is weaker between monitoring and reporting and in terms of links to INSPIRE-related activities, where some policy-watch activities seem to be in place. -Funding estimates for specific activities are impaired by the commercial nature of the monitoring and reporting partners involved, although the archive does contain global figures for contracts and projects.	

Further main sources of information		
9	Programme Report	*Air Pollution in the UK, 2007*
10	Programme technical manuals	*Local Site Operators (LSO) site operations manual* (Report no.: AEAT/ENV/R1595, November 2003)
11	Other relevant online sources	
www.airquality.co.uk		
www.scottishairquality.co.uk		
www.welshairquality.co.uk		
www.airqualityni.co.uk		
The UK Air Quality Strategy, 2007- Volume 1		
The UK Air Quality Strategy, 2007- Volume 2		
Air Quality Research Reports		
Cost-benefit studies		
ERFF database entry		

Monitoring programme site details			
12	Total number of monitoring sites used in the programme		133
13	In which year does this figure apply?		2007
		Yes	**No**
14	Are this programme's monitoring facilities used for other programmes?		X
15	Do locations of monitoring sites (e.g. Environmental Monitoring Facilities) vary between reporting periods?	X	
16	Does the monitoring programme involve a long-term project or reference research sites?		X
17	Do all sites gather the same measures?		X
18	Do all sites use the same instrumentation?		X
19	For programmes related to the Water Framework Directive (WFD) please tick the box if the programme's observational approach is:		
	Surveillance all relevant measures over a fixed time		
	Operational gathers data on areas most sensitive to pressures in comparison to reference conditions		
	Investigative relating to known exceedances, where quality levels have not been achieved and/or accidental pollution (etc.)		
	Not applicable (programme is not related to WFD)		X

2. Policy Context and Data Generation

This section aims to provide a link between the measures monitored in the programme and which policies from the environmental Acquis they apply to, helping to identify where gaps and overlaps may exist. It will also help to outline the scope of the programme in terms of the measures captured, through metadata of the monitoring sites and of the information the observations made, as well as how accessible such data is.

Programme measures and policy-linkage			
20	21	22	23
Relevant Programme Measures	Measurements (including exceedance levels)	Standards Applied to the Programme Measure	Reporting Obligation Database hyperlink (if there is no RO for this measure please enter "not reported")
Nitrogen Dioxide	200 µg m-3, not to be exceeded more than 18 times a year (1-hour mean), 40 µg m-3 (Annual mean)	BS EN14211 : 2005	Air quality assessment annual reporting for 1st daughter directive: Limit values for NOx, SO2, PM2.5, PM10 and Pb in ambient air
Sulphur Dioxide	350 µg m-3, not to be exceeded more than 24 times a year (1-hour mean); 125 µg m-3, not to be exceeded more than 3 times a year (24-hour mean); 266 µg	BS EN14212 : 2005	Air quality assessment annual reporting for 1st daughter directive: Limit values for NOx, SO2, PM2.5, PM10 and Pb in ambient air

	m-3, not to be exceeded more than 35 times a year (15-minute mean)		
PM2.5 Particulates	25 µg m-3 target (annual mean, plus 15% cut in urban background exposure); 12 µg m-3 limit in Scotland (annual mean)	BS EN14907: 2005	Air quality assessment annual reporting for 1st daughter directive: Limit values for NOx, SO2, PM2.5, PM10 and Pb in ambient air
PM10 Particulates	50 µg m-3, not to be exceeded more than 35 times a year (7 time in Scotland) (24-hour mean); 40 µg m-3 (18 µg m-3 in Scotland) (Annual mean)	BS EN12341: 1999	Air quality assessment annual reporting for 1st daughter directive: Limit values for NOx, SO2, PM2.5, PM10 and Pb in ambient air
Carbon Monoxide	10.0 mg m-3, measured over Maximum daily running 8-hour mean (Running 8-hour mean in Scotland only)	BS EN14626 : 2005	Air quality assessment annual reporting for 2nd daughter directive (Art.3, 4, & 5): Limits values for benzene and carbon monoxide in ambient air
Ozone	100 µg m-3 not to be exceeded more than 10 times a year (Daily maximum of running 8-hour mean)	BS EN14625 : 2005	Annual ozone exceedances reporting for 3rd daughter directive: target values for 2010 and their annual exceedances observed; average concentrations of ozone precursors; Zones and agglomerations with ozone exceedances and non-exceedance

24	Programme's contribution to other Reporting Obligations	Reporting Obligation Database		
	Contributions for annual questionnaire	Reporting obligation for: Annual report (questionnaire) on air quality assessment and management (2004/461/EC)		
			Yes	No
25	Is the programme's data used for purposes other than reporting?		X	
26	Do the specific measures need to be combined with other data before reporting?			X
27	Do the monitoring facilities from the programme produce near real-time data?		X	
28	Are any models used to produce data in the programme?		X	
29	If so, please note the name of any models/modelling approach used in producing the programme's data			
	[e.g. name of models- daughter directive for exceedance modelling]			
	[e.g. name of modelling approach for network optimisation]			
	[e.g. name of modelling approach for DPSIR-related pollution source/sink activity]			

Site metadata			
		Yes	**No**
30	Is there site metadata available?	X	
31	Please provide a hyperlink to webpages or catalogues for site metadata if available on line		
	http://www.bv-aurnsiteinfo.co.uk		
32	If the metadata is not available online, please provide an example of a metadata record		

Metadata element	Example of content
Site name	Edinburgh St Leonards
Short site description	The monitoring station is within a self contained air conditioned housing located within a small park area. The park is adjacent to a medical centre car park which is located in the southside of Edinburgh. The nearest road is approximately 50 meters away. It is a busy main road running into the city centre and out to the A7 South of Edinburgh. The site is 25m above sea level, manifold 3.5m above ground.
Site photographs	Views covering 360° (facing north, east, south, west) around the site
Site address	5 meters from St Leonards Health Centre car park
Geographical Identifier	OS Grid Reference: NT263731
Site map	Google Map (point map)
Site Class (and definition via a link)	(Kerbside, Roadside, Urban Centre, Urban Background, Urban Industrial, Suburban, Rural Remote), in this case "Urban Background"
Table of list of pollutants	Site specific e.g. PM10 Particulates (Hourly Measured)
Start date	e.g. (PM10) 24/11/2003
End data	e.g. (PM10) 09/07/2007
Direct link to Air Quality archive for current and historical Air Quality levels	Current and historical Air Quality levels

Additional site details *(if not already specified in the site metadata)*		
33	In relation to the monitoring cycle, please note how often (on average) sites in the programme are visited to take samples or measurements: random, a set time period- weekly, daily or other. For permanent sites or continuous recording please note "continuous".	continuous

Observation metadata			
		Yes	**No**
34	Is there observation metadata available?	X	
35	Please provide a hyperlink to webpages or catalogues for observation metadata that is publicly available		
	Enter URL example here, if relevant		
36	If the metadata is not available online, please provide an example of a metadata record		

Metadata element	Example of content
Enter example here, if	Enter example here, if relevant

relevant	
Enter example here, if relevant	Enter example here, if relevant
…	…

Additional measurement details *(if not already specified in the observation metadata)*		
37	On average, how often are the measurements in the programme are taken (please also state the units- minutes, months etc. or note if continuous)?	continuous
38	What type of data is produced in the programme? *(please select all that apply)*	
	Numerical data	X
	Written notes and surveys (field observations etc.)	
	Photographs (not including aerial photography)	X
	Remote sensed imagery	
	Maps (or other geospatial information)	X
	Videos and other visual media	
	Audio records	
	Other (please specify)	

Data access and user interaction to the programme		Yes	No
39	Is the data publicly available online? *If so please provide a hyperlink to where it can be accessed*	X	
	http://www.airquality.co.uk/data_and_statistics.php		
40	Does the programme gather user feedback?	X	
41	Is the programme used to inform the public of environmental conditions? *Please provide a hyperlink if this also includes online activities*	X	
	http://www.airquality.co.uk/what_near_me.php		
42	Is the programme used as part of public consultation or other participatory activities? *Please provide a hyperlink if this also includes online activities*	X	
	Enter URL example here, if relevant		
43	Is the monitoring programme a cross-border initiative?	X	
44	Does the programme charge for access to its data?		X

3. Programme Stakeholders and Funding

We would like to know more about the types of organisation involved in both monitoring and reporting and the roles they perform. This can vary between the remit of just one organisation, possibly at a central government level in smaller Member States, to organisational networks of varying partnerships between several organisations within governmental and other sectors. We would also like to know about the costs of monitoring and the sources of funding that monitoring programmes use.

Stakeholders' roles and programme staff numbers								
45	46	47	48					49
Organisation	Sub units	Sector *(see guidance for terms)*	Roles *(please indicate all that apply for each stakeholder and provide staff numbers (Full Time Equivalent), where possible)*					Total Annual Cost of the programme (Euros)
			Programme management	**Monitoring facility maintenance**	**Data capture & analysis**	**QA/QC & Validation**	**Dissemination & Reporting**	
Dept for Environment, Food and Rural Affairs	-EU & International Policy -National and local policy -Local air pollution -Integrated pollution -Science & evidence team	public authority: national	X	X				
Air Liquide		Private company		X				
UK local authorities		public authority: local		X n/a				n/a
Bureau Veritas		Private company			X			
AEA Technology	-NetCen -Analysis -Reporting	Private company			X	X	X	

Programme funding, sustainability and risk		
50	Who funds the programme?	Dept for Environment, Food and Rural Affairs
51	Are there any issues of programme funding or sustainability?	- Incongruent timings of funding cycles and policy requirements have been highlighted as a possible risk. -Commitment of central government to this policy area and requirements of European policy mean funding is relatively secure

4. Systems connectivity and INSPIRE-related developments

We would like to know how well the systems involved in the programme are connected. Part of these developments relate to the network infrastructure of the INSPIRE Directive that aims to develop a European environmental spatial data infrastructure, as well as understanding the relevance of the environmental (and related) themes it supports to the monitoring programme.

Virtual connectivity of the programme's systems			
52	In the matrix below, please provide examples relating to the level of virtual connectivity that exists in various stages of the data flow relating to the programme.		
	Data capture to quality assurance	Quality assurance to Analysis	Analysis to Dissemination (including reporting)
High	Data is captured from stations remotely via Indic-Airviro (http://www.indic-airviro.smhi.se) software that helps to analyse the incoming data for anomalies before passing it on for QA/QC by FTP	A system is available to remotely access and check the data from various stations	The data from the programme is also made available as near real-time via a webpage as part of a forecasting service: http://www.airquality.co.uk/what_near_me.php
Medium		After QA/QC data is exported for analysis and reporting purposes via an Excel spreadsheet	The Excel spreadsheet used for reporting is uploaded to the CDR of EIONET
Low			

Status of INSPIRE related network resources used in the programme				
		No plan	Planned	In place (please provide hyperlinks where possible)
53	Discovery services-metadata	X		
54	Discovery services-services			
55	View services	X		
56	Transformation services	X		
57	Download services	X		

Programme's relationship to INSPIRE Annexes					
58	Please rate the relevance of the INSPIRE Annexes (high, medium, low, not relevant) to the monitoring programme and provide a comment on your choice, where appropriate.				
	High	**Medium**	**Low**	**Not relevant**	**Note**
Annex I					
Coordinate reference systems		X			Site location
Geographical grid systems			X		Use in analysis
Geographical names		X			For site description and reporting
Administrative units		X			"Zones" are also Government Office regions
Addresses					Site location (where appropriate)
Cadastral parcels				X	Not used in the UK context
Transport networks			X		Proximity to roads is recorded but not directly referenced
Hydrography				X	
Protected sites				X	
Annex II					
Elevation			X		Currently AURN site metadata does not contained elevation
Land cover			X		Some contextual information given in oblique photographs for the site metadata but not analysed
Orthoimagery				X	
Geology				X	
Annex III					
Statistical units	X				Zones are government regions which are also NUTS levels 1 and 2
Buildings					-Only indirectly to estimate the change in population within agglomerations -Local development data may also be used to account for anomalies in the monitoring record
Soil				X	
Land Use		X			- Some unstructured contextual information is given in the AURN site metadata website. -There is also a classification of the site's location relating to land use.
Human health and safety		X			Air quality data is of relevance to enviro-epidemiological studies
Utility and government services			X		Only in terms of local site operator details
Environmental monitoring facilities	X				This is the main component of the AURN data, including the location and operation of facilities for monitoring air quality
Production and industrial facilities			X		Although this data may be used to determine potential sources of pollution and abatement/amelioration activity
Agriculture and aquaculture facilities				X	

Population distribution – demography	X				Direct estimates of population change draw on 2001 Census data within agglomerations to help optimise the AURN site network
Area management/restriction/ regulation zones and reporting units	X				Zones and agglomerations, as analysis and reporting units are another key feature of the use of AURN data
Natural risk zones				X	However, some air quality management zones (e.g. smoke free zones) could draw on AURN data and impact on site locations
Atmospheric conditions			X		Although there are close links to atmospheric air quality monitoring and data management
Meteorological geographical features					Some stations may have meteorological data to aid calibration and QA/QC (etc.)
Oceanographic geographical features				X	
Sea regions				X	
Bio-geographical regions					
Habitats and biotopes				X	Although, related work by the Centre for Ecology and Hydrology examines deposition of particulates and could be related to AURN data
Species distribution				X	
Energy resources				X	Although, some sites may be selected or local details monitored if energy-related activities may influence results (e.g. proximity to petrochemical refinery)
Mineral resources				X	Although some sites may be selected or local details monitored if energy-related activities may influence results (e.g. proximity to quarrying)

5. Additional Topics and Ideas

We would like to know if there are any comments you have, including issues you would like to share with the system's users that could improve its functionality, as well as identifying opportunities to streamline reporting activities. Lastly, this section includes a place where all acronyms used in the system can be defined.

59	Issues you want to raise, lessons you want to learn?
Keyword(s)	Note
Terminology	There seems to be varying terminology across Europe for when data is seen as "ratified" or "provisional", impacting on when we want to use near real-time data. To help us compare data, what are the underlying concepts and activities that determine these two states of the data?
…	…

60	Consultation: what features, applications and improvements would you like to see for the system as it evolves? Are there any opportunities for streamlining reporting from this programme (alongside others)?
Keyword(s)	Note
Comparison	Knowing where you are placed/ranked in terms of other countries is always useful, something that EIONET does not currently indicate. For example, where is the UK placed in terms of limit values for air quality measurements?
Organisational description	I would like to know more about the outcomes of other organisations contracts and possibly some descriptions as case studies of current projects.
SWOT	I would be interested in seeing a SWOT of the Funding, Sustainability and Risk section
ICT development capacity	Will any ICT developments be carried out in-house?

61	Acronym Wiktionary- Please define all acronyms reported for the monitoring programme
Acronym	Definition
AURN	UK Automatic Urban and Rural Network
CDR	Central Data Repository
DECC	Department of Energy and Climate Change
DEFRA	Department for Environment, Food and Rural Affairs
DEG	Data Exchange Group
EEA	European Environment Agency
EIONET	European Environment Information and Observation Network
FTP	File Transfer Protocol
NRT	Near Real Time
RO	Reporting Obligation
SNHI	Swedish meteorological/hydrological office
…	…