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COOPAIR-LA

COOPERATION BETWEEN EU AND LA IN AERONAUTICS AND AIR TRANSPORT RESEARCH

Funding Scheme: COORDINATION AND SUPPORT ACTION (SUPPORTING)
Call: FP7- AAT- 2008- RTD-1

D1.2. FINAL ACTIVITY REPORT

Project Coordinator: INTA **Deliverable responsable:** INTA

Issue: 01

Project co-funded by the European Commission within the Seventh Framework Programme (2007-2013)		
Dissemination Level		
PU	Public	X
PP	Restricted to other programme participants (including the Commission Services)	
RE	Restricted to a group specified by the consortium (including the Commission Services)	
CO	Confidential, only for members of the consortium (including the Commission Services)	

Issue	Edition Date	Author	Modified Sections / Pages	Comments
01	01-02-2011	INTA	All	

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1. FINAL PUBLISHABLE SUMMARY REPORT

1.1 CONTEXT

The Latin American air transport market is forecast to be among the fastest growing in the world over the next 20 years and therefore of increasing strategic importance to the EU and its industry, who is willing to find alternative opportunities to cooperate in R&D terms.

Some Support Actions have already been put in place for enhancing participation and finding out research capabilities within strategic emerging regions. There are currently several projects and programmes to promote the collaboration between Europe and LA, such as ABEST, UEMEXCyT, FELAS, etc. but none of them is exclusively addressed to the aeronautics and air transport sector. Latin America and research in aeronautics are the next targets to be covered.

The project CoopAIR-LA aims to improve the cooperation in aeronautics between Europe and Argentina, Brazil and Mexico, by disseminating information and assisting LA researchers and SMEs to take full advantage of the European Union research programmes, and exploiting the synergies and common capabilities among the industries of both continents.

1.2 OBJECTIVES

CoopAIR-LA is a Support Action funded under the Trasnport (Aeronautics) Research Theme (FP7-AAT-2008-RTD-1) and to stimulate the cooperation among the EU and the Latin America stakeholders.

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The project objective is to foster the cooperation among entities from Argentina, Brazil and Mexican and the European ones. This objective is accomplished by identifying:

1. the main stakeholders in Latin America ready to participate in European consortiums;
2. the barriers which keep this companies out of the Framework Programme;
3. the preferred common technology areas to cooperate.

CoopAIR-LA proposes:

1.1 recommendations to Latin American stakeholders to avoid the barriers to their participation in the Framework Programme;
1.2 a set of proposals/abstracts to collaborate in consortium EU and Latin American stakeholders with their respective funding schemes;
1.3 an implementation roadmap to gradually establish a base for R&D cooperation among the EU and Argentina, Brazil and Mexico authorities.

1.3 PROJECT STRUCTURE

CoopAIR-LA is a nine-partner project coordinated by the National Institute of Aerospace Technology of Spain (INTA). The consortium incorporates both research and industrial partners, having access to both the Latin America and the European air transport sectors, and representing relevant industries and authorities.

(See table next page)

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No.	Beneficiary Short Name	Beneficiary Name	Country
1	INTA	National Institute of Aerospace Technology	Spain
2	ISDEFE	Ingeniería y Servicios para la Defensa	Spain
3	UPM	Universidad Politécnica de Madrid	Spain
4	AIRBUS	AIRBUS SAS	Norway
5	EMBRAER	Empresa Brasileira de Aeronautica	Germany
6	GMV	GMVIS	Portugal
7	ILOT	Insitute of Aviation	Poland
8	MINCYT	Ministerio de Ciencia, Tecnología e Innovación Productiva	Argentina
9	CONACYT	Consejo Nacional de Ciencia y Tecnología	Mexico

The Workpackages to accomplish the previously mentioned objectives are distributed in the next way:

Work package No.	**Work package title**	**Type of activity**	**Lead participant**
1	Project Management	MGT	INTA
2	Prospecting LA countries capabilities in aeronautics research	SUPP	EMBRAER
3	Analysing gaps and problems limiting the participation of LA organizations in European Aeronautics Research	SUPP	UPM
4	Assessment of the potential projects and preferred cooperation areas	SUPP	INTA
5	Promotion of Aeronautics Research FP7 Programme in LA countries	SUPP	CONACYT
6	Dissemination	SUPP	ISDEFE

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Description of the work performed in the project:

Work package number	1	**Start date or starting event:**	1
Work package title	Project Management		
Activity type	MGT		
WP Coordinator	INTA		

Objectives:

This work package served to ensure effective project management and coordination over the entire project duration. This includes, amongst others, the development of a monitoring and communication strategy and to develop the plan for using and disseminating the knowledge.

Work package number	2		**Start date or starting event:**			1	
Work package title	Prospecting LA Countries capabilities in aeronautics research						
Activity type	SUPP						
Participant acronym	INTA	ISDE	UPM	AIR	EMB	MIN	CON
WP Coordinator	EMBRAER						

Objectives:

This work package was dedicated to identify actors and analyse the aeronautics field in LA – specifically in Brazil Argentina and Mexico. For achieving this purpose, a mapping was performed to identify the actors involved as well as the existing research programmes and projects in the field of aeronautics research. The compilation of the information was carried out at country level.

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Work package number	3	Start date or starting event:	3
Work package title	Gaps and problems limiting the participation of LA countries in European Aeronautics Research		
Activity type	SUPP		
Participant acronym	INTA, ISDE, UPM, MIN, EMB, CON, ILOT		
WP Coordinator	UPM		

Objectives:
This workpackage aimed to find and analyse the main barriers/difficulties leading to a low participation of LA stakeholders in the Framework Programme. One of the main outcomes of this WP has been the elaboration of a guide of recommendations to overcome these issues and facilitate the participation in the programme

Work package number	4	Start date or starting event:	7
Work package title	Identification of potential projects and preferred cooperation areas		
Activity type	SUPP		
Participant acronym	INTA, ISDE, UPM, AIR, EMB, SKY, ILOT		
WP Coordinator	INTA		

Objectives:
This WP had as objective to identify synergies between the LA countries R&DT capabilities and the needs of the European aeronautics research programme. The goal is to strengthen bi-regional dialogue on Aeronautics between EU Member States and Argentina, Brazil and Mexico, in order to achieve collaborative projects in the Aeronautics R&D area. Implementation roadmaps to establish a basis for cooperation in the short and medium-terms was proposed in this workpackage.

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Work package number	5		Start date or starting event:		8				
Work package title	Promotion of FP7 Aeronautics Research Programme in LA countries								
Activity type	SUPP								
Participant acronym	INTA	CON	UPM	AIR	EMB	SKY	MIN		
WP Coordinator	CONACYT								

Objectives:

The aim of this WP has been to support and stimulate the participation of LA Countries in FP7 and to check in situ some of the results of previous workpackages:, support from authorities, results from questionnaires, products offered, etc.. For this, 3 workshops were held in LA (Brazil, Buenos Aires and Querétaro), and a final event in Europe. This last workshop was aiming to aware European stakeholders about the capabilities found in Latin America, and the interest of the authorities to formally establish bilateral cooperation with Europe.

Work package number	6			Start date or starting event:			1		
Work package title	Dissemination activities and information campaign of CoopAIR								
Activity type	SUPP								
Participant acronym	INTA	ISDE	UPM	AIR	EMB	SKY	ILOT	MIN	CON
WP Coordinator	ISDEFE								

Objectives:

Two objectives were the aim of this work package:
1. To build up an information platform and to use other dissemination methods to inform LA aeronautics actors about what CoopAIR offers for enhancing their participation in European aeronautics research.
2. To inform European entities about the objectives of CoopAIR project.

This work package lasted all the lifetime of the project and include the detailed development and fulfilling of the exploitation and dissemination strategy. The dissemination of the CoopAIR results were performed via the design of a multilingual project flyer and posters and via CoopAIR's communication platform. The partners' websites include information about CoopAIR objectives

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List of deliverables of the project:

Del. No.	Deliverable name	WP No.	Nature	Dissemination level	Delivery date
D1.1	Short term report	1	R	CO	6th month
D1.2	Final activity report	1	R	PU	18th month
D1.3	Final management report	1	R	CO	18th month
D1.4	Final plan for using and disseminating knowledge	1	R	PU	18th month
D2.1	Report of actors involved, analysis on the industries and market	2	R	CO	3rd month
D2.2	Review of programmes and relevant projects	2	R	PU	4th month
D3.1	Update of the Database of actors involved and research areas	3	R	PU	6th month
D3.2	Report on the main problems/ barriers and possible solutions	3	R	PU	6th month
D4.1	Report on synergies and mutual interest topics	4	R	PU	11th month
D5.1	Report on the sessions (questionnaire included)	5	R	PU	18th month
D6.1	Project Flyers and Poster	6	R	PU	2nd month
D6.2	Project Website	6	R	PU	3rd month

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1.4 OUTCOME

CoopAIR main outcome can be classified in three assets:

I. DATABASE OF STAKEHOLDERS IN ARGENTINA, BRAZIL AND MEXICO

To find potential partners and to identify who makes what in Argentina, Brazil and Mexico. More than 300 stakeholders identified in the complete Database (available in the website www.coopair-la.eu). Three short lists of win-win partners (10-20 per country) were developed at the end of the project.

SHORT LIST MAIN R&DT STAKEHOLDERS IN ARGENTINA

	Organization	Website	Key contact	Research themes
1	BAaer	http://baaer.com.ar/	Adolfo Bikkesbakker E-mail:baaer@ing.unlp.edu.ar Tel: +54 (0221)156191087	* Materials and Structures * Propulsion
2	Cicare	http://www.cicare.com.ar/	Fernando Cicaré E-mail: fernando@cicare.com.ar Tel.: +54 2344 454548	* Aircraft and Systems Integration * Aerodynamics * Materials and structures * Flight Dynamics and Systems * Systems Engineering and Supply Chain [***aplied to helicopters****]
3	Instituto Nacional de Tecnología Industrial - INTI	http://www.inti.gob.ar/	Dr. Ing. Raul Mingo E-mail: raul@inti.gob.ar Tel.: +54 11 4724-6200 ext. 6698 - 6623	* Aerodynamics * Materials and Structures * Systems Engineering and Supply Chain
4	Instituto Universitario Aeronáutico - IUA	http://www.iua.edu.ar	Mario DErrico E-mail: mderrico@iua.edu.ar Tel.: +54-351-4435047 Cecilia Buthet E-mail: cbuthet@iua.edu.ar Alejo de Saá E-mail: adesaa@iua.edu.ar Tel.: +54 0351 4435037 - 4435000 - int. 34152	* Aircraft and Systems Integration (Hypersonic Aircraft; Unmanned Aircraft) * Aerodynamics (Wind Tunel and Flight Testing) * Flight Dynamics and Control * Materials and Structures * Propulsion
5	Lavia S.A.	http://www.laviasa.com.ar/	Mauricio Arboit (Engineer) E-mail: ingenieria@laviasa.com.ar Tel.: +54 261 4484223	* Aircraft and Systems Integration * Materials and Structures

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	Organization	Website	Key contact	Research themes
6	Fábrica Argentina de Aviones (FAdeA)	http://www.lmaasa.com	Maria Jose Alamo E-mail: alamo@lmaasa.com Tel.:+ 54-351-4668703	* Aircraft and Systems Integration * Aerodynamics * Materials and Structures * Propulsion * Flight Dynamics and Control * Systems, Subsystems and Equipments * Systems Engineering and Supply Chain * Air Transport System Efficiency * Safety and Security
7	Nostromo Defensa S.A.	http://www.nostromo-defensa.com	Martin Backhaus E-mail:mbackhaus@nostromo-defensa.com Tel.: +54 (3547) 432200 +54 9 (351) 6 820 133	*Aircraft and Systems Integration * Aerodynamics * Materials and Structures *Propulsion * Flight Dynamics and Control
8	Prodismo SRL	http://www.prodismo.com	Maria Pedrosa E-mail: mpedrosa@prodismo.com Tel.: +54 351 499 5924	* Aircraft and Systems Integration * Materials and Structures * Systems Engineering and Supply Chain
9	Redimec S.R.L	http://www.redimec.com.ar	Fabian D. Oyarbide E-mail: redimec@redimec.com.ar Tel.: +54 2293 442280	* Aircraft and Systems Integration * Systems, Subsystems and Equipments (Avionics Systems; Information System Technology) * Air Transport System Efficiency (Aircraft Operation and Maintenance) * Systems Engineering and Supply Chain
10	Siper Aviación Argentina S.A. / Texlond Corp. S.A.	http://www.siperaviacion.com.ar	Raul Santiago Siri E-maio: raulsiri@siperaviacion.com.ar Tel: +54 11 4746 7600	* Aircraft and Systems Integration * Materials and Structures * Systems, Subsystems and Equipments * Systems Engineering and Supply Chain
11	Universidad Nacional de Córdona - UNCOR	www.efn.uncor.edu	Jorge Osvaldo García, jgarcia@efn.uncor.edu, 0054-351-155990271	* Safety and Security * Aerodynamics * Air Transport System Efficiency
12	Universidad Nacional de Córdona - UNCOR	www.efn.uncor.edu	Eng. Eduardo Zapico, ezapico@efn.uncor.edu	*Aerodynamics * Propulsion and noise/vibration *Flight Dynamics and Control

	Organization	Website	Key contact	Research themes
13	Universidad Nacional de La Plata	http://www.ing.unlp.edu.ar/aeron/	Alejandro Javier Patanella (Director) E-mail: sec-aero@ing.unlp.edu.ar Tel.: +54 (221) 4236677 int 143/144 Alejandro Di Bernardi E-mail: cadibern@ing.unlp.edu.ar Tel.: +54-221-4236679 int 147 Alejandro J. Pesarini (Professor) E-mail: giai@ing.unlp.edu.a	* Propulsion * Air Transport System Efficiency (Airport capacity) * Safety and Security (Airport security) * Aerodynamics (Wind Tunel and Flight Testing) * Aircraft and Systems Integration * Systems, Subsysytems and Equipments (Avionic systems) * Materia
14	Volartec	http://www.volartec.aero	Fernando Roché E-mail: fRoche@volartec.aero Tel.: +54 9 3513044 446	* Aircraft and Systems Integration * Systems Engineering and Supply Chain * Safety and Security
15	Universidad Nacional de Litoral - Santa Fe	http://www.intec.unl.edu.ar/	Alberto Cardona (Proffesor) E-mail: acardona@intec.unl.edu.ar Tel.: Tel:+54 342 4511594/95	* Systems and Engineering and Supply Chain (Design&Development) * Materials and Structures
16	Universidad Nacional de Río Cuarto	http://gea.ing.unrc.edu.ar/	Guillermo Óscar García (Proffesor) E-mail: g.garcia@ieee.org	* Systems, Subsystems and Equipments (Power Optimised Aircraft Systems)

Extended database of stakeholders in www.coopair-la.eu

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SHORT LIST MAIN R&DT STAKEHOLDERS IN BRAZIL

	Organization	Website	Key contact	Research themes
1	ACS-Advanced Composites Solutiones	http://www.acs-solutions.com.br	Contact: Leandro Guimarães Maia (Vice-President) Phone: 55 12 4009 9537 E-mail:leandro.maia@acs-solutions.com.br	* Materials and Structures (Composite materials and structures) * Aircraft and Systems Integration (General aviation aircraft) * Systems Engineering and Supply Chain (CAD) * Aerodynamics * Flight dynamics and Control (Flight testing and simulation) * Challenge of the environment
2	Aerolane	http://www.lanedesign.com.br/	Contact: Lauro Ney Batista Phone: 55 12 3931 9156 Fax: 55 12 3206 6687 E-mail: lauroney@lanedesign.com.br	* design, development and fabrication of new products for the aerospace, defense and automotive industry * technical services, from product conception to the fabrication of parts, subassemblies or complete assembly
3	ATECH - Fundação Aplicações de Tecnologias Críticas	http://www2.atech.br	Contact: Delfim Ossamu Miyamaru Phone: 55 11 3040 7300 E-mail: delfim@atech.br E-mail: atech@atech.br	* Air Transport System Efficiency (ATM)
4	Avionics Services	http://www.avionics.com.br	Contact: Joao Batista Vernini – Director Phone.: +55 11 5031 2801 E-mail: vernini@avionics.com.br	* Systems Engineering and Supply Chain (Avionic Systems)
5	CENIPA - Centro de Investigaçao e Prevençao de Accidentes Aeronáuticos	http://www.cenipa.aer.mil.br	Contact: Jorge Kersul Filho Director Phone: 55 61 3364 8800 / 3365 1829 E-mail: chefia@cenipa.aer.mil.br	* Safety and Security (Accident and prevention)

	Organization	Website	Key contact	Research themes
6	Compsis	http://www.compsisnet.com.br	Phone: 55 12 2139 3966	* Systems Engineering and Supply Chain (Information System Technology; Advanced Information Technology)
7	Elimco Brazil	http://www.elimco.com	E-mail: aeronautics@elimco.com Tel.: +55 12 32028471	* Systems, Subsystems and Equipments (Avionic Systems) * Systems Engineering and Supply Chain (Integrated Product/Process Development) * Flight Dynamics and Control (Flight Testing and Simulation)
8	Embraer - Empresa Brasileira de Aeronáutica S.A.	www.embraer.com	Contact: Luciano Pedrote R&D Manager Phone: 55 12 3927 2269 E-mail: lpedrote@embraer.com.br	* Embedded systems; * Materials; structures and productive processes; * Energy efficiency and savings; * Alternative fuels; * Modelling & Simulation; * Systems integration, interconnectivity and interoperability.
9	EMBRASIM – Empresa Brasileira de Simuladores Ltda	http://www.embrasim.com.br	Contact: João Evangelos Zacharakis Administrative Director Phone: 55 84 3236 33 40	* Flight dynamics and Control (Flight testing and simulation) * Aerodynamics (Experimental Facilities and Techniques)
10	Equipaer Indústria Aeronáutica	http://www.equipaer.com	E-mail: equipaer@equipaer.com Tel.: +55 11 5034 6388	* Systems, Subsystems and Equipments (Avionic Systems) * Systems Engineering and Supply Chain (Manufacturing) * Aircraft and Systems Integration (Military Aircraft and Missiles)
11	Fibraforte	www.fibraforte.com.br	Contact: Jadir Nogueira Gonçalves Director Phone: 55 12 3937 14 16 E-mail: fibraforte@fibraforte.com.br	* Structural Engineering (Design and analysis) * Materials and Structures * Non destructive inspection system for composites
12	Helibras	http://www.helibras.com.br	Contact: Patricia Lima E-mail: patricia.lima@helibras.com.br Tel.: 55 11 6990 3708	* Aircraft and Systems Integration (Helicopters; Military and Civil Aircrafts) * Flight Dynamics and Control (Flight Testing and Simulation)

	Organization	Website	Key contact	Research themes
13	IACIT	http://www.iacit.com.br	Contact: Luiz Carlos Paiva Teixeira Phone: 55 12 3797 7754	* Air Transport System Efficiency (Flight Management) * Systems Engineering and Supply Chain (Information System Technology-Navigation Systems) * Safety and security (Airport security)
14	INPE - Instituto Nacional de Pesquisas Espaciais	http://www.lac.inpe.br	Contact: José Demísio Simões da Silva (Chief) E-mail: demisio@lac.inpe.br Phone: 55 12 3945 6543	* Air Transport System Efficiency (Flight management) * Safety and Security (Accident prevention)
15	ITA - Instituto Tecnológico de Aeronáutica	http://www.ita.br	Contact: Reginaldo dos Santos Director Phone: 55 12 3947 5730 E-mail: gabinete@ita.br	* Aircraft and Systems Integration * Aerodynamics * Materials and structures * Propulsion * Systems, Subsystems and Equipments * Systems Engineering and Supply Chain * Challenge of the Environment
16	Mectron	http://www.mectron.com.br	Contact: Azhaury da Cunha Filho Director Phone: 55 12 2139 3510 E-mail: azhaury@mectron.com.br	* Systems Engineering and Supply Chain (Electrical systems) * Aircraft and Systems Integration (Military Aircraft and Missiles)
17	Solutions Design & Engineering	http://www.solutionsdesign.com.br	Contact: Dirley Giacomini Director E-mail: dirley@solutionsdesign.com.br	* Systems, Subsystems and Equipments (Avionics Systems)
18	Universidade de Brasília - UnB	http://www.cic.unb.br/ http://www.unb.br/	Contact: Célia Ghedini Ralha Phone: 55 61 3307 2703 E-mail: ghedini@cic.unb.br Weigang Li E-mail: weigang@cic.unb.br	* Air transport System Efficiency (Flight Management) * Systems Engineering and Supply Chain (Advanced Information Technology)
19	Universidade do Vale do Paraiba - UniVap	http://www.ipd.univap.br/	Contact: Ana María do Espírito Santo E-mail: ipd@univap.br Phone: 55 12 3947 1120	* Materials and Structures * Systems, Subsystems and Equipments (Avionic Systems)
20	Universidade Federal de Sao Carlos	http://www2.ufscar.br	Contact: Claudemiro Bolfarini E-mail: cbolfa@power.ufscar.br	* Materials and Structures (Fatigue and Damage Tolerance)

	Organization	Website	Key contact	Research themes
21	Universidade Federal de Minas Gerais	http://www.demec.ufmg.br/Cea/	Contact: Carlos Alberto Cimini Jr (Professor) E-mail: cimini@ufmg.br	* Aircrafts and Systems Integration (Unmanned Air Vehicles * Systems, Subsystems and Equipments (Avionics Systems) * Aerodynamics (Subsonic) * Flight dynamics and Control (Flight testing and simulation)
22	Universidade Federal de Uberlandia	http://www.mecanica.ufu.br/	Contact: Valder Steffen Jr (Proffesor) Phone: 55 34 3239 4030	* Aircraft and Systems Integration (Multidisciplinary Optimization)
23	Universidade Federal do Rio de Janeiro - UFRJ	http://www.coppe.ufrj.br	Contact: Enrique Mariano Castrodeza (Proffesor) E-mail: castrode@metalmat.ufrj.edu.br Elton Fernandes E-mail: elton@pep.ufrj.br	* Materials and Structures (Composite Materials and Strcutures; Damage Tolerance) * Air Transport System Efficiency (Airport capacity)
24	Universidade Federal Do Rio Grande do Sul - UFRGS	http://www.mat.ufrgs.br/	Contact: Álvaro Luiz de Bortoli (Proffesor) Phone: 55 51 3308 7087 E-mail: dbortoli@mat.ufrgs.br	* Aerodynamics (Computational Fluid Dynamics)

Extended database of stakeholders in www.coopair-la.eu

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SHORT LIST MAIN R&DT STAKEHOLDERS IN MEXICO

	Organization	Website	Key contact	Research themes
1	CIDESI-Centre for Engineering and Industrial Development	www.cidesi.com	Dr. Guillermo Rodríguez Vilomara, Research and Posgraduate Studies Director, Dr. Carlos Rubio, Chargue: Applied Research Manager E-mail: crubio@cidesi.mx. Tel. +52 01 (442) 211 9800 Ext. 1264	Mechanical behaviour of composite materials Analysis and diagnosis of mechanical vibrations in structures Numerical simulation Digital Image analysis
2	CIATEQ - Centre for Advanced Technology	www.ciateq.mx	Ing. Miguel Angel Alcántara Chargue: E-Mail: alcantar@ciateq.mx. Tel. +52 01(442)19615 00 Ext. 4145 Asistente: Clara Juárez Ext. 4146	Development of coatings by plasma and HVOF for deposition of thermal barriers in high temperature alloys Development of sensors for remote monitoring Biofuels Analysis and development of techniques for fabrication of light honeycombe structures and low residual stress composite materials Virtual manufacture Design and development of high precision and high speed actuators
3	CINVESTAV - Centre for Research and Advanced Studies of the National Politechnic Institute	www.cinvestav.mx/	Gerardo Trapaga, Charge: Director, Email: trapaga@qro.cinvestav.mx, Tel. +52 01 (442) 211 9925	Coatings of thermal barriers of multilayer ceramic materials Development of monocrystals of Ni and Co based superalloys Develpment and characterization of composite materials
4	GE-CIAT - General Electric - Centre for Advanced Engineering in Turbomachinery, S. de R. L. de C. V.	www.ciat.com.mx	Ing. Julio Castellanos Chargue: Configuration Engineer E-mail: julio.castellanos@ae.ge.com. Tel. +52 01(442) 296 2442	Composite structures and failure analysis Heat transfer and fracture mechanics Mechanical vibrations Composite Materials Fault isolation and causality analysis Light materials Advanced Engineering materials (superalloys) Wireless control systems
5	ITR - Industry of Turborreactors, S. A de C. V.	www.itrmexico.com.mx	Ing. Francisco LaFuente, Research and Development Director E-mail: flafuente@itrmexico.com.mx. Tel. +52 01 (442) 296 3918	Development of low pressure turbines (less than 15,000 psi) Design and development of special turbine parts Design and development of near net shape turbine components Development of turbine radial structures Design and development of compressor static parts Design and instrumentation of motors Full motor testing Repair engineering

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	Organization	Website	Key contact	Research themes
6	UNAM - National Autonomous University of Mexico- Engineering Institute	www.iingen.unam.mx	Dr. Adalberto Noyola Robles, Chargue: Director E-mail: anoyolar@iingen.unam.mx, Tel.: +52 01(55) 5623 36 01	Airfreight logistic Centres; infrastructure innovation, operations benchmarking analysis and best practices for airfreight logistics processes
7	ITESM-Technology Institute of Monterrey	www.itesm.edu	Dr. Eduardo Gónzalez Mendivil Chargue: Project Leader E-mail: egm@itesm.mx, Tel. +52 01 (81) 8328 4000 Ext. 5105	Structure analysis and reconfigurable structures Autonomous flight in non manned vehicles High speed machining Major maintenance time reduction Airline maintenance process improvement Structure analysis and non destructive testing Training systems for airplane maintenance using increased reality
8	CICATA. Applied Research and Advanced Technology Research Centre at Queretaro	www.cicatagro.ipn.mx/wps	Ing. Juan Bautista Hurtado Chargue: Technology Innovation Director E-mail: jbautistah@ipn.mx Tel. +52 01(442) 229 0804	Development of composite materials Use of vision and optic technologies as Non destructive inspection techniques Plasma surface treatment to enhance materials properties
9	CENAM. National Metrology Centre	www.cenam.mx	Dr. Salvador Echeverría, Chargue: Physics Metrology Director E-mail:saleche@cenam.mx Asistente: Rosa del Arenal Tel. +52 01 (442) 211 0500 Ext. 3347	Solution and metal analysis and microstructural analysis Hardness analysis Acoustic materials characterization Techniques for characterizing the morphology of airborne nanoparticles Particle and nanoparticle size characterization Clays nanoparticles for composites Characterization of nanomaterials SW, MW carbon nanotubes New or alternative techniques Ultrasonic non-destructive evaluations and testings Solution and metal analysis and microstructural analysis Evaluation of aircraft noise around airports Development, improvement and evaluation of fuel measurement systems Noise analisys and characterization of acoustic materials and acoustics absortion. Evaluation of color and Modal analysis of structures and dynamic characterization. Structural health monitoring of composite materials using silicon strain gages
10	UAQ - Autonomous University of Queretaro	www.uaq.mx	Dr. Gilberto Herrera Ruiz, Charge: Faculty of Engineering Director, Autonomous University of Queretaro. E-Mail: gherrera@uaq.mx, Tel: +52 01 (442) 192 1200, Ext. 6016,	Non destructive testing inspection by vision systems Structures vibration analysis Robotics control systems

	Organization	Website	Key contact	Research themes
11	CIDETEQ - Centre for Research and Technology Development in Electrochemestry, S.C.	www.cideteq.mx	Dr. Yunny Meas Vong Chargue: Technical Director. E-mail: yunnymeas@cideteq.mx Tel. +52 01 (442)211 6000 Ext. 6070	Light materials/ Evaluation of composite materials Functional coatings Bio-fuels Anti-Icing Soil and water treatment/raw materials recovery Control systems Light fuel cells Electrochemical sensors for pollutant detection
12	CIMAV - Centre for Research in Advanced Materials	www.cimav.edu.mx	Dr. Alfredo Márquez-Lucero, Chargue: Senior Researcher. E-mail: alfredo.marquez@cimav.edu.mx. Tel. +52 01 (614) 439 1100 Ext. 1194	Fiber and glass reinforcerd polymeric composites Turbine blades manufacture Corrosion control of aeroparts Development of reinforced aluminum alloys

	Other aeronautics companies in Mexico			
	Organization	Website	Contact	Location
13	Bombardier Aerospace México, S. A. de C. V. (BAM)	http://www.bombardier.com	Sr. Real Gervais, Charge: Gerente de Planta. Mail: real.gervais@aero.bombardier.com. Tel. +52 01(442) 192 59 00	Ofic: Retorno El Marqués No. 4 F Parque Industrial El Marqués, Planta: Aeropuerto Internacional de Querétaro Carretera Querétaro -Tequisquiapan Km. 22.5, 76246
14	Eurocopter de México, S. A. de C. V. (EMSA)	www.eurocopter.com.mx	Sr. Laurent Bellais, Charge: Director Técnico y de Operaciones, Mail: laurent.bellais@eurocopter.com.mx, Tel:(55) 5716 75 55 01(55) 5716 75 45 01	Hangar 1, Zona "G" de Hangares AICM, Col. Aeropuerto, 15620 México, Distrito Federal
15	Honeywell Aerospace de México S. A. de C. V. (Planta de Ingenieria de Pruebas Laboratorio)	http://www51.honeywell.com	Oscar Zambrano. Charge: Sourcing project leader. Mail: oscar.zambrano@honeywell.com Tel.: +52 01(686) 580 53 85	Circuito Aeroespacial No. 12, Parque Industrial El Vigía II, 21395 Mexicali, Baja California
16	Honeywell Aerospace de México, S. A. de C. V.	http://www51.honeywell.com	Sr. Oswaldo Gutiérrez, Charge: Gerente General. oswaldo.gutierrez@honeywell.com; Tel.: +52 01(81) 8124 45 01	Blvd. Antonio L. Rodríguez No. 3058, Plaza Delphi Suite 501, Col. Rincón de Santa María, 64650 Monterrey, Nuevo Leon.
17	Meggit Aircraft Breaking Systems	http://www.meggitt-mabs.com	Héctor G. Navarro R. , Charge: Gerente de Calidad, Mail: hector.navarro@meggit.com. Tel.: +52 01 (442) 153 3600	Av. del Conde 4B Parque Industrial el Marques - CP 76243. Querétaro, Querétaro
18	Messier Services Americas (Grupo Safran)	www.messierservices.com	Srita. Blanca Fernández, Mail: yazmin.verdi@merssierservices.com. Tel.: +52 01(442) 265 66 77;	Av. De la Noria No. 131, carretera Querétaro San Luis Potosí Km. 28.5, Parque Industrial, 76220 Santa Rosa de Jauregui, Querétaro, Qro.
19	Monterrey Aerospace México, S. de R. L. de C. V. (MD Helicopters)	www.mdhelicopters.com	Sr. Víctor Buenrostro E., Gerente de Operaciones, victor@mtyjet.com +52 01(81) 2881 33 42	Vía Monterrey - Matamoros No. 604, Parque Industrial Milenium 2a. Etapa, 66600, Apodaca, N.L.
20	Snecma America Engine Services, S. A. de C. V. (SAMES)	www.snecma.com	Stéphane Vitrac, Charge: Project Manager. Mail: sthepane.vitrac@snecma.fr.Tel.: +52 01(442) 296 39 41	Acceso IV No. 3, Zona Industrial Benito Juárez, 76120, Querétaro, Qro.
21	Aernnova México, S. A. de C. V.	www.aernnova.com	Sr. F. Javier Pérez Alcaide,Charge: Director General y Gerente de Planta Mail: javier.perez@aernnova.com Tel.: +52 01(442) 2272850	Benito Juárez No. 109, Contienental, C.P. 76220, Querétaro, Querétaro.

Extended database of stakeholders in www.coopair-la.eu

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II. GUIDE OF RECOMMENDATIONS TO LATIN AMERICAN STAKEHOLDERS

To prepare them to participate in Framework Programme. The barriers were identified by two different ways: questionnaires and personal interviews during the Latin American workshops. The barriers were classified in four:

- Internal barriers (depending on the entity)
- Financial barriers
- Educational barriers
- Specific barriers for the participation in the FP7

The information about weak and strong points identified in each country has been used to the elaboration of the implementation roadmap, influencing in the calendar and the funding schemes of the proposed cooperation projects (next outcome).

The following tables show each type of barrier and the qualification given by researchers of each country, in an attempt to provide a degree of importance to each barrier.

In this sense, the barrier 'Low interest of the entities in Aeronautics R&D technologies' would be more important in terms of 'severity' than the barrier 'Lack of specific public R&D technology policies for the Aeronautics sector'.

S=Severe
M=Moderate

	BARRIERS	ARGENTINA	BRASIL	MEXICO
Internal	Low interest of the entities in Aeronautics R&D technologies	S	M	S
	Lack of specific public R&D technology policies for the Aeronautics sector	M	S	M
	Collaboration between private and public sector	-	S	M
	Knowledge sharing with other entities	-	M	S
	Lack of staff	-	M	M

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	BARRIERS	ARGENTINA	BRASIL	MEXICO
Financial	Lack of knowledge of the European financial opportunities in Aeronautics R&D technologies	S	S	S
	Insufficient specific public funds /procurements for Aeronautics R&D technologies	S	S	S
	Participating in R&D is a risk investment for the entities	M	M	M
	Lack of knowledge of the European financial opportunities in Aeronautics R&D technologies	-	M	M
	Insufficient entities' own funds devoted to Aeronautics R&D technologies	-	S	-
	Tax and custom policies	-	S	-

	BARRIERS	ARGENTINA	BRASIL	MEXICO
Educational	Lacking of high-specialized trainers	S	M	S
	Lack of adjustment of the university programs to the industry needs	M	M	S
	Brain drain of aeronautical professionals to Europe and USA	S	-	S
	Insufficient number of postgraduate and PhD students in Aeronautics	S	-	S

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	BARRIERS	ARGENTINA	BRASIL	MEXICO
To participate in FP7	Lack of knowledge of the FP7 opportunities for Latin American countries	S	S	S
	Ignorance about FP7's participation rules and procedures	S	S	S
	Lack of knowledge of the existing support services for researchers	M	M	M
	High level of competition	M	M	M
	Researchers see FP7 as a distant objective	-	S	M
	Adaptation of own research activities to the FP7 requirements	-	M	M
	Problems with European partners in previous experiences	-	M	-

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III. TECHNOLOGICAL AREAS FOR COOPERATION WITH ARGENTINA, BRAZIL AND MEXICO, AND AN IMPLEMENTATION ROADMAP TO ESTABLISH THE BASE FOR SHORT/MID-TERM COOPERATION

This is the main outcome of the project. Taking into account all the results obtained during the completion of the past workpackages, the preferred cooperation areas for the industry of Latin America and the EU were identified, as well as the proposal of a way to establish a base for actual collaboration (including budget sharing).

Proposal for topics in next calls for Argentina, Brazil and Mexico

Funding Scheme	Implementation call	Technical Area	Strength	Weakness	Projects
Standard topic	2012-13	All	▪ Quickest way to fund the identified cooperation topics	▪ Only budget from EC ▪ Participation of ICPC countries not guaranteed	Level 1
SICA	2012-13	All	▪ Quickest way to fund the identified cooperation topics ▪ Participation of ICPC countries guaranteed	▪ Only budget from EC	Level 1: minimun 3 topics (1 per country)

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Argentina

ARGENTINA – Coordinated call – 2014-2015			
Technical Area	**Strength**	**Weakness**	**Projects**
Aerodynamics Avionics Aerostructures	▪ Traditional understanding between Argentinean University and European partners (FP included). ▪ Very high interest from academia and industry to participate in FP7. ▪ Very high knowledge about European culture and proceedings. ▪ Budget coming both from EC and Argentina	▪ Low support from authorities. ▪ Not previous experience in Coordinated calls within FP7	Level 1: 2 topics (up to 1.5 M€ EC contribution per topic)

Brazil

BRAZIL – Coordinated call – 2012-2013			
Technical Area	**Strength**	**Weakness**	**Projects**
Biofuels Aerodynamics Avionics Materials and structures Noise and Vibration ATM	▪ Experience in coordinated calls within FP7 (FP7-ENERGY-2009-BRAZIL). ▪ Strong involvement of some key companies and Universities in R&D relations with Europe. ▪ High support from authorities. ▪ Budget coming both from EC and Brazil	▪ Low knowledge about European Framework Programme proceedings. Seemingly lack of interest. ▪ Mostly non experience in cooperation with Europe. ▪ Low impact of the FP7-ENERGY-2009-BRAZIL coordinated call among Brazilian stakeholders.	Level 1: 5 topics (up to 1.5 M€ EC contribution per topic)

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BRAZIL – Joint call - 2013			
Biofuels	▪ Experience in specific calls EU-Brazil for biofuels within FP7 (FP7-ENERGY-2009-BRAZIL). ▪ Specific topic about biofuels and aviation demanded by European stakeholders.	▪ Low impact of the FP7-ENERGY-2009-BRAZIL coordinated call among Brazilian stakeholders. ▪ Only budget from EC.	Level 1

Mexico

MEXICO – Coordinated call – 2012-2013			
Technical Area	**Strength**	**Weakness**	**Projects**
Advanced materials Aerostructures Avionics Propulsion	▪ Experience in coordinated calls within FP7 (FP7-NMP-2010-EU-MEXICO). ▪ High impact of the FP7-NMP-2010-EU-MEXICO among Mexican stakeholders. ▪ Very high support from authorities: strong interest in launching a coordinated call in Aeronautics. Mexican budget seemingly ready. ▪ Very high interest from academia and industry to participate in FP7. ▪ Budget coming both from EC and Mexico.	▪ Lack of knowledge among European stakeholders about the aeronautics R&D capabilities in Mexico. ▪ Not previous successful attempts of Mexican stakeholders to participate in FP7.	Level 1: 4 topics (up to 1.5 M€ EC contribution per topic)

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Apart of what Framework Programmes offer, bilateral agreements could lead to specific research cooperation taking into account different situations in each of the countries under consideration. This point resulting from the study is summarised as follows:

Bilateral Aeronautics Research Programmes					
Argentina	??	Flight dynamics and control Avionics Aerostructures	▪ High capability at engineer level. ▪ Budget coming both from EC and Argentina.	▪ Low support from authorities. ▪ Low state of maturity of the initial dialogue to lunch a bilateral programme.	Level 1
Brazil	2016 (after the outcome of the topics proposed by CoopAIR)	Biofuels Flight dynamics and control Avionics Materials and structures Noise and Vibration ATM	▪ Experience launching technological cooperation programmes with the EU: 'Diálogos Sectoriais Brasil-UE'. ▪ High support from authorities. ▪ Budget coming both from EC and Brazil.	▪ Mostly non experience in cooperation with Europe. ▪ Low impact of the aeronautics 'Diálogo Sectorial'	Level 1
Mexico	2016 (after the outcome of the topics proposed by CoopAIR)	Advanced materials Aerostructures Avionics Propulsion	▪ Experience in specific bilateral R&DT programmes with the EU: FONCICYT (DG RELEX – CONACYT) ▪ Very high support from authorities. ▪ Budget coming both from EC and Mexico.	▪ Not positive impact of the Aeronautics proposals within FONCICYT: no projects were funded.	Level 1

1.5 METHODOLOGY

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The methodology followed to reach the three results of the project is the basis and strong point of CoopAIR. All the project is held on it.

I. DATABASE OF STAKEHOLDERS IN ARGENTINA, BRAZIL AND MEXICO

The identification of key stakeholders for the elaboration of the database has been reached using own methodologies existing in the Technology Watch units of the responsible of this WorkPackage (Figure 1). It has been based on the use of tools for knowledge management, i.e., specialized databases to identify technical references, existing patents and projects and thus get the companies and technicians involved in those activities.

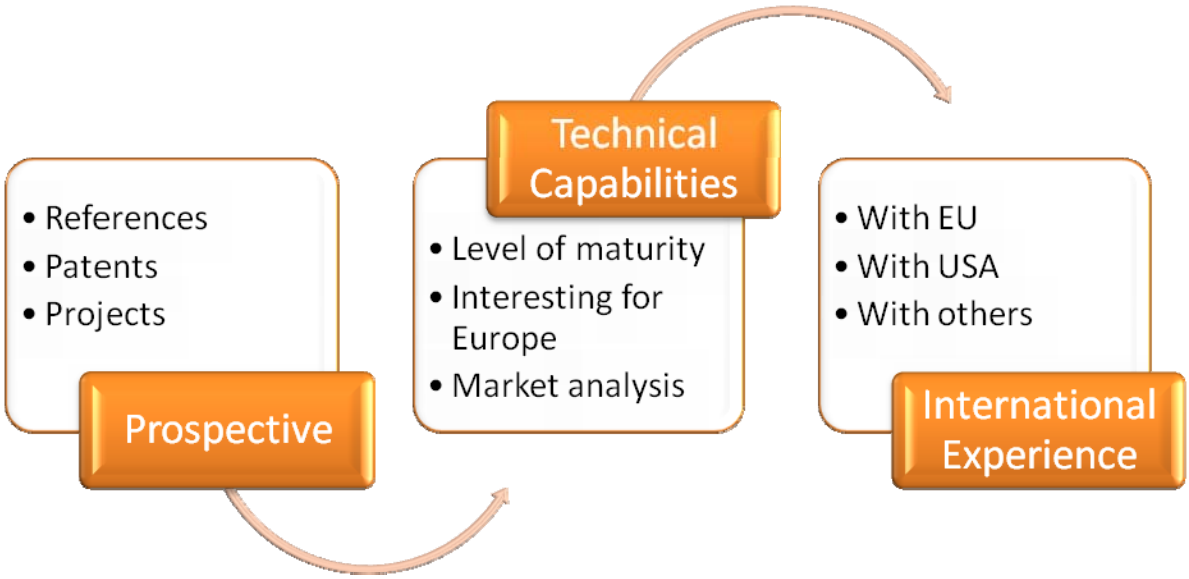

Figure 1

Once identified the actors, the industrial partners of the CoopAIR consortium analyzed the level of maturity of the technical capabilities and the actual interest for them. It was also studied the international cooperation experience of the LA

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stakeholders.All the available data was analyzed and a list of win-win partners was developed per country (see short list in outcome 1).

II. GUIDE OF RECOMMENDATIONS TO LATIN AMERICAN STAKEHOLDERS

The guide of recommendations is the result of the analysis of the barriers identified during the several activities performed during the CoopAIR project. This analysis has served not only to elaborate the guide of recommendations, but also to better understand and foreseen how to prepare a cooperation link between LA and the EU.

The information has been gathered mainly from the questionnaires (internet based and conference calls) and from the ad-hoc workshops.

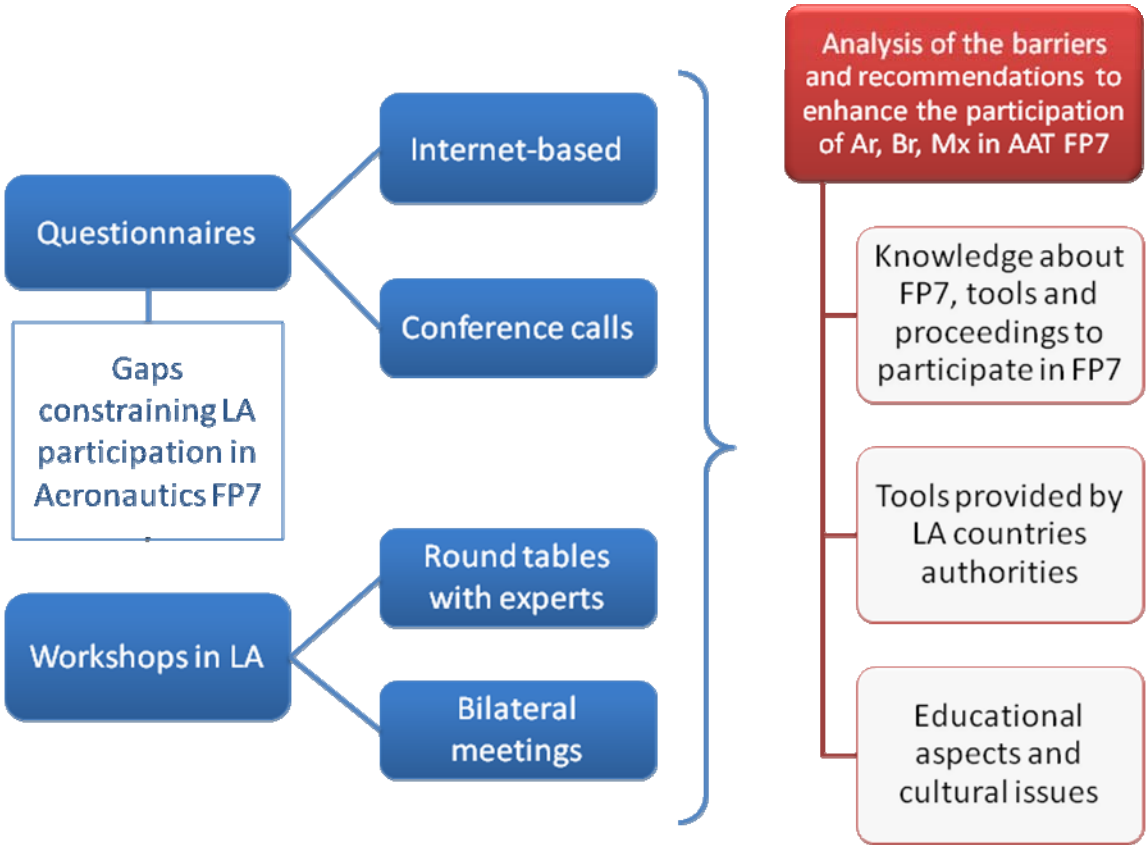

Figure 2

Once all the inputs were collected and the gaps were identified, the analysis began and some recommendations were proposed in order to solve these three points:

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- Lack of knowledge about FP7, tools and proceedings
- Lack of knowledge about available Latin American tools to foster the participation in FP7
- Lack of aware of the opportunity of cooperation in EU for LA stakeholders

III. TECHNOLOGICAL AREAS FOR COOPERATION WITH ARGENTINA, BRAZIL AND MEXICO, AND AN IMPLEMENTATION ROADMAP TO ESTABLISH THE BASE FOR SHORT/MID-TERM COOPERATION

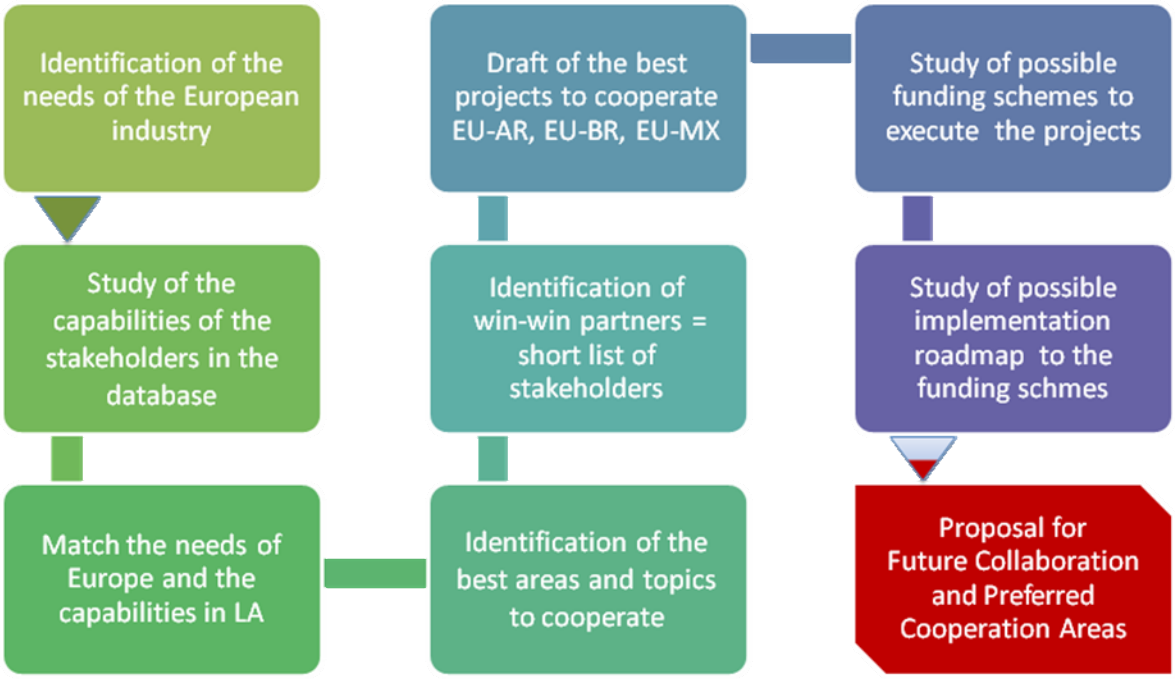

Figure 3

The methodology (Figure 3) to reach the results of this deliverable involves all the previous work performed in the project, including the analysis of the workshops celebrated in Latin America

1. Identification of the needs of the European industry:

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It already exists vast documentation about the needs and priorities of the European Aeronautical industry. The priorities identified by CoopAIR were based mainly in the different Work Programmes of the FP7 Transport (incl. Aeronautics) Theme, the declarations of ASD in different forums as representatives of the European Industry and the documentation published by EREA (Association of European Research Establishments in Aeronautics).

2. **Study of the capabilities of the stakeholders in the database:**
   As a result of the deliverables D2.1 and D3.1, a database of stakeholders was developed and classified by technology area of expertise, between others.

3. **Match the needs of Europe and the capabilities in Latin America**

4. **Identification of the best areas and topics to cooperate:**
   As a result of the matching of the different capabilities (LA) and needs (EU), and based on the analysis in situ of the real research activities and products encountered during the ad-hoc workshops celebrated in LA, the preferred cooperation areas were identified.

5. **Identification of win-win partners: short list of stakeholders:**
   The industrial partners of the Consortium analyzed those high level companies of the database who could provide add value to them (more attractive than other European partner). The experience in international R&D cooperation was taken into account.

6. **Draft of the best projects to collaborate EU-AR, EU-BR and EU MX:**
   Taking into account the profile and capabilities of these win-win partners, some abstracts are proposed to be developed between them and the European industry and research centers.

7. **Study of possible funding schemes to execute the projects:**
   The proposed abstracts and projects haven't got the same scope and each one need a specific funding scheme. CoopAIR consortium has based its proposal in the known funding schemes of the FP7 used in Aeronautics not only in the standard calls, but also in coordinated calls with other ICPC countries (China and Russia).

8. **Study of possible funding schemes to the funding schemes:**

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Different approach is needed to Argentina, Brazil and Mexico, since their level of maturity in terms of knowledge of the EU proceedings, experience in cooperation with the EU in other programmes, etc. are fully different. Support from authorities is a key factor.

9. **Proposal for future collaboration and preferred cooperation areas**
   As the main result reflected in this deliverable D4.1.

2. USE AND DISSEMINATION OF FOREGROUND

This information is contained in the deliverable D1.4 Final plan for using and disseminating knowledge.

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