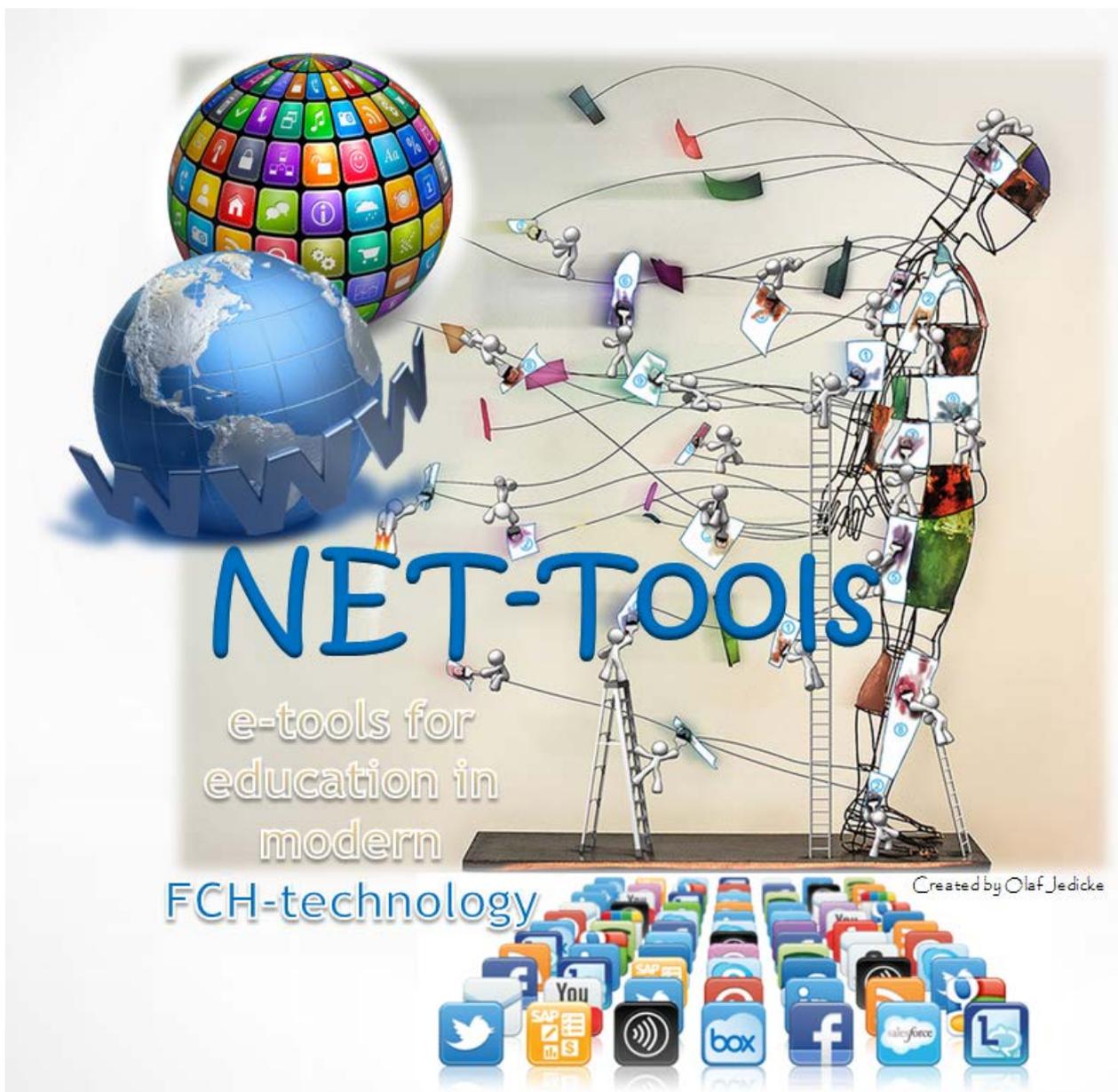


Novel Education and Training Tools based on digital applications related to hydrogen and fuel cell technologies

Deliverable 1.9



Grant agreement no. FCH – 2 JU – 736648



D1.9 List of Advisory Board Members

Due date of deliverable according DoA	30th June 2017
Completion date of deliverable	20th November 2017 Updated 20th May 2018
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Nature (other or report)	Report
Version of deliverable	1.3
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Responsible partner for deliverable (acronym)	KIT, EE
Contributing partners (acronyms)	KIT, IEES, UNIPG

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If deliverable does not get finished as scheduled in description of activity, please add a short explanatory statement. (To be done by responsible person of deliverable)

Explanatory Statement:

The Deliverable was delayed until further information was provided based on advancements of other activities in the project – fixed dates for the Expert Workshop and the Advisory Board Meeting, planned participations in conferences by the Consortium members, etc. The Plan for Networking and Dissemination needs a continuous update and in its current version reflects an actual status.

Document History (authors and co-authors)

Issue Date	Version	Changes Made/Comments
Dec. 2017	1.0	Lisa Ruf, Ben Madden (draft list of advisory board member)
Jan. 2018	1.1	Olaf Jedicke (compilation of content and drafting of deliverable)
Feb. 2018	1.2	Olaf Jedicke (general procedure to collaborate with the advisory board)
May.2018	1.3	Olaf Jedicke (structure, adds, completion list of advisory board members)

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1 Advisory Board Members

1.1 General Tasks of the Advisory Board

Due to the NET-Tools project structure and its importance to the FCH community regarding the future availability of training and educational materials provided as open access under so called NET-Tools e-platform it appears as an adequate method, to incorporate an external advisory board consisting of industry- and academic members similarly. Because of this, the advisory board and activities related became already incorporated as an essential part within the dissemination and exploitation chapters of the proposal.

2.2.4. Advisory Board Meeting	
Methods	Presentations and Roundtable Discussion
Purpose	<p>The establishment of NET-Tools Industrial Advisory Board aims to create a team the potential contributors and experts from industry in concerns of education and training in FCH themes, development of e-infrastructures, and digital educational content. It will include international collaborators from South Africa, Canada, Korea, China, US, probably also from Argentina, Turkey etc. as well as individuals, which are already collaborating in different projects with members outside of the NET-Tools consortium (e.g. SUSANA, H2FC, HyFACTS, HySafe, e.g.) but also members of the research grouping (HER) and industrial grouping (HE) of the FCH-JU 2.0.</p> <p>The objectives dedicated to the advisory board are:</p> <ul style="list-style-type: none"> • To inform on previous initiative of similar nature • To represent industry • To support development of education and training materials • To support development of business concept to keep NET-Tools up to date beyond project <p>In the course of the project two advisory board meetings are planned. The meetings will be held jointly with other project activities for efficiency and cost effectiveness. The first one will be organized half way through the project with the main goal to provide guidance and recommendations in the early development of the online tools.</p>
Audience	<p>The Advisory board members will constitute a large representation of the different stakeholders :</p> <ul style="list-style-type: none"> • International Universities and Research Organizations working on H2&FC technologies and learning tools (European Universities and Research Organizations already represented by some project partners) • Industrial partners both large industry and SMEs (SME already represented by project partner) • Sectorial organizations
Message	<p>Involvement of industry in providing recommendations about the needed learning and training tools, which are modern, easily accessible, and flexible in regard to topics and level of sophistication (this is often not included sufficiently in research lead projects). Since the audience will be expert group, the language will be technical.</p>
Timing	Month 12/13

Tab [1.0] Extraction specific chapters to the NET-Tools proposal



The major goal of installing an advisory board to the NET-Tools project is a more or less continuous thematically evaluation of the project ongoing and outcome at least, derived by invited external “reviewers”, to advice the consortium on further necessities and serve suggestions to the developments of the e-Laboratory, e-Science and e-Learning generally and specifically. To get advice, critics, remarks and suggestions appears to be important to the consortium regarding the specific themes and content of e-learning materials and MOOCs (massive online courses). But also the development of e-tools, its general appearance, functionality, comprehensiveness, attractiveness and at least also attractive design needs to get reviewed by external experts already during its development. However, already at this stage it must be highlighted, that the margin to develop and/or modify and/or implement new and/or further e-tools and e-education materials as well as MOOCs appears limited due to the fixation by description of actions (DoA) which is part of the contract and thus must get pervaded as such during the course of project. Bearing in mind that NET-Tools e-platform shall continue also beyond the project life-time, all suggestions and remarks thitherto received as further demands and future activities are much appreciated to build NET-Tools e-platform and its content at least on external demands instead of executing an internal list of activities only.

The advice and suggestions by advisory board members is highly recommended especially regarding industrial demands on the development of e-Learning content and MOOCs but partially also e-tools incorporated in the e-Laboratory, which is subdivided into two main parts, the e-Engineering part and the e-Science part. Concerning the e-Laboratory, advisory board members are instructed to concentrate first instance specifically on:

- thematic scope and content of e-tools
- general and specific usability of e-tools
- comprehensibility, attractiveness and applicable friendliness of e-tools
- further development and strategic planning to the e-tools
- demands arising from industry and academia
- business concepts to follow up NET-Tools strategy beyond project life-time

Further to the e-Learning which gets incorporated in a Learning Management Systems (LMS) and will be accessible for free to the FCH-stakeholders (industry as well as academia, etc.) it appears as crucial to get discussed more detailed by industry and academia first instance on:

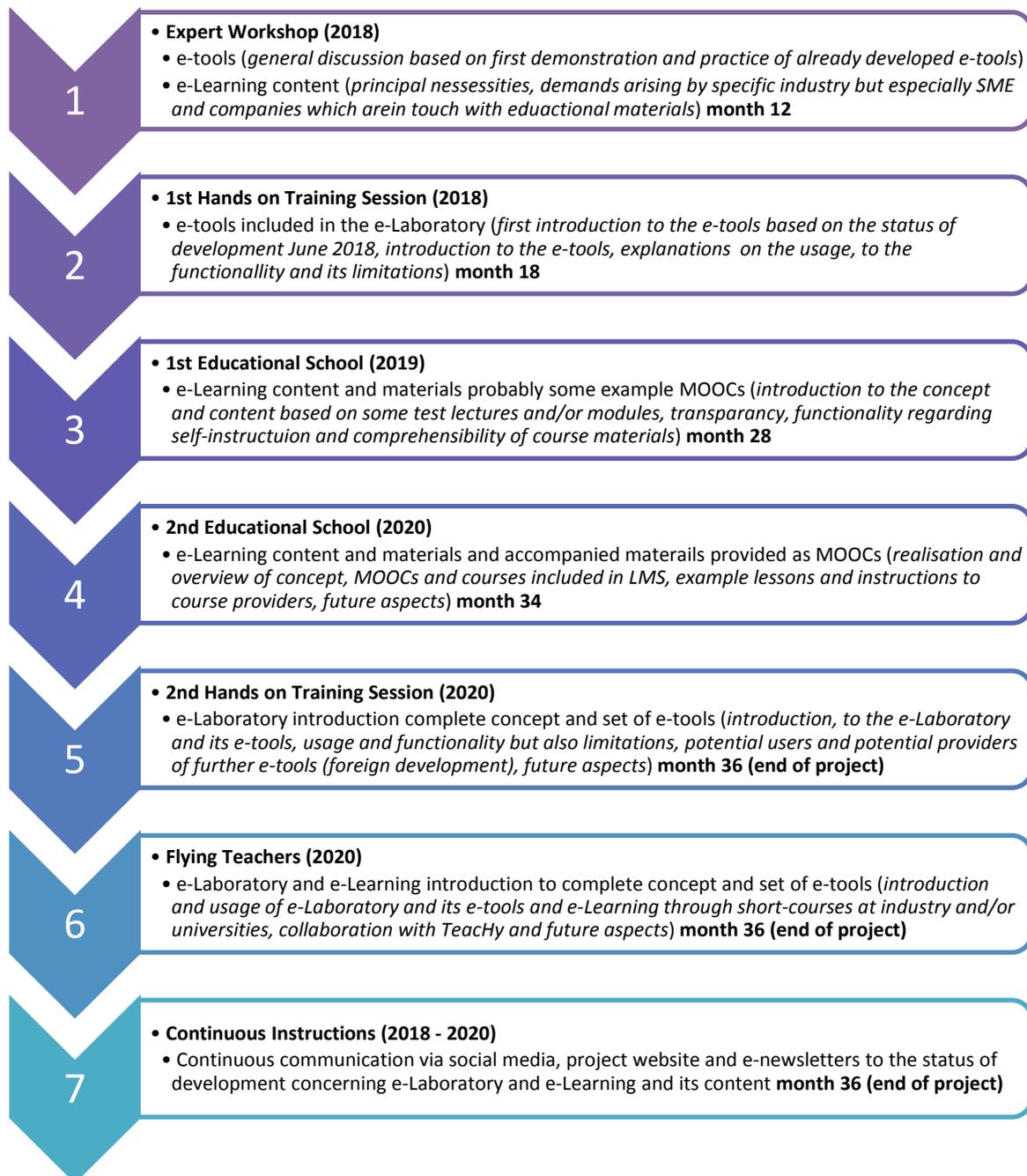
- thematic scope and content to be provided to FCH-community via LMS
- general and specific usability of LMS
- comprehensibility, attractiveness and applicable friendliness of LMS
- further development and strategic planning to the LMS
- thematic demands arising from industry and academia
- functional and optional demands arising from industry and academia
- business concepts to follow up NET-Tools strategy beyond project life-time

Basically, more detailed and specific instructions to the advisory board member will be given each time of meeting-event, e.g. expert workshop, 1st and 2nd technical school etc.

It is cognoscible that the mentioned concerns above must be distinguished between concerns which are related to the basic achievements of the project and concerns related to the ongoing of NET-Tools e-platform and its content beyond the project, including the realization of business and further economical approaches to keep the e-platform alive and attractive.

1.2 Project Events and Invitations of the Advisory Board

Some specific project events were planned to invite external experts, general stakeholders and potential users for demonstration and introduction into the concept based on achieved status due time concerning e-Learning and e-Laboratory. These events specifically are dedicated to the advisory board members. The major focus of each single event will be, to introduce and instruct stakeholders (external) and potential users about the development of e-Learning and e-Laboratory and to test the functioning and functionality during “real” lessons through example lessons.



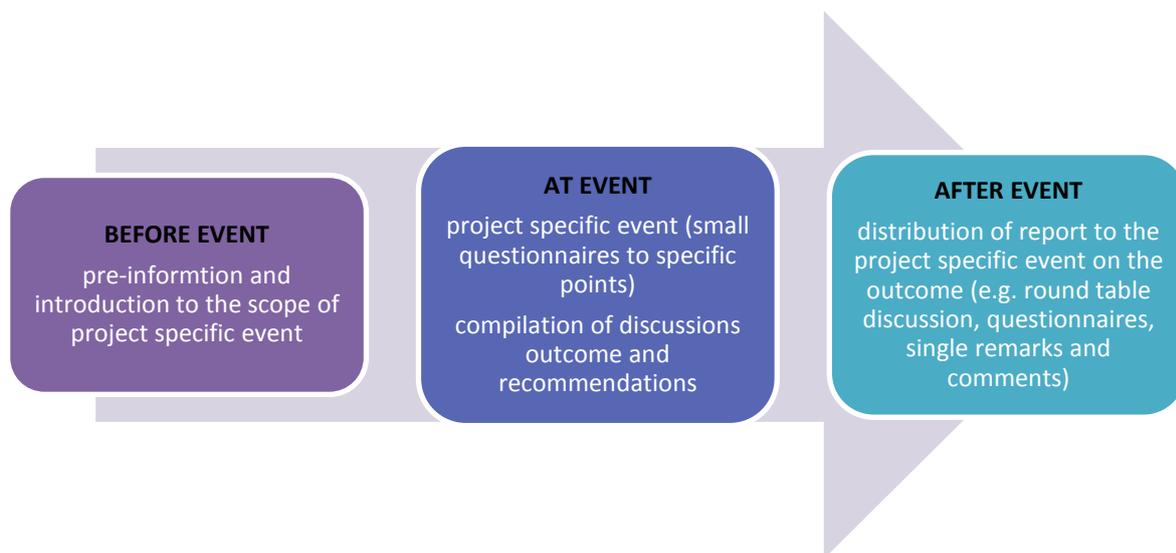
[Fig.1.0] Continuous flow and schedule of project events to report and demonstrate on the continuous development of e-Laboratory and e-Learning (LMS) also dedicated to the advisory board



The above commented list of major project events and additional activities reflects clearly, that the advices, reflections, suggestions, remarks and comments to the overall development of e-Laboratory and e-Learning in all its appearance and usability is ambitious. To each single project event, advisory board members get invited personally by a letter of invitation (example as attachment 2.1).

1.3 Advisory Board related Communication Strategy

In principle, as shown in above schedule of project events, the project consortium likes to receive advice from advisory board members to numerous activities, especially e-Learning and e-Laboratory parts but also business strategies. Due to that, the communication strategy between the project consortium and advisory board members gets developed mostly in relation to the specific project events on which status of the development can get demonstrated and critically discussed. It is planned to follow up the below presented procedure.



[Fig.2.0] Communication strategy and schedule with advisory board members

Generally the advisory board members will get pre-informed at latest 3 month before execution of event about the focus of event and the basic planning and schedule by a personal invitation letter which gets sent by personal Email. Therefore a list of prioritized advisory board members became prepared. Due to the number of specific project events, it was not planned to install a fixed advisory board but to keep it open as possible to several people (stakeholders and external experts) out of the FCH community means, basically Hydrogen Europe and Hydrogen Europe Research members but also some persons (international experts) which became already invited to act as advisory board member in NET-Tools before starting of project and confirmed already by a signed “letter of interest” (see attachment 2.2).

The principle communication strategy brought down more detailed is as follows:

- Personal invitation (specific experts)
 - Scope of event
 - Location and schedule (persons in contact)
 - Travel information
 - Registration form
 - Instructions to the refunding of travel costs
 - Pre-information (documents as far as available or by access to e-platform)
- General invitation (stakeholders non personalized)
 - Scope of event



- Location and schedule (persons in contact)
- Travel information
- Registration form
- Pre-information (documents as far as available or by limited access to NET-Tools e-platform to be decided according the event due to the number of user access)
- Attendees to the event (stakeholders and specific experts)
 - Introduction and scope of the event (agenda)
 - Introduction to the attendees (round table discussions, questionnaires etc.)
 - Available additional information to the event (e.g. reports, lists, links, documents)
 - Pre-information (documents as far as available or by access to e-platform to be decided according the event due to the number of user access)
 - Administrative instructions (to the personally invited external experts only)
 - Analysis of questionnaires and compilation of remarks and suggestions included in specific event report distributed to all attendees

The communication channels to the advisory board members and stakeholders to invite potential stakeholders to the specific project events but also to promote the project activities are:

- General email contact list
- Distribution of announcements via associations and Hydrogen Europe (HE) and Hydrogen Europe Research (HER) or even Program Office (PO) if needed
- Project Website
- Social Media (LinkedIn, Facebook)
- Personal contacts

Contact persons, tasks and responsibilities concerning the exchange of information and communication between advisory board members and project consortium are reported in the following paragraph. One major decision was made by the consortium concerning the interface of activities which became fixed and is mirrored each time by the location of event. Roughly it can get summarized as follows.

Anything which has something common with the location of project event will get arranged by the event manager (DTU, UNIPG, UU and IEES) as responsible for the location:

- Contact person regarding the location of event
- Internal administrative and technical organization (e.g. meeting rooms, equipment, further technical equipment)
- Additional arrangements to the event (e.g. personal, lunch and coffee breaks, evening events and come together)
- List of suitable hotels (near by the collation)
- Travels instructions (how to reach location)
- Etc.

Anything which has something common with the invitations to the event will get arranged by the communication manager (EE), the dissemination manager (IEES) and the coordinator (KIT):

- Contact persons concerning the planning and execution of event
- Agenda and presentations (presenters)
- Schedule of event
- Invitations and feedback (e.g. list of advisory board members and further attendees)
- Event fees (if some)
- General travel arrangements (invited expert persons)
- Refunding of travel costs (partly for experts)
- Etc.



1.4 Structure of Advisory Board

The advisory board gets pre-structures and separated into several categories in principle only to follow up the described process of interaction.

1. Advisory Board members confirmed by Letter of Interest (became attached to the proposal)
2. Advisory Board members compiled by consortium (industry and academia)
3. Advisory Board members consisted by of TeachHy members and partners
4. List of stakeholders to become invited
5. General advisors
6. Etc.

The first category represents the “worldwide” members to the advisory board which is important due to international communication and interaction (exchange of knowledge)

In principle, as shown in above schedule of project events, the project consortium likes to receive advice from advisory board members to numerous activities, especially e-Learning and e-Laboratory parts but also business strategies. Due to that, the communication strategy between the project consortium and advisory board members gets developed mostly in relation to the specific events of the project concerning expert work shop, webinars and technical schools.

Advisory board members who attended the specific project events reported individually to coordinator and head of advisory board. Remarks, comments and suggestions were collected and summarized briefly to find concrete general perspectives.

In the above concern, new members to the advisory board were nominated by the project consortium as listed. Additionally recommendations were done to guide the advisory board members in project development and dissemination concerns.

Attachments

1.5 Personal Invitation Letter

Personal Invitation

NET-Tools Workshop

19th and 20th March 2018

Novel Education and Training Tools based on digital applications related to Hydrogen and Fuel Cell Technology



Organised and chaired by:

Prof h.c. Olaf Jedicke, Karlsruhe Institute of Technology Germany

Dr Giovanni Cinti, University of Perugia, Italy

Ben Madden, Element Energy LTD, United Kingdom



Introduction

The NET-Tools project is a coordination and support action funded by the FCH-JU 2.0. The major target of the NET-Tools consortium is to develop e-Tools related to fuel cells and hydrogen technologies, applications and its safe use. These e-tools will get provided as open access through an internet-platform and are intended to be used by industry, first responders, owners and operators of transportation facilities, and last but not least academic institutions. We expect the tools to be used for individual training and general educational activities. To raise common interest and acceptance, NET-Tools main objective is to develop this unique European platform to support training and education in FCH technologies and businesses leveraging existing knowledge and enabling the development of future novel educational training based on digital content, accessible worldwide independent from the art of electronic device.

To achieve the major goal, NET-Tools project will follow the specific objectives:

- Deliver an open source based e-infrastructure dedicated to FCH knowledge and science
- Offer teaching user interfaces adapted to the different target audience: students and professionals
- Implement a digital laboratory workspace
- Consolidate existing e-education and e-knowledge
- Develop novel training delivery methods together with new digital practices
- Engage with and gain traction from a wide community of companies and universities

Scope of NET-Tools Workshop

A first list of tools has been proposed and a number are under development. The scope of the workshop is to engage with and gain traction from a wider FCH community of industry, institutions, research organisations and universities concerning the further development of digital educational content. In particular, the NET-Tools partners wish to incorporate the demands and requests from industry and institutions others than the academic ones, have formed the basis of the work to date.

Cooperation Request

The NET-Tools consortium wishes to share the major project targets and especially the already developed e-tools and e-platform with the wider FCH community to obtain feedback and request recommendations for further project progress and specific developments via critical discussions and general feedback by attendees. To create a fruitful discussion on:

- status of already developed e-Tools concerning usability and comprehensibility
- topic areas to be tackled and/or covered specifically by e-Tools and educational materials to be developed further



- principal demands of industry concerning thematic areas and educational materials
- quantitative measures to be used for the development of educational materials
- availability of existing educational materials and especially experimental data for inclusion in further processing and activities
- existing demands on training and education courses
- business aspects to be tackled

The NET-Tools consortium wishes to introduce into the project targets and e-tools by different talks to be followed up with questions and answers and a round table.

Your participation is appreciated in following our presentations, specific discussions and round tables completed by a specific half day work shop on topics listed above in separated groups.

Yours sincerely,

Prof h.c. Olaf Jedicke, Karlsruhe Institute of Technology Germany

Coordinator Net-Tools project

Attachments

- Workshop Overview (agenda, travel and location information)
- List of invited organisations

<p>Fuel cells and hydrogen technologies</p>    <p>Funded by European Commission Contract No. 736648</p>	
<p>➤ Learn</p> <ul style="list-style-type: none"> ✓ Massive open online courses (MOOCs) <ul style="list-style-type: none"> ✓ Workshops ✓ Flying teachers ➤ Improve <ul style="list-style-type: none"> ✓ Advanced topics and problems ✓ Scientific database 	<p>➤ Test</p> <ul style="list-style-type: none"> ✓ E-Laboratory <p>➤ Share</p> <ul style="list-style-type: none"> ✓ Knowledge and experience among other members of FCH community



Workshop Overview

Days	Monday 19 th March	Tuesday 20 th March
Morning Session	<i>Arrival of Attendees</i>	Welcome, Registration, Formalities Round Table
Midday	<i>Welcome, Registration, Formalities</i> <i>Lunch</i>	<i>Lunch</i>
Afternoon Session	Introductions of Attendees Presentations from NET-Tools project Round Table	<i>Departure of Attendees</i>
Evening	<i>Networking Dinner</i>	

Additional information can be found here: <https://www.h2fc-net.eu/>

Location



Grand Hotel Imperial Levico Terme

<http://www.hotel-imperial-levico.com>

Levico Terme – Trentino Alto Adige –
Italy

Travel Information

Closer airport is Verona Airport

Transport to the venue will be organised

General Contacts

Olaf Jedicke - Karlsruhe Institute of Technology (KIT) - olaf.jedicke@kit.edu

Giovanni Cinti – University of Perugia – giovanni.cinti@unipg.it

Logistical aspects



By car - It is compulsory for all vehicles to have winter tyres / snow chains.

By train - Regional trains departing from Trento stop in Levico Terme. The train station is ~ 1 km away from the hotel.

By plane - The nearest airport is in Verona (approx. 100 km). Other airports: Venice (140 km) and Milan (250 km). You can continue your journey from the airports by rail and bus.



1.6 Designated Advisory Board Members confirmed by LOI



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Web: <http://www.nwu.ac.za>
<http://www.hysainfrastructure.org/>

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Tel: (+27) 18 285 2468
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26 August 2015

To whom it may concern:

RE: NET-Tools International Collaboration

Our University and my team would be happy and honoured to collaborate with NET-Tools consortium in development and testing of 'Novel Education and Training Tools² (FCH2 JU call for proposals 2015). We are looking forward to exchange experience in e-learning tools for education in the area of hydrogen and fuel cell technologies. Our experts are well prepared to contribute to practically all aspects of the emerging discipline, including writing short articles on particular specialised topics such as electrochemical compression, etc.

Kind Regards

Dr Dmitri Bessarabov
Director: DST Hydrogen Infrastructure Center of Competence (HySA Infrastructure)
Tel: (+27) 18 285 2460
Cell: (+27) 72 623 0172
E-mail: dmitri.bessarabov@nwu.ac.za





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Tel: (509) 371-6882
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Jamie.Holladay@pnl.gov

8/25/2015

To Whom It May Concern:

SOLICITATION TITLE: NOVEL EDUCATION AND TRAINING TOOLS: FCH-04.2-2015

I am pleased to express Pacific Northwest National Laboratory's (PNNL) interest in partnering toward a proposal for European Commission Joint Undertaking Call for Proposal. PNNL has considerable experience in hydrogen safety training including on-line, classroom, and hands-on training. Our on-line training has had tens of thousands of visits and we have had a thousand first responder trainers attend our class room training in our train the trainers work for the DOE. We also have recently released a new training template that could be any agency in crafting their own custom training materials. In addition, we have developed a Hydrogen Tools Portal which integrates an innovative design to bring a number of hydrogen resources together to help inform those tasked with designing, approving, or using systems and facilities, as well as those responding to incidents. All of these capabilities as well as others not listed in this short paragraph will be available for use on this project.

Sincerely,

A handwritten signature in blue ink that reads "Jamie Holladay".

Jamie Holladay
Fuel Cells Sub-Sector Manager
Pacific Northwest National Laboratory



MEMORANDUM OF UNDERSTANDING

Regarding Faculty Appointment

Between
 Olaf Jedicke, Karlsruhe Institute of Technology, Coordinator
 And
 Il Moon, Graduate School of Integrated Engineering, Yonsei University, Head of the
 department

This document summarizes the agreement between Karlsruhe Institute of Technology and the Graduate School of Integrated Engineering, Yonsei University.

Yonsei University wishes to collaborate a specialized educational tools in the field of education in hydrogen and fuel cells.

- A. Graduate School of Integrated Engineering, Yonsei University will collaborate with Karlsruhe Institute of Technology using NET-tools during the project and afterwards.
- B. Graduate School of Integrated Engineering, Yonsei University will be interconnected to Karlsruhe Institute of Technology, and share academic information and expertise from educational e-tools.

This agreement will be effective from the date of signing.

Terms and conditions of this MOU are clearly understood and agreed to by the following:

Il Moon
 Il Moon
 Graduate school of integrated engineering,
 Yonsei University

Aug. 27, 2015
 DATE

 Olaf Jedicke
 Institute of Technology

 DATE

1.7 Advisory Board Members compiled by NET-Tools Consortium

#	Proposed member (Organisation outside of Net-Tool)	Contact 1	Contact 2	Contact 3
1	Element Energy	<i>Lisa Ruf</i>	<i>Ben Madden</i>	
2	Zhejiang University	<i>KIT to make suggestion for contact. We would suggest not having international guests for this workshop.</i>	<i>(if required)</i>	<i>(if required)</i>
3	Yonsei University	<i>same as above</i>		
4	Pacific Northwest National Laboratory	<i>same as above</i>		
5	North West University (SA)	<i>same as above</i>		
6	Technova Inc.	<i>same as above</i>		
7	Hydrogen Europe	<i>s.skiker@hydrogeneurope.eu</i>	<i>n.brahy@hydrogeneurope.eu</i>	<i>j.chatzimakakis@hydrogeneurope.eu</i>
8	N.ERGHY	<i>KIT to make suggestion for contact</i>		
9	Air Liquide	<i>Charline.dubois@airliquid e.com</i>	<i>pierre.deraphelis@airliquid e.com</i>	
10	Daimler	<i>joerg.wind@daimler.com</i>		
11	BMW	<i>bernardo.mota@bmw.de</i>		
12	AREVAH2Gen	<i>fabien.aupretre@arevah 2gen.com</i>		
13	Linde	<i>sebastian.fritz@linde.com ;</i>	<i>Akintomide.Akinloye@boc.com</i>	<i>peter.s.haider@linde.com</i>
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16	Solid Power	<i>olivier.bucheli@solidpower.com</i>	<i>Alberto.ravagni@solidpower.com</i>	
17	Sunfire	<i>Andreas.Froemmel@sunfire.de</i>	<i>Markus.Muench@sunfire.de</i>	
18	Ballard Power	<i>yane.laperche-riteau@ballard.com</i>	<i>jt@ballardeurope.com</i>	
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22	ULEMCO	<i>alyne@ulemco.com</i>	<i>paul.turner@revolve.co.uk</i>	



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27	Nel	<i>ultos@nelhydrogen.com</i>		
28	Toyota	<i>Vincent.Mattelaer@toyot a-europe.com</i>		
29	JRC	<i>francesco.dolci@ec.europ a.eu</i>		
30	Arcola	<i>richard@arcolaenergy.co m</i>		
31	University of Birmingham	<i>robert.steinberger@h2o- emobile.de</i>	<i>A.El-kharouf@bham.ac.uk</i>	
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42	McPhy	<i>florian.peter@mcphy.co m</i>	<i>bertrand.amelot@mcphy.co m</i>	
...	To be completed if necessary			
...	Suggestions to get invited			
43	Volvo			
44	Powercell			
45	Nedstack			
46	Viessmann/ Hexis			
47	ENEA			
48	Alston			
49	Centro Nacional del			



	Hidrógeno (CNH2)			
	...			
	...			



2 Table 2.2: Short Term Activities

2.2.1. Project website realization and maintenance	
Methods	Website and social networks account. The website will have public and private sections
Purpose	<p><i>Public Part of the website and social network:</i></p> <ul style="list-style-type: none"> • Promote and inform about the project • Raise awareness and provide visibility to the main achieved results • Offer relevant information and fast link to internet pages about e-learning tools in hydrogen and fuel cells • Dedicated section of the website to the publication of advances of other projects in similar topics <p><i>Private Part of the website :</i> internal web platform for exchange and storage of documents, knowledge and information</p>
Audience	<p><i>Public Part of the website and social network:</i> Public audience</p> <p><i>Private Part of the website:</i> Partners of the Net Tools consortium</p>
Message	The language of the website will be clear, simple and easy to understand and therefore appropriate for a public audience. Due to the large expansion of the web, the promotion is very important. Social network and blog, which generally are particularly sensitive to environmental issues, will be used to promote the existence the website.
Timing	The website will be placed on-line in the third month of the project. It will be the entry door to NET TOOLS, accessible to anyone willing to learn more about the project goals and running activities. It will offer dynamic information about the project and will connect users to the other components of NET TOOLS as well as to external resources.
<p>A Twitter account along with a Facebook and LinkedIn account will be developed in the first three months of the project. The aforementioned accounts will be used to promote news of the project results to the general public and professionals. The accounts will continue working after the end of the project.</p>	
2. 2.2. Project Newsletter	
Methods	Electronic Newsletter
Purpose	<ul style="list-style-type: none"> • Promote and inform about the project • Raise awareness and provide visibility to the main achieved results • Promote advances of other projects in the field of education and e-learning
Audience	A mail-list of stakeholder and interested research group will be prepared. Stakeholders will be identified, listed, and assessed in term of their interest in the project and importance for its success and further dissemination
Message	Since the audience will be stakeholders and research groups, the language of the newsletter will be technical
Timing	3 releases foreseen (1 per year)
2.2.3. Expert Workshop	
Methods	Workshop
Purpose	<ul style="list-style-type: none"> • Confirmation of the topic areas • Ensure the practical relevance of the educational materials to students • Analyse existing educational material



	<ul style="list-style-type: none"> • Raise awareness and provide visibility to the main achieved results
Audience	Experts from the FCH community mainly coming from academia and industries
Message	Since the audience will be expert group, the language of the workshop will be technical
Timing	Month 13
2.2.4. Advisory Board Meeting	
Methods	Presentations and Roundtable discussion
Purpose	<p>The establishment of NET-Tools Industrial Advisory Board aims to create a team the potential contributors and experts from industry in concerns of education and training in FCH themes, development of e-infrastructures, and digital educational content. It will include international collaborators from South Africa, Canada, Korea, China, US, probably also from Argentina, Turkey etc. as well as individuals, which are already collaborating in different projects with members outside of the Net-Tools consortium (e.g. SUSANA, H2FC, HyFACTS, HySafe, e.g.) but also members of the research grouping (SG) and industrial grouping (IG) of the FCH-JU.</p> <p>The objectives of the advisory board are:</p> <ul style="list-style-type: none"> • To inform on previous initiative of similar nature • To represent Industry • To support development of education and training materials • To support development of business Concept to keep NET-Tools up to date beyond project <p>In the course of the project 2 Advisory Board Meetings are planned. The meetings will be held jointly with other project activities for efficiency and cost effectiveness. The first one will be organized half way through the project with the main goal to provide guidance and recommendations in the early development of the online tools.</p>
Audience	<p>The Advisory board members will constitute a large representation of the different stakeholders :</p> <ul style="list-style-type: none"> • International Universities and Research Institutes working on H2&FC technologies and learning tools. European Universities and Research Institutes are represented by project consortium partners. • Industrial partners both large industry and SMEs • Sectorial organizations
Message	Involvement of industry in providing recommendations about the needed learning and training tools, which are modern, easily accessible, and flexible in regard to topics and level of sophistication (this is often not included sufficiently in research lead projects). Since the audience will be expert group, the language will be technical.
Timing	Month 12/13
2.2.5. "Flying Teachers" Short Courses and Webinars (short and mid term activity)	
Methods	Develop and realize short courses and webinars
Purpose	work with other initiatives and programmes carry out short "on-site" Q&A training course
Audience	Technicians from industries Researchers and experts form other projects
Message	The communication will be technical both for short Courses and for Webinars



Timing	On demand
2.2.6. Project flyers and brochures	
Methods	Printed and electronic advertisement
Purpose	To submit brief and focused information to identified target groups and broader public about the launch of the project, its goals, the progress, and expected outcomes
Audience	Participants in topical conferences, workshops, summer schools
Message	Since the audience will be mainly stakeholders and research groups, but also broader the information will be brief and understandable for non specialists in the field
Timing	M4 till M24
2.2.7. Organization of special sessions	
Methods	Develop and realize hands-on webinars in use of e-Laboratory via webinars
Purpose	e-Laboratory will be positioned as a platform for dissemination of relevant research outputs generated by all European stakeholders, including FCH2 JU industrial and research groupings .
Audience	Permanent staff of hydrogen industry, researchers, experts and students
Message	The communication will be technical and tutorials will be established
Timin	The first hands-on sessions is planned as a short term activity and will be organised using webinars in month M18.
2.2.8. Participation in Conferences , Workshops, Schools	
Methods	<p>Promotion of the project through presentations, posters, flyers at national, regional, and international conferences. Additionally it will be promoted at topical Workshops, Seminars, Summer and technical Schools. The project advance will be reported at JU Fuel Cells & Hydrogen Review Days. Up to now the identified scientific events of interest are as follows:</p> <ul style="list-style-type: none"> • Sofia Electrochemical Days (May, 2017, Sofia, Bulgaria) • Regional Symposium on Electrochemistry of South East Europe (RES SEE, June 2017, Balaton, Hungary) • European Summer School on Hydrogen Safety (within JESS), Sept. 2017 http://www.jess-summerschool.eu/ • SUPERGEN researcher conference http://www.h2fcsupergen.com/conference2017/ • FC&H2 Review Days, Nov 2017 • European Fuel Cell Technology and Applications, Piero Lunghi Conference (December 2017, Naples, Italy) • Expert Workshop, Advisory Board Meeting, and the Second Progress Meeting will be held in sequence in April 2018. Thus, a broader audience - invited and/or interested representatives of research community and industry inside and outside Europe and will be involve and motivated to contribute for project dissemination and promotion. • European Hydrogen Energy Conference (March 2018, Malaga, Spain) • World Hydrogen Energy Conference (June 2018, Rio de Janeiro, Brazil) • 9th International Seminar on Fire and Explosion Hazards (ISFEH) (2019 in St Petersburg)
Purpose	Promote project results within the energy research & technical worldwide community to highlight the impact of competencies and technologies



	originated in other fields
Audience	International, scientific and technical audience
Message	Technical Language
Timing	M3 till M24.
2.2.9. Cooperation with other EU projects & Clusters	
<p>The majority of NET TOOLS partners are members in the international association of hydrogen safety (IA HYSAFE). The goal of this organization is to facilitate communication between stakeholders, and the coordination, maintenance and development of the infrastructure and resources necessary for generating and disseminating knowledge to different groups of stakeholders. Based on a leading position in hydrogen safety research and development, the association will develop and maintain a strategic research agenda for hydrogen safety issues from a European perspective. As it is mentioned in the dissemination work package, NET TOOLS project will cooperate with this international organization. All consortium partners are members of either Hydrogen Europe or N.ERGHY, two strong associations aiming for developing the hydrogen and fuel cell technology sector, and thus important cooperation partners for the consortium.</p> <p>Active exchange with other European communities (e.g. Information and Communication Technology), European projects related to developments in the educational sector will be envisaged further to strengthen the platform quality and attractiveness.</p> <p>Special efforts will be made to provoke the emerging industrial interest to hydrogen technologies in the East European countries, in particular in Bulgaria. Contacts will be established with several organisations capable to promote the NET-Tools through their channels and members. These are Bulgarian Chamber of Trade and Commerce, Industrial Cluster Electro-mobility, and Bulgarian Industrial Association.</p>	

Table 2.3: Mid Term Activities

2.3.1. Project website maintenance	
Methods	Website and social networks account.
Purpose	<p><i>Public Part of the website and social network:</i></p> <ul style="list-style-type: none"> • Promote and inform about the project; • Raise awareness and provide visibility to the main achieved results • Offer relevant information and fast link to internet pages about e-learning tools in hydrogen and fuel cells • Dedicated section of the website to the publication of advances of other projects in similar topics <p><i>Private Part of the website :</i> internal web platform for exchange and storage of documents, knowledge and information</p>
Audience	<p><i>Public Part of the website and social network:</i> Public audience</p> <p><i>Private Part of the website:</i> Partners of the Net Tools consortium</p>
Message	Clear, simple and easy to understand language, appropriate for a broad public audience. Social networks and blogs will be further used to promote the existence the website.
Timing	The website will have public and private sections which will be maintained during the course and after the project end. The website will embed some tracking system like Woopra to allow for traffic management and will be updated continuously (also after the end of the project). The updating plays an



	important role and it is a compulsory action for the success of the dissemination. The risk of having a website with “old” news is possible and the web is full of examples. This will be avoided through an internal user friendly interface for the updating and with a continuous control by the dissemination staff.
<i>The Twitter, Facebook and Linked-in accounts will continue working after the end of the project.</i>	
2. 3.2. Project Newsletter	
Methods	Electronic Newsletter
Purpose	<ul style="list-style-type: none"> • Inform about the third year development and the final outcome of the project • Raise awareness and provide visibility to the main achieved results • Promote advances of other projects in the field of education and e-learning
Audience	A mail-list of identified stakeholders and interested research groups.
Message	Since the audience will be stakeholders and research groups, the language of the newsletter will be technical
Timing	Third release foreseen in M36
2.3.3. Advisory Board Meeting	
Methods	Presentations and Roundtable discussion
Purpose	A second Industrial Boar meeting will be organized towards the end of the project to provide guidance and recommendations for next steps and provide suggestions on development of business concept to keep NET-Tools up to date beyond project. The meetings will be held jointly with other project activities (either in person meeting or workshop) for efficiency and cost effectiveness.
Audience	<ul style="list-style-type: none"> • International Universities and Research Institutes working on H2&FC technologies and learning tools. European Universities and Research Institutes are represented by project consortium partners. • Industrial partners both large industry and SMEs • Sectorial organizations
Message	
Timing	Month 33/34
2.3.4. Educational Schools	
Methods	Education and Training of engineers, technicians and students
Purpose	<ul style="list-style-type: none"> • Collection of comments, critics, suggestions to the improvements and changes needed to the e-tools developed • Discover bottlenecks in presenting materials • Find the knowledge gaps in the educational content • Verify that the educational materials and content as well as the e-tools developed appear useable and attractive
Audience	Engineers, technicians and students
Message	The language will be clear, simple and easy to understand and therefore appropriate for a public audience.
Timing	Two technical schools are foreseen at month 28 and month 34
2.3.5. “Flying Teachers” Short Courses and Webinars	
Methods	Develop and realize short courses and webinars
Purpose	work with other initiatives and programmes



	carry out short “on-site” Q&A training course
Audience	Technicians from industries Researchers and experts form other projects
Message	The communication will be technical both for short Courses and for Webinars
Timing	On demand
2.3.6. Organization of special sessions, participation in conferences	
Methods	Develop and realize hands-on webinars in use of e-Laboratory via webinars
Purpose	e-Laboratory will be positioned as a platform for dissemination of relevant research outputs generated by all European stakeholders, including FCH2 JU industrial and research groupings .
Audience	Permanent staff of hydrogen industry, researchers, experts and students
Message	The communication will be technical and tutorials will be established
Timing	The second hands-on session will be organised using webinar in months M36
2.3.7. Publications in International Journals	
Methods	Publication in scientific and technical international journal and within conferences. A least one paper is planned to be published in high impact journals (e.g. International Journal of Hydrogen Energy, Electrochimica Acta, Journal of Power Sources.).
Purpose	Promote project results within the energy research & technical worldwide community and also through cross-sectorial publications to highlight the impact of competencies and technologies originated in other fields
Audience	International, scientific and technical audience
Message	Technical language
Timing	Publications are strictly linked to the project results and achievements. As such, on publication is foreseen at the project end.
2.3.8. Participation in Conferences , Workshops, Schools (M25-M48)	
The promotion of the project through presentations, posters, flyers at national, regional, and international conferences, as well as at topical Workshops, Seminars, Summer and technical Schools from M25 till the end of the project and even afterward will be scheduled in details in the up-date version of the Dissemination Plan (D5.2 due in M19). The project advance will be reported at JU Fuel Cells & Hydrogen Review Days.	
2.3.9. Cooperation with other EU and non-EU projects, clusters, universities, and companies engaged in the Hydrogen Technologies (M25-M48)	
The active exchange with other European communities (e.g. Information and Communication Technology), European projects related to developments in the educational sector further to strengthen the platform quality and attractiveness will be prolonged after the project end.	
The networking and communication strategy of the project includes also collaboration on global level. It will be realized by mapping of the non-European universities with FCH teaching activities, different Professional Chambers and Training Centers related to the hydrogen technologies, and similar e-science and e-learning projects outside Europe. The NET-Tools has already received support by international universities and research centers from Japan, South Korea, USA, Canada, and South Africa. Using the personal contacts of the Consortium members, the social media, as well as different scientific forums, exhibitions, and trade shows, potential international partners will be further identified and contacted to collaborate and contribute for the sustainability of the developed e-learning platform after the project end.	



The mid-term activities will be up dated later in the course of the project (D5.2. due in M19).

The next table presents the timeline of the planned activities.

Table 2.4: Timeline of the networking and dissemination plan

Activities	Timing																							
	M1	M2	M3	M4	M5	M6	M7	M8	M9	M10	M11	M12	M13	M14	M15	M16	M17	M18	M19	M20	M21	M22	M23	M24
2.1 Short-term activities																								
2.1.1. Project website																								
2.1.2. Project Newsletter																								
2.1.3. Expert Workshop																								
2.1.4. Advisory Board Meeting																								
2.1.5. "Flying Teachers"	On demand																							
2.1.6. Project flyers and brochures																								
2.1.7. Organization of special sessions																								
2.1.8. Participation in Conferences																								
2.1.9. Cooperation with EU projects &																								
2.2 Mid Term Activities																								
2.2.1. Project website maintenance																								
2.2.2. Project Newsletter																								
2.1.3. Advisory Board Meeting																								
2.2.4. Educational Schools																								
2.2.5. "Flying Teachers"																								
2.2.6. Organization of special sessions																								
2.2.7. Publications in International Journals																								
2.1.8. Participation in Conferences																								
2.2.9. Cooperation with EU & non-EU																								

3 Integrated Communication Campaign

The main objective of the Communication Strategy is to keep all partners fully informed about the project status, planning and all other issues of importance and to increase the synergy of the cooperation. Technical meetings (Kick-off and Progress meetings General Assembly, Expert Workshop, Advisory Board meetings, Tele-conferences etc.) will play an important role.

All information (minutes of the meetings, task reports, relevant publications) will be notified to the Project Coordinator, who will be responsible for channeling this information to the consortium. All project deliverables (and milestones assessment) will be communicated to all partners upon validation and submission to the EC. Internal communication will be performed using an internet confidential platform administrated by the project coordinator allowing creation of recipient mailing lists, documents approval circuit and storing of project working documents.

This will be beneficial for understanding possible concerns and tackling them from the standpoints of science and governance, and will promote the desirable informed judgement and engagement.

Another goal is to disseminate effectively the project results outside the consortium: to Industries and Professional Organizations including Academic and Research community; Private Capital Risk Investors; Regulatory Agencies (National and Worldwide: Standards and Policy makers); General Public.

Partners will carry out an integrated communication campaign to establish a permanent dialogue between researchers, public and private decision-makers, and other stakeholders as well as to demonstrate to non-specialized audiences the project's benefits. The communication activities will be bi-directional and partners expect to end up with information and conclusions helping the novel tools to find easier ways to market. Possible



customers' and end users' opinion is considered as more than critical for the project's success and the permanent dialogue developed will contribute to this direction.

The communication activities will be bidirectional and partners expect to end up with information and conclusions helping the novel tools to find easier ways to market. Possible customers' and end users' opinion is considered as more than critical for the project's success and the permanent dialogue developed will contribute to this direction.

The communication strategy includes also the definition of planning for publications and the identification of conferences or Fairs to be attended on behalf of the Consortium.

The work package leaders (WPL) will be responsible for the appointment and frequency of WP team meetings. At least one WP team meeting will be appointed every three months via teleconference and/or email communication. WPL will be responsible to integrate the results of the individual tasks and report them to the WP leader (IEES) responsible for Dissemination and to the Project Coordinator, who will circulate these reports to the Partners and incorporate them in periodic reports. Each WPL will be also responsible to disseminate the results of their activities to other WPLs.

IEES will be responsible to report to the Project Coordination and provide dissemination, exploitation and communication plans. Additionally, IEES will have to approve the dissemination material which will be developed during the project such as posters, conference presentations; flyers etc. Finally, IEES as responsible Partner for dissemination and networking will be undertaking the activities such as dissemination of the knowledge beyond the consortium, studies on socio economic aspects, as well as activities promoting the exploitation of the results.

A report of planned and completed communication activities will be conducted and delivered during the project and a final one at the end of it as a part of the Plan for Dissemination and Networking.