



**ASEAN-EU
STI Days**

The Association of Southeast Asian Nations – European Union
Science, Technology and Innovation Days

Funding Opportunities in Metrology Related Research



Participation of SEA countries, and funding opportunities

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By Tanfer Yandayan, 19 February 2014, GEBZE

Metrology as a key enabling technology

Metrology, science of measurement is the central nerve in the spine of our high-tech world. What we cannot measure, we do not understand properly and cannot control nor manufacture or process reliably. Provision of measurement capability is part of the technical infrastructure that underpins a country's science, engineering, and technology landscape for government, industry, and academia. New measurement techniques and technologies stimulate and support innovation in products, process and services. To develop new products and process, companies need to measure quantity, quality and performance. Therefore, measurement plays a fundamental part in manufacturing process [Yandayan, 2012].

For developed countries, metrology provides tools that allow other areas of science to roll back their frontiers. Governments in advanced countries support measurement infrastructure and most have national research programmes, delivered primarily by their National Metrology Institutes (NMIs) [Kaarls, 2007].

For developing countries, lack of an internationally recognised metrological infrastructure will lead to difficulty in dealing with WTO's TBT agreement. Therefore, it is one of national priority to establish NMIs in these countries. In the long run, such idea will probably be more economical than outsourcing to other NMIs [Kaarls, 2007].

The European Metrology Research Programmes (EMRP of FP7 and EMPIR of H2020) are long-term plan for high quality joint R&D amongst the metrology community in Europe. They will ensure collaboration between National Metrology Institutes (NMIs) and Designated Institutes (DIs), reducing duplication and increasing impact.

EURAMET's (European Association of Metrology Institutes) European Metrology Programme for Innovation and Research (EMPIR) is one of the intended partnerships for a Joint Programme of the Member States and the European Commission (EC). EMPIR is extension of EMRP covering larger fields and participants. Participation of SEA countries in the European Metrology Research Programmes is possible.

Mobility of Researchers in European Metrology Research Programmes

Mr. Tanfer Yandayan (TUBITAK UME) and

Mr. Kamal Hossain, EURAMET Chairpersons, Director, NPL (UK)

Mobility programmes in EMRP were described in conjunctions with Marie Curie programmes. Tanfer Yandayan has proposed the following scenarios for participation of SEA organisations and researchers in European Metrology Research Programmes;

For SEA Organisations

1. Participation as unfunded project partner: No funding is available. The organisation shares the work and responsibilities in the project and share the information gained in the project.

The advantage of this participation is that the organisation can be part of the high level projects and may improve themselves. The cost is covered by the SEA organisation itself.

2. Participation as unfunded project collaborator: No funding is available. The organisations do some part of the work in the project with some special agreements. In this way, they gather information and may apply the new developments in their premises reporting the results to project consortium. They do not share the responsibilities in the project like project partners. It is one of the easiest and cost effective ways of participation for SEA organisations.

Tanfer Yandayan also gave an example for participation of SEA organisations as collaborator. He showed the way that how NIMT- National Institute of Metrology (Thailand), and KIM-LIPI National Metrology Institute of Indonesia is on the way being a collaborator to one of the EMRP projects (SIB58 Angles, www.anglemetrology.com).

For SEA individual researchers

1. SEA researchers can apply to REGs (Researcher Excellence Grants) in European Metrology Research programmes. They are expected to visit one of the Organisations in Europe (apart from National Metrology Institutes and Designated Institutes) and work there for a specific project with high level salary. For further information, see Guide 1 and Guide 7 in

<http://www.emrponline.eu/downloads.html> .

REG is suitable for high level researchers.

2. RMG (Researcher Mobility Grant) is another type of programme. This is for any researcher employed by an organisation located in EURAMET member countries. It is suitable for usually in short term visits. For participation of researchers employed by organisation located outside of EURAMET member countries (e.g. SEA), there is a need for adding new regulations such as being an employee of organisations in ICPC (international cooperation partner countries). This should be done by EURAMET.
3. Another way of participation is the use of Marie Curie programmes. There are two critical requirements for use of Individual Fellowship (IF) programmes of Marie Skłodowska-Curie actions (MSCA):
 - a) High level project topics
 - b) Suitable high level scientists for high level projects.

National Metrology Institutes (NMIs) in Europe carry on further work on project topics completed under EMRP projects (i.e. ex-EMRP project topics). These are high level topics which were proved during the EMRP evaluation process. Application of suitable candidates from SEA on these project topics (as Marie Curie Individual fellowships -IF) has high potential to win since the first requirement (a) is mostly conformed.

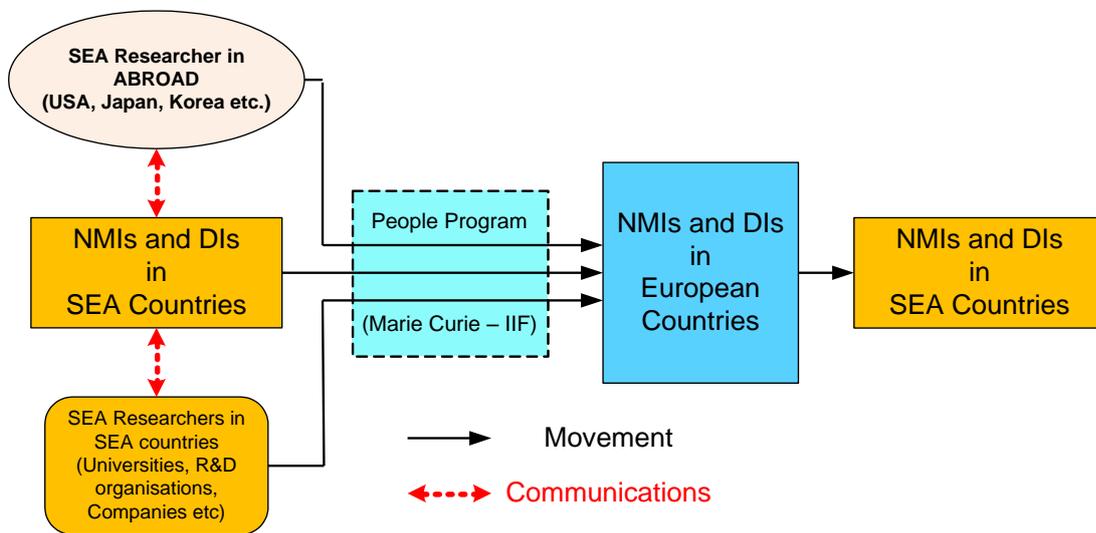
4. Innovative Training Networks (ITN) under MSCA of H2020 may also be another way of participation. For this, European NMIs may establish such project networks that researchers can be exchanged between both regions. This may be coordinated under EURAMET.



Mobility of Researchers in European Metrology Research Programmes

Mr. Tanfer Yandayan (TUBITAK UME)

Tanfer Yandayan and **Kamal Hossain** answered the questions on Participation of SEA researchers in EMRP/EMPIR from the audience and outlined the possibilities in further cooperation between SEA and EU considering establishment of quality infrastructure for “free trade of goods in ASEAN member countries” as well as establishment of new Regional Metrology Organisation (RMO) in SEA.



The model for participation of SEA researchers in metrology research projects using IIF-Marie Curie (2011 – 2012)

Note: Please refer to below link to obtain detailed information.

[Mobility of Researchers in European Metrology Research Programmes](#)
Mr. Tanfer Yandayan (TUBITAK UME)



Mr. Tanfer Yandayan

Chief Reserach Scientist, TUBITAK UME (Turkey)

Tanfer Yandayan is a Chief Research Scientist in TUBITAK UME, National Metrology Institute of Turkey. He is doing research in dimensional metrology laboratory and coordinating one of the EMRP projects (SIB58 Angle Metrology) started in Sep. 2013 in addition to his work in SEA-EU-NET 2 project.

Tanfer joined TUBITAK UME after completing his PhD degree in Mechanical Engineering at the University of Manchester, UK. His research areas are interferometric dimension measurements, geometrical errors, coordinate metrology, machine tool metrology and angle metrology. He headed the dimensional lab of TUBITAK UME for 15 years and worked for integration of TUBITAK UME to international metrology system being first international representatives of Turkey in length metrology.

Tanfer also has taken part in international support projects such as World Bank and German Cooperation (PTB) projects for establishment of new metrology facilities including staff development. He has also taken part in establishment of metrology system in Turkey as well as in other neighbourhood countries for quality infrastructure facilities such as accreditation.

Tanfer has initiated the cooperation of metrology activities in Fp7 coordination action projects to support to other scientific activities using the key enabling technology role of metrology. He has conducted various meetings and workshops since 2008 in the region of SEA and worked for facilitation of metrology research activities between Europe and South East Asia (SEA).



Mr. Kamal Hossain

EURAMET Chairpersons, Director, NPL (UK)

Kamal Hossain is the Director, Research and International at the National Physical Laboratory, UK where he is responsible for the strategic development of the laboratory's scientific capability as well as leading international work.

Kamal joined NPL after completing his PhD research in Physics at the Cavendish Laboratory, Cambridge University. His research expertise is in high-resolution electron microscopy relating microstructures to materials performance and behavior in aggressive environments. He is a Fellow of the Institute of Physics and the Institute of Nanotechnology. He has a visiting Professorship at the University of Surrey in the Faculty of Engineering and Physical Sciences.

Kamal has extensive experience of advisory work for the Government, the EU, and UNIDO, and has served on various high level national and international committees. He has served as a high level expert Advisor of the EU's Framework Programmes 6 and 7. Kamal is the Chair of EURAMET, the European Association of Metrology Institutes which is currently running a 400 million euros European Metrology Research Programme funded jointly by the EC and 23 European countries. The EC has submitted a joint 600 million euros follow-on programme known as EMPIR - European Metrology Programme for Research and Innovation.

Kamal was honored with an OBE for 'services to industry' by the Queen in June 2009.