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Horizon 2020: Demystifying EU funding

Essex EU launch event, 6th June 2014.
Current EU Programme experiences

Michael Butler
Head of Research Group (AEC)



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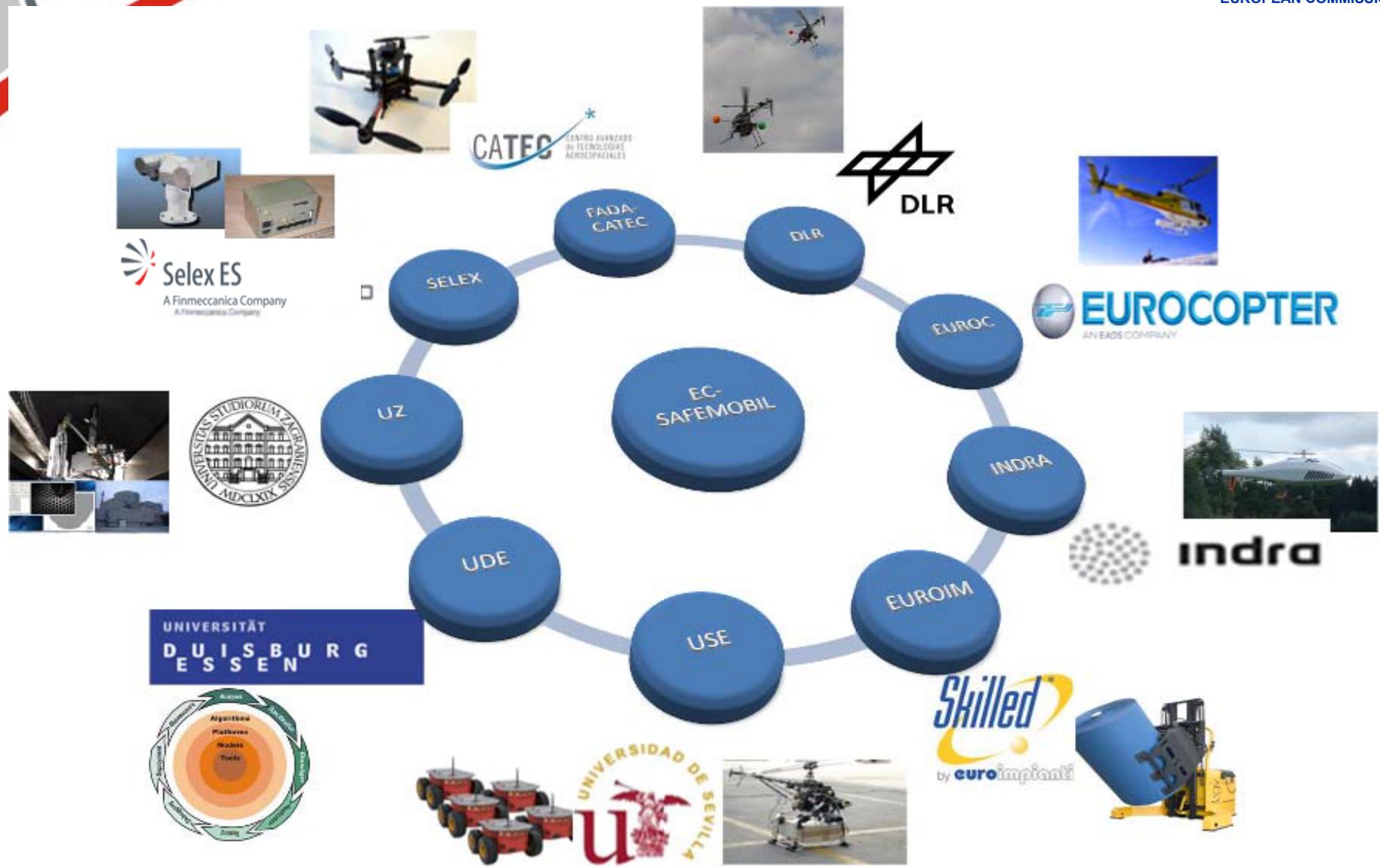
Creating teams with EU partners



EUROPEAN COMMISSION



Partner multiple interests



PROJECT 'PLANET' PARTNERS



PROJECT 'EC-SAFEMOBIL' PARTNERS



Project Objectives:

- **Need to be clear**
- **Not too prescriptive**
- **Elements of risk**
- **New and Exploitable**
- **How is Europe going to be better because of this project?**

EC-SAFEMOBIL Objectives and Approach

Objectives

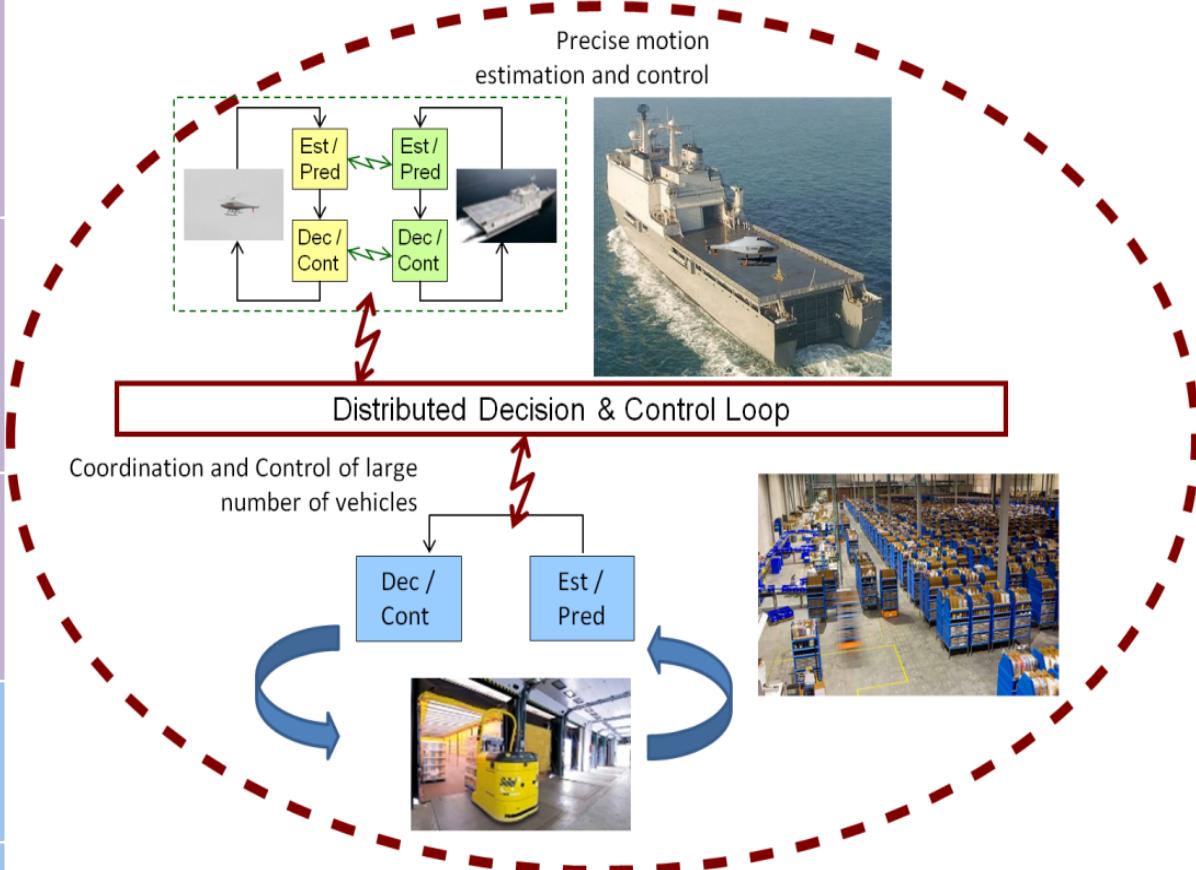
O1. Development of new robust distributed probabilistic state estimation/prediction and event detection/tracking methods for complex high mobility systems.

O2. Development of new distributed methods for safe real-time networked cooperation, coordination, and control.

O3. Architectural paradigms for safe and secure industrial networked estimation and cooperative control.

O4. Very accurate coupled motion control of two mobile entities.

O5. Distributed safe reliable cooperation and coordination of many high mobility entities

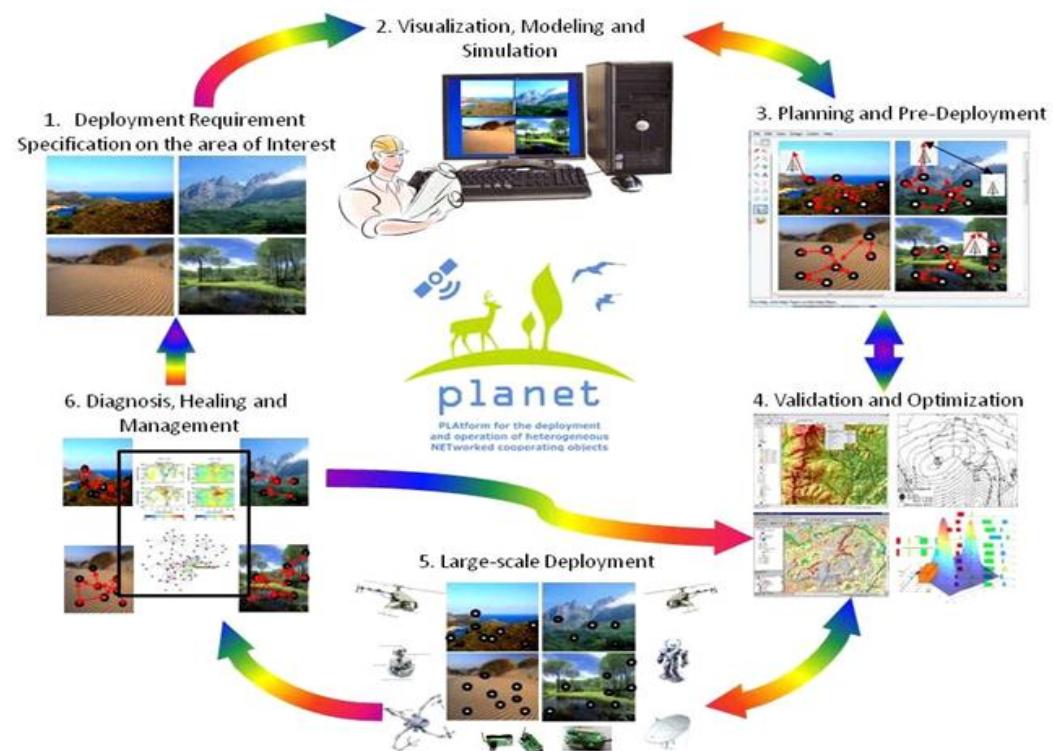




PLANET Objectives and Approach

The design, development and validation of an integrated platform to enable the smarter deployment, cost effective operation and maintenance of large scale complex systems of heterogeneous networked Cooperating Objects, including Wireless Sensor and Actuator Networks and mobile objects.

Objectives
O1: Design and development of the PLANET platform
O2: Methods for adaptive network deployment
O3: Autonomous systems for deployment
O4: Distributed network-centric computing
O5: Security methods
O6: Validation DBR
O7: Validation Airfield



Public awareness:

- **Sell your project during its lifecycle and beyond**

Web-Site creation

PLANET

PLATFORM FOR THE DEPLOYMENT AND OPERATION OF HETEROGENEOUS NETWORKED COOPERATING OBJECTS

SEARCH

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 planet

AT A GLANCE

Project: PLANET
Platform for the Deployment and Operation of Heterogeneous Networked Cooperating Objects

Project coordinator:
Universität Duisburg-Essen – Germany
Prof. Dr. Pedro José Marrón

Duration: 48 months from 01/10/2010

Total cost: 6.951.613 €

Consortium: 12 partners from 5 countries

[KNOW MORE...](#)

LATEST NEWS

Inauguration of UBICITEC
The inauguration of UBICITEC e.V., the European Research Center for Ubiquitous Technologies and Smart Cities, was held in Duisburg on November 20th. This initiative led by UDE counts with several project partners of PLANET as founding members. The main goal of UBICITEC is to establish a World-Class Center of Excellence on Smart Cities and Ubiquitous Technologies. Furthermore, UBICITEC [...]

Newsletter #2 available!
The second newsletter of the project has been released! Check it out at our download

PLANET PROJECT
The main objective of PLANET project is the design, development and validation of an integrated platform to enable the deployment, operation and maintenance of large-scale/complex systems of heterogeneous networked Cooperating Objects, including Wireless Sensor and Actuator Networks and mobile objects. The platform will support optimal and adaptive deployment and operation by means of mobile cooperating objects, i.e. vehicles, networked with static nodes. The platform will be validated in two complementary scenarios: the monitoring of the Donyana Biological Reserve with very high ecological value and very sensitive to the impact of pollution, and the highly automated airfield scenario in which security plays an important role and where wireless communication and cooperative techniques pose significant challenges.

LOG IN

Username
Password

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Register

Lost your password?

CALENDAR

M	T	W	T	F	S	S
					1	2
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30		

TRANSLATION



TWITTER

 hv

1 Oct 2011 - 30 Sep 2012

1,771 people visited this site

 Visits: 3,058

 Unique Visitors: 1,771

 Pageviews: 9,299

 Pages / Visit: 3.04

 Avg. Visit Duration: 00:03:54

 Bounce Rate: 49.15%

 % New Visits: 57.03%

255 visits/month PLANET webpage during last year

<http://www.planet-ict.eu>

Social Media creation

- Social Networks
 - Profile in social networks:

- <http://www.facebook.com/pages/Planet-Project/344820085543652?ref=ts>
 - » 39 Likes
- https://twitter.com/#!/PLANET_PROJECT
 - » 90 Followers
- <http://www.linkedin.com/groups/PLANET-PROJECT>
 - » 26 members



PLANET Project
@PLANET_PROJECT
PLANET is a R&D project funded by the EC that develops an integrated platform for the Deployment and Operation of Heterogeneous Networked Cooperating Objects.
Valencia http://www.planet-ict.eu

Tweets

- Following
- Seguidores
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- Listas
- Similares a ti
- Latif Ladid @Latif6 Seguir
- universAAL @uHALProject Seguir
- Mario Campolargo @mariocampol... Seguir

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Tweets

- PLANET Project (@PLANET_PROJECT) 5h UBICITEC was launched last week, a research centre focused on Smart Cities and Ubiquitous Technologies, do you know it? ubicitec.org/about-us/ Abrir
- PLANET Project (@PLANET_PROJECT) 5h And more interesting events, the IOT international forum will be held this week in Bled, Slovenia, more info: planet-ict.eu? page_id=207&e... Abrir
- PLANET Project (@PLANET_PROJECT) 6h Interesting workshop about robotics organised by a2 at UPV (Valencia, Spain), more info: intranet.a2.upv.es/afresco/webs... Abrir
- PLANET Project (@PLANET_PROJECT) 17 oct Newsletter number 2 of the project has been released with experiments details! Check it out at: planet-ict.eu?page_id=242 Abrir
- PLANET Project (@PLANET_PROJECT) 16 oct Out now the newsletter no 2 of PLANET Project! with technical architecture details an experiments. Download it now at: planet-ict.eu?page_id=242 Abrir



Planet Project
Develop a Platform for the Deployment and Operation of Heterogeneous Networked Cooperating Objects

About

Highlights

20 Friends like Planet Project

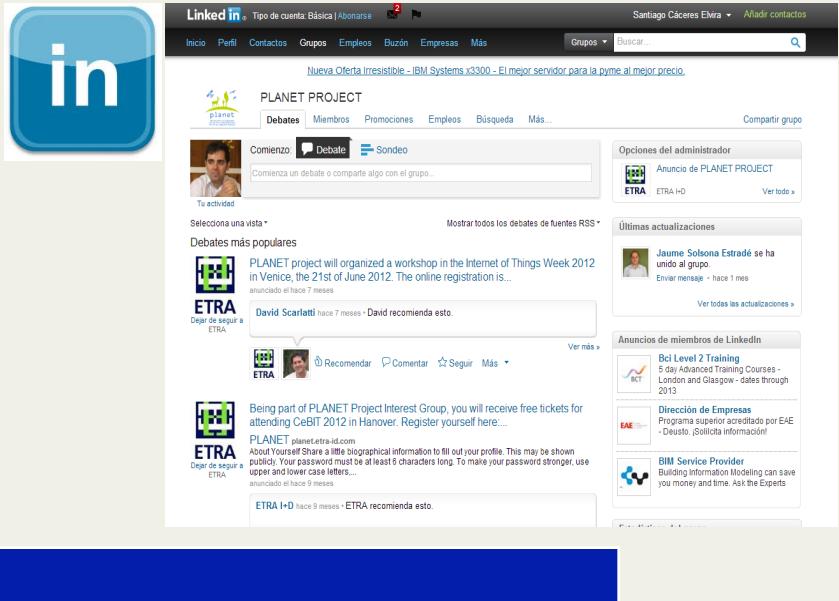
33,106 Likes

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3 hours ago ETRA shared a link.

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PLANET PROJECT

Debates | Miembros | Promociones | Empleos | Búsqueda | Empresas | Más... | Compartir grupo

Nueva Oferta Irresistible - IBM Systems x3300 - El mejor servidor para la pyme al mejor precio.

Comienzo: Debate Sonda

Comienza un debate o comparte algo con el grupo...

Opciones del administrador Anuncio de PLANET PROJECT ETRA Ver todo »

Últimas actualizaciones Jaume Solsona Estradé se ha unido al grupo. Enviar mensaje • hace 1 mes Ver todas las actualizaciones »

Anuncios de miembros de LinkedIn BCI Level 2 Training 5 Advanced Training Courses - London and Glasgow - dates through 2013 Dirección de Empresas Programa superior acreditado por EAE - Deusto, Solicitud información!

BIT Service Provider Building Information Modeling can save you money and time. Ask the Experts

Newsletters

- Information about the project and the major milestones achieved
- 7 page issue
 - Coordinator message
 - PLANET First Integrated Experiments
 - Security in PLANET project
 - PLANET framework architectural approach
 - GAMBAS as invited project



Newsletter
Issue nr. 2, September 2012

PLANET
PLAform for the deployment and operation of heterogeneous NETworked cooperating objects

COORDINATOR MESSAGE



What a great year! Cooperating Objects, Cyber-Physical Systems and Smart Cities in general are stronger than ever and the relevance of research for the support and development of these topics has been stressed in very different settings. For example, the European Commission has issued a number of Calls on related topics and there is now even a Smart Cities call. This is great news for the PLANET project which is perfectly on focus of this trend. During the last part of 2011 and most of 2012, the PLANET consortium has been able to achieve a number of major milestones that have led to the establishment of the foundations used in small-scale experiments and real deployments. Of course, there is still a lot of work to do but we are very excited to share with you the main highlights through this newsletter. Just to mention one of them, the system integration has started and, although we still have two more years to go, the consortium has been able to integrate in a working system Wireless Sensor Networks, Unmanned Aerial Vehicles and Unmanned Ground Vehicles using the PLANET Platform. To show the flexibility of the system and the capabilities of its use in real settings, we have started to perform real-world experiments with the support from end-users and experts in the field of biology. These experiments are only preliminary for the moment, but the goal is to produce robust scalable software that is able to run for several months unattended. What a challenge! But we do not want to give everything away... For more exciting news, you will have to read on. We hope you enjoy it!

<http://www.planet-ict.eu/>

Prof. Dr. Pedro José Marrón,
University of Duisburg-Essen
Coordinator of PLANET

PLANET PROJECT

Platform for the Deployment and Operation of Heterogeneous Networked Cooperating Objects

PLANET platform will support optimal and adaptive deployment and operation by means of mobile cooperating objects, i.e. vehicles, networked with static nodes. The platform will be validated in two complementary scenarios: the monitoring of the Doñana Biological Reserve with very high ecological value and very sensitive to the impact of pollution, and the highly automated airfield scenario in which security plays an important role and where wireless communication and cooperative techniques pose significant challenges.





In July 2012, PLANET consortium successfully performed its first integrated experiments. These experiments were held in a private airfield located at Villamartín (Cádiz) and involved more than 20 people from 10 different partners. Moreover, a large number of equipment were mobilized including 3 UAVs, both fixed-wing and rotary-wing from FADA-CATEC and Flying-Cam, and one UGV from AICIA.

OBJECTIVES

Two main objectives were pursued in these experiments:

- Test the integration of the different cooperating objects (UAVs, UGVs, wireless sensor networks) with the PLANET framework.
- Perform experiments that emulated some of the PLANET use cases: pollution monitoring and airfield automated mission service provision.

EXPERIMENTS

The experiments lasted four complete days with a progressive level of integration and difficulty. From software integration of the different systems up to a complete mission that involves two or more unmanned vehicles (aerial and ground) and a large number of ground sensors.

Apart from the integrated experiments, several isolated experiments have been conducted in order to test the technologies and systems needed for the different use cases.

First, FADA-CATEC and EBD performed some night flights with the Viewer UAV in Doñana national park in order to evaluate the current modification on the UAV to be used as a insect capture tool.

On the other hand, UEDIN has performed experiments with real horses in order to test their new sensor specially developed for the PLANET project needs.

After all these successful experiments, we are confident that next year we will be able to conduct experiments that up to a level of maturity where we are able to fulfill the requirements of most of the designed PLANET use cases.



Figure 1: Software integration before the experiments



Figure 2: Group picture with X-Vision and SARAH UAV after the successful integrated experiments

Project Posters



planet
PLAform for the deployment and operation of heterogeneous NETworked cooperating objects

PLANET Approach

The main objective of PLANET is the design, development and validation of an integrated platform to enable the deployment, operation and maintenance of large-scale/complex systems of heterogeneous networked Cooperating Objects, including Wireless Sensor and Actuator Networks and mobile objects

Contact details:
Prof. Dr. Pedro José Marrón
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planet-ude@lists.planet-ict.eu

Logos:
UNIVERSITÄT DUISBURG ESSEN, FADA, SELEX GALILEO, CATEC, BOEING, ETRA IVD, DLR, FLYING CAM, CSIC, SEVENTH FRAMEWORK PROGRAMME, EUROPEAN COMMISSION

Text:
PLANET addresses the design methodology and development of the platform as well as the algorithms required to support the deployment and maintenance of heterogeneous systems with mobile and static nodes.

The PLANET platform will be validated in two scenarios: An environmental and wildlife monitoring application deployed in the Doñana Biosphere Reserve (Spain); and the management of a highly automated airfield which could be used as the operating base of unmanned vehicles for the previous application. Both scenarios, although complementary, have very different requirements regarding the QoS needed from the system and, thus, enable the PLANET platform to show its adaptation and self-organization capabilities in diverse settings.



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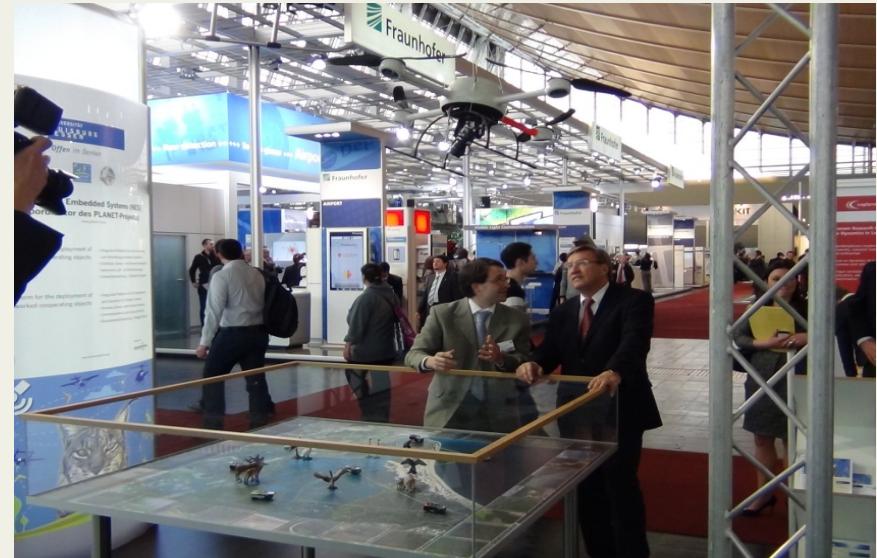
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EU Trade shows

- **CeBIT 2012:** March, Hannover (Germany)
 - PLANET stand, the most successful with visits from more than 200 organization, including the innovation, economy and research ministers of the region and several communication means.
- **IoT week 2012:** 21st June 2012, Venice (Italy).
 - Workshop “IoT Everything Linked: From the Sensors to the Cloud”. Organised by PLANET Consortium with the participation of GAMBAS, OpenIoT and SmartSantander Projects.
- **1st Industrial PLANET Workshop:** 28th June 2012, Valencia (Spain).
 - PLANET project, with the collaboration of the Official Organisation Telecommunication Engineers of Valencia, organized the workshop “Internet of things and Smart cities”. Participation of industries: Balmart and Libellum.



The project work.

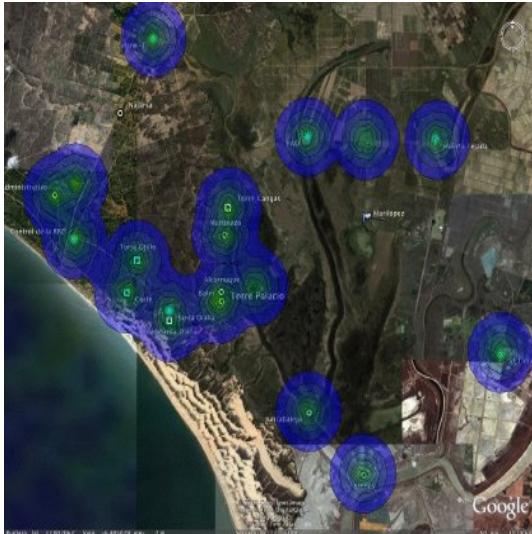
- Show what you can do
- Highlight your capabilities



PLANET Experimental Facilities

Environment:

Doñana Biological Reserve



Declared World Heritage Site in 1994. Part of the EU Large Scale Facilities.

Critical infrastructures and vehicles: Airfield Scenario



New UAV airfield facility (4.1M euros) for Air Traffic Management and UAV experimentation.

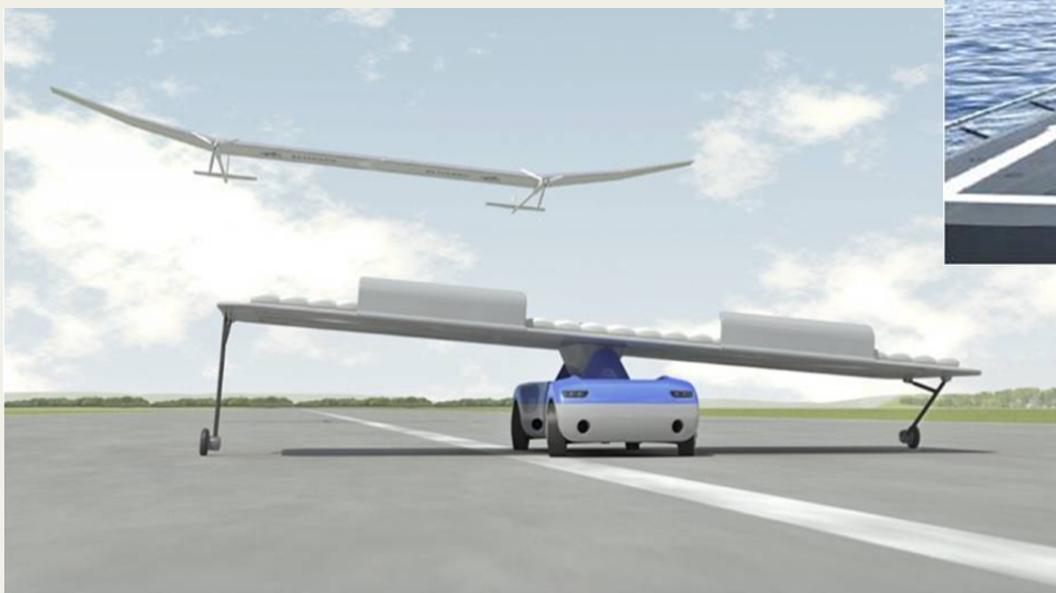
Other 'case-study' Scenarios



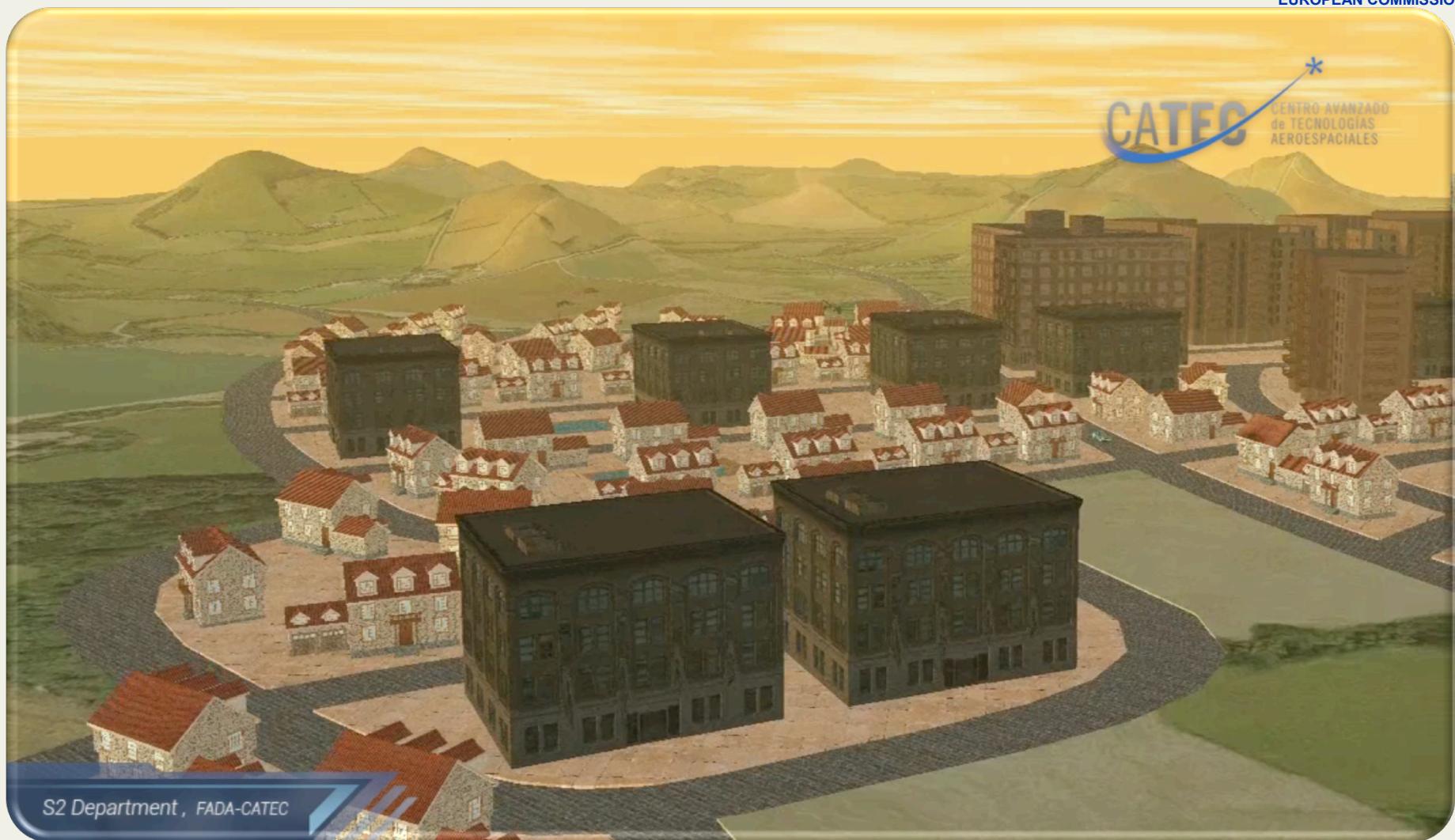
Bavarian forest monitoring



Development of accurate motion estimation, control methods and technologies



Simulation presentation (example)



Field trial assets

UAV	Task
	Locomove <ul style="list-style-type: none"> • Misbehaviour scenario and multivehicle tasks. • Airfield UC5 (emergency and landing aid service) • Bat Scenario
	X Vision <p>Airfield UC1</p>
	Viewer <p>Doñana scenarios (Pollution, horses and bats)</p>
	K2B6 <p>Airfield UC1 → Taxi operations</p>

Field Trials, fixed and rotary wing experiments



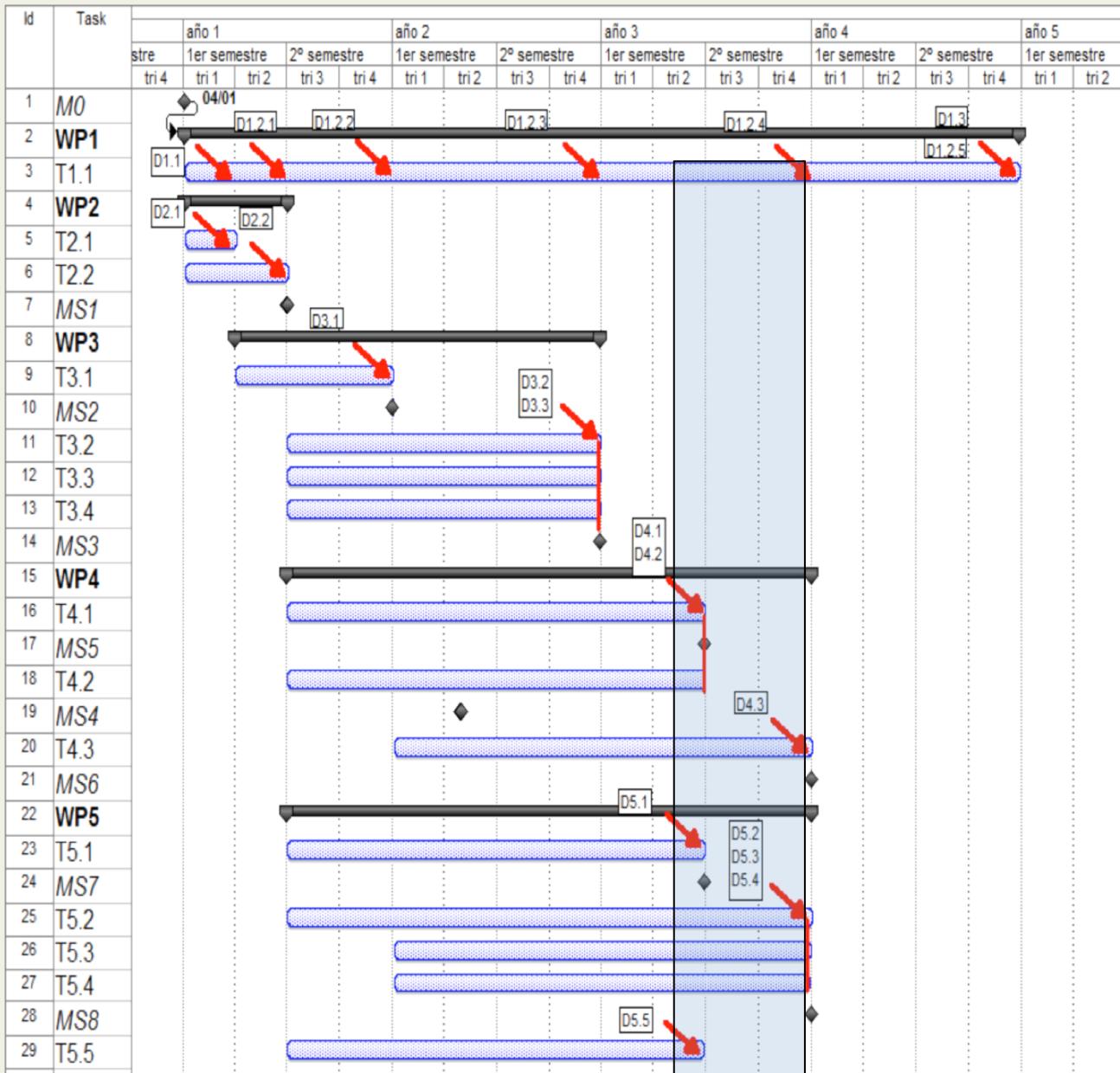
Atlas Airfield under construction and UGV tracking



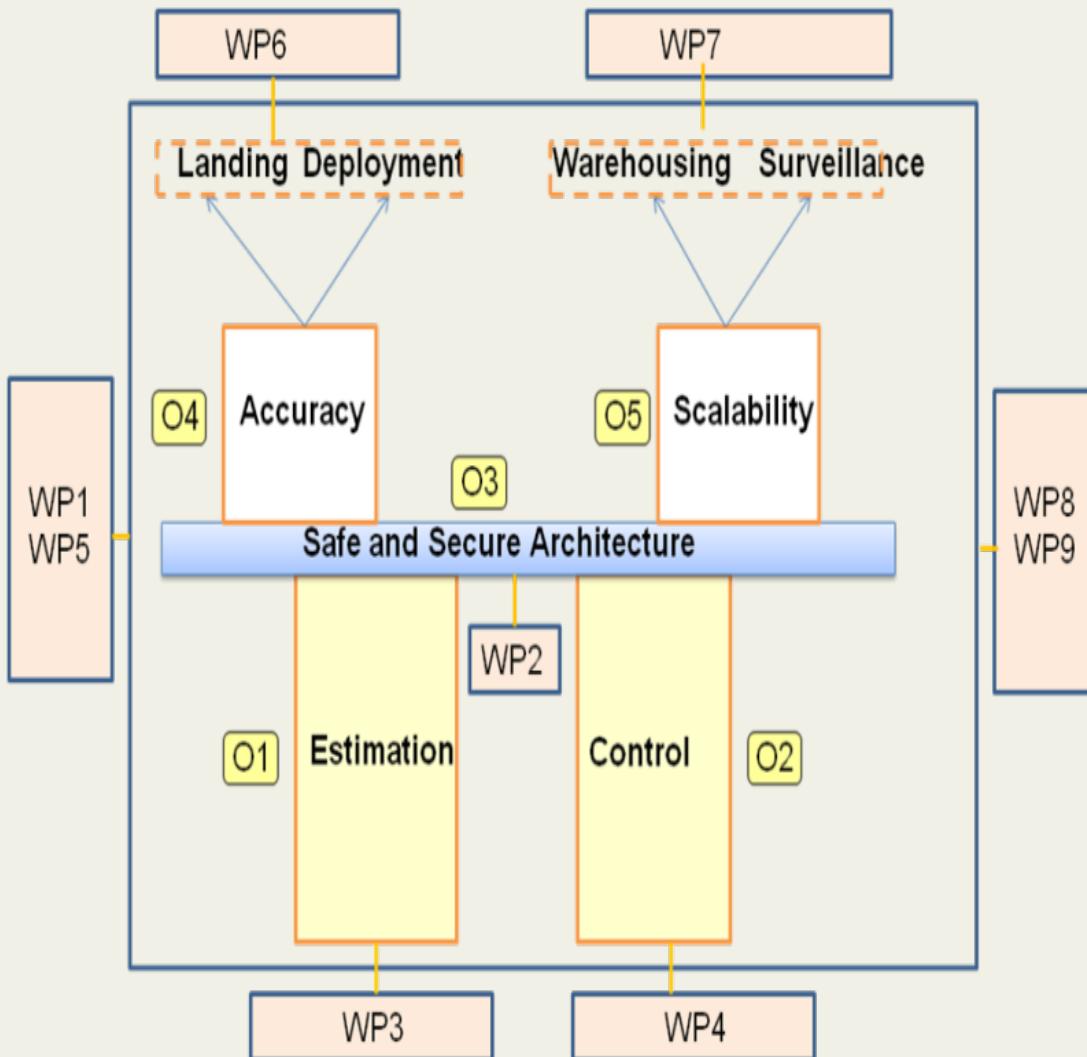
Project Management:

- **Show monitoring and control**
- **Explain deviations to original plan**
- **Financial reasoning, audibility**
- **Show transfer of knowledge between partners and other EU projects**
- **Mitigate Risks**
- **Show active high level participation**

Project Management, Gantt Chart.

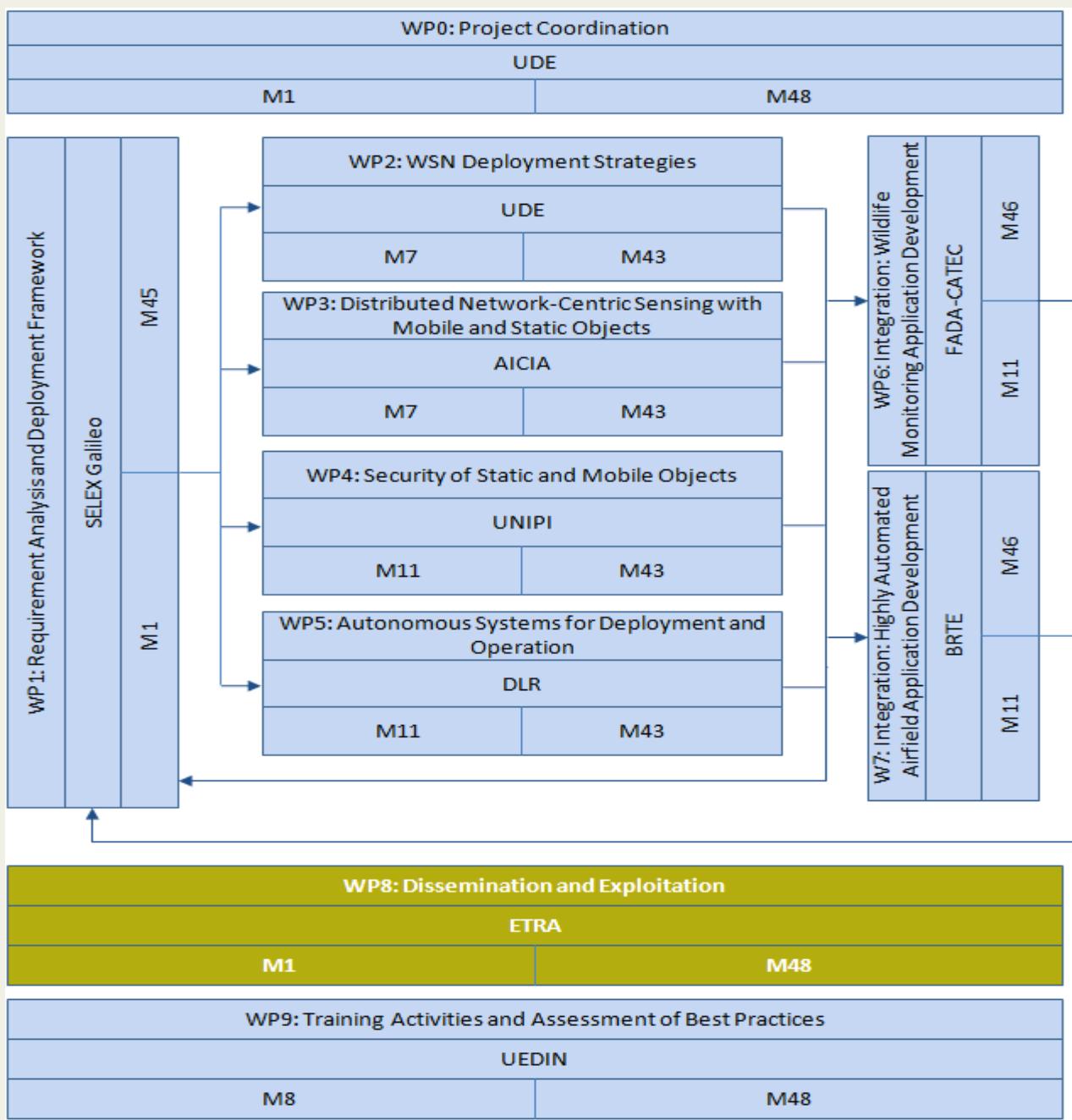


'WP' structure



Work package No	Work package title
WP 1	Coordination
WP 2	Industrial Requirements and Specification
WP 3	Architectures for distributed estimation and cooperative control
WP 4	Distributed robust estimation involving environment models
WP 5	Safe and reliable real-time cooperative networked control
WP 6	Simulation tools
WP 7	Testing and validation of Rendezvous-Docking and Release-Undocking methods
WP 8	Testing and validation of methods for cooperation of multiple mobile vehicles
WP 9	Exploitation and Dissemination
WP 10	Training Activities and Assessment of Best Practices
	TOTAL

Work Package template



Task examples

- **T8.1** Dissemination Master Plan (ETRA, UDE, UNIPI)

To define how to promote and disseminate the PLANET's results over Europe.

- **T8.2** Dissemination actions (All)

To raise the awareness of the PLANET project among the widest possible audience.

- **T8.3** Documentary and Filming of Experiments (FC)

Multimedia material to document the experiments carried out in the project.

- **T8.4** Exploitation Plan (FC, BRTE, SELEX Galileo, ETRA, SELEX SI)

Definition of the overall exploitation strategy of the consortium as a whole and individual strategies.

Deliverables process

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Del. n°	Deliverable name	WP n°	Lead benefit	Estim. PM (all partners)	N	Diss. Level	Del. date (M)	Reviewed by	Delivery date to Review (M)	Delivery date sent back to leader
D1.2.1	Periodic Reports	1	FADA-CATEC	4	R	RE	6 (8)	INDRA	17/02/2012	28/02/2012
D1.2.2	Periodic Reports	1	FADA-CATEC	4	R	RE	12	UZ	15/08/2012	31/08/2012
D3.1	EC-SAFEMOBIL architecture including security and safety	3	SELEX	29	R	PU	12	FADA-CATEC	15/08/2012	01/09/2012
D6.1	Design of simulation tools for high mobility cooperative systems	6	FADA-CATEC	16	R	CO	9	USE	15/03/2012	30/03/2012
D9.1.1	Plan to use and disseminate Foreground knowledge	9	SELEX	10	R	CO	12	FADA-CATEC	15/06/2011	29/06/2011

WP 1- PLANNING AND REPORTING



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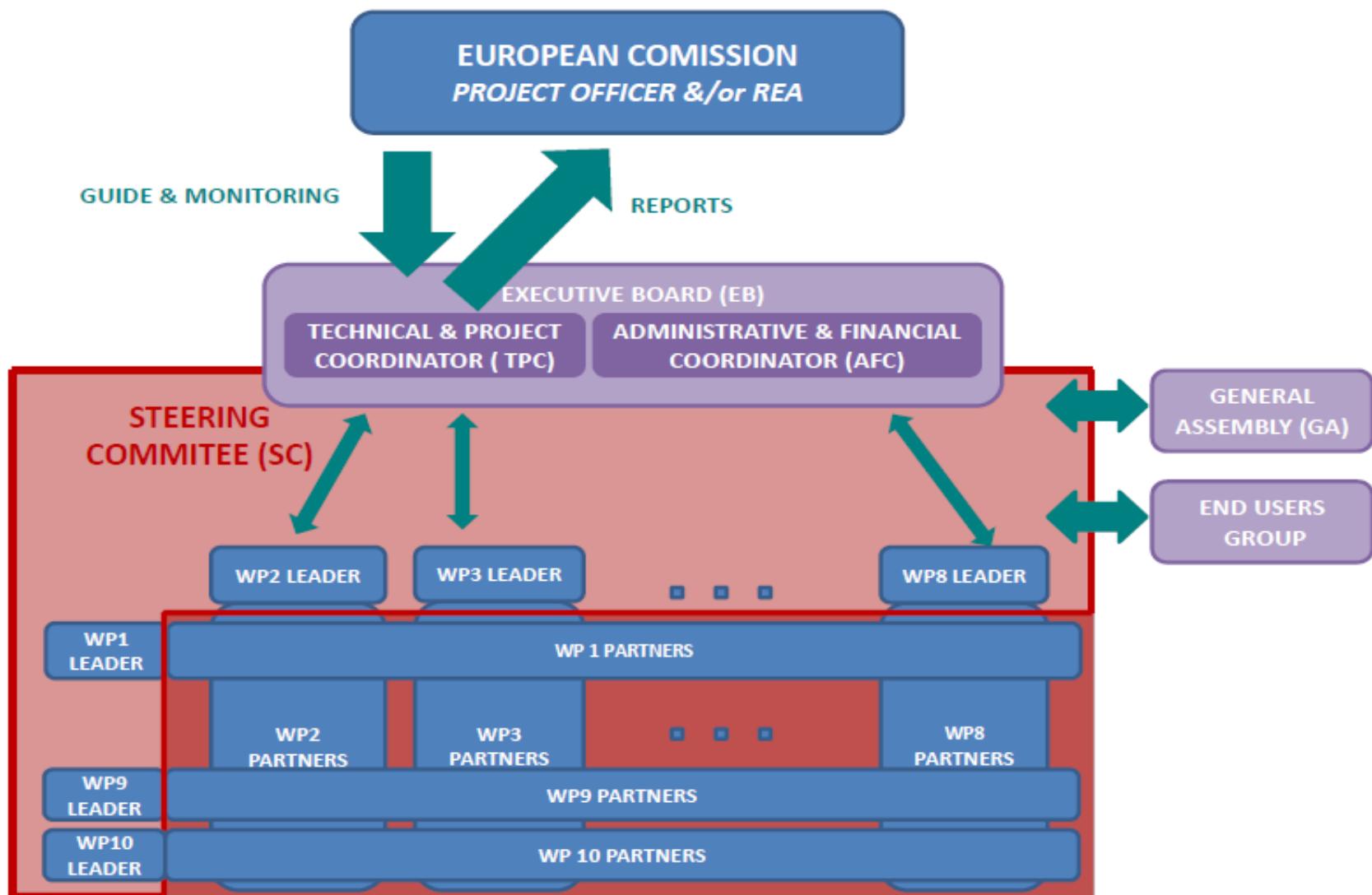
FP7 - Grant Agreement - Annex VI - Collaborative Project				Version 2, 02/10/2008	
Form C - Financial Statement (to be filled in by each beneficiary)					
Project nr	nnnnnn	Funding scheme	Collaborative Project		
Project Acronym	xxxxxxxxxxxxxxxxxx	Is this an adjustment to a previous statement ?		<input type="checkbox"/> Yes/No	
Period from To	dd/mm/yy dd/mm/yy				
Legal Name Organisation short Name		Participant Identity Code Beneficiary nr	nn nn		
Funding % for RTD activities (A)		If flat rate for Indirect costs, specify %	%		
1- Declaration of eligible costs/lump sum/flat rate/scale of unit (in €)					
Type of Activity					
	RTD (A)	Demonstration (B)	Management (C)	Other (D)	TOTAL (A+B+C+D)
Personnel costs					
Subcontracting					
Other direct costs					
Indirect costs					
Lump sum/flat rate/scale of unit declared					
Total					
Maximum EU contribution					
Requested EU contribution					
2- Declaration of receipts					<input type="checkbox"/> Yes/No
Did you receive any financial transfers or contributions in kind, free of charge from third parties or did the project generate any income which could be considered a receipt according to Art.II.17 of the grant agreement ?					<input type="checkbox"/> Yes/No
If yes, please mention the amount (in €)					
3- Declaration of interest yielded by the pre-financing (to be completed only by the coordinator)					<input type="checkbox"/> Yes/No
Did the pre-financing you received generate any interest according to Art. II.19 ?					<input type="checkbox"/> Yes/No
If yes, please mention the amount (in €)					
4- Certificate on the methodology					<input type="checkbox"/> Yes/No
Do you declare average personnel costs according to Art. II.14.1 ?					<input type="checkbox"/> Yes/No
Is there a certificate on the methodology provided by an independent auditor and accepted by the Commission according to Art. II.4.4 ?					<input type="checkbox"/> Yes/No
Name of the auditor		Cost of the certificate (in €), if charged under this project			
5- Certificate on the financial statements					<input type="checkbox"/> Yes/No
Is there a certificate on the financial statements provided by an independent auditor attached to this financial statement according to Art.II.4.4 ?					<input type="checkbox"/> Yes/No
Name of the auditor		Cost of the certificate (in €)			
6- Beneficiary's declaration on its honour					
We declare on our honour that:					
<ul style="list-style-type: none"> - the costs declared above are directly related to the resources used to attain the objectives of the project and fall within the definition of eligible costs specified in Articles II.14 and II.15 of the grant agreement, and, if relevant, Annex III and Article 7 (special clauses) of the grant agreement; - the receipts declared above are the only financial transfers or contributions in kind, free of charge, from third parties and the only income generated by the project which could be considered as receipts according to Art. II.17 of the grant agreement; - the interest declared above is the only interest yielded by the pre-financing which falls within the definition of Art. II.19 of the grant agreement ; - there is full supporting documentation to justify the information hereby declared. It will be made available at the request of the Commission and in the event of an audit by the Commission and/or the Court of Auditors and/or their authorised representatives. 					
Beneficiary's Stamp	Name of the Person(s) Authorised to sign this Financial Statement				
	Date & signature				

- Financial Statements – ‘Form C’ and ‘Summary Financial Report’**
- Grant Agreement and NEF tool**

EU Brussels Project Review:

- **They are human**
- **Show strong business reasons for your actions**
- **Ask for guidance if prudent**
- **Rehearse as a team the day before**

Programme Management Structures



FP7 Programme Guidance

Examples of Documents and guidance for FP7 programmes:

http://cordis.europa.eu/fp7/find-doc_en.html

- General FP7 documents and guidance:
Basic information on FP7 (overview)
- Specific FP7 documents and guidance:
Proposal submission and contract.
- FP7 project management documents and guidance:
Run the project.
 - Wiki on FP7 Periodic Report and NEF:
<http://212.68.215.215/display/iKnowextern/1.+Security>
 - Guide to Financial issues: general document
ftp://ftp.cordis.europa.eu/pub/fp7/docs/financialguide_en.pdf
 - Certificates issued by external auditors:
ftp://ftp.cordis.europa.eu/pub/fp7/docs/guidelines-audit-certification_en.pdf
 - Guide for IPR: ftp://ftp.cordis.europa.eu/pub/fp7/docs/ipr_en.pdf
 - Project reporting:
ftp://ftp.cordis.europa.eu/pub/fp7/docs/project_review_en.pdf

The IPR issue

- Background IPR needs to be identified, and the approach to IP management defined during the proposal stage.
- European Patents needs to be prepared and potential foreground knowledge protected by individual participants and managed during the project.



Final Outcomes:

- **What has my Company gained from this experience?**
- **What has the EU gained from this programme?**
- **What do you do next?**

Industrial Exploitation Targeted Dissemination

- 12 events specifically targeted at exploitation routes
 - Ranging from international air shows to focussed UAS conferences
- 2 information courses to industrial audiences
- 2 private meetings with AESA for definition of legislation
- Sample of events (Full list with details in D9.1.2)

MAST Europe Maritime Systems and Technology
September 2012

Senior level leaders from 40 countries

Astrium promoting EC-SAFEMOBIL and RBS system

ILA Berlin Air Show - UAS
September 2012

UAS developers and end-users

USE & FADA-CATEC presenting EC-SAFEMOBIL cooperating system aspects

Paris Air Show
June 2013

140k trade visitors, 3k journalists, public & dignitaries

Presentation of EC-SAFEMOBIL exploitation through Selex SkyISTAR Astrium RBS

ICUAS
December 2012

200 participants from academia, industry & military

USE, FADA-CATEC & DLR presenting papers on EC-SAFEMOBIL development

Exploitation

Industrial Requirements

Safe, secure,
cooperating
Systems

Fault tolerant,
graceful
degradation

Dynamically
scalable

Autonomous
operation

Innovation Areas

EC-SAFEMOBIL

Control

Estimation

Architecture

Results

New control
paradigms

Dynamic trajectory
calculation

Fault detection and
mitigation methods

Scalable, secure
architecture

Industria
l Benefits

Enhanced system
performance

Reduced operator costs
and requirements

Expanded deployment
capability and
operational envelope



Acknowledged
experts in UAS based
ISTAR systems