Making it happen: Aligning impact to meet the need

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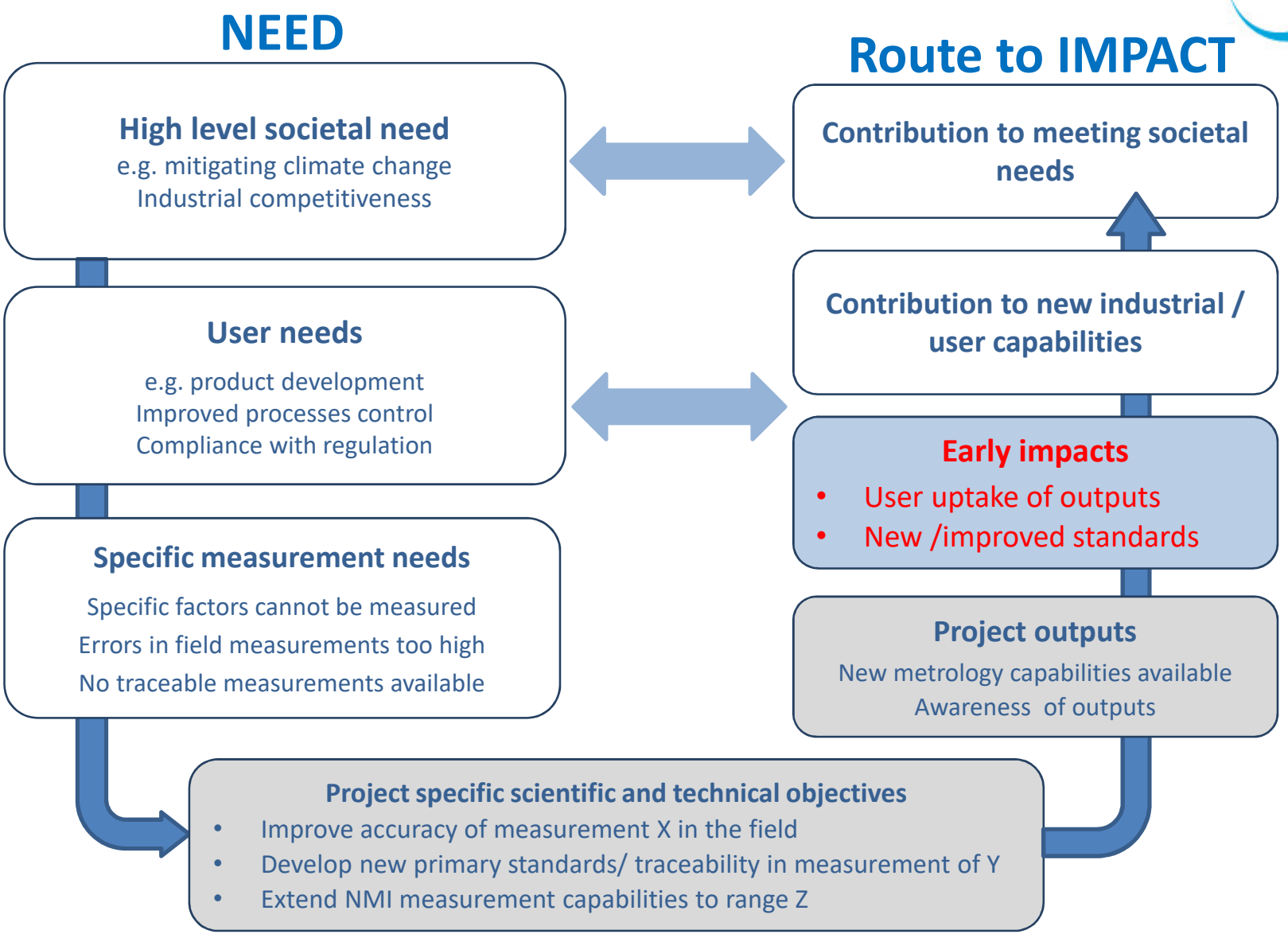
What impact is for us



Three Tasks

Task 1	Identifying the need
Task 2	Identifying the route to impact
Task 3	Designing & delivering the impact workpackage

Three Tasks

Task 1	**Identifying the need**
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Task 1: Identifying the need

4.5.4 Section B1.d: Need for the project

This section must **explain a clear need for the project** i.e. why the project is being undertaken. It should be approximately 1 page in length and should explain the background to the need for the project, i.e. why improved measurement capability, measurement techniques and better measurements are needed and who needs them.

The description should follow **a logical flow from the high-level needs** (e.g. to contribute to mitigating climate change, improve productivity in sector X), **through to the specific user needs** (problems encountered in specific types of companies or public agencies) **that needed to be addressed via improved measurement capabilities at NMIs/DIs**. For Research Potential projects, the needs and drivers for the development of the capability from end users and stakeholders outside the metrology community must be described.

The **explanation of the need for the project should link clearly to the project's scientific and technical objectives** and explain the need for each of them i.e. it should be clear to the reader why the project, with its particular objectives, needs to be conducted. Where relevant, you should refer to the European legislation, documentary standards, technology roadmaps etc. that need to be addressed.

If your project continues the work undertaken in a previous JRP please summarise why further work is needed in this area.

You may also include evidence of support from the "end user" community (e.g. letters of support; see Section 2), but please note that all references to letters of support will be removed during negotiations, therefore the need should be adequately explained without requiring reference to them.

In SRTs for pre- and co-normative JRPs there may be a requirement for the proposed research to be justified by "clear reference to the measurement needs within strategic documents published by the relevant Standards Developing Organisation (SDO) or by a letter signed by the convenor of the respective TC/WG". In those cases

Task 1: Identifying the need

NEED: what problem is metrology research solving?	
High level societal need	e.g. • Improved productivity in sector A • Diagnosing and treating cancer, heart disease, etc • Monitoring and mitigating climate change
Specific user need	e.g. • **Sector A** needs to better understand the performance of new materials / products /methods to support new product development • **Sector B** needs to understand and improve process control • **Sector C** needs to demonstrate compliance with challenging regulations or standards / comply more efficiently with regulation
Specific user measurement need/ problem	e.g. • Measurements of parameter X are not robust / reliable/ comparable and this causes over-engineering, additional costs, additional waste • Regulation sets low permissible values of parameter X, beyond limit of current instrumentation or traceability capabilities
Metrology solution to the need above	e.g. (*these are the projects objectives*) • Extend NMI/DI measurement range • Reduce uncertainties • New measurement methodologies required

Task 1: Example

NEED: what problem is metrology research solving?	
High level societal need	• Competitiveness of automotive, petrochemical and pharmaceutical industries.
Specific user need	• New high pressure manufacturing techniques (such as autofrettage, hydroforming and isostatic pressing) can improve the quality and lifetime of products, increase process efficiency and, in some cases, reduce emission of final products. () *For example autofrettage is used in the automotive sector to strengthen components in diesel engines operating at higher fuel injection pressures. This results in increased fuel efficiency and compliance with European emissions regulations.* • These new techniques use pressures up to 1.5 Gpa
Specific user measurement need/ problem	• Pressure transducers used in industry are not sufficiently accurate at such high pressures and so the manufacturing processes cannot be adequately controlled: too little pressure and components are not sufficiently hardened; too much and they are damaged • There is no NMI/DI capability above 1 Gpa to provide the accuracy required
Metrology solution to the need above	e.g. (*these are the projects objectives*) • Extend NMI/DI measurement range for pressure to 1.6GPa with an uncertainty of $5x10^{-4}$ • Develop transfer standards for pressure from 1.0-1.6 Gpa • Etc…

Task 1: Identifying the need

NEED: what problem is metrology research solving?	
High level societal need	
Specific user need	
Specific user measurement need/ problem	
Metrology solution to the need above	

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Task 2: Route to impact

4.6 Section B2: Potential outputs and impact from the project results

This section is made up of four sub-sections. In Sections B2.a, B2.b and B2.c you should provide details of the **early impacts** (see definition below) in three areas (i) user uptake and use of project outputs amongst industrial and other user communities and (ii) uptake and use by the wider metrological and scientific communities and (iii) improved standards and uptake by the standardisation community, (respectively). Then in Section B2.d describe the **wider economic and social impacts** that your project will contribute to and the routes to facilitate them.

You should describe how your project will make a positive difference to Europe (and internationally) by addressing the needs described in Section B1.d. This should not be a statement of what your project will do (i.e. you do not need in-depth technical details), but a statement of the benefits the project will bring to those who make direct use of the new measurement capabilities (**early impact**) (such as reduced uncertainties, extended measurement ranges, new reference standards, new or improved methods, devices, prototypes, new knowledge, etc.) and how these early impacts will contribute to the wider economic and societal benefits (**wider impacts**). You should also ensure that the impact you describe can realistically be achieved by your project.

You should clearly explain what the impacts will be and the route to impact. You should clearly explain:

- What the new measurement capabilities will be at the end of the project (**project outputs**) and how these will lead to benefits for the direct users of the new measurement capabilities, and who these direct users will be (**early impact**) (Sections B2.a, B2.b and B2.c)
- How the **early impacts** will lead to wider economic and social benefits (**route to wider impact**) such as such as, improving industrial productivity, mitigating climate change, supporting the implementation EC Directive (Section B2.d)

The early impacts and benefits you describe should be specifically attributable to the outputs and aims of the project.

Task 2: Route to impact

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Consider impact on:

Industrial communities (direct & indirect)

Public services

Regulation and documentary standards

- How the **early impacts** will lead to wider economic and social benefits (**route to wider impact**) such as such as, improving industrial productivity, mitigating climate change, supporting the implementation EC Directive (Section B2.d)

The early impacts and benefits you describe should be specifically attributable to the outputs and aims of the project.

Task 2: Route to impact

What IMPACT do you expect to have and how will it happen?	
High level societal need	• Improved productivity in sector A • Diagnosing and treating cancer, heart disease, etc • Monitoring and mitigating climate change
Wider /indirect beneficiaries	**Customers of the direct beneficiaries (so meeting the wider need) e.g.** • Manufacturers in sector A who use measurement instrumentation / accredited labs • Public organisations (such as environment agencies, hospitals) • Consumers
Direct (first) beneficiaries	**People /organisations who will be the first users of the metrology solutions to solve their measurement problem e.g.** • Measurement instrumentation manufacturers • Accredited laboratories • Manufacturers in sector A who use measurement instrumentation • Regulators/ standards developing organisations
Metrology solution	e.g. (*these are the projects objectives*) • Extend NMI/DI measurement range • Reduce uncertainties • New measurement methodologies required

How will they access the new capabilities

How will they access the new capabilities

Task 2: Example

What IMPACT do you expect to have and how will it happen	
High level societal need	• Improved products in automotive sector - for reduced emissions • Improved processes in petrochemical and pharmaceutical sectors
Wider /indirect beneficiaries	**Customers of the direct beneficiaries (so meeting the wider need) e.g.** • Automotive manufacturers • Manufactures of vessels for petrochemical and pharmaceutical companies
Direct (first) beneficiaries	**People /organisations who will be the first users of the metrology solutions to solve their measurement problem e.g.** • Manufacturers of pressure transducers & pressure measurement instrumentation • Manufacturers of autofrettage , hydroforming & isostatic pressing equipment • Accredited labs with services in pressure calibration • ISO TC 123, WG3
Metrology solution	e.g. (*these are the projects objectives*) • Extend NMI/DI measurement range for pressure to 1.6GPa with an uncertainty of $5x10^{-4}$ • Develop transfer standards for pressure from 1.0-1.6 Gpa • Etc…

Task 2: Route to impact

What IMPACT do you expect to have and how will it happen	
High level societal need	
Wider /indirect beneficiaries	
Direct (first) beneficiaries	
Metrology solution	

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Task 3: Designing & delivering the impact workpackage

Knowledge Transfer	**Dissemination / communication** Who you will target with your impact generating activities and how you will reach them? • Where do they meet? • What do they read?
Training (as a specific form of knowledge transfer)	**Upskilling users of metrology** Who do you expect to attend? What will they learn? How will you reach them / how will they know about the training?
Uptake and exploitation	**Uptake (early adopters)** What are your plans to proactively encourage and enable outputs to be adopted/used by users in the industrial and public service communities? • What will be form the of the relevant project outputs and how will they be made available to users? (e.g. calibration services, measurement guides, reference materials, software, new measurement methods, etc) • What will you do to encourage and enable adoption? (e.g. validate industrial prototypes / field trials / co-design new instrumentation with industry, etc) • If formal IP is expected (if any) what is the exploitation plan?

Task 3: Designing & delivering the impact workpackage

Knowledge Transfer	
Training	
Uptake and exploitation	

Demonstrating impact

Recognise and report impacts *(tell the MSU!)*

- **Output and Impact Report**
  - Enables reporting of outputs at programme level (*all worksheets*)
  - Provides information to identify **impact case studies** *(uptake worksheet)*
  - Data for bibliometrics
- **Final Publishable Reports**
  - Demonstrate the value of your project to the funding bodies
  - Provide examples of uptake/adoption (you don't have to name specific companies if it is confidential - just say, for example, a accompany in the instrumentation sector has validated their new instrument against the new calibration services available)