AirMonTech

Illuminating the landscape:

The AirMonTech Research Roadmap

Paul Quincey and the AirMonTech Consortium

Duisburg workshop

4 – 6 March 2013

www.airmontech.eu

Introduction

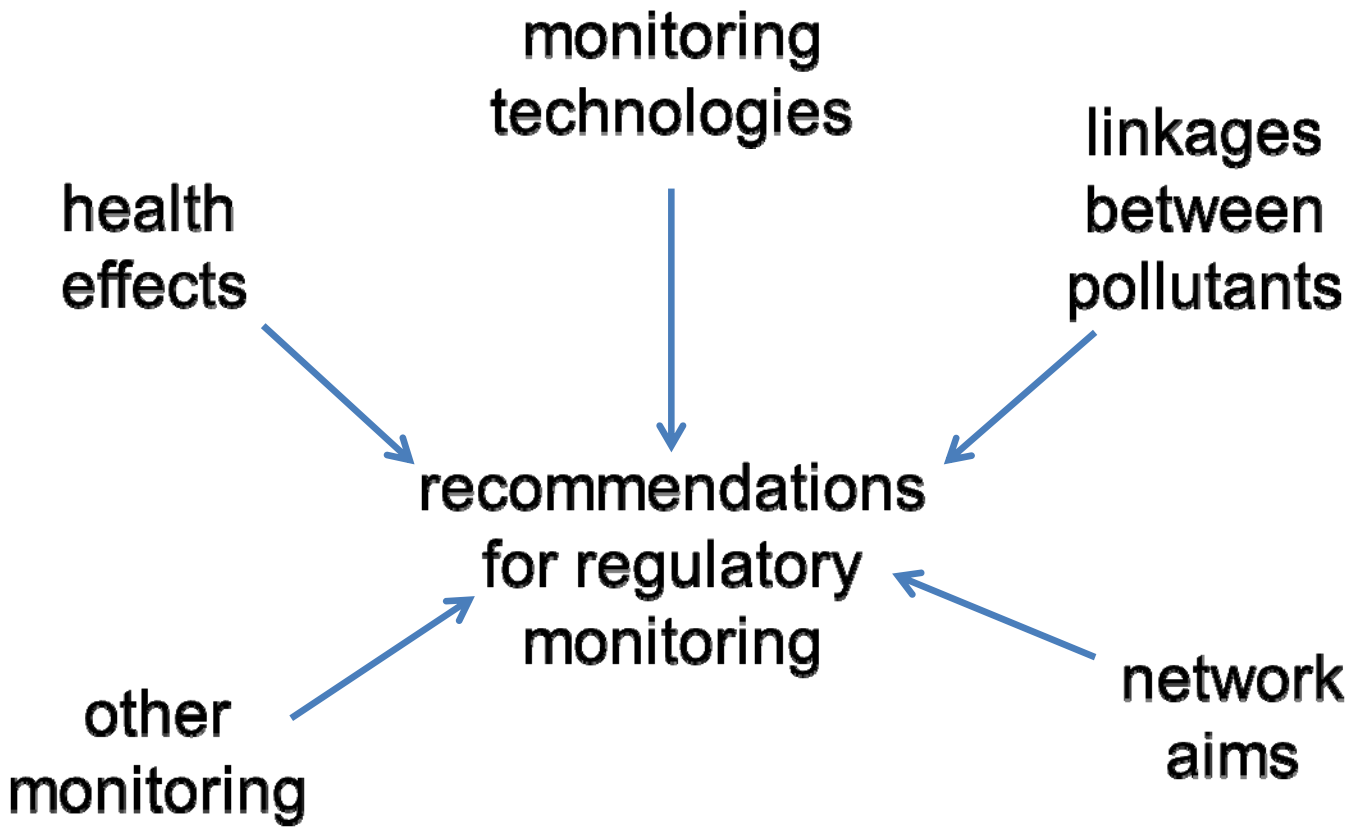
monitoring technologies

recommendations for regulatory monitoring

Air Pollution Monitoring Technologies for Urban Areas

Introduction

NPL National Physical Laboratory



Air Pollution Monitoring Technologies for Urban Areas

The task

National Physical Laboratory

Technologies - where we are

Technologies – current developments

Networks and other tools - where we are

Health effects knowledge - where we are

Air Pollution Monitoring Technologies for Urban Areas

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Where we would like to be

Air Pollution Monitoring Technologies for Urban Areas

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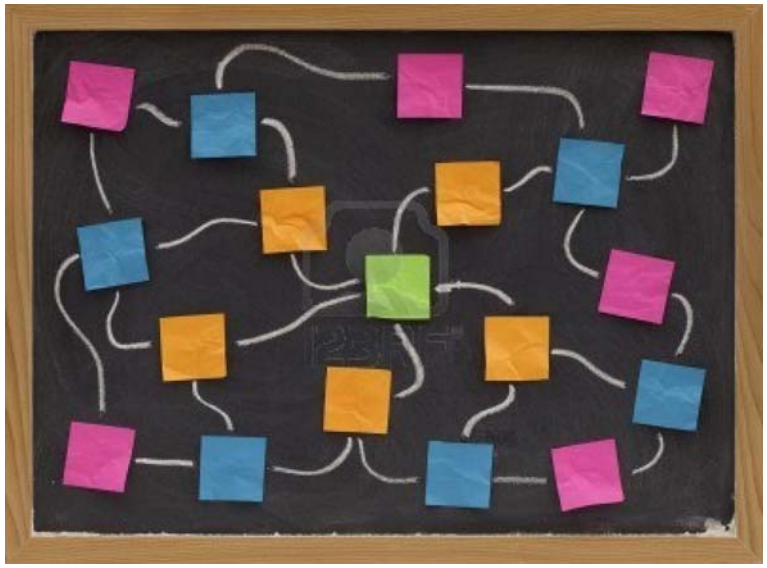

What is a sensible way to bridge the gap ?

Where we would like to be

Air Pollution Monitoring Technologies for Urban Areas

Roadmap: the destination

National Physical Laboratory

Scope for new metrics such as EBC, particle number concentration, surface area concentration, ROS

Well chosen and well defined AQ metrics

2013 → 2020

Air Pollution Monitoring Technologies for Urban Areas

Roadmap: the destination

National Physical Laboratory

Well chosen and well defined AQ metrics

Scope for multi-laser spectroscopy for gases; low cost sensors for gases; miniature optical particle spectroscopy; particle speciation

New and better instruments and sensors

2013 → 2020

Air Pollution Monitoring Technologies for Urban Areas

Roadmap: the destination

National Physical Laboratory

Well chosen and well defined AQ metrics

New and better instruments and sensors

Concept of “supersites” in urban areas; traffic and background

Flexible processes for evaluating new instruments and metrics

2013 → 2020

Air Pollution Monitoring Technologies for Urban Areas

Roadmap: the destination

National Physical Laboratory

Well chosen and well defined AQ metrics

New and better instruments and sensors

Flexible processes for evaluating new instruments and metrics

Bringing the separate disciplines together synergistically

Better integration of ambient monitoring, remote monitoring, emissions data, and modelling

2013

2020

Air Pollution Monitoring Technologies for Urban Areas

Roadmap: the destination

National Physical Laboratory

Well chosen and well defined AQ metrics

New and better instruments and sensors

Flexible processes for evaluating new instruments and metrics

Better integration of ambient monitoring, remote monitoring, emissions data, and modelling

New and better monitoring strategies addressing defined aims

Making it explicit that national monitoring networks have aims beyond compliance monitoring, such as source apportionment, abatement assessment, and scientific understanding.

2013 → 2020

Air Pollution Monitoring Technologies for Urban Areas

Roadmap: the destination

National Physical Laboratory

Well chosen and well defined AQ metrics

New and better instruments and sensors

Flexible processes for evaluating new instruments and metrics

Better integration of ambient monitoring, remote monitoring, emissions data, and modelling

New and better monitoring strategies addressing defined aims

Making health effect monitoring and health impact assessment integral with national AQ monitoring

Integration of routine AQ and health effects monitoring (with the other scientific aims)

2013

2020

Air Pollution Monitoring Technologies for Urban Areas

Roadmap: the destination and philosophy

NPL National Physical Laboratory

Coordinated, focussed projects timed to maximise the use of the available expertise and to fit EU funding cycles

Well chosen and well defined AQ metrics

New and better instruments and sensors

Flexible processes for evaluating new instruments and metrics

Better integration of ambient monitoring, remote monitoring, emissions data, and modelling

New and better monitoring strategies addressing defined aims

Integration of routine AQ and health effects monitoring with other scientific aims

2013 → 2020

Air Pollution Monitoring Technologies for Urban Areas

Roadmap outline

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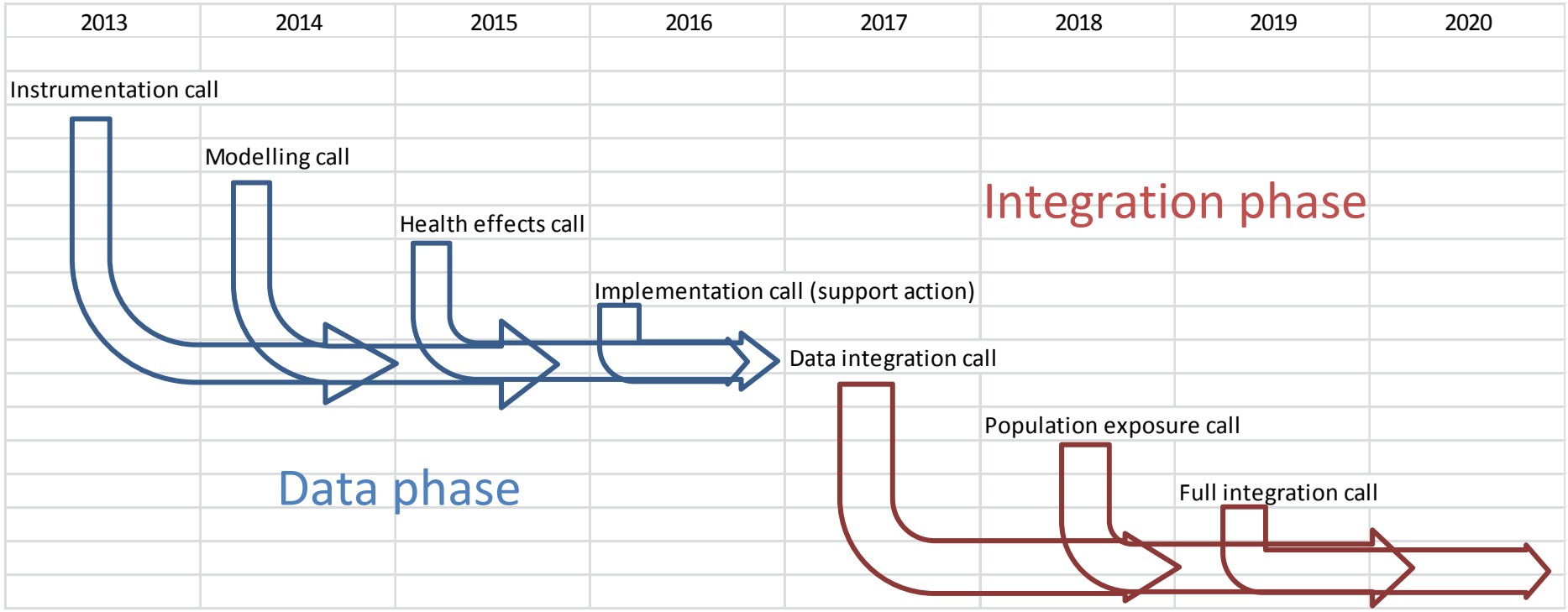

Air Pollution Monitoring Technologies for Urban Areas

Roadmap

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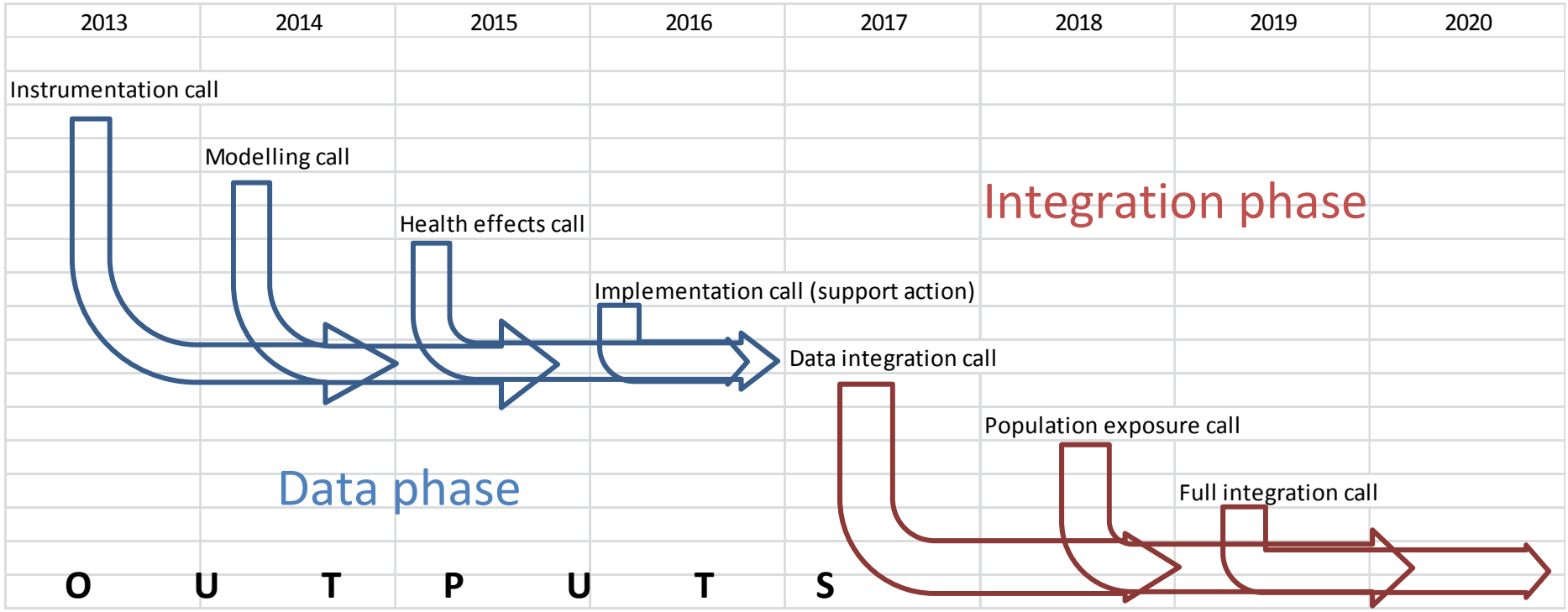

Instrumentation: New and improved monitoring technologies for new and alternative metrics relating to health and source monitoring.

Modelling: Modelling and AQ data integration tool developed, including for alternative metrics.

Health effects: Methods to achieve (Europe-wide) routine health effect monitoring and health impact assessments.

Implementation (SA): Implementation strategies of new AQ network designs, including new metrics.

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Roadmap

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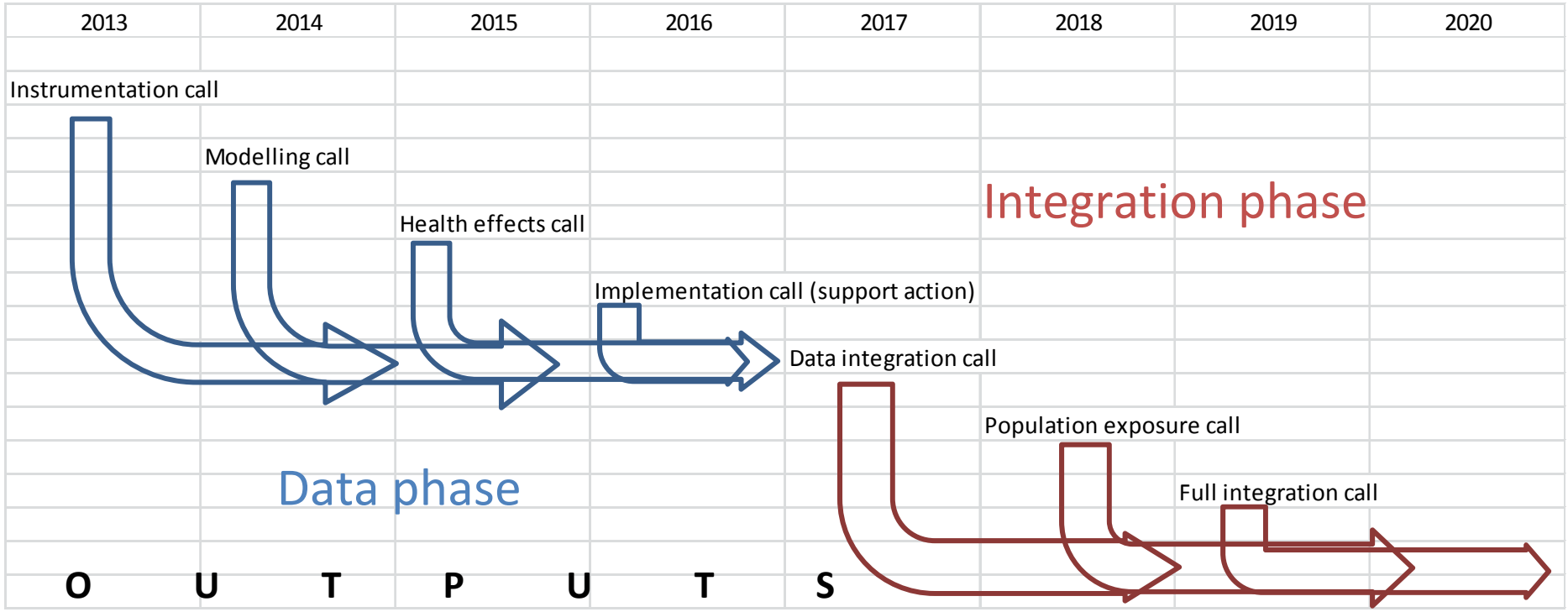

Data integration: Methods for optimised use of all monitoring data and modelling to enable routine health, source, abatement and compliance assessment.

Population exposure: Methods to improve the estimation of population exposure from ambient concentrations and other data.

Full integration: Integration of AQ and health monitoring, together with the supplementary scientific aims, at selected cities.

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SEVENTH FRAMEWORK PROGRAMME

Thank you for your attention

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