Bilateral Coordination of the Enhancement and Development of S&T Partnerships between the European Union and the United States of America

Name of Deliverable	Inventory of existing programmes in Europe with the USA
Number of Deliverable	D1.3
Work Package	WP1 Supporting the EU-U.S. STI Policy Dialogue
Worktask Number	WT1.2
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1. Executive Summary

The current re-negotiation of the S&T Agreement between the EU and the USA shows clearly the efforts on both sides of the Atlantic to draw conclusions from the past. Deepening and widening joint STI activities shall adequately address future global and common challenges.

Experts recommend reflecting the innovation dimension in the EU-US S&T Agreement as innovation support is an important element of the Europe 2020 strategy, its flagship initiatives and Horizon 2020.

The BILAT USA 2.0 project will correspond to these new requirements and will organize the EU-US Innovation conference to take place in Brussels, Belgium, on 14-15 January 2015. Main objective is to provide the opportunity to identify among European and US experts the innovation aspects which need to be included in the S&T Agreement to be renewed between the EU and the US.

In the first 2014-2015 work program of Horizon 2020 the USA has been targeted as important research cooperation partner in areas of marine and arctic research, health research, transport (incl. aeronautics), (raw) materials research, ICT, energy research and security research.

BILAT USA 2.0 has organized four thematic workshops (in 2013 and 2014) and is planning to organize another seven workshops in 2014 and 2015 within the first five above mentioned thematic priorities. Goals of the thematic workshops are to promote Horizon 2020 and its open calls in order to foster US participation in thematic research topics and to bring together researchers from both sides of the Atlantic in order to strengthen transatlantic research networks and consortia.

After mapping bilateral and multilateral programmes, initiatives and projects between Europe and the USA in the four main thematic priority areas of marine and arctic research, health research, transport, and NMP (nanosciences, nanotechnologies, materials and new production technologies), BILAT USA 2.0 provided four inventory reports which are included in this document.

Finally, this report raises questions in order to support given expert recommendations and add value to the discussion on how to improve transatlantic STI cooperation. Do the EU-US STI Agreement and bilateral STI Agreements with the USA need more reciprocal references in order to allow for mutual enrichment leading to the discussion on its actual function? Shall the renewed EU-US S&T Agreement rank policy instruments according to the level of commitment or should it include legal and funding issues in order to boost transatlantic STI collaboration?

2. Introduction

2.1. Background

Transatlantic relations in Science and Technology (S&T) date back to the 1950s when the first formal cooperation took place in 1990 with the Transatlantic Declaration, followed by a new Transatlantic Agenda and regular EU-U.S. Summits to assess and develop transatlantic cooperation. In 1995 the European Union and the USA signed a Science and Technology Co-operation Agreement (S&T Agreement). It entered into force in 1998, was renewed in 2004, extended and amended in 2009 and finds itself again in a renewal process right now since expired in October 2013.
S&T Agreements also establish legal frameworks for cooperation between governments and demonstrate their broad government-to-government interest and opportunities in transatlantic S&T cooperation (Link2US, 2011).

2.2. Objective of the report

This report on existing and potential synergies within bilateral and multilateral programmes, initiatives and projects between Europe and the USA is a summary of several reference documents showing the development of the scientific and technological cooperation between the European Union and the United States based on transatlantic S&T Agreements and several transatlantic bilateral and multilateral programmes, initiatives and projects.

It shall provide an overview of the current status of the bilateral S&T Agreements (between the European Union and the United States as well as the single Member States and Associated Countries with the United States) as status quo document at the beginning of Horizon 2020 by summarising key areas of cooperation, main common elements of bilateral S&T Agreements and their challenges.

Furthermore, it shall give an insight into the currently ongoing transatlantic bilateral and multilateral programmes, initiatives and projects highlighting their importance and ability to act as suitable instruments for fostering new trends and developments.

Based on the experience and insights gained by two finalised FP7 funded projects, i.e. Link2US and BILAT USA, the report shall outline relevant planned and already undertaken activities and measures of the ongoing BILAT USA 2.0 project with regard to the developments and requirements outlined in this report.

Current bilateral and multilateral programmes, initiatives and projects between Europe and the USA in the priority research fields of Health, Marine and Arctic Sciences, Transport, and Nanosciences, nanotechnologies, materials and new production technologies (NMP) have been identified by the BILAT USA 2.0 project and listed under http://www.euussciencetechnology.eu/inventory-page. They are included in the annex of this report.

3. STI cooperation between Europe and the United States of America

3.1. S&T cooperation between the European Union and the USA

Based on the S&T Agreement between the EU and the USA actions are taken through Implementing Arrangements. The Joint Consultative Group (JCG), established under the EU-US S&T Agreement, is the main vehicle for strategic and administrative operation of the S&T Agreement, discussing and deciding on areas of cooperation and for the need of suitable implementing arrangements with relevant US agencies (Horvat and Harrap, 2009). It identified four main priority areas for future S&T cooperation with the USA, i.e. Marine and Arctic Research, Health research, Transport, and Materials research and Nanotechnologies.

The current renewal process of the S&T Agreement between the EU and the USA as of Autumn 2013 is characterised by the efforts on both sides to draw conclusions from the past and ameliorate cooperation through deepening and widening joint activities in order to adequately address future global and common challenges. In addition, efforts on both sides are made to consider actions in order to meet the challenges of increasing globalisation of research and innovation, the remarkable rises in R&D expenditures of leading economies, such as China, the development of more knowledge- intensive economies, as well as the increasing need for open innovation (Acheson and León, 2013).

Studies and analyses have been commissioned to analyse and evaluate the EU-US S&T Agreement and give recommendations for future renewal and negotiation processes. The reviews, made since
2003, show among others, that the awareness of the EU-US S&T Agreement is very low and that there are difficulties to differentiate between the EU-US S&T Agreement and the single bilateral ones between EU Member States (EU MS) and the USA.

While mobility of researchers was evaluated to be one of the most successful activities in the realm of the EU-US S&T Agreement there is enough potential for increasing transatlantic research project cooperation (Fikkers and Horvat, 2014).

3.1.1. The innovation dimension in the EU-US S&T Agreement

Experts draw the conclusions form the increasing importance paid to innovation policies in Europe, the US and worldwide and recommend to reflect the innovation dimension in the EU-US S&T Agreement. Innovation support is an important element of the Europe 2020 strategy, its flagship initiatives and Horizon 2020, one of its implementing tools.

BILAT USA 2.0 will organize the EU-US Innovation conference to take place in Brussels, Belgium, on 14-15 January 2015. Main objective is to provide the opportunity to identify among European and US experts the innovation aspects which need to be included in the S&T Agreement to be renewed between the EU and the US and to discuss the extend of concreteness, clearness and direction such S&T agreement needs to incorporate. MS delegates and SFIC are invited to contribute in finding suitable ways of including the innovation dimension in the EU-US S&T Agreement which shall then facilitate transatlantic innovation policies on national and European level.

3.1.2. Horizon 2020

In September 2012, the European Commission set out its new approach to international cooperation under Horizon 2020 in a Communication with international cooperation activities developed under Horizon 2020 aiming to contribute to the objectives of:

- Strengthening the Union's excellence and attractiveness in research and innovation and its economic and industrial competitiveness
- Tackling global societal challenges
- Supporting the Union's external policies

The new international cooperation strategy focuses on research in areas of common interest and mutual benefit and differentiates between three country groupings:

- Industrialised and emerging economies (which will only receive funding under specific conditions)
- Enlargement and neighborhood countries (eligible for automatic funding)
- Developing countries (eligible for automatic funding)

In the first 2014-2015 work program of Horizon 2020 the USA, falling under the first country grouping, has been targeted as important research cooperation partner in areas of **marine and arctic research, health research, transport (incl. aeronautics), (raw) materials research, ICT, energy research and security research**.

Supporting transatlantic S&T cooperation, BILAT USA 2.0 has organized four thematic workshops (in 2013 and 2014) and is planning to organize another seven workshops in 2014 and 2015 within the first five above mentioned thematic priorities. Goals of the thematic workshops are to promote Horizon 2020 and its open calls in order to foster US participation in thematic research topics and to bring together researchers from both sides of the Atlantic in order to strengthen transatlantic research networks and consortia.

3.2. Bilateral S&T cooperation

In addition to the S&T Agreement between the European Union and the USA 17 individual European countries (EU Member States and Associated Countries) have a signed S&T Agreement with the USA, most of them indicating specific fields of cooperation (Link2US, 2011).

Main objectives of transatlantic S&T cooperation were identified to be competitiveness driven on the one side, such as promoting mobility of researchers and academics, supporting knowledge exchange, partnerships and cooperation networks for research excellence and facilitating hi-tech start-up companies and partnerships in break-through technologies. On the other side objectives of transatlantic S&T cooperation are unsurprisingly cooperation driven, e.g. developing and supporting long-term bilateral cooperation with the USA, addressing grand challenges, identifying strategic fields of cooperation and responding to international strategies (Gnamus, 2010).

3.2.1. Key characteristics of bilateral S&T cooperation

The main S&T cooperation activities indicated in all bilateral S&T Agreements are:

- Exchange of S&T information through contacts between embassies and researchers, organization of joint events (workshops, conferences, etc.)
- Mobility and exchange of scientists through research fellowships and scholarships providing mutual recognition of certificates
- Joint research projects through joint calls and joint cooperation in the EU programmes and dissemination of results

In every second bilateral S&T Agreement joint research programmes and programme coordination are higher ranked instrument. The more the level of cooperation increases, the less often these S&T cooperation activities are indicated, such as joint science and academic networks, joint research institutions, joint large-scale research infrastructures and facilities and joint innovation clusters, which can be found in S&T Agreements between the USA and Germany, France, Finland and the one with the EU (Gnamus, 2010).

Environment incl. climate change, energy and health are the most commonly indicated thematic priorities in key areas of cooperation (Link2US, 2011).

3.2.2. Transatlantic bilateral and multilateral programmes, initiatives and projects

Within the four main priority areas for future S&T cooperation with the USA, i.e. Health research, Marine and Arctic Research, Materials research and Nanotechnologies, and Transport, BILAT USA 2.0 provided inventory reports after mapping bilateral and multilateral programmes, initiatives and projects between Europe and the USA.

Detailed information on identified bilateral and multilateral programmes, initiatives and projects between the EU/EU MS and the USA are available on the BILAT USA 2.0 EU-US Cooperation projects inventory under http://www.euussciencetechnology.eu/inventory-page.

3.2.2.1 Health research (Inventory report in the field of Health)

The National Institutes of Health (NIH) has a long tradition of funding collaborations between US and European scientists. For years, European researchers had been able to compete for NIH biomedical and behavioural research grants directly and in joint projects with US researchers. NIH and the European Commission signed an agreement to make it easier for US scientists to participate in international collaborations funded by the European Commission.

In 2008, the European Commission published a call for proposals within the Health theme of its Seventh Framework Programme for Research and Development (FP7) where, for the first time, the EC had announced that researchers working in US institutions were eligible to participate in EC-supported research projects and to receive funds from the EC if they are part of a consortium with

European Union investigators. Ever since US researchers participating in collaborative Health research projects under the EU research funding programmes are eligible for funding.

In the US-EU Joint Consultative Group Meeting on Science and Technology Cooperation in February

2013 both sides discussed joining forces to develop new methods to prevent and treat diseases like HIV/AIDS, malaria and tuberculosis and working together to strengthen science capacity in developing regions of the world.

E-Health is one of the areas in health research in which the EU and the USA already have a cooperation agreement. The European Commission's Directorate General for Communications Networks, Content and Technology (DG CONNECT) and the United States Department of Health and Human Services (DHHS) have agreed on a roadmap to strengthen transatlantic cooperation in e-Health and Health information technologies.

Two areas were identified as having immediate importance and potential:

- International interoperability of Electronic Health Records information, to include semantic interoperability, syntactic interoperability, patient and healthcare provider mediated data exchange (including identification, privacy and security issues surrounding exchange of health data)
- Cooperation around the shared challenges related to e-Health/health IT workforce and e- Health proficiencies

The Independent Expert Group on the Future of European Public Health Research addressed the importance of the international dimension of public health research for the EU. The Expert Group noted that in Horizon 2020, bilateral or multilateral cooperation with other regions of the world should be encouraged in particular with developing countries in the field of disease prevention.

In Horizon 2020, the EU research funding programme for the years 2014-2020, the specific objective of Health, demographic change and well-being is to improve the lifelong health and well-being of all by supporting research and innovation. Ageing, chronic diseases, infectious diseases, health care and health promotion are some of the key areas.

http://www.euussciencetechnology.eu/content/health

3.2.2.2 Marine and Arctic research (Inventory report in the field of Marine and Arctic research)

Marine and Arctic Research has been determined a priority field of transatlantic S&T cooperation. A high-level meeting has been held in May 2013 in Galway, Ireland, where the European Union, the United States and Canada formally agreed to join forces on Atlantic Ocean research in the 'Galway Statement on Atlantic Ocean Cooperation'. The agreement focuses on aligning the ocean observation efforts of the three partners. The goals are to better understand the Atlantic Ocean and to promote the sustainable management of its resources. The work will also study the interplay of the Atlantic Ocean with the Arctic Ocean, particularly with regards to climate change.

The agreement recognizes that Atlantic research will in many areas be more effective if coordinated on a transatlantic basis. Areas identified for potential cooperation under the agreement include:

- Ocean observation
- Sharing of data, such as on temperature, salinity and acidity
- Interoperability and coordination of observing infrastructures, such as measurement buoys and research vessels
- Sustainable management of ocean resources
- Seabed and benthic habitat mapping
- Promoting researcher mobility
- Identifying and recommending future research priorities

DG MARE released the EU's Integrated Maritime Policy (IMP) which aims at a more coherent European approach to maritime issues to contribute to the creation of sustainable growth and jobs from sea-related activities. The IMP has further been complemented by two communications ´Developing a Maritime strategy for the Atlantic Ocean Area´ and ´Blue Growth: opportunities for marine and maritime sustainable growth'.

http://www.euussciencetechnology.eu/content/marine-and-arctic-research

3.2.2.3 Nanosciences, nanotechnologies, materials and new production technologies (Inventory report in the field of NMP)

Transatlantic S&T cooperation in Nanosciences, nanotechnologies, materials and new production technologies (NMP) is based on the EU-US S&T Agreement in particular on the Implementing Arrangement between the European Commission and the National Science Foundation (NSF). In the in 2004 extended EU-US S&T Agreement nanotechnology was for the first time explicitly mentioned.

Transatlantic S&T cooperation has been put into place through the EC programme "Competitive and Sustainable Growth" during the Fifth Framework Programme (FP5) which organised three coordinated calls for proposals with NSF, including mainly research but also education activities. The NMP priority of FP6 implemented one coordinated call for proposals with NSF in the field of computational materials research. A joint call has been implemented in the Nanosciences, Nanotechnologies, Materials and new Production Technologies theme in FP7 regarding "Modelling tocicity behavior of engineered nanoparticles" with funding from the US side having been provided through the Environmental Protection Agency (EPA), National Science Foundation (NSF), National Institute for Occupational Safety and Health (NIOSH), National Institute of Environmental Health Sciences (NIEHS) and United States Department of Agriculture (USDA).

In the NMP cooperation programmes between the EU and the USA emphasis is given on the following activities:

- Nanosciences and nanotechnologies – studying phenomena and manipulation of matter at the nanoscale and developing nanotechnologies leading to the manufacturing of new products and services.
- Materials – using the knowledge of nanotechnologies and biotechnologies for

new products and processes.

- New production – creating conditions for continuous innovation and for developing generic production 'assets' (technologies, organization and production facilities as well as human resources), while meeting safety and environmental requirements. Integration of technologies for industrial applications - focusing on new technologies, materials and applications to address the needs identified by the different European Technology Platforms.

During the EU-U.S. Joint Consultative Group Meeting on Science and Technology Cooperation which took place in February 2013 EU and US officials met in order to discuss ways to enhance science, technology and innovation cooperation and agreed to explore possibilities for collaboration opened up by new U.S. initiatives on advanced materials, particularly in the field of computational modelling.

http://www.euussciencetechnology.eu/content/nanosciences-nanotechnologies-materials-and-new- production-technologies-nmp

3.2.2.4 Transport (Inventory report in the field of Transport)

At the 2004 Summit in Shannon, Ireland, the EU and the United States agreed on the commitment to strengthen economic partnership and to foster trade and transport security. At the Washington Summit in June 2005, the EU and the US launched an initiative to enhance transatlantic economic integration and growth including, among others, air cargo traffic and air transport security. As a follow-up, a joint EU-US Work Programme and a common EU platform were set up in November 2005 during the EU-US first informal economic ministerial meeting.

At the June 2006 Vienna Summit, the EU and the US presented a joint declaration to strengthen their strategic partnership and agreed to intensify efforts to conclude a first stage air transport agreement and also to enhance cooperation on the legal framework governing the transfer of air passengers' data.

At the EU-US Joint Consultative Group (JCG) Meeting on Science and Technology Cooperation in February, 2013, the European Commission and the U.S. Department of Transportation signed an agreement to boost cooperation in transport research. This agreement is designed to foster research into new cross-cutting technologies that will improve transportation systems and maintain competitiveness of both sides in the following areas:

- Development of highway infrastructures
- Road safety
- Traffic management
- Freight logistics and other areas

Horizon 2020, the EU research funding programme for the years 2014-2020, will address transport as an integrated system, however not ignoring its specifics of the different modes (rail, road, waterborne and air transport), particularly where there is a need to achieve technological breakthroughs. Attention is given to both, technology and in relevant socio-economic research. Actions shall focus on four areas:

- Resource-efficient transport

- Better mobility, less congestion, more safety and security
- Global leadership for the European transport industry
- Socio-economic research and forward-looking activities for future policy making

Horizon 2020's funding of transport research and innovation shall complement Member States' investment by focusing on activities with a clear European added-value and priority areas that match European policy objectives.

http://www.euussciencetechnology.eu/content/transport

3.3. Questions to be raised for improving STI cooperation between Europe and the USA

Besides the very reasonable recommendations given by experts, e.g. that EU Member States should coordinate their S&T strategies with the USA in the framework of the new international strategy and Horizon 2020, (Acheson and León, 2013) and that more coordinated approaches (jointly by the EU and the EU MS) in the form of an ´umbrella action´ towards the USA would lead to increased efficiency and effectiveness in transatlantic STI cooperation (Fikkers and Horvat, 2014), the following questions shall be raised in this report, in order to support given expert recommendations and add value to the discussion on how to improve transatlantic STI cooperation:

General question: Which actual function shall the EU-US S&T Agreement have?

Whether or not the Basic Principles Umbrella (BPU), as informal model or set of basic principles which might be used as the basis for future STI agreements by the EU and EU MS, will be explored in terms of practicability (Fikkers and Horvat, 2014), shall the EU-US S&T Agreement only be a frame for the bilateral S&T Agreements as it was until now or shall it take advantage of the established bilateral policy instruments and go beyond offering cooperation possibilities for higher added value cooperation (Gnamus, 2010)?

This would mean that national research systems need to be more inter-operable and inter-connected and that the EU-US STI Agreement and bilateral STI Agreements with the USA need more reciprocal references in order to allow for mutual enrichment. Hence, the function of SFIC as robust link and intermediary needs to be strengthened.

Detail questions: What shall the EU-US S&T Agreement include in order to facilitate transatlantic STI collaboration on European and bilateral level?

Levels of policy instruments: Shall the EU-US S&T Agreement classify levels of policy instruments based on a ranking of activities as identified (Gnamus, 2010)?

This would allow EU MS to identify their levels of policy instruments and commitment in their S&T Agreements in a more efficient way as well as to boost transatlantic STI collaboration in a more observable and effective way.

Legal issue: Shall the EU-US S&T Agreement foster and include existing bilateral agreements between the European Commission and US national funding organisations regarding applicable law and jurisdiction?

Several US agencies and institutions are legally not capable to sign contracts under Belgian (foreign) law. This was a main legal barrier to EU-US FP7 collaboration (BILAT USA, 2012). An inclusion under one umbrella would simplify and increase US participation in Horizon 2020.

Funding issue: Shall the EU-US S&T Agreement foster and include existing bilateral reciprocal funding programmes?

Dialogue between programme managers of similar funding S&T programs on both sides of the Atlantic is crucial to create bilateral cooperation instruments as mobility, joint calls or twinning of research projects (Acheson and León, 2013).

The major hurdle to EU-US collaboration in FP7 was lack of funding for the US partner. A synchronization of EU and US funding programs is required allowing the U.S. partner to receive national funding if FP7 funding is not approved (BILAT USA, 2012).

Innovation dimension: Shall the EU-US S&T Agreement identify and include innovation aspects?

Innovation support is an important element of the Europe 2020 strategy, its flagship initiatives and Horizon 2020, one of its implementing tools. Experts draw the conclusions form the increasing importance paid to innovation policies in Europe, the US and worldwide and recommend to reflect the innovation dimension in the EU-US S&T Agreement. Experts argue that this would facilitate bilateral innovation policy dialogues and foster bilateral STI cooperation. BILAT USA 2.0 was commissioned to organise its EU-US Innovation conference in order to discuss this question, i.e. to identify among European and US experts the innovation aspects which need to be included in the new S&T Agreement and its needed extend of concreteness, clearness and direction.

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Innovation Union Scoreboard, European Union, 2014

Inventory Reporting in the field of NMP, BILAT USA 2.0, 2013

Inventory Reporting in the field of HEALTH, BILAT USA 2.0, 2013

Inventory Reporting in the field of TRANSPORT, BILAT USA 2.0, 2013

Inventory Reporting in the field of MARINE AND ARCTIC RESEARCH, BILAT USA 2.0, 2013

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http://www.euussciencetechnology.eu/content/marine-and-arctic-research

http://www.euussciencetechnology.eu/content/nanosciences-nanotechnologies-materials-and-new-production-technologies-nmp
http://www.euussciencetechnology.eu/content/transport

5. Abbreviation

Abbreviation	Full name
DHHS	United States Department of Health and Human Services
EC	European Commission
EU	European Union
EPA	Environmental Protection Agency
FP5/FP6/FP7	Fifth/Sixth/Seventh Framework Programme
IMP	Integrated Maritime Policy
JCG	Joint Consultative Group
MS	Member State
NMP	Nanosciences, nanotechnologies, materials and new production
NSF	National Science Foundation
NIOSH	National Institute for Occupational Safety and Health
NIEHS	National Institute of Environmental Health Sciences
NIH	National Institutes of Health
STI	Science, Technology and Innovation
S&T	Science and Technology
US/USA	United States/of America
USDA	United States Department of Agriculture

BILAT USA 2.0

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Annex

INVENTORY REPORTING

TASK 1.2.: COORDINATION AND COOPERATION OF EC AND MS/AC RESEARCH PROGRAMMES AND RELATED INITIATIVES TARGETING THE USA (TASK LEAD: FFG)

HEALTH RESEARCH

Prepared by: Academy of Finland, December 2013

Table of content

1. EU-US S&T cooperation framework in the field of Health research

Transatlantic health research relies on the cooperation between the European Community and United States. Increasing international communication can be seen in the rising proportion of research publications with authors from several countries. In the globalized world health issues need to be addressed though science, technology and education partnerships through international collaboration. Challenges in health research field include such global issues as emerging pandemics, other infectious diseases, demographic change, cancer, neurodegenerative diseases, cardiovascular disease and obesity epidemics.

The Seventh Framework Program (2007-2013) has been open to international cooperation and has generated increased opportunities for transatlantic cooperation. On the US side the most important role in health research is played by the National Institutes of Health (NIH).

Strategic Forum for International S&T Cooperation (SFIC) was launched 2008 (COM/2008/588) to facilitate the further development, implementation and monitoring of the international dimension of ERA. SFIC member countries all had several instruments supporting S&T cooperation with the US partners. The health research is one of the main thematic priorities.

The European Union, the United States and Canada signed the "Galway Statement on Atlantic Ocean Cooperation" in May 2013. One of the main topics for cooperation is Health research. The aim is to join forces to develop new methods to prevent and treat diseases like HIV/AIDS, malaria and tuberculosis and working together to strengthen the scientific capacity in developing regions of the world.

2. Bilateral S&T cooperation framework between the USA and EU member states

Bilateral cooperation between the USA and the different EU member states is generally high: indeed, the USA are one of the most important S&T cooperation partners of most EU member states and bilateral cooperation agreements have as thus been signed for the majority of countries. Examples are:

- *Germany:* The intergovernmental Agreement on Science and Technology Cooperation signed in February 2010 between Germany and the USA provides a general framework for cooperative activities. In addition, more than 50 bilateral cooperation agreements have been concluded between individual institutions, which form the basis of a tight-knit network of US-German research projects (e.g. GAIN and GSO are the biggest networks of German scholars and scientists in North America).
- *France:* Ms Valérie Pécresse, Minister of Higher Education and Research, and Dr. Arden Bement, director of the National Science Foundation, signed an Agreement on scientific and technological cooperation between France and the United States. The **agreement aims at encouraging shared projects between researchers in the two** countries. It's objective is to help clarify researchers' situations, notably for intellectual property, and the discoveries they make (e.g. "Young Entrepreneurs Initiative" launched in 2005 by the Embassy of France in the United States).
- *Denmark:* In September 2009, Denmark's Minister of Science, Helge Sander and US Ambassador, Laurie S. Fulton signed a bilateral agreement on research cooperation. The agreement will strengthen the existing joint research work being carried out in Denmark and the US. For example, in 2009 alone, more than 350 US government-

sponsored scientists and officials, representing 15 different US technical agencies organizations, have come to Denmark (and Greenland) to collaborate with their counterparts on scientific and technological projects.

3. EU-US S&T cooperation in Health research on implementation level (EC programmes/ initiatives and FP7 projects)

S&T cooperation between the EU and collaboration partner countries is implemented through different programs and initiatives as well on bilateral as on multilateral level:

- FP7 horizontal programs (e.g. ERA-NETs)
- Collaborative research structures/initiatives such as ETPs, JTIs, JPIs, EIPs, EIT KICs, etc.
- FP7 thematic programs.

A comprehensive set of identified initiatives, as well as programmes and projects related to Health research can be found in the BILAT US 2.0 online inventory-database. In the following chapters, several initiatives and projects are indicated as cooperation examples.

3.1 EC programs / initiatives in Health research

As part of the European collaborative research structures, several initiatives such as Joint Technology Initiatives (JTIs), European Technology Platforms (ETPs), European Innovation Partnerships (EIPs), etc. have been launched in the last years, with the objective to build a strong network in S&T between countries. These collaborative research structures / initiatives are implemented in different thematic areas with the objective to push forward future priority fields. With regard to the field of Health research, several horizontal programs as well as initiatives can be identified. In particular, there are many ERA-NET projects operating in divers neighboring fields of Health research, as well as some other collaborative initiatives/platforms.

The figure below shows an overview of existing initiatives in the field of Health:

ERA-NET	ERA-NET+	ART.185	ETP	JTI	JPI	FET-Flagship	EIT-KIC	EIP
EMIDA	ERASysBio+	EDCTP -	NanoMedicine	JTI IMI	AMR - Antimicrobial resistance	HBP	Innovation for healthy living and active ageing	Active and Healthy Aging
ERA-Age		EMRP			HDHL -			
NEURON II					JPND			
E-Rare-2								
EUROCOURSE								
HIVERA	EurotransBio							
Infect-ERA	PathoGenoMics							
LEAD ERA	TRANSCAN							

3.2 FP7 projects in the field of Health

Under the cooperation program of FP7 (all topics), there are around 250 activities with US participation. Health is among the areas where the US participation in FP7 projects is the most prominent. According to the CORDIS database, there are 123 projects with US participation in the thematic program of Health.

Examples of FP7 Projects in the field of Health like SYSCOL (Systems Biology of Colorectal Cancer) and EUROHEADPAIN (Mechanisms and Treatment of Migraine and its Chronification), among others, show a strong cooperation between organizations from the European Union and the USA.

Also, a number of FP7 projects include not only organizations from the European member states and the USA, but also countries from different parts of the world. For example:

- IHMS (International Human Microbiome Standards) include collaboration between EU, China and the USA.
- APARET (African Programme for Advanced Research Epidemiology Training) include partners from Europe, Africa and the USA.

4. Bilateral cooperation projects between EU member states and the USA in the field of Health

In addition to EU programmes/initiatives and projects, there are specific bilateral initiatives and projects between the United States and European Member States, for example:

- An initiative between the USA and Finland, Innovations and learning, is a research collaboration that takes a wide perspective of learning in schools, colleges and work life
- Hellenic Bio Cluster is presenting Greek biosciences field to establish new Greek-US partnerships and collaborations

5. Annex I: Useful links for EU-US collaboration in Health

The following table provides some useful links related to EU-US collaboration in the field of Health research.

Health FP7 projects	http://cordis.europa.eu/projects/index.cfm?fuseaction=app.search&TXT=health&FRM=1&STP=10&SIC=&PGA=&CCY=&PCY=&SRC=&LNG=en&REF=&Search=Search
Research & Innovation in Health	http://ec.europa.eu/research/health/index_en.html
Current EU projects in Health	http://ec.europa.eu/eahc/projects/database.html
EU Health projects	http://www.horizonhealth.eu/
Horizon2020 Health	http://horizon2020projects.com/societal-challenges/health/
US-EU Cooperation in eHealth and Health IT	http://www.healthit.gov/policy-researchers-implementers/eu-and-us-step-cooperation-ehealth-and-health-it
European Connected Health Alliance	http://www.echalliance.com/content.asp?PageId=228&id=228
Funding Opportunities for Transatlantic Health Research	http://archive.euussciencetechnology.eu/uploads/docs/STETransatlHealthRsrchBroch.pdf
European & Developing Countries Clinical Trials Partnership	http://www.edctp.org/
Office of Science and Technology Policy	http://www.whitehouse.gov/administration/eop/ostp/nstc/committees/cos
National Institutes of Health	http://www.nih.gov/
IRDiRC - International Rare Diseases Research Consortium	http://ec.europa.eu/research/health/medical-research/rare-diseases/irdirc_en.html
EU Digital Agenda - eHealth	http://ec.europa.eu/digital-agenda/en/news/eu-and-us-step-cooperation-ehealth-it
ECHAlliance (M-Health)	http://www.echalliance.com/content.asp?PageId=228&id=228
Global Alliance for Chronic Diseases	http://www.gacd.org/research/alliance/members
International Mouse Phenotyping Consortium	https://www.mousephenotype.org/about-impc/impc-members

International Human Microbiome Consortium	http://www.human-microbiome.org/index.php?id=25
ICGC - International Cancer Genome Consortium	http://www.icgc.org/#about
IHEC- International Human Epigenome Consortium	http://ihec-epigenomes.org/about/

6. Annex II: Table of cooperation programs/initiatives and projects

Detailed information on cooperation initiatives / programs and projects between the EU (or EU member states) and the USA in the field of Health research can be found on the BILAT USA 2.0 project online inventory-database

BILAT USA 2.0

Marine and Arctic Research

INVENTORY REPORTING

TASK 1.2.: COORDINATION AND COOPERATION OF EC AND MS/AC RESEARCH PROGRAMMES AND RELATED INITIATIVES TARGETING THE USA (TASK LEAD: FFG)

Prepared by: Academy of Finland, October 2013

Table of content

1. EU-US S&T cooperation framework in the field of Marine and Arctic Research

Marine and Arctic Research has been determined a priority field of transatlantic cooperation. In order to launch formally this cooperation, a high-level meeting has been held in May 2013 in Galway, Ireland. The European Union, the United States and Canada formally agreed to join forces on Atlantic Ocean research. The agreement focuses on aligning the ocean observation efforts of the three partners. The goals are to better understand the Atlantic Ocean and to promote the sustainable management of its resources. The work will also study the interplay of the Atlantic Ocean with the Arctic Ocean, particularly with regards to climate change. The EU and its Member States alone invest nearly two billion euro on marine and maritime research each year. The 'Galway Statement on Atlantic Ocean Cooperation' was signed at this high level conference at the Irish Marine Institute in Galway.

The agreement recognizes that Atlantic research will in many areas be more effective if coordinated on a transatlantic basis. Areas identified for potential cooperation under the agreement include:

1. Ocean observation
2. Sharing of data, such as on temperature, salinity and acidity
3. Interoperability and coordination of observing infrastructures, such as measurement buoys and research vessels
4. Sustainable management of ocean resources
5. Seabed and benthic habitat mapping
6. Promoting researcher mobility
7. Identifying and recommending future research priorities.

Beginning in 2014, DG RTD also wants to orientate its research programmes more in line with the different DGs. The following areas in marine and arctic research have been determined as very useful for the transatlantic cooperation:

- Sustainable Atlantic ecosystem approach
- Sustainable marine food production (fisheries and aquaculture)
- Innovative uses and conservation of the Atlantic / marine biodiversity (including seabed biological resources)
- Seabed Critical Raw materials (CRM – seabed mining)

2. Bilateral S&T cooperation framework between the USA and EU member states

Bilateral cooperation between the USA and the different EU member states is generally high: indeed, the USA are one of the most important S&T cooperation partners of most EU member states and bilateral cooperation agreements have as thus been signed for the majority of countries. Examples are:

- *Germany:* The intergovernmental Agreement on Science and Technology Cooperation signed in February 2010 between Germany and the USA provides a general framework for cooperative activities. In addition, more than 50 bilateral cooperation agreements have been concluded between individual institutions, which form the basis of a tight-knit network of US-German research projects (e.g. GAIN and GSO are the biggest networks of German scholars and scientists in North America).

- *France:* Ms Valérie Pécresse, Minister of Higher Education and Research, and Dr. Arden Bement, director of the National Science Foundation, signed an Agreement on scientific and technological cooperation between France and the United States. The **agreement aims at encouraging shared projects between researchers in the two** countries. It's objective is to help clarify researchers' situations, notably for intellectual property, and the discoveries they make (e.g. "Young Entrepreneurs Initiative" launched in 2005 by the Embassy of France in the United States).
- *Denmark:* In September 2009, Denmark's Minister of Science, Helge Sander and US Ambassador, Laurie S. Fulton signed a bilateral agreement on research cooperation. The agreement will strengthen the existing joint research work being carried out in Denmark and the US. For example, in 2009 alone, more than 350 US government-sponsored scientists and officials, representing 15 different US technical agencies organizations, have come to Denmark (and Greenland) to collaborate with their counterparts on scientific and technological projects.

3. EU-US S&T cooperation in Marine and Arctic research on implementation level (EC programmes/ initiatives and FP7 projects)

S&T cooperation between the EU and collaboration partner countries is implemented through different programs and initiatives as well on bilateral as on multilateral level:

- FP7 horizontal programs (e.g. ERA-NETs)
- Collaborative research structures/initiatives such as ETPs, JTIs, JPIs, EIPs, EIT KICs, etc.
- FP7 thematic programs.

A comprehensive set of identified initiatives, as well as programmes and projects related to marine and arctic research will be available in the BILAT USA 2.0 online inventory-database. In the following chapters, several initiatives and projects are indicated as cooperation examples.

3.1 EC programs / initiatives in marine and arctic research

As part of the European collaborative research structures, several initiatives such as Joint Technology Initiatives (JTIs), European Technology Platforms (ETPs), European Innovation Partnerships (EIPs), etc. have been launched in the last years, with the objective to build a strong network in S&T between countries. These collaborative research structures / initiatives are implemented in different thematic areas with the objective to push forward future priority fields. With regard to the field of marine and arctic research, several horizontal programs as well as initiatives can be identified.

The figure below shows an overview of existing initiatives in the field of marine and arctic research :

ERA-NET	ERA-NET+	ART.185	EUREKA	JPI	EIP
SEAS-ERA	Bonus+	BONUS-169	ACQUEAU	Healthy & productive seas and oceans	Water Efficient Europe
MariFish				Water Challenges	
MARTEC II					

3.2 FP7 projects in the field of marine and arctic research

Under the cooperation program of FP7 (all topics), there are around 250 activities with US participation. According to the CORDIS database, there are 20 projects with US participation related to marine research and 2 projects related to arctic research, spread over different thematic areas.

FP7 projects in the field of marine and arctic research, such as

- ACOBAR (Acoustic technology for observing the interior of the Arctic Ocean),
- KILLSPILL (Integrated Biotechnological Solutions for Combating Marine Oil Spills) and
- CARBOCHANGE (Changes in carbon uptake and emissions by oceans in a changing climate) show a strong cooperation between organizations from the European Union and the USA.

Also, a number of FP7 projects include not only organizations from the European member states and the USA, but also countries from different parts of the world. For example:

- INTERACT International Network for Terrestrial Research and Monitoring in the Arctic
- ORECCA Off-shore Renewable Energy Conversion platforms
- THESEUS Innovative coastal technologies for safer European coasts in a changing climate

4. Bilateral cooperation projects between EU member states and the USA in the field of marine and arctic research

Neither specific bilateral initiatives nor projects between the United States and European Member States could have been identified.

5. Annex I: Useful links for EU-US collaboration in marine and arctic research

The following table provides some useful links related to EU-US collaboration in the field of marine and arctic research.

Marine FP7 projects	http://cordis.europa.eu/newsearch/index.cfm?page=resultListGET&radioparticipant=participant&formid=form_proj&oneword=Marine%20ocean&countries=USCOUNTRY&exactphrase=marine%20or%20"ocean"&typeEvent=PROJECTS_SEARCH&programmes=FP7&useraction=advanced_search&controlsession=false
Marine environment FP7 projects	http://ec.europa.eu/research/environment/index_en.cfm?pg=projects&area=marine
Arctic FP7 projects	http://cordis.europa.eu/newsearch/index.cfm?page=resultListGET&radioparticipant=participant&formid=form_proj&countries=USCOUNTRY&exactphrase=arctic&typeEvent=PROJECTS_SEARCH&programmes=FP7&useraction=advanced_search&controlsession=false
Marine research in EU	http://ec.europa.eu/research/environment/index_en.cfm?pg=marinel
DG MARE	http://ec.europa.eu/dgs/maritimeaffairs_fisheries/index_en.htm
Integrated maritime policy	http://ec.europa.eu/maritimeaffairs/policy/index_en.htm
EU Arctic policy	http://eeas.europa.eu/arctic_region/
EU Arctic Information Centre	http://www.arcticcentre.org/InEnglish/ABOUT-US/EU-Arctic-Information-Centre
Arctic Forum Foundation	http://eu-arctic-forum.org/
Northern Dimension	http://www.northerndimension.info/
The Arctic Council	http://www.arctic-council.org/index.php/en/
European Maritime Day 2013	http://ec.europa.eu/maritimeaffairs/maritimeday/index_en.htm

6. Annex II: Table of cooperation programs/initiatives and projects

Detailed information on cooperation initiatives / programs and projects between the EU (or EU member states) and the USA in the field of marine and arctic research will soon be provided in the BILAT USA 2.0 project online inventory-database.

BILAT USA 2.0

INVENTORY REPORTING

TASK 1.2.: COORDINATION AND COOPERATION OF EC AND MS/AC RESEARCH PROGRAMMES AND RELATED INITIATIVES TARGETING THE USA (TASK LEAD: FFG)

Prepared by: inno TSD, July 2013

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1. EU-US S&T cooperation framework in the field of NMP

The field of 'Nanosciences, Nanotechnologies, Materials and new Production Technologies' (NMP) is a still young area of research and development and it is a thematic focus of both EU and USA research and development activities. Nanosciences and nanotechnologies are new approaches to research and development that aim to control the fundamental structure and behaviour of matter at the level of atoms and molecules. As a consequence, different application sectors are concerned by the approach, so the aim is to strengthen the competitiveness of industry by generating 'step changes' in a wide range of sectors and implementing decisive knowledge for new applications between different technologies and disciplines.

The United States are committed to the long-term, sustainable growth of this burgeoning field through Federal funding programs and an extensive infrastructure of research and development centers, networks, and user facilities. American nanotechnology research is world-leading and there is high cooperation potential with EU experts. Indeed, a study funded by the US National Science Foundation projects that 6 million nanotechnology workers will be needed worldwide by 2020, with 2 million of those jobs in the United States (Roco, Mirkin, and Hersam, 2010).

EU-USA cooperation in the field of nanotechnology has been initiated in December 1999 through the EU-USA Agreement on Scientific and Technological Cooperation and in particular by the Implementing Arrangement between the European Commission and the National Science Foundation (USA) for cooperative activities in the field of materials science. Under the umbrella of the EC-US S&T agreement, specific Implementing Arrangements were indeed signed between the European Commission and the US funding agencies to organize collaboration in particular areas of research. As a result, since 2003, several implementing arrangements have been initiated, for instance in the field of environmental research with the National Science Foundation (NSF) and the Environmental Protection Agency (EPA). Other formal cooperation arrangements have been launched in metrology with the NIST (National Institute of Standards and Technology) and in materials science (including nanotechnology) with the NSF.

In the extension of the EU-USA Agreement to another five years, signed on 13th October 2004, nanotechnology was for the first time mentioned explicitly. Following the renewal of the Agreement, the Implementing Arrangement was automatically extended in 2009.

The Joint Consultative Group meeting, which recently took place under the bilateral agreement for scientific and technological cooperation between the European Union and the United States (12.02.2013), addressed among others the field of materials science. There is indeed already successful cooperation between the EU, the USA and Japan in the area of critical raw materials research, and it was agreed at the meeting to explore possibilities for collaboration opened up by new US initiatives on advanced materials, particularly in the field of computational modelling.

2. Bilateral S&T cooperation framework between the USA and EU member states

Bilateral cooperation between the USA and the different EU member states is generally high: indeed, the USA are one of the most important S&T cooperation partners of most EU member states and bilateral cooperation agreements have as thus been signed for the majority of countries. Examples are:

- *Germany:* The intergovernmental Agreement on Science and Technology Cooperation signed in February 2010 between Germany and the USA provides a general framework for cooperative activities. In addition, more than 50 bilateral cooperation agreements have been concluded between individual institutions, which form the basis of a tight-knit network of US-German research projects (e.g. GAIN and GSO are the biggest networks of German scholars and scientists in North America).
- *France:* Ms Valérie Pécresse, Minister of Higher Education and Research, and Dr. Arden Bement, director of the National Science Foundation, signed an Agreement on scientific and technological cooperation between France and the United States. The agreement aims at encouraging shared projects between researchers in the two countries. It's objective is to help clarify researchers' situations, notably for intellectual property, and the discoveries they make (e.g. "Young Entrepreneurs Initiative" launched in 2005 by the Embassy of France in the United States).
- *Denmark:* In September 2009, Denmark's Minister of Science, Helge Sander and US Ambassador, Laurie S. Fulton signed a bilateral agreement on research cooperation. The agreement will strengthen the existing joint research work being carried out in Denmark and the US. For example, in 2009 alone, more than 350 US government-sponsored scientists and officials, representing 15 different US technical agencies organizations, have come to Denmark (and Greenland) to collaborate with their counterparts on scientific and technological projects.

3. EU-US S&T cooperation in NMP on implementation level (EC programmes/ initiatives and FP7 projects)

S&T cooperation between the EU and collaboration partner countries is implemented through different programs and initiatives as well on bilateral as on multilateral level:

- FP7 horizontal programs (e.g. ERA-NETs)
- Collaborative research structures/initiatives such as ETPs, JTIs, JPIs, EIPs, EIT KICs, etc.
- FP7 thematic programs.

A comprehensive set of identified initiatives, as well as programmes and projects related to NMP can be found in the BILAT US 2.0 online inventory-database. In the following chapters, several initiatives and projects are indicated as cooperation examples.

3.1 EC programs / initiatives in NMP

As part of the European collaborative research structures, several initiatives such as Joint Technology Initiatives (JTIs), European Technology Platforms (ETPs), European Innovation Partnerships (EIPs), etc. have been launched in the last years, with the objective to build a strong network in S&T between countries. These collaborative research structures / initiatives are implemented in different thematic areas with the objective to push forward future priority fields. With regard to the field of NMP, several horizontal programs as well as initiatives can be identified. In particular, there are many ERA-NET projects operating in divers neighboring fields of NMP, as well as some other collaborative initiatives/platforms, for example the ERA-NETs "AETROS", "EuroNanoMed" or "M-ERA.net", as well as "Nanomedicine" (ETP), "Raw Materials" (EIP), "Grapheme" (FET-Flagship), etc.

The figure below shows an overview of existing initiatives in the field of NMP:

Materials, Nano-Sciences and Nanotechnologies :

ERA-NET	ERA-NET+	ART.185	ETP	EUREKA	FET-Flagships	EIT-KICS	EIP
AETROS	MATERA+	EMRP	NanoMedicine	CATRENE	Graphene	raw materials (2014ff)	Raw Materials
CAPITA	WoodWisdom Net Plus			EUREKABUILD2			
CROSSTEXNET				EURIPIDES			
ECO-INNOVERA							
ERA-CHEMISTRY							
ERA-MIN							
ERASynBio							
EuroNanoMed							
M-ERA.NET							
MNT ERA-NET							
PV-ERANET 2							
SAFERA							
SIINN							
SOLAR ERA-NET							

3.2 FP7 projects in the field of NMP

Under the cooperation program of FP7 (all topics), there are around 250 activities with US participation. Nanosciences, Nanotechnologies, Materials and Production Technologies (NMP), together with other topics such as Health, Information and Communications Technologies (ICT) and Food, Agriculture & Fisheries and Biotechnology (FAB), is among the areas where the US participation in FP7 projects is the most prominent. According to the CORDIS database, there are 21 projects with US participation in the thematic program of NMP, whereas some others can be detected in neighboring fields with a nano-component (e.g. ICT, KBBE), as well as in other FP7 programs (e.g. Marie Curie actions in People program).

Examples of FP7 Projects in the field of NMP like DIAMANT (Diamond based atomic nanotechnologies), INFERNOS (Information, Fluctuations, and Energy Control in Small Systems), NANOCOM (Lowering Barriers for Nanotechnology Commercialization via Open Innovation), among others, show a strong cooperation between organizations from the European Union and the USA.

Also, a number of FP7 projects include not only organizations from the European member states and the USA, but also countries from different parts of the world. For example:

- NanoValid (Developing Reference Methods for Nanomaterials) include collaboration between EU, Brazil, Canada, India and the USA.
- CARBONNASA (Carbon-based Nanomaterials and Nanostructures for Advanced Sensing Applications) include partners from UK, Portugal, Japan, China and the USA.
- NANOMAG (Magnetic Nanoparticles and Thin Films for Spintronic Applications and High Performance Permanent Magnets) include organizations from Greece, Slovenia, Cyprus, Italy, Poland, the USA and Korea.

4. Bilateral cooperation projects between EU member states and the USA in the field of NMP

In addition to EU programmes/initiatives and projects, there are specific bilateral initiatives and projects between the United States and European Member States, for example:

- An initiative between the USA and UK, the UK/US Environmental Nanoscience Initiative, is based on joint research effort to develop and validate predictive tools and similar conceptual models that predict exposure, bioavailability and effects of manufactured nanomaterials in the environment.
- The project "Nanomagnet Dynamics" between partners from the USA and Sweden. In this project, research institutes of both counties develop measurement methods to aid the development of new nanomagnet-based devices.
- With regard to NMP related platforms, organizations from the USA, from Switzerland and UK have created the GoodNanoGuide platform. This collaboration platform is designed to enhance the ability of experts to exchange ideas on how to handle nanomaterials in an occupational setting.

5. Annex I: Useful links for EU-US collaboration in NMP

The following table provides some useful links related to EU-US collaboration in the field of Nanosciences, Nanotechnologies, Materials and Production Technologies (NMP).

NMP FP7 projects	http://cordis.europa.eu/projects/index.cfm?fuseaction=app.search&TXT=&FRM=1&STP=10&SIC=&PGA=FP7-NMP%2CFP7&CCY=&PCY=USCOUNTRY&SRC=&LNG=en&REF=
Research in Nanosciences and Technologies	http://ec.europa.eu/research/industrial_technologies/nanoscience-and-technologies_en.html
Strategy for Nanotechnology (EU)	http://ec.europa.eu/nanotechnology/pdf/nano_com_en_new.pdf
National Nanotechnology Initiative (US)	http://www.nano.gov/
US-EU Bridging nanoEHS research efforts	http://us-eu.org/
Current EU projects in NMP	http://www.nano.org.uk/aboutus/current-activities
Nanotechnology in EU (archive)	http://cordis.europa.eu/nanotechnology/
Nano werk (database)	http://www.nanowerk.com/index.php
Nanosafety Cluster	http://www.nanosafetycluster.eu/
Observatory Nano	http://www.observatorynano.eu/
An overview of the European Union's nanotechnology projects	http://www.nanowerk.com/spotlight/spotid=31109.php#ixzz2Y9kthKcW

6. Annex II: Table of cooperation programs/initiatives and projects

Detailed information on cooperation initiatives / programs and projects between the EU (or EU member states) and the USA in the field of NMP can be found on the BILAT US 2.0 project online inventory-database. An extract is indicated in the table below:

Name of cooperative program/ initiative or project	Type/ Category of initiative	Characteristics / Differences to other types/ categories	Thematic focus	US focus? Cooperation with US organisations, policy makers, etc.? If yes, which? Include Contact	Participation requirements / US participation possible?
"NanoSafety Cluster"	Bilateral program EU MS-US	Cluster	NMP	US partner: US-NNCO	USA-EU participation
"The Office of Science and Technology"	Bilateral program EU MS-US	Initiative	NMP	US partner: individual researchers	US-France participation
YESS, "Beyond Silicon" Nanoelectronics	Bilateral program EU MS-US	Collaboration	NMP	US partner : state universities	USA-France participation
UK/US Environmental Nanoscience Initiative	Bilateral program EU MS-US	Initiative	NMP	US partner: Engineering & Physical Sciences Research Council, Department for Environment, Food & Rural Affairs, Environment Agency, Environmental Protection Agency, National Science Foundation	USA-UK participation
DIAMANT	Bilateral program EU MS-US	project	NMP	US partner: THE REGENTS OF THE UNIVERSITY OF CALIFORNIA; PRESIDENT AND FELLOWS OF HARVARD	USA, Germany, Belgium, UK, Netherlands, Hungary, Austria

				COLLEGE	
ELECTRON CORRELATION	Bilateral program EU MS-US	project	NMP	US partner: Rice University in Houston	USA-Spain
INFERNOS	FP7 project	project	NMP	INFERNOS US partner: THE RESEARCH FOUNDATION OF STATE UNIVERSITY OF NEW YORK	USA, Finland, Spain, Norway, Netherlands, France, Sweden
MAPACOMAS	FP7 project	project	NMP	US partner: Drexel University	USA-Spain
The International Team in NanosafeTy	Multilateral EC programs/ initiatives	initiative	NMP	US partner: University of Michigan	USA, France, Germany, Canada, Japan,
International Center for Materials Nano-architectonics	Multilateral EC programs/ initiatives	initiative	NMP	US partner: University of California, Georgia Institute of Technology	USA, France, UK, Japan
European Commission's information platform on European, national and regional research and innovation systems and policies	Multilateral EC programs/ initiatives	initiative	NMP	US partner: National Science Foundation	US-EU-3rd countries collaboration (worldwide)
OECD Working Party on Manufactured Nanomaterials	Multilateral EC programs/ initiatives	collaboration	NMP	US partner: National Institute for Occupational Safety and Health (NIOSH)	US-EU-3rd countries collaboration (worldwide)
MULTIFLEXIOXIDES	Multilateral EC programs/ initiatives	collaboration	NMP	US partner: Oregon State University	US-EU-3rd countries collaboration (worldwide)

BILAT USA 2.0

INVENTORY REPORTING

TASK 1.2.: COORDINATION AND COOPERATION OF EC AND MS/AC RESEARCH PROGRAMMES AND RELATED INITIATIVES TARGETING THE USA (TASK LEAD: FFG)

TRANSPORT RESEARCH

Prepared by: Academy of Finland, December 2013

Table of content

1. EU-US S&T cooperation framework in the field of Transport research

On 12 February 2013, EU and US officials met in EU-U.S. Joint Consultative Group Meeting on Science and Technology Cooperation in Washington to discuss ways to enhance science, technology and innovation cooperation. Both sides are committed to the role science, technology and innovation can play in developing the knowledge and technologies that can foster economic growth, create jobs and help solve shared challenges.

At the meeting, the European Commission and the U.S. Department of Transportation signed an agreement to boost cooperation in transport research. This agreement is designed to foster research into new cross-cutting technologies that will improve our transportation systems and maintain our competitiveness. The addressed topics concentrated on the development of highway infrastructures, road safety, traffic management, freight logistics and other areas.

The European Conference of Transport Research Institutes (ECTRI) and the US Transportation Research Board (TRB) have assessed how the differences between the research cultures of the EU and the US can be used to drive new innovations in joint research projects. The EU and US transport research coordinating bodies studied the role of research in relation to the transport market and advances in the sector. In its report, entitled "EU/US Transport Research Collaboration: Challenges and Opportunities", the ECTRI/TRB Working Group writes it is important to intensify cooperation in the field of research in order to establish greater research projects in the future.

With a first symposium named 'City Logistics : A Transatlantic Perspective' held in Washington on May 30 and 31 the EU and the US have paved the way for closer cooperation in research in the field of transport. For this first meeting, fifty researchers from the U.S.A and the EU have discussed and exchanged views on the transport of goods in urban areas. The objective of these meetings is clear: create a culture of transatlantic collaboration through better communication between researchers. Four annual meetings are scheduled, two in U.S.A, two in Europe.

2. Bilateral S&T cooperation framework between the USA and EU member states

Bilateral cooperation between the USA and the different EU member states is generally high: indeed, the USA are one of the most important S&T cooperation partners of most EU member states and bilateral cooperation agreements have as thus been signed for the majority of countries. Examples are:

- *Germany:* The intergovernmental Agreement on Science and Technology Cooperation signed in February 2010 between Germany and the USA provides a general framework for cooperative activities. In addition, more than 50 bilateral cooperation agreements have been concluded between individual institutions, which form the basis of a tight-knit network of US-German research projects (e.g. GAIN and GSO are the biggest networks of German scholars and scientists in North America).
- *France:* Ms Valérie Pécresse, Minister of Higher Education and Research, and Dr. Arden Bement, director of the National Science Foundation, signed an Agreement on scientific and technological cooperation between France and the United States. The agreement aims at encouraging shared projects between researchers in the two

countries. It's objective is to help clarify researchers' situations, notably for intellectual property, and the discoveries they make (e.g. "Young Entrepreneurs Initiative" launched in 2005 by the Embassy of France in the United States).

- *Denmark:* In September 2009, Denmark's Minister of Science, Helge Sander and US Ambassador, Laurie S. Fulton signed a bilateral agreement on research cooperation. The agreement will strengthen the existing joint research work being carried out in Denmark and the US. For example, in 2009 alone, more than 350 US government-sponsored scientists and officials, representing 15 different US technical agencies organizations, have come to Denmark (and Greenland) to collaborate with their counterparts on scientific and technological projects.

3. EU-US S&T cooperation in Transport research on implementation level (EC programmes/ initiatives and FP7 projects)

S&T cooperation between the EU and collaboration partner countries is implemented through different programs and initiatives as well on bilateral as on multilateral level:

- FP7 horizontal programs (e.g. ERA-NETs)
- Collaborative research structures/initiatives such as ETPs, JTIs, JPIs, EIPs, EIT KICs, etc.
- FP7 thematic programs.

A comprehensive set of identified initiatives, as well as programmes and projects related to transport research can be found in the BILAT USA 2.0 online inventory-database. In the following chapters, several initiatives and projects are indicated as cooperation examples.

3.1 EC programs / initiatives in Transport research

Transport and mobility play a fundamental role in today's world. Representing 6.3% of the EU's GDP and employing nearly 13 million people, this sector is also one of Europe's most valuable ones. The industry is therefore a key driver of economic growth and sustainability. Building a 'smart, green and integrated transport network' constitutes one of the six Societal Challenges. The European Commission aims at the promotion of efficient, safe, secure and environmentally friendly mobility and creation of the conditions for a competitive industry generating growth and jobs.

The European Commission's Directorate-General for Mobility and Transport (DG MOVE) works in concert with the European Union Member States, European industry, citizens and stakeholders. It participates in the financing of the horizontal research activities (CORDIS, COST, Eureka, ERA-NET) and shares the management responsibility with the DG Research & Innovation. Currently, it also coordinates a cross-disciplinary team preparing the European Innovation Partnership (EIP) Smart Cities and Communities aiming to help cities and communities, business and civil society to implement smart city solutions across the sectors energy, transport and ICT at much greater scale and speed and to improve services while reducing energy and resource consumption, greenhouse gas (GHG) and other polluting emissions.

Horizon 2020, the EU research funding programme for the years 2014-2020, will address transport as an integrated system, however not ignoring its specifics of the different modes (rail, road, waterborne and air transport), particularly where there is a need to achieve

technological breakthroughs. Attention is given to both, technology and in relevant socio-economic research.

The four main priorities for transport research under Horizon 2020 are:

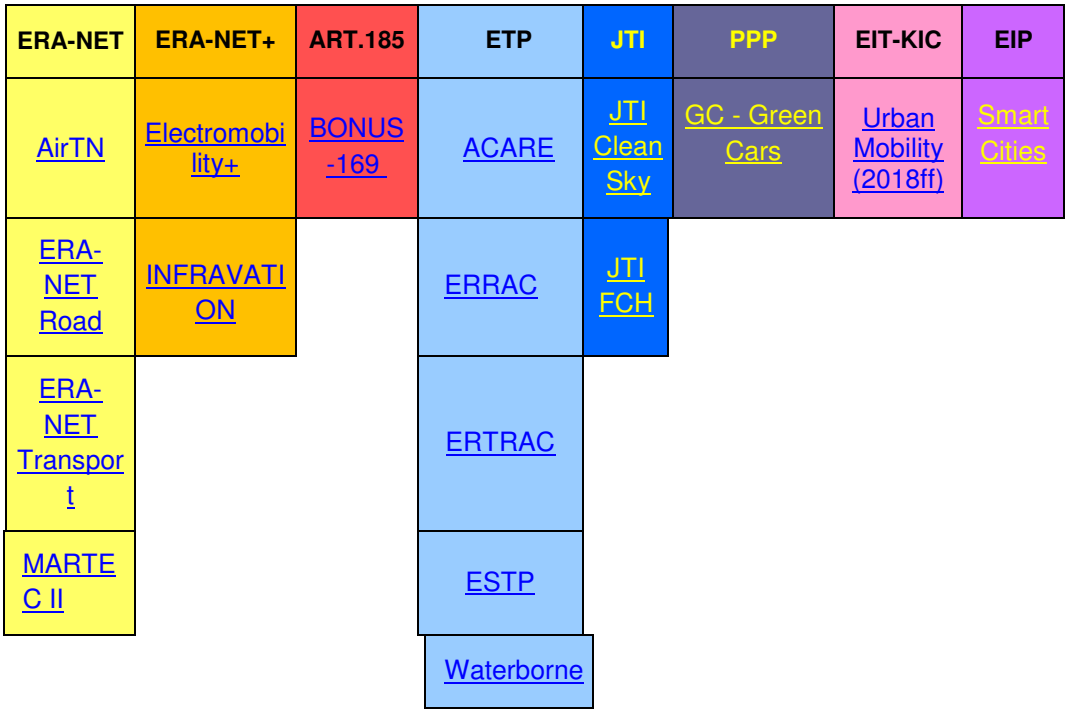
1. Making transport more sustainable: resource-efficient transport that respects the environment.
2. Making transport and transport systems seamless: better mobility, less congestion, greater safety and security.
3. Keeping transport competitive: the European transport industry as a global leader.
4. Making transport research responsive: socio-economic research and forward-looking activities for policy-making.

The work carried out in the framework of the Strategic Transport Technology Plan (STTP) will contribute to focusing the transport European research and innovation activities through Horizon 2020.

Horizon 2020's funding of transport research and innovation will complement Member States' investment by focusing on activities with a clear European added-value. More specifically, emphasis will be placed on priority areas that match European policy objectives.

As part of the European collaborative research structures, several initiatives such as Joint Technology Initiatives (JTIs), European Technology Platforms (ETPs), European Innovation Partnerships (EIPs), etc. have been launched in the last years, with the objective to build a strong network in S&T between countries. These collaborative research structures / initiatives are implemented in different thematic areas with the objective to push forward future priority fields. With regard to the field of transport research, several horizontal programs as well as initiatives can be identified.

The figure below shows an overview of existing initiatives in the field of transport research :



3.2 FP7 projects in the field of transport research

Under the cooperation program of FP7 (all topics), there are around 250 activities with US participation. According to the CORDIS database, there are 8 projects with US participation funded within the FP7 Transport programme. Other projects related to transport research can be found spread over different thematic areas.

Examples of FP7 Projects in the field of transport research OSTLER (Optimised storage integration for the electric car), BEAUTY (Bio-ethanol engine for advanced urban transport by light commercial vehicle & heavy duty) and FIREPROOF (Probabilistic framework for onboard fire-safety) among others, show a strong cooperation between organizations from the European Union and the USA.

Also, a number of FP7 projects include not only organizations from the European member states and the USA, but also countries from different parts of the world. For example:

- HAIC (High Altitude Ice Crystals)

4. Bilateral cooperation projects between EU member states and the USA

Neither specific bilateral initiatives nor projects between the United States and European Member States could have been identified!

5. Annex I: Useful links for EU-US collaboration in transport research

The following table provides some useful links related to EU-US collaboration in the field of transport research.

Transport FP7 projects	http://cordis.europa.eu/search/index.cfm?fuseaction=proj.resultList&page=1&perPage=10&q=52114343267A973DEE26D1170E3621E0&type=adv
Transport research in EU	http://ec.europa.eu/research/transport/
DG MOVE	http://ec.europa.eu/transport/index_en.htm
JTI Clean Sky	http://www.cleansky.eu/?arbo_id=83&set_language=en
JTI Fuel Cells	http://www.fch-ju.eu/
Smart Cities	http://ec.europa.eu/energy/technology/initiatives/smart_cities_en.htm
European Conference of Transport Research Institutes	http://www.ectri.org/index.html
Research and Innovative Technology Administration (RITA), U.S. Department of Transportation	http://www.rita.dot.gov/
Transportation Research Board	http://www.trb.org/AboutTRB/AboutTRB.aspx

6. Annex II: Table of cooperation programs/initiatives and projects

Detailed information on cooperation initiatives / programs and projects between the EU (or EU member states) and the USA in the field of transport research can be found on the BILAT USA 2.0 project online inventory-database .