NORMAN Joint Programme of Activities (JPA)

List of scientific activities organised by the NORMAN network in 2016

The *NORMAN Joint Programme of Activities* (JPA) is defined every year by the Steering Committee, after consultation with the membership (General Assembly meeting and e-mail survey).

The final JPA and the associated budget are approved by the Steering Committee, taking into account the following criteria:
▪ the level of member interest of the members (results of the survey);
▪ the relevance of the research topic to European environmental policies;
▪ the balance between different sectors / fields of interest;
▪ the relative value of the proposed in-kind contribution *vs* amount of resources required.

The Steering Committee has approved a budget of € 186 545 for 2016, based on the expected income from membership fees of the Founding and Ordinary members. These resources will be allocated for scientific and coordination activities (including the NORMAN website), and regular updating and maintenance of the databases.

NOTE: The NORMAN network JPA is financed by the contributions of its members (membership fees and members' in-kind contributions), always with a view to maximising synergies between research teams in the field of emerging substances.

The list of approved scientific activities for 2016 is as follows:

Databases:
- Further development and maintenance of the **NORMAN EMPODAT database** (EI slobodnik@ei.sk, ipolyi@ei.sk). The work in 2016 will cover:
  - EMPODAT Chemical module:
    - o Maintenance, upgrading and feeding of new data into the database, with a specific focus on the new substances on the NORMAN 2015 List (monitoring data; major uses; classification & labelling; physico-chemical data, literature LOQs collected by WG-1, etc.);
    - o Development and implementation of automated quality control tools for identification of outliers in the collected datasets;
    - o Implementation of the 'Exposure index' in EMPODAT (as soon as its development within WG-1 is finalised).
    - o further development and implementation of the Indoor Environment data module;
  - EMPODAT Ecotox module:
    - o Upload of new ecotox datasets into the ECOTOX module, including QSAR predictions for substances without ecotoxicological data in the literature and existing databases;
    - o Implementation of the CRED sub-module as part of the ECOTOX module (the CRED sub-module allows the automated allocation of reliability and relevance scores, which are then used to support the selection of the key studies for the derivation of the Lowest PNEC);
  - EMPODAT Bioassays Monitoring module:
    - o Implementation of the new Bioassays Monitoring data module and development of a test version of an automated quality score system; upload of data from the EDA-EMERGE European Demonstration Programme;
  - EMPODAT Passive sampling module:
    - o Support to the Passive Sampling Cross Working Group Activity for the development of a new Passive Sampling data repository in EMPODAT;
  - Non-target screening:
    - o Update of the NORMAN Suspect List Exchange; development of the sub-list for substances in the indoor environment;
    - o Further development of a Non-target Screening Data Collection Template (DCT; based on the template used in the NORMAN Collaborative Trials on Non-target screening) and draft design of the related database (using the above DCT as a basis to set up the structure of the database) within the 'NORMAN Non-target screening data exchange platform' (see below "NTS CWA: Non-target screening data exchange platform" by UFZ);
    - o Upload of data from the NORMAN Collaborative Trial on Non-target screening of organic substances in river water and Joint Danube Survey 3;

- Harmonisation and interconnection of all NORMAN EMPODAT database system modules using InChIKey; proposal for a link to 'NORMAN Open Access Platform';
- Implementation of the "link" between the EMPODAT Chemical and EMPODAT Ecotox modules and the associated workflow in order to allow automatic upload of occurrence and ecotox data into the NORMAN Substance Factsheets , including the prioritisation scores.

- Further development and maintenance of **NORMAN MassBank** to support storage of mass spectral information for identification of unknowns (as part of the NTS-Cross-Working Group Activity and the EDA Working Group). The work in 2016 (UFZ tobias.schulze@ufz.de and Eawag Emma.Schymanski@eawag.ch) will focus on:
  - Implementation of isotope peak annotation in RMassBank;
  - Implementation of tentative / unknown compounds processing in RMassBank (i.e. compounds without known structure);
  - Implementation of data independent analysis in RMassBank to address new instrumentation developments;
  - Maintenance of RMassBank;
  - Upload of new mass spectra to MassBank (UFZ, Eawag, all members are invited);
  - Further integration of MassBank with other existing databases / tools (e.g. ChemSpider, StoffIdent) for more efficient structural elucidation;
  - Improvement of output / download formats for MassBank records (e.g. MassBank downloadable in NIST library format, so called SVN service for download / synchronisation of MassBank records);
  - Fostering discussions with the MassBank developers community (MassBank consortium) and intensive contact with MassBank of North America (MoNA) to improve the MassBank server platform.

Scientific activities:

SWB NORMAN Bulletin	NORMAN Bulletin on Emerging Substances (5th issue) and collaboration with the journal "Environmental Sciences Europe" (ESEU) (coordination as in-kind contribution by INERIS valeria.dulio@ineris.fr and fabrizio.botta@ineris.fr, with science notes contributed by various NORMAN members).
WG-1 Prioritisation of emerging substances	Working Group N°1: Prioritisation of emerging substances (on-going activity coordinated by INERIS valeria.dulio@ineris.fr in collaboration with EI slobodnik@ei.sk and UBA peter.vonderohe@uba.de).
	The work of WG-1 in 2016 will focus on the following tasks:
	Task 1: Support to the prioritisation work of the EC (surface water). NORMAN will carry out a prioritisation run using the data in EMPODAT and will inform the EC of its position regarding the selection of the new Priority Substances;
	Task 1b: Recommendations for a Watch List for GW (see Sub-Group Prioritisation CECs in GW);
	Task 2: Further collection and compilation of physico-chemical properties, new ecotox data, existing PNECs and monitoring data in the EMPODAT database to support categorisation and prioritisation of new substances on the NORMAN 2015 list (see EMPODAT database tasks above);
	Task 3: Ecotox module – start of the ecotoxicity expert group to approve Lowest PNEC values for substances of the NORMAN 2015 list;
	Task 4: Continuation of the implementation of Substance Factsheets and the semi-automated prioritisation module in EMPODAT (see EMPODAT database tasks above);
	Task 5: Prioritisation of compounds in Category 3 and selection of 3–5 compounds for which ecotoxicity tests will be performed for a more robust hazard assessment (see WG-1 Prioritisation: Ecotoxicity profiling of high-priority substances in Category 3 below);
	Task 6: Finalisation and testing of an operational exposure index for pharmaceuticals and biocides;
	Task 7: Drafting of a guidance document for prioritisation of substances from the non-target screening workflow by NORMAN NTS CWA experts in 2016 in collaboration with WG-1.
Sub-Group Prioritisation CECs in GW	Sub-Group Prioritisation of contaminants of emerging concern in groundwater (GW) (on-going activity coordinated by BRGM b.lopez@brgm.fr in collaboration with UBA ruediger.wolter@uba.de)
	The work of the GW Sub-Group in 2016 will focus on the following tasks:
	Task 1: Contribution to the European Commission CIS GW Working Group for the development of the European GW Watch List (i.e. definition of the methodology, criteria and identification of priority compounds);
	Task 2: Adaptation of the WG-1 prioritisation scheme for surface water to groundwater topics. Here

	particular attention will be addressed to the definition of criteria for "Cat. 1 compounds" for GW: i.e. priority substances for regular monitoring in groundwater, according to different protection objectives / uses of groundwater (drinking water production, aquifer recharge, etc.).
WG-1 Prioritisation: Ecotoxicity profiling of high-priority substances in Category 3	Ecotoxicity profiling of high-priority substances in Category 3 (Leader UBA, peter.vonderohe@uba.de in collaboration with BfG Buchinger@bafg.de and Group Gisela Umbuzeiro (GGU), as part of the activities of WG-1 Prioritisation of emerging substances); WG-1 experts will select 3–5 NORMAN compounds, classified as high-priority candidates for biotesting (Category 3 of the NORMAN prioritisation scheme) and will carry out a rigorous hazard assessment for these compounds. The final aim is the derivation of a "Lowest PNEC" value for the tested compounds (including evaluation of the key studies to verify the quality of the respective biotests according to the CRED methodology) with a view to the preparation of recommendations to the Commission for the next reviews of the list of Priority Substances of the WFD.
WG-2 Bioassays	Working Group N°2: The value of bioassays and biomarkers in water quality monitoring programmes (on-going activity coordinated by RWTH – Aachen University Henner.Hollert@bio5.rwth-aachen.de). The work of WG-2 Bioassays in 2016 will focus on the following tasks: **Task 1:** Follow-up of the Science Policy Interface (SPI) action on "Effect-based and chemical analytical monitoring approaches for steroidal oestrogens" (already approved as part of NORMAN JPA 2015). The leader of this SPI action is the Swiss Centre for Applied Ecotoxicology (CH), Eawag-EPFL robert.kase@oekotoxzentrum.ch. Contributors to this task: Eawag-EPFL, RWTH, Aachen Henner.Hollert@bio5.rwth-aachen.de and RECETOX hilscherova@recetox.muni.cz . The aim of the project is to demonstrate the applicability of specific effect-based tools for the monitoring of the three steroidal oestrogens on the 1st EU Watch List: EE2, E2 and E1. The project aims to assess the application of biological tests as screening tools for oestrogenicity assessment in water and wastewater. The preparation of this project started in 2014 and the experimental work / monitoring campaign started in 2015. More than 24 institutes and agencies from 11 countries are involved. Many experts (INERIS, RECETOX, BfG, etc.) participating in NORMAN WG-2 are involved in this SPI activity. This task covers in particular the contribution of WG-2 to data evaluation, publication and reporting to the European Commission. **Task 2:** Organisation by RWTH–Aachen of a wide-scope WG-2 meeting to discuss the general strategy of this working group (and NORMAN position) on how to use bioassays to deal with emerging substances in the regulatory framework (e.g. definition of common battery of bioassays with associated trigger values for implementation in the future regulation, forthcoming Water Reuse Directive, review of the Water Framework Directive, etc.). The discussion should also address new fields of work, such as aquatic neurotoxicity assessment. Today aquatic neurotoxicity assessment is not required at the regulatory level, neurotoxicity is not routinely assessed in environmental samples and the neurotoxic potential of the great majority of chemicals remains unknown. Further work of WG-2 on neurotoxicity should therefore be discussed and planned in a more general perspective. **Task 3**: Organisation of an Expert Group (EG) meeting on micro- and nanoplastics (with a specific focus on fresh water) to discuss current methods and challenges and the role of the NORMAN Network in support of on-going research projects and initiatives in this field. The EG meeting will take place in Berlin on 23 June 2016, back-to-back with the "European Conference on Plastics in Freshwater Environments (21–22 June 2016, http://www.umweltbundesamt.de/en/plastics-conference-2016). Coordination by RWTH– Aachen Henner.Hollert@bio5.rwth-aachen.de in collaboration with Eawag Ralf.Kaegi@eawag.ch and UBA jan.koschorreck@uba.de.
WG-3 Effect-directed analysis	Working Group N°3: Effect-directed analysis for hazardous pollutant identification (on-going activity coordinated by UFZ werner.brack@ufz.de and IVM marja.lamoree@ivm.vu.nl). The work of the EDA WG in 2015 will focus on the following tasks: **Task 1:** Workshop on "Virtual EDA": Multivariate approaches to link chemical signals to effects" (possibly back-to-back with IEEA workshop) (Leader: UFZ tobias.schulze@ufz.de, see AW-2 below). **Task 2:** Two-day workshop on Integrated Exposure and Effects Assessment, in collaboration with US EPA and NIES-Japan and under the umbrella of the NORMAN network (planned March / April 2017) (Leader: IVM marja.lamoree@ivm.vu.nl, see AW-3 below).

WG-4 Engineered nanoparticles	Working Group N°4: Engineered nanoparticles (on-going activity coordinated by EAWAG – Ralf Kaegi Ralf.Kaegi@eawag.ch). Collaboration with WG-2 (RWTH, Aachen) for the organisation of the Expert Group meeting on micro- and nanoplastics (see above *WG-2 Bioassays, Task 3*)
WG-5 Wastewater reuse and contaminants of emerging concern	Working Group N°5: Wastewater reuse and contaminants of emerging concern (on-going activity coordinated by NIREAS, University of Cyprus – Despo Kassinos dfatta@ucy.ac.cy in collaboration with Catholic University of Porto – Celia Manaia cmanaia@porto.ucp.pt and University of Dresden thomas.berendonk@tu-dresden.de). The work of WG-5 in 2016 will address two key areas: 1) Role of wastewater reuse practices on the accumulation of antibiotic resistance in the environment. In the first two years of WG-5, activities were devoted to determining resistance genes in wastewater to improve our knowledge of the role of wastewater reuse practices on the accumulation of antibiotic resistance in the environment. Two screening campaigns were organised in 2014 and in 2015 on a representative set of WWTP around Europe and Mediterranean countries. **Task 1** in 2016 will address the validation of the results of the 2014 and 2015 screening campaigns, the aim being to design and agree on a harmonised method for antibiotic resistance detection and quantification. 2) EU Water Reuse policy: The drafting of a Water Reuse policy instrument is currently under way at Commission level. Members of NEREUS COST Action (ES1403) and NORMAN WG-5 are committed to provide recommendations to the European Commission. Input will focus in particular on the definition of minimum quality criteria for reuse of treated wastewater for groundwater aquifer recharge and agriculture irrigation purposes. **Task 2** in 2016 will address the drafting of minimum quality criteria for reuse of treated wastewater for groundwater aquifer recharge and agriculture irrigation. That will include: biological tests, associated with trigger values; priority chemical contaminants; measurement of antibiotic resistance; recommendations for monitoring schemes.
WG-6 Emerging contaminants in the indoor environment	Working Group N°6: Emerging contaminants in the indoor environment (on-going activity coordinated by IVL Eva Brorström-Lundén Eva.BL@ivl.se in collaboration with IVM pim.leonards@ivm.vu.nl and University of Antwerp adrian.covaci@uantwerpen.be). The work of WG-6 in 2016 will focus on: ▪ Development of a protocol for sampling methods for indoor air (Leader: IVM pim.leonards@ivm.vu.nl and University of Antwerp adrian.covaci@uantwerpen.be). ▪ Agreement on the final requirements (structure, metadata, substances) for inclusion of an indoor environment module in EMPODAT (Leader: IVL Eva.BL@ivl.se). ▪ Start of the compilation of data from WG members as well as from projects outside NORMAN, including non-target screening studies for uploading in the new indoor environment module in EMPODAT (Leader: IVL Eva.BL@ivl.se). ▪ Evaluation of the results from the NORMAN Collaborative Trial of non-target and suspected screening of indoor dust (together with other NORMAN activities and non-target screening cross-working activity group) (see "NORMAN Collaborative Trial: Non-target and suspect screening methods for organic substances in indoor dust").
Non-target screening Cross-Working Group Activity (NTS CWA)	Cross-Working Group Activity on Non-target screening (on-going activity coordinated by Eawag juliane.hollender@eawag.ch in collaboration with NIVA kevin.thomas@niva.no, EI slobodnik@ei.sk, UFZ tobias.haglund@ufz.se and University of Athens Nikos Thomaidis ntho@chem.uoa.gr). The new Activity Group will be in charge of the following tasks in 2016: ▪ Continuation of NormaNEWS, discussion of results of the first round /pilot phase of NormaNEWS (NIVA) (see "NormaNEWS and Retrospective Screening"); ▪ Setting up further "suspect" substances lists on the NORMAN server (EI, Eawag); ▪ Enlargement of MassBank through spectra of Norman emerging compounds and target compounds of Norman partners (Eawag, UFZ) (see "NORMAN MassBank / RMassBank"); ▪ Setting up a repository for MS data (UFZ, EI) (see "NORMAN Non-target screening data exchange platform"); ▪ Processing of existing NTS data within NORMAN (UoA, Eawag) (see "NORMAN Non-target Collaborative Screening Trial: Retrospective Screening") ▪ Testing and further development of retention time prediction/index (UoA, UFZ) (see "Development of models for prediction of retention time index in LC-MS") ▪ Assessment of results of indoor environment CT (NILU) (see ILS-1 "NORMAN Collaborative

	Trial: Non-target and suspect screening methods for organic substances in indoor dust") ▪ Meeting to discuss the progress of the different activities as well as the drafting of a guideline for non-target screening based on the results of the two CTs and further results from other NORMAN activities (linked to the Nontarget2016 conference in Ascona, CH) (all, Eawag)
NTS CWA: NormaNEWS and retrospective screening	NormaNEWS and retrospective screening (Leader: NIVA, kevin.thomas@niva.no in collaboration with UoA, ntho@chem.uoa.gr). The Norman Early Warning System (NormaNEWS) is a collaborative activity aimed at members active in non-target analysis. The concept of NormaNEWS is that when one group identifies a new contaminant of emerging concern identification criteria are sent to other members of the group who use retrospective analysis techniques to check their own samples. This way we can rapidly establish the occurrence of newly identified compounds of emerging concern across Europe and beyond. A pilot activity started in 2015 and will be pursued in 2016 to evaluate the approach http://www.normandata.eu/?q=node/244. The pilot activity is expected to bring together interested parties working on non-target analysis and having already accurate mass high-resolution mass spectrometry data for environmental samples. All interested laboratories are invited to provide candidate compounds for inclusion. These compounds will be summarised into a single list that will be circulated to all participating laboratories and then each laboratory will perform retrospective analysis on their existing data. The expected output of the pilot is a peer-reviewed paper, co-authored by contributing participants. *Expected outcomes for 2016:* ▪ Retrospective Screening of NORMAN Collaborative Trial data with NormaNEWS suspect list ▪ Quality assurance of the retrospective analyses performed by the participants ▪ Proof of concept for NormaNEWS and Suspect List Exchange ▪ Potential manuscript depending on outcomes of retrospective screening results.
NTS CWA: Non-target screening data exchange platform	A new non-target screening data exchange platform (raw mass spectra obtained high resolution-mass spectrometry techniques) will be created. The aim is to: (1) allow exchange of information on non-target data and tentatively identified compounds, (2) relate non-targets to samples and sample locations, (3) provide data for basic server side and advanced external profiling analysis with workflows (Leader: UFZ tobias.schulze@ufz.de ; contributions from UMEA and EI). It is proposed to base the development of such a platform on existing software that will be customised (e.g. CKAN). CKAN has the capabilities for the building of federated e-infrastructure (that means that a main portal collects and presents all data received from external, distributed data providers).The advantage of the distributed system is: (1) control of own data and (2) no overload of one institute with large raw data records. All data are federated by a central portal. The data access can be private (e.g. for restricted data or when it is necessary to keep an embargo on it before publication), open for a group or open for the public. Metadata information on the existence of a dataset should be open access anyway. The test cases for the platform will be the data from the NORMAN Non-target Collaborative Trial (CT) (2012–2013, surface water) and possibly the whole Joint Danube Survey (JDS3) dataset. The main tasks for 2016 will be: ▪ Proof of the basic concept and of the applicability of CKAN (mockup / demo server, requirements for implementation) (UFZ); ▪ Programming / implementation of missing CKAN functions (e.g. comprehensive search) (UFZ); ▪ Setup of the central public server portal and building of the first node in the federated server infrastructure (UFZ, UMEA); ▪ Upload of first demonstration datasets (e.g. NT CT data); ▪ Test and improvement of the federated infrastructure (UFZ, UMEA) ▪ Concepts on minimal metadata requirements and implementation of an ontology / vocabularies (e.g. sample types, sampling spots, chemical lists, etc.) (EI, UFZ).
NTS CWA: Development of models for the prediction of retention time index in LC-MS	Development of a retention time index (RTI) and its modelling following advanced QSRR procedures (Leader: University of Athens - Nikos Thomaidis ntho@chem.uoa.gr in collaboration with TUM - Thomas Letzel t.letzel@tum.de, eawag, UFZ and IUPA). The ultimate aim is to provide NORMAN members with a tool for the prediction of RTs of their suspect and unknown compounds. One of the major gaps in existing non-target screening workflows is the absence of a universal retention time prediction model to support the identification of unknowns and reduce the false positive findings. Up to now, there have been no efficient, widely applicable tools available for this purpose.

	Expected outcomes for 2016: ▪ Agreement on an LC retention time index model; ▪ An open source software program to predict RT and RTI; ▪ Agreed criteria to reject or accept candidate structures based on their RTI/RT within given confidence level(s); ▪ Demonstration of the applicability domain.
Open access software platform - Solutions and workflows in environmental analysis	Open access software platform - Solutions and workflows in environmental analysis (Leader: TUM (t.letzel@tum.de) in collaboration with LfU (Manfred.Sengl@lfu.bayern.de) and EI (slobodnik@ei.sk). The aim of this action is to create an Open Access Platform fitting the requirement of current analytical workflows and to be used by the European community in environmental analysis. A first common meeting to define and harmonise the needs and future perspectives of such an Open Access Platform will be organised on 2– 4 November 2016 in Garching (Munich; Germany) between the existing German FOR-IDENT platform http://for-ident.hswt.de/pages/en/project/summary.php , the NORMAN Association and further European initiatives. Participants may be analytical and water chemists as well as information scientists. The analytical solutions and workflows for structural elucidation and for analytical databases developed by vendors are typically locked for outside users. On the other hand, there is a growing community of research institutions developing open-access tools for 'Nontarget and Suspects Screening', but often they are programmed as single solutions to a specific analytical question (mainly without linkage to each other). The final aim is to establish a long-term structure so that this platform can be used freely by several (commercial and non-commercial) users in the future. The detailed agenda of the first meeting will be discussed and presented at the NORMAN NTS-CWA meeting in Ascona (3 June 2016), back-to-back with the Nontarget2016 conference.
Passive sampling Cross-Working Group Activity (PS CWA)	Passive sampling Cross-Working Group Activity (activity coordinated by NIVA Ian.Allan@niva.no and IRSTEA cecile.miege@irstea.fr) The work of the Passive sampling Cross-Working group activity in 2016 will focus on the development of a data management system (to be included in EMPODAT) for recording passive sampling data with all information necessary for a transparent estimation of a freely dissolved contaminant concentration in water. Passive sampling has a role to play in the future within regulatory water quality monitoring programmes such as for the Water Framework Directive. The next step to facilitate the comparability of data obtained by labs with different passive sampling tools at European level is to standardise passive sampling data reporting. The work will start with the organisation of a working group discussion (planned 2 or 3 teleconference meetings) to develop and agree on a structure and specifications for a database for inputting passive sampling data into a common repository. One on-site meeting may be planned in September–October to review and discuss progress to date regarding database specifications. This action is coordinated by NIVA Ian.Allan@niva.no and IRSTEA cecile.miege@irstea.fr as part of the actions of the Passive Sampling CWA.
AW-1	Workshop N°1: "Emerging chemicals in the EU – 10 years of the NORMAN Network" (Leader UBA, INERIS, NILU, NIVA, Eawag, EI/WRI, ALTERRA /Wageningen in collaboration with University of York lorraine.youds@york.ac.uk) Organisation of a one-day workshop on Emerging chemicals in the EU – 10 years of the NORMAN Network (Brussels, 26 October 2016), hosted by UBA at the Representation of the State of Saxony-Anhalt to the EU. The main objective of this workshop is to present a clear need to focus on emerging contaminant issues in EU states and at the EU level in terms of policy-making and regulation-development. This involves raising awareness among EU regulators of the NORMAN Network's overall goals and its role in facilitating data exchange and harmonisation and streamlining of knowledge of emerging substances so as to inform more closely the making and implementation of policy. The workshop will provide a forum for NORMAN Network members, the European Commission, EU Member States and other relevant stakeholders for presenting and discussing the evidence for, and rationale behind, a harmonised approach for policy and regulation coherence with relation to emerging contaminants in the environment. Particular attention will be given to: ▪ 10 years of the NORMAN Network: what has been achieved and vision for the future; ▪ Expanding the cooperation of the NORMAN Network with sectoral regulation (i.e. Water Framework Directive, REACH, etc.) and exchange with authorisation and registration

	agencies (offer of databases and assessment tools).
AW-2	Workshop N°2: "Virtual EDA" - Multivariate approaches to link chemical signals to effects" (Leader UFZ, werner.brack@ufz.de and tobias.schulze@ufz.de) (activity organised as part of the activities of WG-3 on EDA)
	Multivariate statistics are gaining importance in this context in classical HT-EDA (see Radovic et al., 2014, ES&T) as well as in the so called "virtual EDA" which uses multivariate statistics as a kind of "virtual fractionation" to isolate chromatographic peaks that co-vary with effects in bioassays (e.g. Hug et al., 2015).
	Experts in multivariate statistics, chemometrics, non-target screening and effect-based screening will be invited. Focus: overview of the various existing approaches, identification of opportunities and pitfalls with virtual EDA, requirements on data quality, concepts to handle missing data etc. The final goal is the drafting of the first guidance paper in this field under the NORMAN umbrella.
	The workshop is expected to take place in Autumn 2016 or March / April 2017 (possibly back-to-back to IEEA workshop, see below).
AW-3	Workshop N° 3: "Integrated Exposure and Effects Assessment (Leader IVM marja.lamoree@ivm.vu.nl) (activity organised as part of the activities of WG-3 on EDA)
	A two-day workshop on Integrated Exposure and Effects Assessment will be organised by IVM in collaboration with US EPA and NIES-Japan, under the umbrella of the NORMAN network. The aim is to bring together the experience gained in the US (http://pubs.usgs.gov/of/2015/1113/), Asia and Europe regarding the deployment of target- / non-target screening and biological monitoring tools for integrated exposure and effect assessment. This workshop should also offer the opportunity for the definition of recommendations for WFD Review in 2019. This workshop was already part of the Joint Programme of Activities of 2014, see *AW-3* in NORMAN JPA 2014, but it could not be organised due to schedule problems. It is planned to take place in March / April 2017, if possible jointly with the "Virtual EDA" workshop (see above).
EG-1	Expert Group meeting N° 1: "Small-sized Plastic Noise in the Water" (Leader RWTH – Aachen, Henner.Hollert@bio5.rwth-aachen.de, in collaboration with Eawag Ralf.Kaegi@eawag.ch and UBA jan.koschorreck@uba.de) (activity organised as part of the activities of WG-2 on Bioassays)
	The aim of this EG meeting is to discuss current methods and challenges in the investigation of the risks associated with micro- and nanoplastics (with a specific focus on fresh water) and to agree on the role of the NORMAN Network in support of on-going research projects and initiatives in this field. The EG meeting will take place in Berlin on 23 June 2016, back-to-back with the "European Conference on Plastics in Freshwater Environments (21–22 June 2016, http://www.umweltbundesamt.de/en/plastics-conference-2016), organised by the German Environment Agency (UBA) and the German Federal Institute of Hydrology (BfG) on behalf of the German Federal Ministry for the Environment, Nature Conservation, Building and Nuclear Safety.
	The NORMAN EG will facilitate communication and cooperation between NORMAN members working on micro- and nanoplastics. One of the aims of the EG meeting will be to discuss whether an activity on "microplastics" should be integrated as a permanent activity within the NORMAN Network (possibly under the scope of WG-4 on nanomaterials).
ILS-1	Collaborative Trial (CT) on Non-target and suspect screening methods (GC-MS and LC-HR-MS(MS) methodologies available in participating laboratories) for organic substances in an indoor environmental dust sample (as part of the activities of WG-6 on Emerging substances in the Indoor Environment and the Cross-Working Group Activity "Non-target screening"). (Leader NILU PernillaBohlin.Nizzetto@nilu.no in collaboration with EI slobodnik@ei.sk).
	This exercise is organised as a follow-up action to the NORMAN CT "Non-target screening of organic substances in water" (JPA 2013 and 2014). The preparation of this CT started in 2015 (invitations, logistics, template/protocol etc). There are 30 laboratories participating in this Collaborative Trial. It is planned to organise a workshop to discuss results and methods evaluation.
	Expected outcomes: ▪ Recommendations by the NORMAN Association on the use of suspect screening and non-target screening for the identification of the pollutants specific to indoor environments; ▪ Preparation of a scientific publication.
ILS-2	Collaborative Trial for the analysis of polar compounds (Coordinated by KWR Patrick.Bauerlein@kwrwater.nl in collaboration with TUM - Thomas Letzel t.letzel@tum.de and University of Athens Nikos Thomaidis ntho@chem.uoa.gr). Further to the discussion in the "1st NORMAN workshop on analysis of problematic compounds" in

	2015 in Rhodes, this collaborative trial will be organised to compare the different analytical techniques that are used in various laboratories within the Norman network and outside. This trial is necessary to evaluate the techniques that are currently used and identify the advantages and disadvantages of each method.
	For this trial about 20 compounds (e.g. pharmaceuticals and their metabolites) will be chosen. Different concentrations of these compounds will be added to a surface water sample. The spiked surface water samples will be sent to all participating laboratories. Each laboratory will be asked to use its in-house methods to analyse the samples. The samples should be analysed qualitatively and quantitatively. If a quantitative analysis is not possible, an exclusively qualitative analysis is also possible. Costs for the analysis of the samples will be borne by the participating laboratories. A one-day workshop may also be organised to discuss the results of the trial.
ILS-3	Organisation of two interlaboratory studies on sweeteners, benzotriazole, antibiotics and beta blockers. (Leader IWW as full in-kind contribution; David Schwesig d.schwesig@iww-online.de).
	These studies will combine proficiency testing of laboratories and evaluation of the suitability of methods used (V3 level). The ILS will be carried out anyway within Germany (expected participation of approx. 30 laboratories), but thanks to participation of – and dissemination via – the NORMAN Network, it is expected that the number of participants will increase. The study will foster the harmonisation of approaches and the validation and comparability of data and also serves as a proof of competence for the participating labs.

The proposed budget will be revised by the Steering Committee in May 2016. All approved scientific activities will be implemented, independently of the revision of the budget.