



**Metrology for monitoring  
endocrine disrupting  
compounds under the Water  
Framework Directive**

## METROLOGY AND STANDARDISATION

The pre- and co-normative TPs will provide timely metrology research to underpin the quality and help accelerate the development of a draft European or International standards. Metrology research will help those who develop and rely on documentary standards to:

- ❑ enhance industrial competitiveness
- ❑ enable and enhance trade opportunities for new emerging products, services and technologies
- ❑ support quality of life issues (climate change, environment, health care, consumer protection) through scientific rigour in support of regulation

CALL 2018

Networks ranked list			
1	JNP-w05	18NET01	Energy Gases
2	JNP-w06	18NET02	TraceLabMed
3	JNP-w03	18NET03	SEG-Net
4	JNP-w02	18NET04	ForClimateOcean
5	JNP-w01	18NET05	MATHMET
6	JNP-w04		SupEMN-Q

SIP ranked list			
1	SIP-14IND12	18SIP01	ISOCONCur
2	SIP-14IND10	18SIP02	5GRFEX
3	SIP-ENG54	18SIP03	SIP-ENG54 Biogas
4	SIP-14IND13		TeraGuide
5	SIP-ENV07		IMMA

RPT ranked list			
1	JRP-r02	18RPT01	ProbeTrace
2	JRP-r01	18RPT02	adOSSIG
3	JRP-r04	18RPT03	MetForTC
4	JRP-r05		ALGTrace

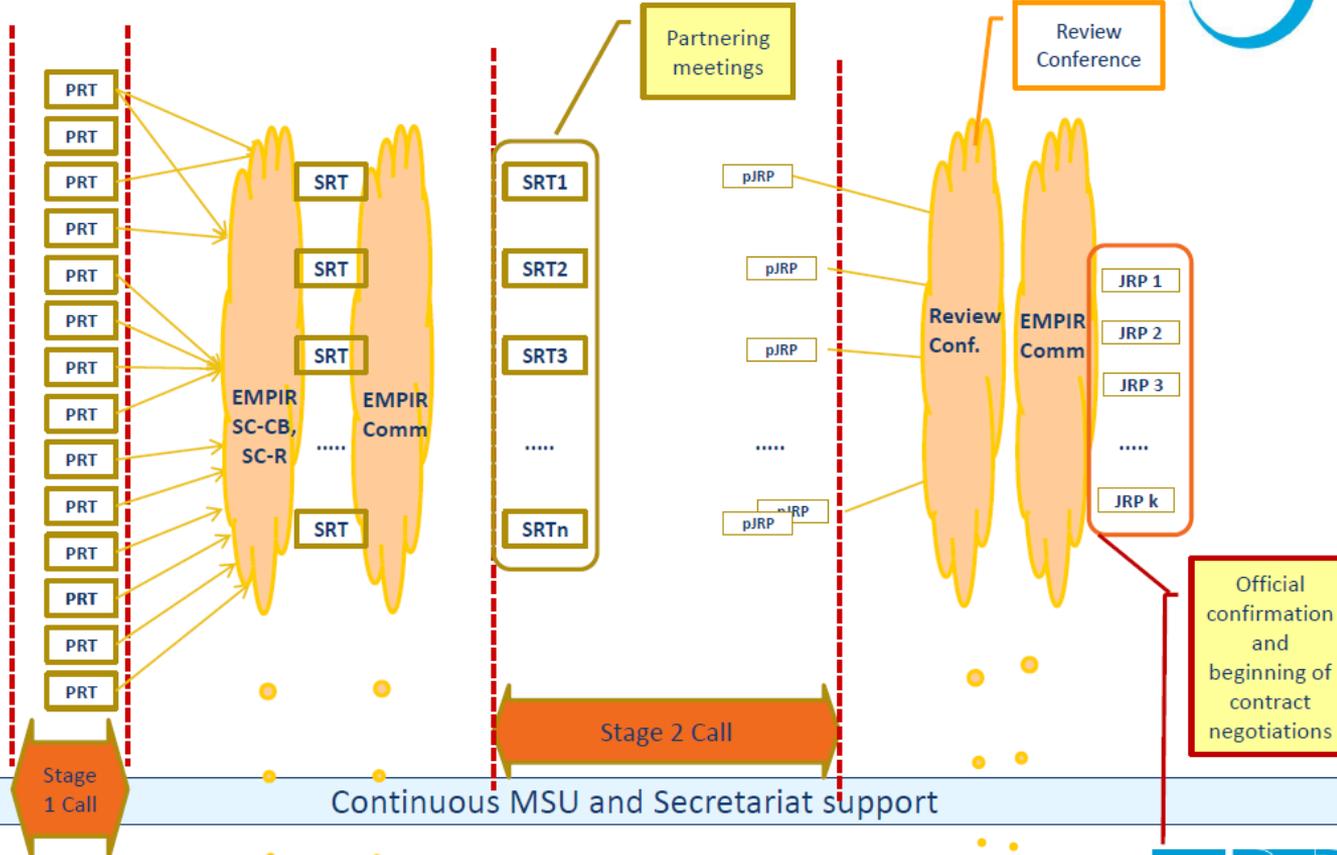
NRM ranked list			
1	JRP-n11	18NRM01	EDC-WFD
2	JRP-n09	18NRM02	PRISM-eBT
3	JRP-n10	18NRM03	INCIPIT
4	JRP-n12	18NRM04	Heroes
5	JRP-n05	18NRM05	SupraEMI
6	JRP-n03	18NRM06	NEWGASMET
7	JRP-n02	18NRM07	NanoXSpot
8	JRP-n08		DyVerS
9	JRP-n06		SpaceCell
10	JRP-n04		EPB+
11	JRP-n13		ValidaTiOn

Health ranked list			
1	JRP-h11	18HLT01	METVES II
2	JRP-h09	18HLT02	AeroTox
3	JRP-h01	18HLT03	SEPTIMET
4	JRP-h21	18HLT04	UHDpulse
5	JRP-h08	18HLT05	QUIERO
6	JRP-h13	18HLT06	RaCHy
7	JRP-h04	18HLT07	MedalCare
8	JRP-h18	18HLT08	MEDDII
9	JRP-h05	18HLT09	Neuromet2
10	JRP-h10	18HLT10	CardioMet
11	JRP-h15		MRgRT - II
12	JRP-h14		NanoAuRad

SIB ranked list			
1	JRP-s09	18SIB01	GeoMetre
2	JRP-s13	18SIB02	Real-K
3	JRP-s20	18SIB03	BxDiff
4	JRP-s10	18SIB04	QuantumPascal
5	JRP-s15	18SIB05	ROCIT
6	JRP-s16	18SIB06	TiFOON
7	JRP-s05	18SIB07	GIQS
8	JRP-s19	18SIB08	ComTraForce
9	JRP-s02	18SIB09	TEMMT
10	JRP-s12	18SIB10	chipS-CALe
11	JRP-s11		PhotoLED2
12	JRP-s14		ULTraceWater
13	JRP-s03		NanoElec
14	JRP-s17		QuVMet
15	JRP-s08		UltraCyl
16	JRP-s04		ModSignals
17	JRP-s01		IsoTrac
18	JRP-s21		TOPFO
19	JRP-s06		RealBq
20	JRP-s07		3Dtexture



# Call Cycle (approximative timeline)



Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sep. | Oct. | Nov. | Dec. | Jan. | Feb.



# ***STEP 1: Proposed Research Topic***

# MAIN FACTS

BALANCE BETWEEN RESEARCH IN METROLOGY AND CONSTRAINTS FOR METHODS TRANSFER TO STANDARDIZATION

DIFFERENCE BETWEEN OUR PERCEPTION OF NEEDS AND THE REAL NEEDS OF STAKEHOLDERS ➤ *SUPPORT ALL THE JUSTIFICATION BY STRATEGIC DOCUMENTS FROM THE NON NMI COMMUNITY*

CHECK POSSIBLE OUTPUTS FROM PREVIOUSLY FUNDED JRP PROJECT ➤ *FOLLOW-UP?*

STAKEHOLDERS ON BOARD AT EARLY STAGE

BE CAUTIOUS WHEN LISTING THE OBJECTIVES

BE SMART

THINK TO IMPACT

BE PEDAGOGIC AS EURAMET MEMBERS ARE NOT NECESSARILY SPECIALISTS

# PRT NORM WFD EDC-VF.DOCX

# OVERVIEW OF THE PROJECT

Follow us on our website

<http://projects.Ine.eu/jrp-edc-wfd/>

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# THE CONSORTIUM

- 8 partners / 6 European countries
- 5 NMI/DI, one DI operating outside of its designation, one academic research laboratory, one research institute
- Consortium brings together **scientific excellence** in research institutes and experience in **ultra-trace measurements of micropollutants**
- **Balance of expertise:** development and certification of RM, proficiency tests / interlaboratory comparison design, method development and validation, standardisation
- **Avoidance of unnecessary duplication of works**



# AIM

Natural and pharmaceutical estrogens are key Endocrine Disrupting Chemicals (EDC) which are monitored differently depending on the country, and for which standardised reference methods are currently not available.

⇒ Main Objective: Develop reliable and harmonized measurement methods for estrogens, to comply with the WFD Directive requirements

⇒ Outcomes: to be disseminated to CEN/ TC 230 and ISO/ TC 147 to be fed into the documentary standards they develop

**Start date: 01 September 2019**

**Duration: 36 months**

**Budget: 800K€**

# OBJECTIVES

- *The overall objective of this project is to develop **traceable measurement methods** for endocrine disrupting chemicals, with a specific focus on **three estrogens of the first watch list** (17-beta-estradiol (17 $\beta$ E2), 17 alpha ethinylestradiol (17 $\alpha$ EE2), and estrone (E1)). Estrogens 17-alpha-estradiol (17  $\alpha$  E2) and estriol (E3) will be included to demonstrate the reliability of the developed methods and to support the requirements of Directive 2013/39/EC, Directive 2009/90/EC and Commission Implementation Decision (EU) 2018/840, hence **improving the comparability and compatibility of measurement results within Europe.***

## **The specific objectives of the project are to:**

- 1. Optimize and validate traceable aqueous reference Mass Spectrometry-based methods for the analysis of 5 estrogenic compounds** prioritizing 3 selected estrogenic compounds 17 $\beta$ E2, 17 $\alpha$ EE2, and E1 **in whole water samples** at environmental quality standard (EQS) levels. **Methods will have limit of quantification (LOQ) not exceeding 30% EQS with a measurement uncertainty of  $\leq 50$  % at EQS.**
- 2. Evaluate the interaction and partitioning** of 5 estrogenic compounds prioritizing 3 selected estrogenic compounds 17 $\beta$ E2, 17 $\alpha$ EE2, and E1 **between water samples and suspended particulate matter (SPM)** and the **capability of developed methods to address the different fractions of matrix** (whole water and dissolved concentrations of estrogens).
- 3. Develop production methods for aqueous reference materials (RM)**, which are as close as possible to real water samples, with proven homogeneity, short- and long-term stability.
- 4. Improve the comparability of estrogen measurements with selected Effect-Based Methods (EBM)** in whole water samples at EQS level. Methods will have been correctly calibrated and information on uncertainty will be provided.
- 5. Organize and perform an interlaboratory comparison (ILC) to demonstrate the performance of the developed methods using the reference material (RM)** for the selected estrogen substances.
- 6. Contribute to the work of key European and international standardization organizations e.g. CEN TC 230 and ISO TC 147** ensuring that the outputs of the project are aligned with their needs, communicated quickly to those developing the standards and to those who will use them to support the implementation of directives, and in a form that can be incorporated into the standards at the earliest opportunity.

<https://www.nist.gov/standardsgov/sample-documents-conformity-assessment-topics>