

Twining towards excellence in alternative methods for toxicity assessment.

H2020 Twining project TWINALT

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NILU is one of the 4 partners of TWINALT project

It is an independent, non-profit research institution, established in 1969 and is one of the leading European institutes in environmental and climate research, environment and health, and nanosafety research.

NILU has great experience in writing proposals and high success rate in obtaining EC grants.

Health Effects Laboratory

Consists of 7 members

Elise Rundén Pran section leader, senior scientist

Maria Dusinska, scientific director, senior scientist



Health Effects Laboratory projects 2008-2017

INSTITUTE OF OCCUPATIONAL MEDICINE

12 finished projects:

- HISENTS *Horizon 2020*
 - NANoREG2 *Horizon 2020*
 - GEMNS *EuroNanoMed II*
 - NorNANoREG *NFR coordinator*
 - NANoREG *FP7 NMP.2012.1.3-3*
 - NanoTEST *FP7-HEALTH-2007-1.3 coordinator*
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- NanoImpactNet *FP7-NMP-2007-CSA-1 WP leader*
 - QualityNano *FP7-INFRA 2010 -1.1.3.1*
 - NanOmega *FP7-PEOPLE-2009-IEF*
 - NanoTOES *FP7-PEOPLE-2010-ITN WP leader*
 - Norwegian Polish *EEA PNRF122*
 - Norwegian Czech *EEA*



Health Effects Laboratory projects 2017-2021

INSTITUTE OF OCCUPATIONAL MEDICINE

13 running project

RiskGONE	H2020 NMBP13 – HEL coordinator
NanoSolveIT	H2020 NMBP14 – WP leader
SaByDOMA	H2020 NMBP25 – WP leader
NanoBioReal	NFR - WP leader
INTER	NFR - WP leader
hComet	COST action – WG leader
VISION	EU Twinning – WP leader
TWINALT	EU Twinning – WP leader
INNOCENT	<i>EuroNanoMed II</i>
GOTTARC	<i>EuroNanoMed III</i>
CELLUX	<i>EuroNanoMed III</i>
TEPCAN	EEA No-PO
CompSafeNano	H2020



TEPCAN EEA No-PO

CompSafeNano H2020



- Call H2020 – WIDESPREAD – 2018-2020,
- Coordination and support action
- Project start: November 2020 under Grant agreement 952404
- Length of the project - 3 years
- Coordinator: Nofer Institute of Occupational Medicine (NIOM), Poland
- Project originally written and started by prof. Maciej Stepnik, now coordinated by prof. Edyta Rezska



How we started:

- 4 enthusiastic scientists discussed needs for new advanced models and development of alternative tests for safety assessment of chemicals and nanomaterials: profs. Maciej Stepnik, Tamara Vanhaecke, Corado Gali and Maria Dusinska
- We found appropriate call
- The process started in 2017
- Brainstorming to discuss the proposal
- Proposal development – approximately three months
- First submission November 2017, second submission 2018, third submission 2019 - successful



No	Name	Short name	Country	Project entry month ⁸	Project exit month
1	INSTYTUT MEDYCZYNY PRACY IMIENIA PROF. DRA MED. JERZEGO NOFERA W LODZI	NIOM	Poland	1	36
2	VRIJE UNIVERSITEIT BRUSSEL	VUB	Belgium	1	36
3	NORSK INSTITUTT FOR LUFTFORSKNING STIFTELSE	NILU	Norway	1	36
4	UNIVERSITA DEGLI STUDI DI MILANO	UMIL	Italy	1	36

2 universities and 2 research institutions.

Common interest in alternative in vitro tests, hazard and risk assessment



Twinning towards excellence in alternative methods for toxicity assessment





twinalt partners complementarity in skills

MEDICINE

NIOM Expertise in *in vitro* and *in vivo* toxicity testing, one of the leading institute in Poland with great potential to hazard and risk assessment NIOM was first in Poland to have GLP laboratory in toxicology

VUB Expertise in the field of functional liver-based *in vitro* models, including metabolically competent primary hepatocyte cultures and stem/progenitor cells, stem cell technology, toxicogenomics and microarray technology to generate more complete mechanistic information

NILU Expertise in human related *in vitro* cytotoxicity, genotoxicity, mutagenicity and carcinogenicity, new *in vitro* cell culture models mimicking *in vivo* situation (lung, liver, etc.), high throughput methods and miniaturisation, hazard assessment, risk assessment of chemicals including nanomaterials, GLP laboratory for *in vitro* cytotoxicity and genotoxicity

UMIL Expertise in *in vitro* alternative models for skin sensitization and skin toxicity, immunotoxicity, hazard and risk assessment



Twinning towards excellence in alternative methods for toxicity assessment



- Priority area 1: advanced methods for cytotoxicity assessment (High Throughput/Content Screening);
- Priority area 2: new cell models in alternative methods (co-cultures, 3D models);
- Priority area 3: standard/modern alternative methods for genotoxicity and carcinogenicity assessment;
- Priority area 4: characterization of cell-nanomaterial interactions under in vitro conditions;
- Priority area 5: *in silico* methods in safety assessment



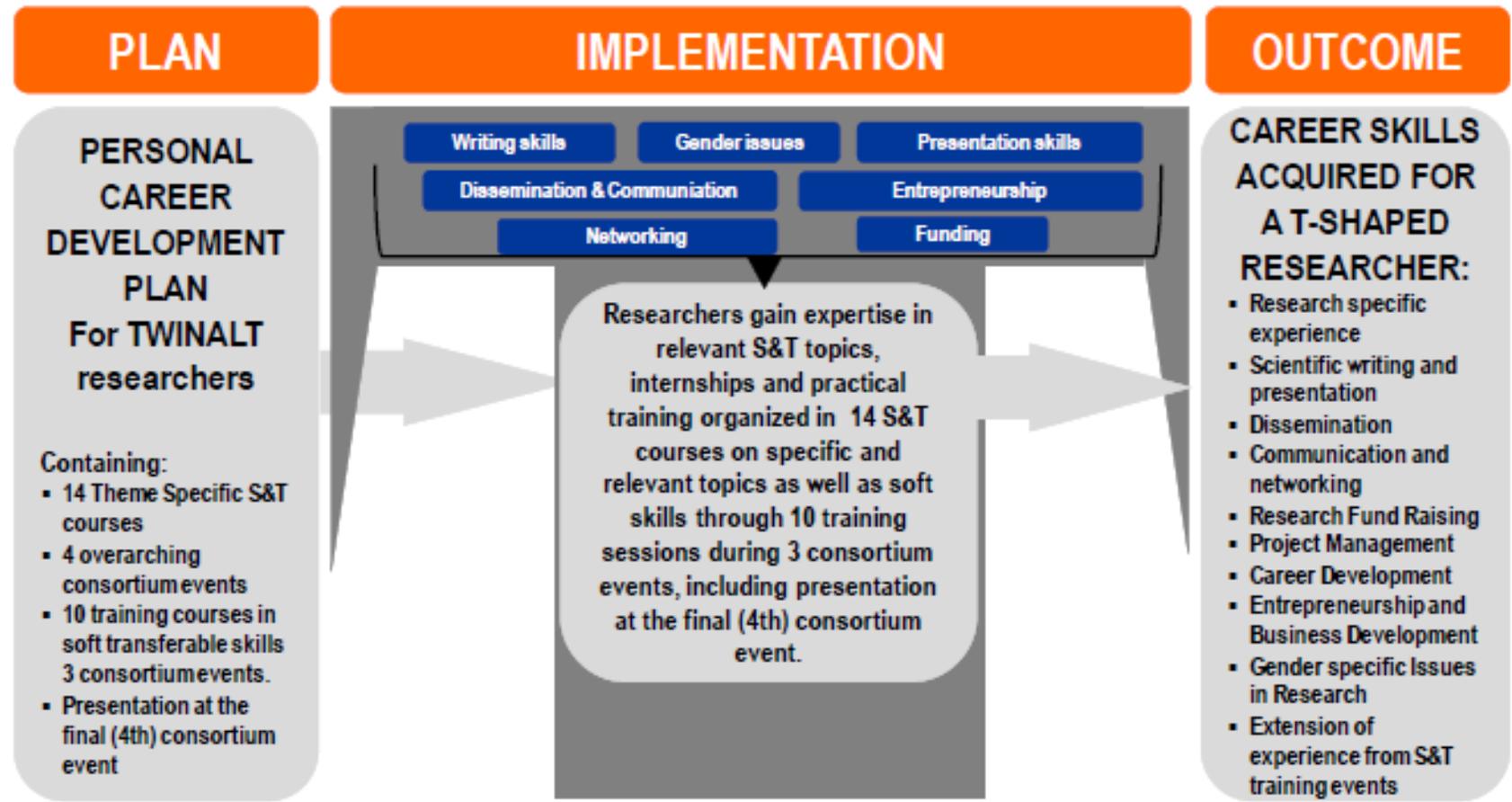
- Strengthen the research position of NIOM in the field of alternative methods to toxicity assessment by linking it with 3 prominent scientific partners in this field from Belgium, Norway and Italy
- Enhance the S&T capacity of the 4 linked institutions with a principal focus on the NIOM;
- Commercialize and integrate the TWINALT research with the needs of society at the local, regional, national, European and global level.

With support of the TWINALT partners NIOM will define the long-term scientific strategy for further development of alternative methods and will indicate the most promising directions in global development of alternative methods.

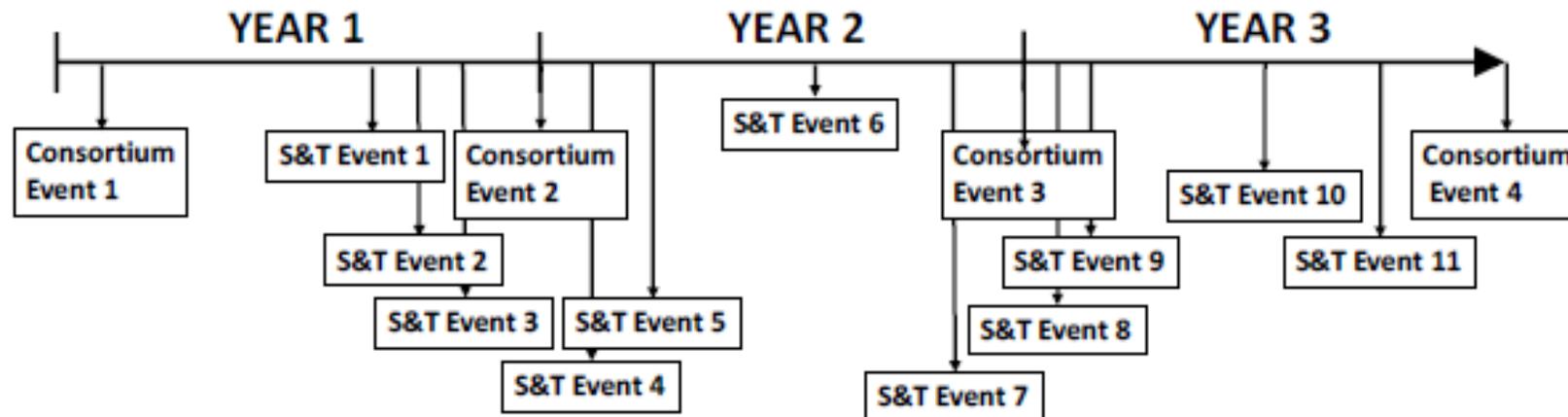


WP Number ⁹	WP Title	Lead beneficiary ¹⁰	Person-months ¹¹	Start month ¹²	End month ¹³
WP1	Elaboration of a common RTD and innovation strategy on alternative methods for toxicity assessment	3 - NILU	14.50	1	30
WP2	Exchange of know-how with partners through training mobility	1 - NIOM	33.00	1	36
WP3	Communication, exploitation and dissemination	2 - VUB	17.00	1	36
WP4	Management	1 - NIOM	9.00	1	36





Good work planning



Activities/Events:

short-term staff exchanges, expert visits, on-site or virtual trainings, courses, workshops, networking, collaborative projects, publications, dissemination and outreach activities

has started (not at application stage) those beneficiaries which do not opt-out, will need to create a more detailed Data Management Plan for making their data findable, accessible, interoperable and reusable (FAIR).

⚠ You will need an appropriate consortium agreement to manage (amongst other things) the ownership and access to key knowledge (IPR, research data etc.). Where relevant, these will allow you, collectively and individually, to pursue market opportunities arising from the project's results.

⚠ The appropriate structure of the consortium to support exploitation is addressed in section 3.3.

- Outline the strategy for **knowledge management and protection**. Include measures to provide **open access** (free on-line access, such as the 'green' or 'gold' model) to peer-reviewed scientific publications which might result from the project⁴.

⚠ **Open access publishing** (also called 'gold' open access) means that an article is immediately provided in open access mode by the scientific publisher. The associated costs are usually shifted away from readers, and instead (for example) to the university or research institute to which the researcher is affiliated, or to the funding agency supporting the research. Gold open access costs are fully eligible as part of the grant. Note that if the gold route is chosen, a copy of the publication has to be deposited in a repository as well.

⚠ **Self-archiving** (also called 'green' open access) means that the published article or the final peer-reviewed manuscript is archived by the researcher - or a representative - in an online repository before, after or alongside its publication. Access to this article is often - but not necessarily - delayed ('embargo period'), as some scientific publishers may wish to recoup their investment by selling subscriptions and charging pay-per-download/view fees during an exclusivity period.

b) **Communication activities**^{5,6}

- Describe the proposed communication measures for promoting the project and its findings during the period of the grant. Measures should be proportionate to the scale of the project, with clear objectives. They should be tailored to the needs of different target audiences, including groups beyond the project's own community.

3. Implementation

3.1 Work plan — Work packages, deliverables

Please provide the following:

- brief presentation of the overall structure of the work plan;
- timing of the different work packages and their components (Gantt chart or similar);
- detailed work description, i.e.:
 - a list of work packages (table 3.1.a);
 - a description of each work package (table 3.1.b);

⁴ Open access must be granted to all scientific publications resulting from Horizon 2020 actions (in particular scientific peer reviewed articles). Further guidance on open access is available in the [H2020 Online Manual](#) on the Participant Portal.

⁵ See participant portal FAQ on how to address [communication activities](#) in Horizon 2020

⁶ For further guidance on communicating EU research and innovation for project participants, please refer to the [H2020 Online Manual](#) on the Participant Portal.



- Expected impact 1: Increased research excellence of NIOM in the field of alternative methods for toxicity assessment
- Expected impact 2: Enhancing NIOM's reputation, visibility, attractiveness and networking channels of the coordinating institution
- Expected impact 3: Improved capability to compete successfully for national, European and international research funding
- Expected impact 4: Qualitative and quantitative impact of the twinning exercise within NIOM
- Expected impact 5: Provision of access to new research avenues, creativity and the development of new approaches by VUB, NILU and UMIL
- Expected impact 6: Overall benefits for VUB, NILU and UMIL



How we prepared successful project proposal

- Common interest – built new ideas and discussed what are needs and where are gaps in research
- We have good overview of the field
- We found the call
- We read the call carefully with instructions and we studied the template and evaluation criteria
- Composed consortium with appropriate expertise
- Discussed regularly the proposal to find innovative approach, to set best events for training and twinning activities to maximize the impact, to prepare balanced proposal
- Shared the work on the proposal



Focus on Impact

We defined short term and long term impact: effects of results on society, the environment, the economy and science, enabled by the outcomes of R&I investments (long term).

We discussed how our project outcome contributes and affects the field and consequently our environment, health, our organizations, society, economy, education, etc.

Dissemination – measure how to maximise the impact



What is important for a successful proposal ?

- Excellence science – Innovation, unique feature
- Relevant to the call topic
- Clear objectives, good concept, feasible work plan, easy to read, with graphical illustration (timeline - gantt chart)
- WPs should have logical sequence, clearly formulated tasks, each task has outcome in deliverable, WPs should be connected with each other
- Great potential impact
- Pay attention on Dissemination and Exploitation
- High quality of the consortium (collaborators)
- Realistic requested budget
- Good coordination and professional management and dissemination



Choice of appropriate collaborators (consortium) is important

- Choose preferably partners you have good references on them. All TWINALT partners knew each other
- Both expertise and personalities are important!
- We set up early in the project proposal development regular brainstorming meetings to let idea and proposal mature.
- We made clear workplan together. This prevents possible problem of misunderstanding in future
- We spread our responsibilities among partners and assigned each WP to the partner with appropriate expertise. Responsibilities should be balanced



We submitted TWINALT three times.
We did not give up!

Difference between successful people and failures is only that successful ones go through failure without loosing enthusiasm!

THANK YOU!

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