

EURAMET TC-PR Small Collaborative Project SmartPhora

EURAMET Online Workshop: 2021 Call for Small Collaborative Projects (SCPs) 2021-07-13



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20SCP01

Smart PhoRa

Smart specialization and stakeholder linkage in Photometry and Radiometry

Start date: 01 September 2021

Duration: 18 months

Coordinator

Stefan Kück

Physikalisch-Technische Bundesanstalt, former TC-PR Chair

EURAMET Online Workshop: 2021 Call for Small Collaborative Projects (SCPs)

13.07.2021



The specific objectives of the project are:

To provide training and transfer knowledge to enable emerging NMIs/DIs to develop their metrological knowledge and expertise in the field of photometry and radiometry to support smart-specialisation

- (i) under consideration of the specific national and regional stakeholder needs,
- (ii) based on the identified stakeholder needs presented in workshops on support, collaboration and coordination held within the TC-PR,
- (iii) by improving the linkage between NMIs and stakeholders based on enhanced expertise and
- (iv) by building mutual trust between the project partners.

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May 2017: New TC-PR chair: Stefan Kück

Mission Statement

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The TC PR developed well in the last years due to the excellent work of my predecessors. In my perspective, one of the major topics will be the further development of coordinated research activities within the TC in order to react on the upcoming challenges in the field of photometry and radiometry. The European joint research projects within European programs are one pillar, the other, especially for new fields, may be joint research centers. The TC-PR should also act as a platform for discussion and planning. But besides research and innovation, there are also basic duties to fulfill. I would like to improve the CMC submission process within the TC and would like to further enhance the cooperation and collaboration between **all members** of the TC. Therefore, it is important to listen to and to take into account the needs of **all TC members**.



January 2018: TC-PR meeting

EURAMET TC-PR WORKSHOP on Support, Collaboration and Coordination

- Presentation from the participants on needs for support, collaboration, coordination
- Each NMI to present at max. 3 issues, it is facing in their work and there it needs/searches support from EURAMET TC-PR or their members
- Each NMI to present one strategic goal for the next 5 years.
- Max. 5 min each

"SPEED DATING"



January 2019: TC-PR meeting Outcome of EURAMET TC-PR WORKSHOP on Support, Collaboration and Coordination

- Summary of action happened since TC-PR meeting 2018
- All member NMIs please submit brief summary of actions since last year to TC chair
- Discussion on how to proceed further

19.W04.01 Outcome of SCC Workshop EURAMET

In 2018:

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- 19 presentations (from at that time 24 members)
- Presentations were stored on EURAMET TC-PR webpage



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19.W04.01 Outcome of SCC Workshop **EURAMET** In 2018:

- 19 presentations (from at that time 24 members)
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What I have done: Summary of results: sorted all strategic goals and needs

What we should do? Idea: to discuss outcome and derive activities (projects, joint work)

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19.W04.01 Goals and Needs - Overview EURAMET

| Strategic goals | | Needs | | | |
|-----------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|--|
| Photometry, Radiometry | "Basic" Photometry: BEV, BFKH, CMI, SMU LED: VTT Detectors, power measurement: VTT, JV | Photometry, Radiometry | LEDs, scale realization: VTT, SMU, UME (Advanced) detectors, power measurements: JV, VTT Cameras: PTB Safety of light sources: BIM Development of standards: CMI | | |
| | | | System calibration: CSIC Source characterization: CSIC Calibration of photometric and colorimetric devices: GUM Fibre optics: Metrosert, RISE PV: UME | | |
| | | Strategy, Coordination of services | Strategic Rsearch Agenda: VSL Coordination of services: JV, Metas, NPL Traceability: Metrosert, BEV (Filtertransmission) | | |
| | | Comparisons | Participation in comparisons: BFKH Bilateral comparison of cryogenic radiometers: DFM, RISE New Comparisons: Metas Cost, procedures of comparisons: NPL, VSL | | |
| Quantum optics and photonics | Quantum optics and photonics (detectors, single photon sources): CMI, DFM, IO-CSIC, PTB, UME | Quantum optics and photonics | Quantum Optics: CMI, Metas, PTB Special Funding for quantum optics: DFM | | |
| Climate and Earth Observation | Climate and Earth Observation: CMI, NPL, VSL | | | | |
| Appearance, optical properties of materials | Optical properties of material and Appearance: CMI, VTT, IPQ, LNE. METAS, | Appearance, optical properties of materials | Material characterization, Appearance: VTT, BIM, CMI, IO- CSIC, Metas Appearance, Reflectometry, Colour: Metrosert, PTB, RISE, UME | | |
| Regional issues | Baltic region telecom and photonics: Metrosert | | | | |
| Others | New building: GUM Digitalization, electrification, autonomous driving: RISE | Others | (EMPIR) projects: BFKH, BIM Personnel: LNE, NPL | | |
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January 2020: TC-PR meeting EURAMET TC-PR WORKSHOP on Support, Collaboration and Coordination – 2nd follow-up Focus on: "Pilot measure on Small Collaborative Projects"

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|--------------------------------|----------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------|------------------------------|--|--|
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| Home Calls Call 2020 | - Capacity Building | | | | | |
| Previous Calls | Call for | Call for Researcher Mobility Grants (RMG) - CLOSED | | | | |
| Call 2020 - Industry | CLOSII The aim | CLOSING DATE: 1 September 2020 The aim of RMGs is to increase the capability of the European metrology researcher community; increase the capacity of | | | | |
| Call 2020 - Fundamental | Call for | Individual researchers in metrology; and ensure the sustainability of EMPIR. The RMG supports researchers undertaking transnational guestworking on work related to the JRP. | | | | |
| Call 2020 - Normative | OPENI | OPENING DATE: 29 June 2020 CLOSING DATE: 1 September 2020 | | | | |
| Call 2020 - Networks | The over emerging | The overall strategic aim of the new instrument for capacity building by EURAMET is to fund support activities targeted at emerging EURAMET NMIs/DIs. This will be in the form of SCPs with limited budgets of 150 k€ and up to 18 months duration. | | | | |
| Call 2020 - Support for Impact | | | | | | |
| Call 2020 - Capacity Building | | | | | | |

New Instrument Proposal for Small Collaborative Projects



- New CB instrument for *Small Collaborative Projects* funded from EMPIR national commitments is proposed as a pilot for 2020.
- Support action, not research action.
- Primary aims of such projects might be:
 - to support smart-specialisation through the coordination and sharing of resources and services across national borders,
 - to build stronger links with stakeholders with the aim of determining needs for metrology services and cooperatively developing solutions for meeting them,
 - to transfer knowledge to non-NMI/DI actors by building networks
- Projects to be sharply targeted, ideally with one specific objective (similar to above), with a clear work and budget plan to achieve it and well-defined, objective-oriented deliverables (max. 4).



First idea over night, discussed at TC-PR meeting



New Instrument Proposal for Small Collaborative Projects



Emerging NMI – Highly developed NMI

Within this project

- an emerging NMI is defined as an NMI which cannot fulfil the requirements of its country in that specific metrology area,
- whereas a highly developed (highly experienced) NMI is an NMI, which is able to provide teaching and training for the emerging NMIs in specific metrology areas.

Process summary



Submission of SCP proposal



Annex I – SCP protocol

Version Date: 31 August 2020

Smart PhoRa

Smart specialization and stakeholder linkage in Photometry and Radiometry

Start date: 01 June 2021

Duration: 18 months

Coordinator

Stefan Kück

Physikalisch-Technische Bundesanstalt, TC-PR Chair



| no. | Participant Type | Short Name | Organisation legal full name | Country |
|-----|--------------------|------------|--------------------------------------------------------------------|-------------------------|
| 1 | SCP Funded Partner | РТВ | Physikalisch-Technische Bundesanstalt | Germany |
| 2 | SCP Funded Partner | Aalto | Aalto-korkeakoulusäätiö sr | Finland |
| 3 | SCP Funded Partner | BIM | Bulgarian Institute of Metrology | Bulgaria |
| 4 | SCP Funded Partner | CNAM | Conservatoire national des arts et métiers | France |
| 5 | SCP Funded Partner | CSIC | Agencia Estatal Consejo Superior de Investigaciones Cientificas | Spain |
| 6 | SCP Funded Partner | GUM | Central Office of Measures | Poland |
| 7 | SCP Funded Partner | INM | I.P. Institutul Național de Metrologie | Moldova, Republic of |
| 8 | SCP Funded Partner | Metrosert | AS Metrosert | Estonia |
| 9 | SCP Funded Partner | TUBITAK | Turkiye Bilimsel ve Teknolojik Arastirma Kurumu | Turkey |



| | Total |
|--------------------------------------------|------------|
| Labour (€) | 62 071.00 |
| Subcontracts (€) | |
| T&S (€) | 79 082.00 |
| Equipment (€) | |
| Internally Invoiced Goods and Services (€) | |
| Other Goods and Services (€) | 1 500.00 |
| Large Research Infrastructure (€) | |
| Indirect (€) | 7 132.65 |
| Total eligible costs (€) | 149 785.65 |
| EURAMET contribution (€) | 149 785.65 |
| Months | 13.0 |

21.W03 SCP within TC-PR



January 2021: TC-PR meeting

Report on the Small Collaborative Project within TC-PR

| Small Collaborative Projects ranked list | | | | |
|------------------------------------------|--------|-------------|------------------------------------------------------------------------------------------------------------------------------------|--|
| 1 | SCP-03 | Smart PhoRa | Smart specialization and stakeholder linkage in Photometry and Radiometry | |
| 2 | SCP-01 | CEFTON | Development of eye-tonometry in CEFTA countries | |
| 3 | SCP-02 | BallR | Strengthening of links between stakeholders and NMIs/DIs in the field of ionizing radiation metrology in Balkan and Baltic regions | |
| 4 | SCP-04 | DeepChill | Development of ultra-low (towards -90 °C) dew/frost point capabilities | |







| WP No | Work Package Title | Active Partners (WP leader in bold) | Months |
|-------|---------------------------------------------------------|---------------------------------------------------------|--------|
| WP1 | Metrology for the smart specialization for photometry | BIM, CNAM, INM-MD, PTB, TÜBİTAK | 3.2 |
| WP2 | Metrology for the smart specialization on appearance | GUM, Aalto, BIM, CNAM, CSIC, Metrosert, PTB, TÜBİTAK | 2.5 |
| WP3 | Metrology for the smart specialization in fibre optics | Metrosert, CSIC, TÜBİTAK | 2.3 |
| WP4 | Metrology for the smart specialization in photovoltaics | TÜBİTAK, Aalto, PTB | 1.1 |
| WP5 | Creating impact | Aalto, all partners | 1.7 |
| WP6 | Management and coordination | PTB, all partners | 2.8 |
| | | Total months | 13.5 |



| Relevant objective (Activity delivering the deliverable) | Deliverable number | Deliverable description | Deliverable type | Partners (Lead in bold) | Delivery date |
|----------------------------------------------------------------|-----------------------|---------------------------------------------------------------------------------------------------------|----------------------------------------|----------------------------|------------------|
| 1 (A5.1.6) | D1 | Compendium of web-based seminars for capacity building within the TC Photometry and Radiometry | Compendium of web-based lectures | PTB, all partners | M18 |
| 1 (A5.1.6) | D2 | Compendium of training courses for capacity building within the TC Photometry and Radiometry | Compendium of training lectures | PTB, all partners | M18 |
| 1 (A5.1.7) | D3 | Validation report of successful knowledge transfer within the TC Photometry and Radiometry | Validation report | PTB, all partners | M18 |
| n/a | D4 | Delivery of all technical and financial reporting documents as required by EURAMET | Reporting documents | PTB, all partners | M18 + 60 days |

SCP SmartPhora – General Idea



| Activity number | Activity description | Partners (Lead in bold) |
|-----------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------|
| A1.1.1 M06 | PTB to organize a web-based seminar on photometric and radiometric calibration of LEDs. The content of the seminar leads, together with other seminar content, to deliverable D1: "Compendium of web-based seminars for capacity building within the TC Photometry and Radiometry". | PTB, CNAM, TÜBİTAK |
| A1.1.2 M12 | PTB to organize a two-weeks training course at PTB on photometric and radiometric calibration of LEDs. The content of the training course leads, together with other training content, to deliverable D2: "Compendium of training courses for capacity building within the TC Photometry and Radiometry". | PTB , CNAM, TÜBİTAK |
| A1.1.3 M16 | TÜBİTAK to organize visits of experts from PTB at TÜBİTAK for teaching in the field of photometric and radiometric calibration of LEDs. | TÜBİTAK, PTB |
| A1.1.4 M18 | TÜBİTAK to organize an interlaboratory comparison on luminous intensity of LED-based transfer standards between PTB, CNAM and TÜBİTAK to show the successful knowledge transfer to TÜBİTAK and CNAM. The result of this pilot comparison leads, together with A2.1.3, A2.2.3, A2.3.3, A3.1.4, and A4.1.4 to deliverable D3: "Validation report of successful knowledge transfer within the TC Photometry and Radiometry". | TÜBİTAK, CNAM, PTB |

SCP SmartPhora – Creating Impact



| Activity number | Activity description | Partners |
|--------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|
| A5.1.1 M18 | A project webpage will be created on PTB website with public access and a part restricted for partners only (see A6.1.4). The webpage will be regularly updated with information such as project reports, papers published by the partners, project meetings, training videos etc | PTB, all partners |
| A5.1.2 M18 | An exploitation plan will be created at the beginning of the project by Aalto with support from all partners and reviewed and updated at least at each project meeting. | Aalto, all partners |
| A5.1.3 M18 | The partners plan to present the project and its outcomes, and to seek feedback from stakeholders at various national or regional events and workshops. | Aalto, all partners |
| A5.1.4 M18 | To enable other stakeholders to understand and have access to the results of the projects at least one article will be submitted to the popular press or trade journal. | PTB, all partners |
| A5.1.5 M18 | PTB with the support from all partners will compile the web-based seminars from work packages WP1, WP2, WP3, WP4 to a compendium, which will be available to all partners, their stakeholders and all members of the TC-PR. This compendium will include at least two videos from each technical WP. This activity leads to Deliverable D1: "Compendium of web-based seminars for capacity building within the TC Photometry and Radiometry" | PTB, all partners |
| A5.1.6 M18 | PTB with the support from all partners will compile the training courses from work packages WP1, WP2, WP3, WP4 to a compendium, which will be available to all partners, their stakeholders and all members of the TC-PR. This compendium will include at least two videos from each technical WP. This activity leads to Deliverable D2: "Compendium of training courses for capacity building within the TC Photometry and Radiometry" | PTB, all partners |
| A5.1.7 M18 | PTB with the support from all partners will compile the results from the pilot comparisons from work packages WP1, WP2, WP3, WP4 to a compendium, which will be available to all partners, their stakeholders and all members of the TC-PR. his activity leads to Deliverable D3: "Validation report of successful knowledge transfer within the TC Photometry and Radiometry" | PTB, all partners |
| A5.1.8 M18 | Information on the results of the project will be disseminated to metrology committees, mainly TC-PR and EURAMET, and feedback is sought. | PTB, ALL |