

EUROPEAN METROLOGY PROGRAMME FOR INNOVATION AND RESEARCH

EMPIR

MAY 2013

Joint programming of metrology research



- coordination of national metrology research programmes
 22 participating states in EMRP
 - 27 participating states in EMPIR
- jointly agreed strategic research agenda
- implemented by EURAMET e.V.
- highly integrated



28 European states have committed to EMPIR



1	Austria	15	Italy
2	Belgium	16	Netherlands
3	Bosnia Herzgovina	17	Norway
4	Bulgaria	18	Poland
5	Croatia	19	Portugal
6	Czech Republic	20	Romania
7	Denmark	21	Serbia
8	Estonia	22	Slovakia
9	Finland	23	Slovenia
10	France	24	Spain
11	Germany	25	Sweden*
12	Greece	26	Switzerland
13	Hungary	27	Turkey
14	Ireland	28	United Kingdom

Total national commitment of more than 300 M€

black: the 22 EMRP participating states

red:

the 6 new countries committing to EMPIR

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The structure of EMPIR					
Module 1:	Fundamental scientific metrology				
Science	Grand challenges Energy, Environment, Health	48 %			
Module 2:	Industry-driven joint research				
Innovation	Technology-transfer projects	22 70			
Module 3 : Pre-normative	Pre- and co-normative metrology R&D	10 %			
Module 4:	R&D for measurement capabilities				
Capacity building	Capacity building projects				
running costs, central support					



Towards EMPIR



Impact assessment (IA)

- Draft roadmap (August 2012)
- Expert group (September January 2013)
- Interservice Group (September 2012 January 2013)
- Public consultation, survey and meeting (October 2012 January 2013)
- COM Impact Assessment draft report (January 2012)
- Impact Assessment Board (February 2013)

Commission Proposal (Commission decision, annexes, IA)

- Interservice Consultation on the draft proposal(March/April 2013)
- Revision of the draft proposal, translation (May/June 2013)
- Adoption Commission proposal (<u>after</u> Horizon 2020 agreement, target 10 July 2013)

Co-decision procedure (July 2013 – April 2014)

"Ahead-of-contract preparations (early 2014)

Formal Publication OJ (Summer 2014)

Conclusion General Agreement (Summer 2014)

Formal start of the initiative (autumn 2014)



Commission proposal

Proposal for a DECISION OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL on the participation of the European Union in a European Metrology Programme for Innovation and Research (EMPIR) jointly undertaken by several Member States

Content:

Draft decision

- Explanatory memorandum
- Decision as such (recitals and articles)
- Annex 1: Objectives
- Annex 2: Activities and Implementation
- Annex 3: Governance
- Legislative Financial Statement
- Citizens summary
- Impact Assessment Report, Executive Summary, IAB opinion





EMPIR Objectives

Boost industrial uptake and improve standardisation

- At least €400m of European turnover from new or significantly improved products and services that can be attributed to the research activities of EMPIR and its predecessors
- At least 60% of CEN/CENELEC /ISO/IEC Technical Committees and equivalent standardisation bodies with potential to benefit directly from EMPIR projects to engage with the programme

Underpin a coherent, sustainable and integrated European metrology landscape to fully exploit the EU potential

- Maintain a level of at least 50% of dedicated national metrology research investments in Europe being coordinated or influenced via the programme
- All European NMIs and their designated institutes interact with the programme
- European leadership in at least 20% of international metrology committees





EMPIR Activities

The main activities of EMPIR shall consist of the following joint research and technological development actions:

- A scientific-technical programme which supports fundamental scientific metrology laying the basis for all successive steps including applied metrology research and development and metrology related services;
- Metrology research into societal challenges focusing on contributions for energy, environment and health;
- Research into novel measurement instrumentation aiming at industrial takeup of metrological technologies to stimulate innovation in industry;
- Pre-normative and co-normative metrology research and development for priority documentary standards aiming to use the expertise of metrology institutes in Europe to support policy implementation and accelerate innovative products and services to market;
- Metrology capacity-building activities on different technological levels aiming to achieve a balanced and integrated metrology system in Europe.





EMPIR Activities (cont.)

The main activities shall be carried out by NMI and DI.

EMPIR shall encourage and support the participation of other entities. This approach is expected to lead to around 15% of the budget of EMPIR going to those entities.

In addition:

- Support services to increase exploitation and deployment of metrology research from on-going projects and to build on knowledge in order to achieve greater socio-economic impacts.
- Activities specifically addressing metrology institutes with no or limited scientific capabilities, by supporting them in using other European, national or regional programmes for training and mobility, cross-border cooperation or investment in metrology infrastructure.
- Networking activities to promote EMPIR and maximise its impact.



EMPIR Modules



Module 1:	Fundamental scientific	like EMRP TP OE, more focussed on metrology than			
	metrology	pure blue sky research			
	Grand challenges	like FMRP TP FNG FNV HFA but stronger focus on			
Science	Energy, Environment,	sustainable infrastructures \rightarrow MRIs			
	Health				
Module 2: Innovation	Industry-driven joint	like FMRP_TP IND			
	research				
	Technology-transfer	as "Extension" or own project type			
	projects				
Module 3:	Pre- and co-normative	as "Extension" or own project type			
Prenorm.	metrology R&D				
Madula 4.	R&D for measurement	like EMRP TP SIBS \rightarrow related to MRIs			
Capacity building	capabilities	or as "research notential projects RPot"			
	Capacity building	of as research potential projects, kPot			
	projects	Focus group taking the wider EURAMET view			
running costs, central support		like EMRP, in addition 2 – 4 persons for CP und			
		innovation/impact			

JRP extensions



	Contract for RTD phase	Additional contract for impact achieving phase
(γ
	Partner 8	Preparation industry take-up
	Partner 7	
	Partner 6	Finalise standardisation activities
	Partner 5	
	Partner 4	Finalise regulation input
	Partner 3	
	Partner 2	Preparation industry take-up
	Partner 1	Finalise standardisation activities
t=0	1 2	3 4 5 6 Project duration in years
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- extensions for enhancing impact : standardization, innovation uptake
- extensions up to 3 years
- eligible: NMI/DIs, staff costs, other direct costs
- after JRP, no parallel "filling the gaps"
- open for all iMERAplus and EMRP project
- for EMPIR projects to be considered already in planning phase

JRP extensions



Survey among JRP project partners (382; 59 responding) in May 2013: (done by Michael Huch and Lucy Buckby)

- 90% have interest in extension phase
- 65% see contributions to a standards, 85% the uptake of research results by industry
- 50% estimate the effort between 6 and 18 person-months;
 33% expect less than 6 person-months;
 20% more than 18 person-months
- 50% estimate costs between 10,000 and 30,000 € appropriate;
 33% estimate lower than 10,000 €; 20% to be higher than 30,000 €.
- 60% assume this period to be between 12 and 24 months; each 20% either below 12 or higher than 24 month.

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"Institution-centred research capacity building project" Increase "Research Potential" of NMI/DI

Activities – incl. RTD – may comprise

- a) SWOT analysis of the targeted NMI / DI
- b) Draft an action plan for the strategic development
- c) Conduct focused research in selected core areas
- d) Activities related to human resources development, staff exchanges, trainings, etc.



Draft Scientific Research Agenda (SRA) – to be approved by EMRP/EMPIR committee



	SI units		yr	M€	TPs	M€		M€	
2007	Health		2014	50	IND	40	TT,	Δ	
	Length				RPot	6	standardization	-	
	EM			80	HEA		> addresses inno	 vation/	industry
2009	Energy						explicitely	vation	muustiy
2010	Env.		2016	95	ENV		addresses CB explored of those ways and the second seco	xplicite	ly on the
2010	Industry						commitments		
	Health		2017	95			➢ defines TP only	where	relevant
2011	SI BS				 HFA		now: Grand Challenges		
	New Techn.		2018	95			2014 call comp	lete	
	Industry				ENV		calls 2015 – 202 include TPs:	20 later	, will
2012	SI BS		2019	95	ENG		 Industry SI BS 		
	Open exc.		0000						
	Energy		2020	90			– Fundamer	itals	
2013	Env.	G07.05 EMPIR 7 th FLIRAMET General Assembly, Revkiavik, 28-29 May 2013							15

Long-term strategy and MRIs



yr	TPs	extensions
2014	IND RPot	TT, stand.
2015	HEA 	
2016	ENV ENG 	
2017		
2018	HEA 	
2019	ENV ENG 	
2020		

Identify future sustainable, European metrology (research) infrastructure to work towards

- likely associated with grand challenges
- include TCs in that work
 - most powerful structures to develop strategy; roadmaps, infrastructures
- possibly adapt the selection criteria of associated JRPs



- Strategy development
 - make full use of EMPIR; its size, strategic opportunities and multiannual approach
- National commitments
 - funding rules will change
 - consider new opportunities

National funding (predicted/commitment)





