

# Acoustics and Ionising Radiation Formulation and Strategy

20 May 2009  
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- What is the future of Programme Formulation?
- What is Rolling Formulation?
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- Roadmaps

# How we fit in

UK Government

Department of Innovation Universities and Skills (DIUS)

Innovation Unit

National Measurement Office (NMO)

National Physical Laboratory (Serco)

Acoustics and Ionising Radiation

Radioactivity Group, Dosimetry Group, ...

Ionising Radiation Metrology Forum

Core metrology work is funded by DIUS through the NMS, currently comprising 12 programmes

The rest of NPL's funding comes from R&D contracts from the public & private sectors, measurement services, and a variety of consultancy and measurement solutions contracts

# Future Formulation

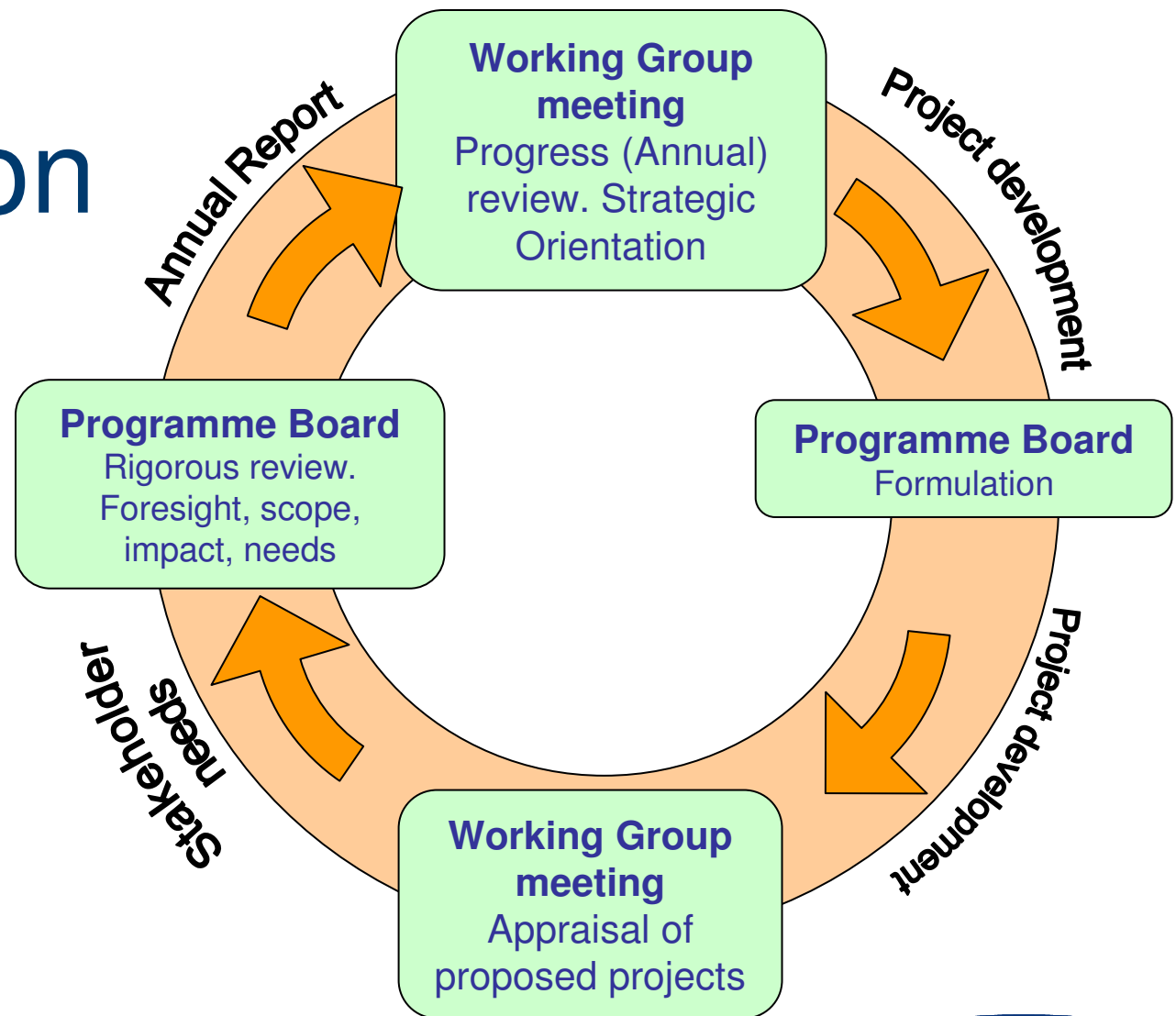
- Improved impact for projects
- More strategic management of Programmes
  - Not just a ranked list of individual projects
- Development of a portfolio of projects to meet a strategy
- Programmes will always extend for 3 years
- Programmes will be more responsive
- Programmes are currently in a period of transition

# Future formulation

- Develop strategy
- Overview
- Roadmaps for next 6 – 10 years
- Rolling formulation (~1 yr) more responsive
- Rigorous review of existing projects
- Annual definition of new projects
- More user focus
  - Better consultation with user groups
- There will still be assessment of ‘impact’
  - Quality of Life
  - Economic
  - Science

# Rolling Formulation

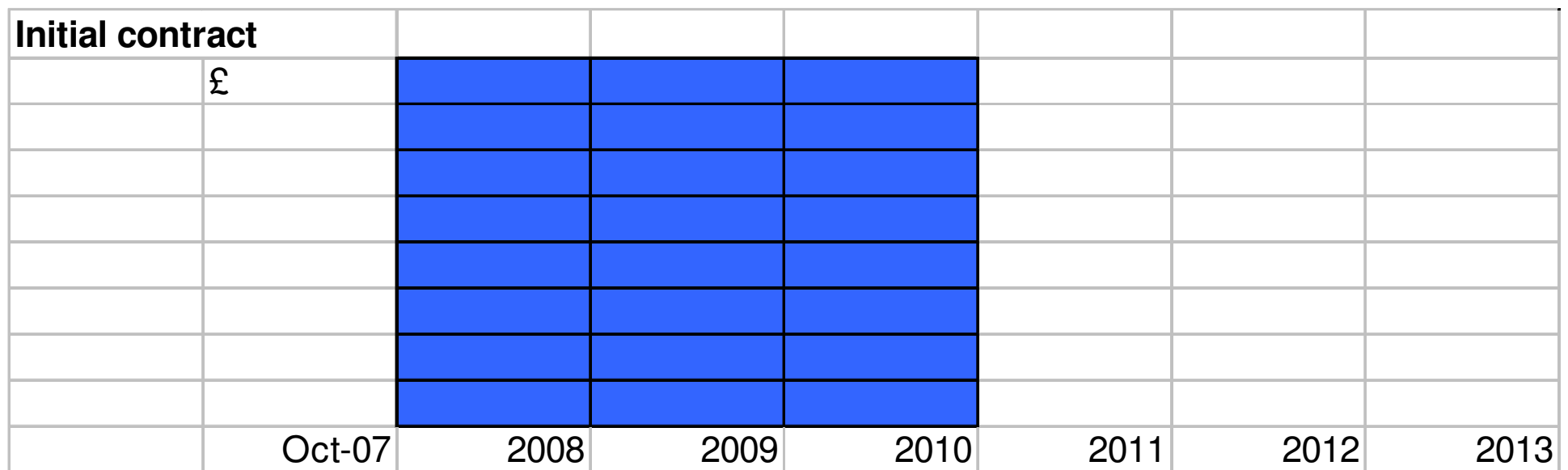
Changing emphasis of NMI and Working Group activity on an Annual Cycle



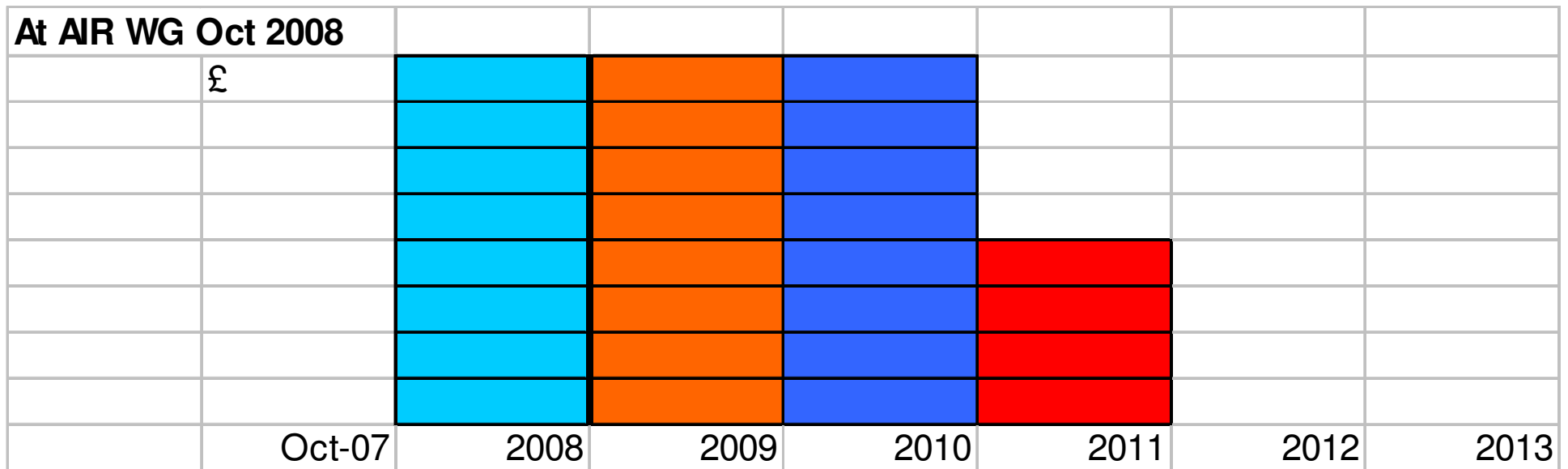
# AIR WG meetings

- Completed
  - 17 Feb 2009 Programme Board
    - Rigorous review. Foresight, scope, impact, needs
  - 23 Feb 2009 AIR WG
    - Progress review
    - Strategic orientation
  
- To do
  - 17 June 2009 Programme Board
    - Formulation
  - 4 Sept 2009 AIR WG
    - Appraisal of proposed projects

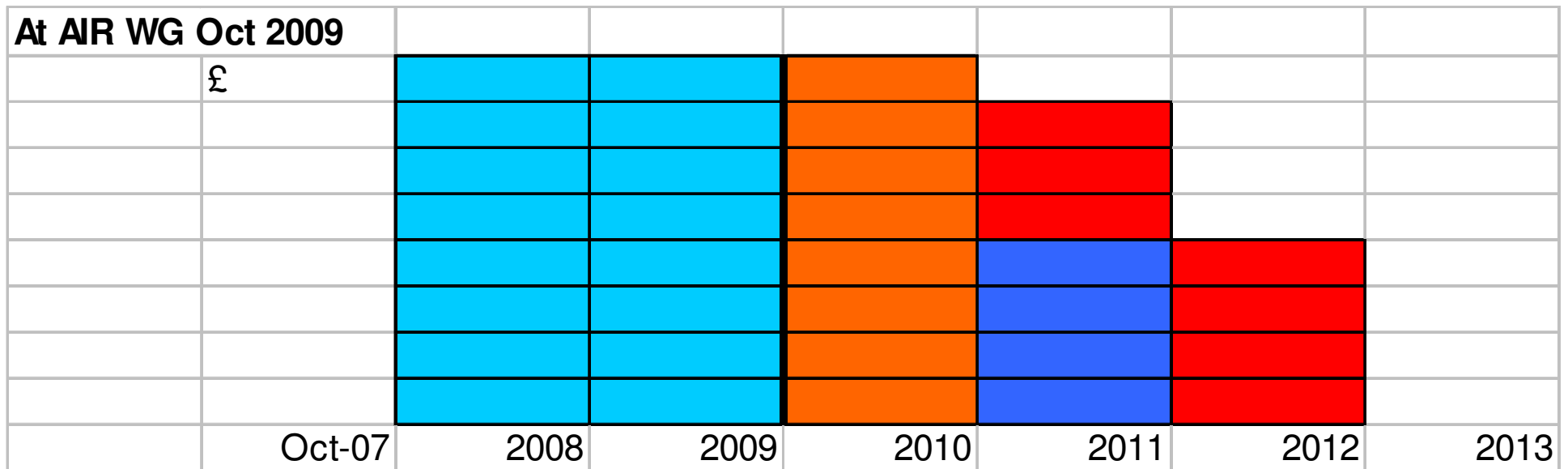
# AIR Rolling Formulation



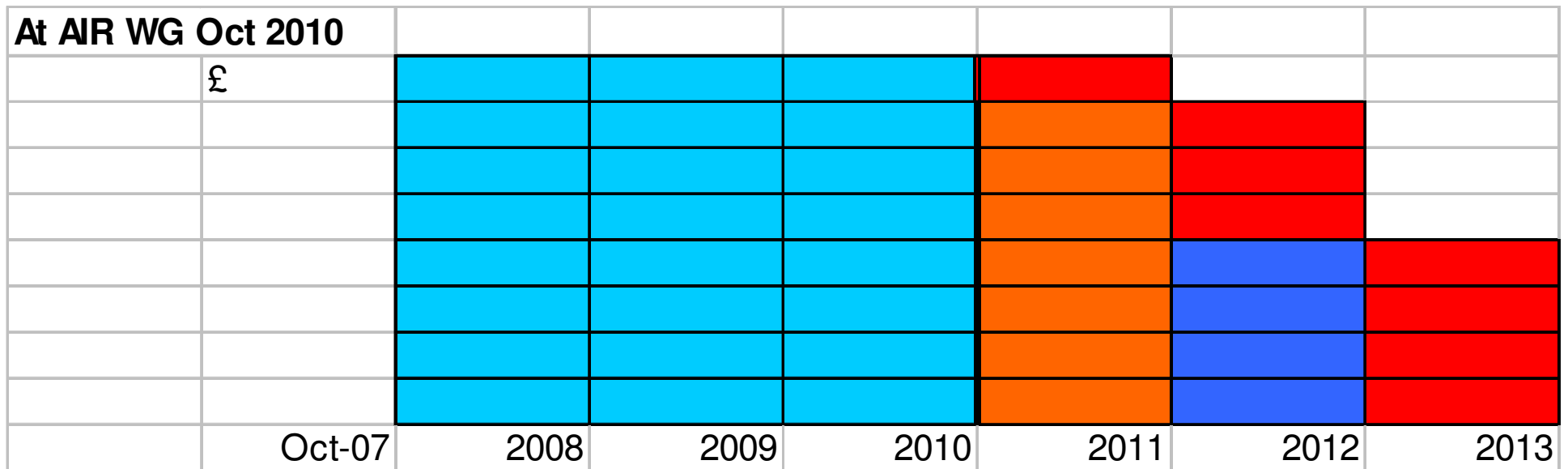
# AIR Rolling Formulation



# AIR Rolling Formulation

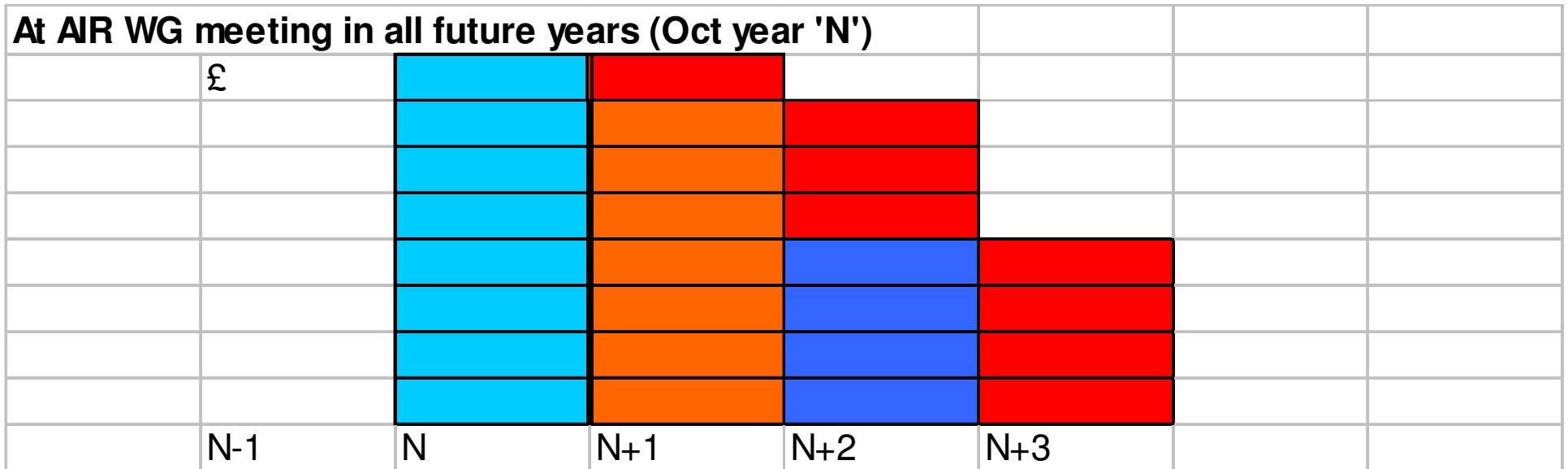


# AIR Rolling Formulation



# AIR Rolling Formulation

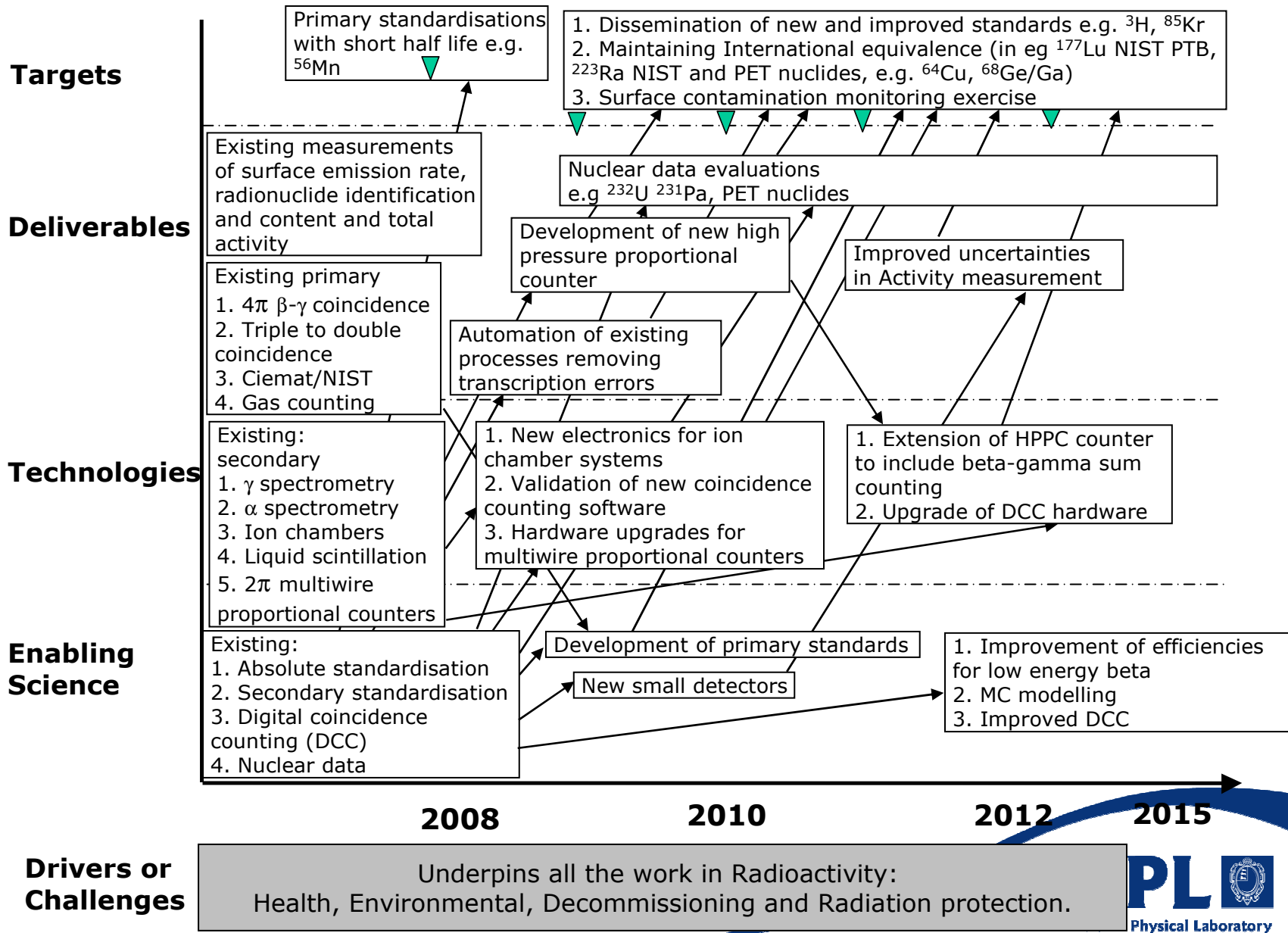
	Funded
	Completed
	New projects
	Rigorous review



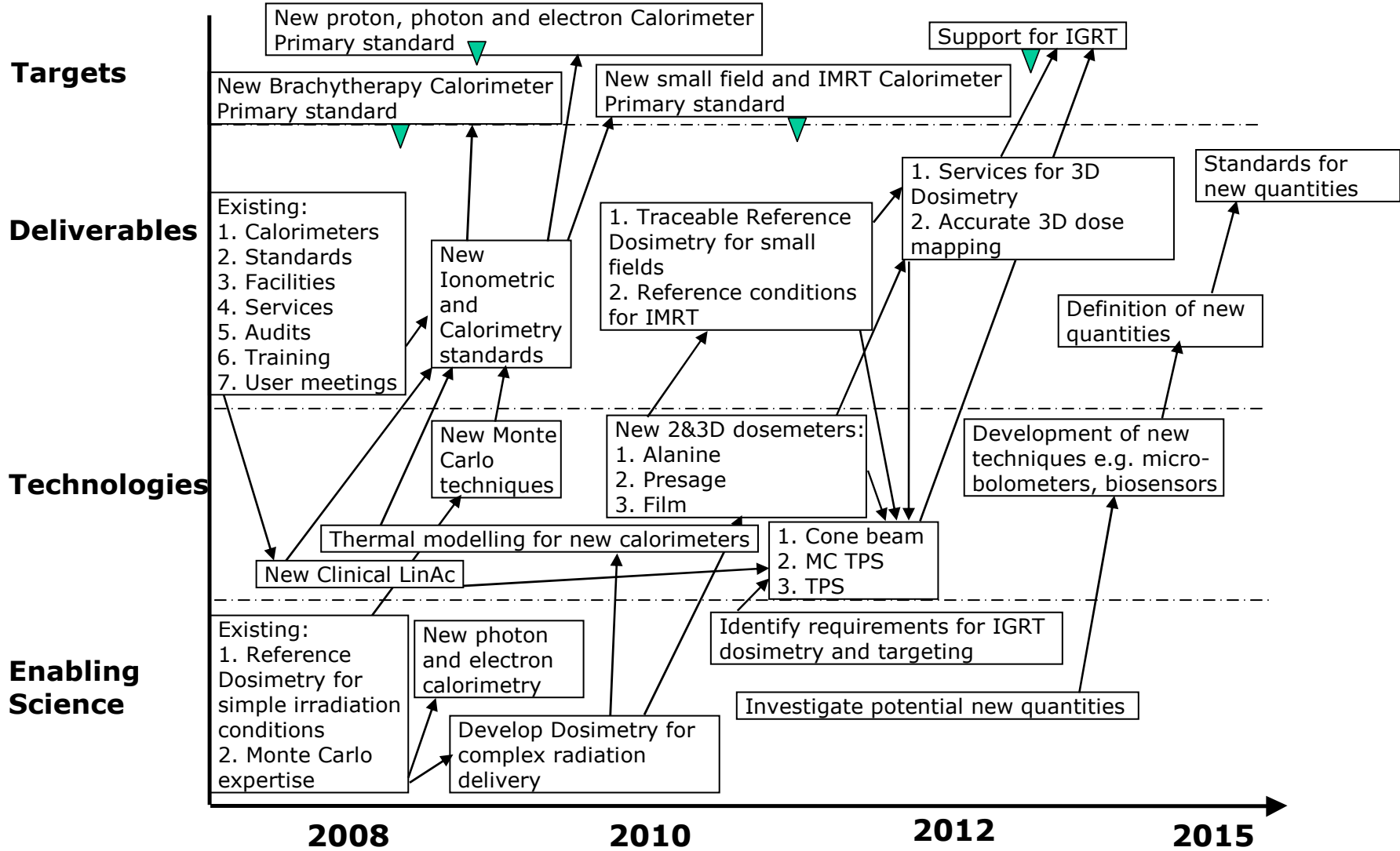
# AIR Programme Overview

NATIONAL MEASUREMENT SYSTEM						
Acoustics and Ionising Radiation PROGRAMME OVERVIEW						
APPLICATION AREA & PRIORITY FOCUS OF IMPACT	CHALLENGE	HOW THE NMS PROGRAMME INTENDS TO ADDRESS IT			SPECIFIC NMS IMPACT	
Healthcare - Therapeutics	Improving cure rates and quality of life for UK citizens (disease treatment and amelioration)	Developing metrology infrastructure to support the effective use of existing and new modalities in radiotherapy (IMRT, Stereotactic, IGRT, targeted radionuclides), ultrasound (inc. HIFU) and application of digital hearing aids.			Effective application of ionising radiation and acoustics in medicine	
Healthcare - Diagnostics	Medical diagnostic techniques for accurate and earlier diagnosis of disease	Development of new methods of measurement, instrumentation, test protocols, standards, measurement services, quality assurance, proficiency test exercises, good practise guides (e.g. in nuclear medicine, ultrasound and X-ray)			Optimised application of medical diagnostic techniques	
Healthcare - Personal Safety Underpinning Metrology - Regulation	Protect the public and radiation workers from ionising radiation	Disseminate legally traceable personal standards that meet evolving regulator needs			Continued safe operation of industries that use ionising radiation (IRR99, IRMER)	
Environmental Sustainability - Pollution Healthcare - Personal Safety	Protection of the public and marine environment from anthropogenic noise	Development of methodologies (including MEMS), standards, and new instrumentation to support urban noise mapping & marine renewable energy sources (wind-farms; tidal etc.)			Better understanding and mitigation of the effects of personal and environmental noise exposure	
Environmental Sustainability - Pollution Energy Gen & Transmission - Emissions reduction	Decommissioning of nuclear power facilities; management of radioactive discharges and nuclear waste	Providing standards, reference materials, consultancy, tools (e.g. microfluidics), exercises and proficiency tests of UK (and CTBTO) environmental laboratories			Enable the UK to comply with international obligations and more accurate sentencing of waste	
Security - National Security Security - Personal Security	Prevent and reduce significant security threats, national emergencies and improve to personal security.	Characterising sonar systems under ocean-like conditions. Developing new generation of measurement techniques. Enabling countries to move to civil uses of nuclear technology by training, consultancy and measurement expertise.			Reduce risks from nuclear weapons and enhanced marine defence.	
Energy Gen & Transmission - Production	Maintain and develop capabilities for existing and new nuclear power facilities. Establish new energy sources.	Validation and adapting current NPL facilities to perform reactor instrumentation tests. Measurements in support of the off-shore oil and gas industry.			Maintaining a science base to support national nuclear energy options and hydrocarbon exploration.	
Advanced Manuf. - Process Control Advanced Manuf. - Instrumentation	The optimised application of industrial processes and non-destructive monitoring techniques	Developing and dissemination of standards to meet the requirements of the radiation processing industry. Development of methodologies, standards, and new instrumentation for acoustic emission and hydrodynamic cavitation			Affordable control of infection rates. Optimised application of ultrasound in detection and processing	
Underpinning Metrology - Extension of SI Underpinning Metrology - Traceability	Enabling the measurement of acoustic and ionising radiation quantities at the accuracy required by society	Providing traceability to the SI by maintaining and developing standards and measurement methods, linking to international metrology, and providing measurement services and advice to users			Internationally accepted and accessible measurement standards	
<b>Programme Themes</b>	<b>Sound-in-Air</b>	<b>Sound-in-Water including ultrasound</b>	<b>Radiation Dosimetry</b>	<b>Neutrons</b>	<b>Radioactivity Primary and Secondary Stds</b>	<b>Radioactivity Sector related activities</b>
						<b>Knowledge Transfer and Management</b>

# Theme Roadmap – Radioactivity primary and secondary standards



# Theme Roadmap – Dosimetry:Radiotherapy



## Drivers or Challenges

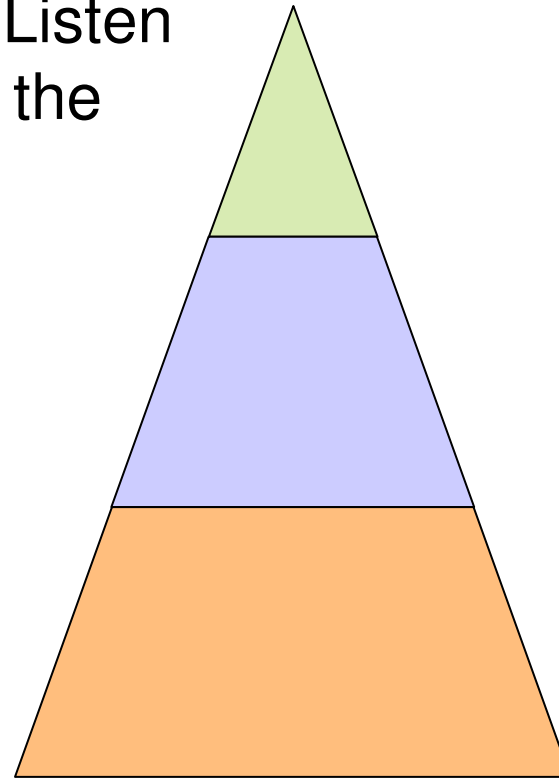
**Cancer mortality is over 150,000 per year and increasing. After surgery, radiotherapy is the next most effective modality for treating cancer and plays a role in over 40% of all those who are cured**

# Stakeholders

1. One to one visits to customer site. Listen to the Voice of the Customer

2. User group meetings and Focussed Interest groups

3. Email and web consultation



# Comment

Your comments are welcome

1. Ideas for new projects
2. Strategy for the National Measurement infrastructure
3. Optional Project Outline Proposals
4. Essential Project proposals

A web area is at

[www.npl.co.uk/air/](http://www.npl.co.uk/air/)

By end of May 2009

# Thank you

## Any Questions?

## Contact

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