

<p><b>1. Analysis of needs <sup>1</sup></b></p> <p><i>In this chapter it is foreseen to explain how you approach your stakeholders in order to acquire their opinins. A list of all stakeholders collected in questionnaires for the first part of the workshop in available in the section "Comments".</i></p>
<p><b>Description of the methodology and assessment of the performance of the analysis of needs</b></p>
<p><b>Description of the results of the analysis - What are most important needs to be addressed</b></p>
<p><b>Description of planned further analysis of needs</b></p>

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<sup>1</sup> Proposed ways to get information on stakeholders' needs:

- Direct meeting with heads of particular stakeholder (organisation)
- Surveys / Questionnaires
- Open days
- Workshops
- Received calibration / verification requests (important in this case if they can not be performed because of the lack of capacities)
- Request from ministries
- Meetings of the NMI supervisory/advisory board

<p><b>2. Decisions on priority areas of development (based on 1, including timeframe)</b></p> <p><i>Description of the decisions, i.e.</i></p> <ul style="list-style-type: none"> <li>- <i>why those priority areas have been selected and justification for setup/strengthening of own capabilities (instead of channeling services to other established providers e.g. in the region)</i></li> <li><i>or</i></li> <li>- <i>decision not to develop particular capacities because the need can be solved in more efficient way using capacities within the European metrology network</i></li> <li><i>or</i></li> <li>- <i>decision to develop particular capacity jointly with another NMI/DI</i></li> </ul>
<p><b>New measurement fields</b></p>
<p><b>Improvement of measurement fields</b></p>
<p><b>New services</b></p>
<p><b>Intention to participate in RPOTs<sup>2</sup> (other JRPs)</b></p>
<p><b>Submission of new CMCs<sup>3</sup></b></p>

<sup>2</sup> For your information please see the attached list of PRT ideas during the 2014 FG meeting and list of PRTs that have been submitted in 2014

<sup>3</sup> Please see the excel file "CMCs\_ManaTrainII.xlsx"

<b>3a/ Measurement Capacities to be developed (including timeframe)</b>
<b>3b/ Measurement Capacities to be reduced (including timeframe)</b>

<b>4 Organisational capacities to be developed (policies, management procedures, processes, cooperation structure, internal and external communication, etc.)</b>

<b>5 Human capacities to be developed (management capacities, technical capacities, etc)</b>

<b>6. How this strategy building block is integrated into a broader development perspective / plan</b>

<b>7. Role and importance of the regional cooperation between NMI (areas, objectives, how formal are agreements, etc.)</b>

<b>8. Explanation if preparation of particular chapters has been prepared in collaboration with other NMIs</b>

### Additional questions

**What kind of new challenges have occurred in the process of NMI strategic plan development**

**What areas / challenges should be addressed by specific inputs in the next workshop on March 12/13**

## **RPOT PRT ideas during the 2014 FG Meeting:**

PRTs related to establishment/improvement of traceability

- Traceability in density measurement
- Traceability in MiC / analysis of precious metals
- Traceability for LIDARs
- Traceability in T&F
- Traceability for medical Measuring Devices
- Traceability in gas metrology (MiC)

Other PRT proposals

- Thermometry fixed points (cells)
- Radiation thermometry
- Traceability in Humidity
- Medical Metrology
- Dissemination of T&F

## Potential Research Topics Qualified for the SC-CB meeting in May 2014

- Establishing traceability for density measurements
- PT in chemistry – Organisation of proficiency testing in the field of precious metals alloys (Content of platinum in platinum jewellery alloys)
- Production and certification of matrix reference materials in the field of precious metals analysis - gold and silver jewellery alloys
- Realization of international traceability for time and frequency measurements including calibration of time transfer links
- Production and certification of matrix reference materials in the field of environmental analysis - organic pollutants and heavy metals
- Detecting illegal logging or trade of timber by isotope techniques
- Traceability in humidity
- Improving air temperature measurement capabilities for environmental applications
- MET-NET: Development of the web-based tool for knowledge transfer
- Investigation of methods for determination of equilibrium state between two pressure balances
- Design, construction, and characterization of a free air chamber standards for measurements of air-kerma for energy X-rays used in radio diagnostic
- Development of Scientific and Technical Capabilities in the field of Thermophysical Properties Measurements for strengthening the South-East European Industry
- Dimensional Measurements and Traceability of Material Measures of General Use
- Surface roughness metrology
- Metrology for magnetic nanoparticle based imaging
- Traceability in non-contact thermometry
- Improvement of measurement capability in the field of ionization radiation in medical purposes - radiotherapy and diagnostic radiology.
- EMetRE: Establishing metrology research potential in Estonia
- Automation of the Electrical Measurements
- Improving measurement capabilities for high temperature contact thermometry
- Design, construction, and characterization of a set of cavity standards for measurements of air-kerma for <sup>60</sup>Co and <sup>137</sup>Cs gamma rays
- Towards the propagation of ac quantum voltage standards
- Design, construction and characterization of a water calorimeter for the measurement of absorbed dose in high energy X-Rays beam
- Evaluating CMCs of uniaxial tensile/compression material testing machines as force calibration machines
- Calibration of weighing instruments, which operate in a dynamic mode
- Implementation and harmonization of infrastructures within European States for calibration of hydrophones in the 10 Hz to 1 kHz range
- Traceable AFM measurements capability: pre-requisite to develop research potential in nanometrology
- Development of Isotope Dilution Mass Spectrometry primary methods for capacity building in the field of Inorganic Analysis
- Fundamental RF&MW quantities at higher frequencies
- Higher order measurement methods for quantification of cellular and molecular analytes in laboratory and bio-medicine
- Holistic metrology of dimensions and morphologies of nanostructures with emphasis on stochastic aspects

## Stakeholders and their expectations<sup>4</sup>

Identified stakeholders	Their expectations/requirements
<p>Industry sector</p> <ul style="list-style-type: none"> <li>• Food industry</li> <li>• Medical devices industry</li> <li>• Durable Goods industry</li> <li>• Automotive industry</li> <li>• Aviation industry</li> <li>• Other Manufacturers (electronics, machinery, etc.)</li> <li>• Pharmaceutical industry.</li> <li>• Defence industry</li> </ul>	<ul style="list-style-type: none"> <li>• Traceability to SI units, testing and verification of measuring instruments</li> <li>• Training,</li> <li>• Consultancy,</li> <li>• Problem solution for measurement, R&amp;D</li> </ul>
<p>Energy sector</p> <ul style="list-style-type: none"> <li>• electric power industry,</li> <li>• petrochemical industry</li> <li>• gas industry,</li> <li>• heat energy production</li> </ul>	<ul style="list-style-type: none"> <li>• Traceability to SI units and</li> <li>• testing of measuring instruments</li> <li>• Consultancy</li> </ul>
<p>Small and medium-sized enterprises from different trades of industry</p> <p>Utility services (distribution of electricity, water, gas,...)</p>	<ul style="list-style-type: none"> <li>• <i>Calibration of measuring instruments,</i></li> <li>• <i>testing of measuring instruments</i></li> <li>• <i>verification of measuring instruments</i></li> <li>• Reduction of the costs and shortening the service time.</li> <li>• Consultancy</li> <li>• Eventually establishment of the new primary measurement standard in country to avoid the necessity of calibrating abroad.</li> </ul>
<p>Accredited conformity assessment bodies in different fields:</p> <ul style="list-style-type: none"> <li>• Traffic safety,</li> <li>• Health protection,</li> </ul>	<ul style="list-style-type: none"> <li>• <i>implementation of EU legislation</i></li> <li>• <i>Traceability and</i></li> <li>• <i>Consultancy</i></li> </ul>

<sup>4</sup> As listed in questionnaires we received before the first part of the Training.

<ul style="list-style-type: none"> <li>• Environment protection,</li> <li>• Food safety</li> </ul> <p>Small businesses (taxi associations, goldsmith associations, automotive centres and services, electrical safety checking institutions), Trade sector</p>	<ul style="list-style-type: none"> <li>• <i>Verification of measuring instruments</i></li> </ul>
<ul style="list-style-type: none"> <li>• Public health laboratories</li> <li>• Agriculture testing laboratories</li> <li>• Secondary level laboratories</li> </ul> <p>(Accredited and non- accredited laboratories dealing with calibrating and testing)</p>	<ul style="list-style-type: none"> <li>• Traceability/Calibration,</li> <li>• Training,</li> <li>• Consultancy,</li> <li>• interlaboratory comparisons,</li> <li>• proficiency tests</li> </ul>
<p>Government, Superior ministry</p>	<ul style="list-style-type: none"> <li>• More Income to budget</li> <li>• Staff reduction</li> <li>• Implementation of EU directives</li> </ul>
<p>Other governmental bodies</p> <ul style="list-style-type: none"> <li>• Consumer protection authorities</li> <li>• Market surveillance authorities</li> <li>• General inspection authorities</li> <li>• Particular inspection authorities (Inspectorate of the Environment Protection, Inspectorate of the Health Protection)</li> <li>• Blood banks</li> <li>• Health care centres</li> <li>• Army,</li> <li>• Ministry for Internal Affairs (Police),</li> <li>• the Customs Services</li> <li>• Energy Market Regulation Authority</li> <li>• Other Related Ministries</li> <li>• Legal metrology authorities in a country</li> </ul>	<ul style="list-style-type: none"> <li>• Consultancy</li> <li>• Traceability/Calibration,</li> <li>• <i>Verification of measuring instruments in different fields of their responsibility</i> (traffic safety instruments, radiation protection, weighing instruments, blood pressure measuring instruments, sound level meters etc)</li> </ul>
<p>Other:</p> <ul style="list-style-type: none"> <li>• Universities</li> <li>• Accreditation Agency</li> <li>• Standard Institute</li> </ul>	<ul style="list-style-type: none"> <li>• R&amp;D projects,</li> <li>• Consultancy,</li> <li>• Expertise</li> </ul>



