DECISION OF THE PUBLIC AUTHORITIES BOARD OF THE ARTEMIS JOINT UNDERTAKING APPROVING CHANGES TO THE SELECTION OF PROJECT PROPOSALS AND THE ALLOCATION OF PUBLIC FUNDING FOLLOWING NEGOTIATIONS FOR CALL 2009

THE PUBLIC AUTHORITIES BOARD OF THE ARTEMIS JOINT UNDERTAKING

Having regard to its Decision of 22 October 2009 approving the selection of project proposals retained for negotiation following ARTEMIS Call 2009 and the allocation of public funding[1],

Whereas:

(1) 13 proposals were selected and retained for negotiation and for possible financing following the ARTEMIS Call 2009;

(2) 6 proposals were put on a reserve list;

(3) The Executive Director carried out negotiations with the consortia of selected proposals as empowered by the Public Authorities Board;

(4) On December 15th 2009 (end of negotiation mandate), 11 out of the 13 projects had successfully completed negotiations. The 2 remaining proposals plus one from the reserve list were granted an extension of the mandate from the PAB to the Executive Director to investigate their viability.

(5) During this extension of the mandate, the two remaining proposals were merged to form the ME3GAS proposal and the SHIELD proposal from the reserve list became pSHIELD.

(6) No other proposal in the reserve list could be funded because of funding limitation.

HAS ADOPTED THIS DECISION:

Article 1

13 proposals are selected for receiving public funding as detailed in Annex 1 to this Decision. Negotiation summaries are included in Annex 2.

[1] ARTEMIS-PAB-12/09

Article 2

The Executive Director is hereby empowered to reject the 5 remaining proposals from the reserve list subject to the successful conclusion of grant agreements with the 13 selected proposals.

Article 3

This Decision shall enter into force on the date of its adoption.

Done at Brussels, 15 February 2010

For the Public Authorities Board

Aldo Covello
Chairperson of the Public Authorities Board

Annex 1 – Proposals retained for receiving public funding
Annex 2 – Negotiations summaries

Annex 1 – Proposals retained for receiving public funding

The following table lists the results of the successfully negotiated projects, with their total eligible cost, National Funding and JU Funding. As information, the distribution of funding per participant type and the corresponding average funding rates is also given.

Total Eligible Cost, JU- and National Funding per project

Project	Total Eligible Cost	JU Funding	National Funding
ACROSS	16,066,012.26	2,683,024.05	4,965,155.81
ASAM	5,829,365.00	973,503.59	1,786,001.40
CHIRON	18,064,346.00	3,016,745.78	6,205,747.27
eSONIA	12,084,895.75	2,018,177.59	4,801,982.88
iFEST	15,794,707.00	2,637,716.07	5,158,992.92
ME3GAS	15,732,529.20	2,627,332.38	2,717,219.47
POLLUX	33,245,302.00	5,551,965.43	10,255,145.98
pSHIELD	5,392,809.07	900,599.11	1,522,774.16
R3-COP	18,319,660.00	3,059,384.58	6,737,692.86
RECOMP	25,772,220.00	4,303,960.74	9,339,154.66
SIMPLE	7,433,467.00	1,241,388.00	2,798,967.00
SMARCOS	13,461,741.00	2,248,110.75	4,420,052.11
SMECY	20,537,505.00	3,429,763.34	6,513,371.00
TOTAL	**207,734,559.28**	**34,691,671.40**	**67,222,257.52**

Annex 2 – Negotiations summaries

1) ACROSS – 100208

Duration of the project (months): 36
Project start date: 01/04/2010
Total Costs: 16.1 M€

Partner	Country	Total eligible costs	Total JU contribution	Total national funding	Total funding
AVL	AT	797,775.00	133,228.43	199,444.00	332,672.43
DICE	AT	602,741.26	100,657.79	150,685.31	251,343.10
SAGÖ	AT	1,203,474.00	200,980.16	300,868.00	501,848.16
TTT	AT	2,091,748.00	349,321.92	732,111.00	1,081,432.92
TU Vienna	AT	1,045,734.00	174,637.58	616,983.00	791,620.58
EADS DE	DE	1,593,365.00	266,091.96	432,599.00	698,690.96
EADS IW	DE	828,937.00	138,432.48	225,056.00	363,488.48
fortiss	DE	573,413.00	95,759.97	477,653.03	573,413.00
Lauterbach	DE	231,212.00	38,612.40	62,774.06	101,386.46
SYSGO	DE	1,130,472.00	188,788.82	363,446.75	552,235.57
TUV	DE	649,240.00	108,423.08	176,268.66	284,691.74
UAU	DE	167,421.00	27,959.31	139,462.00	167,421.31
CoFluent Design	FR	174,491.00	29,140.00	14,483.00	43,623.00
EADS FR	FR	535,490.00	89,426.83	44,446.00	133,872.83
PrismTech	FR	199,356.00	33,292.45	26,514.00	59,806.45
TCF	FR	387,778.00	64,758.93	32,186.00	96,944.93
TRTFR	FR	535,138.00	89,368.05	44,416.00	133,784.05
UJF/Verimag	FR	306,727.00	51,223.41	255,505.00	306,728.41
ED	IT	3,011,500.00	502,920.50	670,255.00	1,173,175.50
TOTAL		**16,066,012.26**	2,683,024.05	4,965,155.81	**7,648,179.85**

It is the objective of the ACROSS project to develop and implement an ARTEMIS cross-domain architecture for embedded MPSoCs based on the architecture blueprint developed in the FP7 project GENESYS (Generic Embedded System Architecture). ACROSS will result in the design of a generic Multi-Processor Systems-on-a-Chip (MPSoC) and a first implementation in an FPGA. The ACROSS MPSoC will provide a stable set of core services as a foundation for the component-based development of embedded systems with short-time-to-market, low cost and high dependability. The ACROSS-MPSoC will be a universal platform for automotive, aerospace and industrial control systems in order to realize the benefits of the economies of scale of the semiconductor technology. Additionally, the ACROSS-MPSoC platform provides significant potential for being adopted by other industries with safety-critical data communication requirements such as applications in the medical-, power generation -, (i.e. atomic power plant control equipment), space- domains, to mention just a few. Using the core services of the ACROSS-MPSoC, a library of middleware services will be realized in the ACROSS project. Generic middleware will offer services to be used in multiple application domains (e.g., fault-tolerance, diagnosis, security), while domain-specific middleware will implement domain-specific services for specific domains (e.g., AUTOSAR services for the automotive domain, IMA services for the avionic domain).

Another significant result of the project will be a general design methodology, supported by appropriate adaptable tools, for the implementation of ACROSS-based applications. The benefits of the cross-domain architecture will be shown in demonstrators from the targeted application domains.

2) ASAM – 100265

Duration of the project (months): 36
Project start date: 01/04/2010
Total Costs: 5.83 M€

Partner	Country	Total eligible costs	Total JU contribution	Total national funding	Total funding
TUE	NL	1,017,649.00	169,947.38	338,877.00	508,824.38
ST Italy	IT	886,800.00	148,095.60	272,654.40	420,750.00
UNICA	IT	828,000.00	138,276.00	268,224.00	406,500.00
TUBS	DE	448,788.00	74,947.60	-	74,947.60
DTU	DK	556,368.00	92,913.46	324,363.00	417,276.46
SH	NL	1,301,153.00	217,292.55	358,141.00	575,433.55
ACE	NL	527,200.00	88,042.00	149,198.00	237,240.00
CMPD	NL	263,407.00	43,989.00	74,544.00	118,533.00
TOTAL		**5,829,365.00**	973,503.59	1,786,001.40	**2,759,504.99**

This project addresses a uniform process of automatic architecture synthesis and application mapping for heterogeneous multi-processor embedded systems, defining a new unified design methodology, as well as, related synthesis and prototyping tool-chains.

The main objective of the project is to build a unified synthesis and prototyping environment enabling:

- technology-aware multi-objective design space exploration for configurable heterogeneous multi-ASIP systems and identification of the application-tailored system architecture (i.e. selection of the number of processors, kind and shape of communication resources and memories hierarchy, as well as their composition);
- automatic architecture instantiation or customization of particular application-tailored processors, hardware accelerators, communication and memory structures, including extension of processors with new application-specific instructions;
- optimal hardware synthesis of the created platform,
- automatic application mapping on the resulting multi-processor heterogeneous system,
- software compiler retargeting and automatic software compilation, when accounting for the processor characteristics and for functional and extra-functional requirements and trade-offs.

In order to pursue this whole set of objectives, a highly efficient automatic synthesis flow will be created from the algorithmic specification down to its hardware/software implementation at the circuit/code level. The automatic synthesis flow will enable the system and algorithm designers to focus on the higher-level design and algorithm development issues, relieving them from the lower-level implementation issues. In this way, the new design environment

will enable the system and algorithm designers to perform rapid exploration of the high-level and algorithm design space and, consequently, to quickly develop high-quality designs. At the same time, the final system synthesis will be automated in an efficient way.

3) CHIRON – 100228

Duration of the project (months): 36
Project start date: 01/03/2010
Total Costs: 18.1 M€

Partner	Country	Total eligible costs	Total JU contribution	Total national funding	Total funding
BARCO	BE	1,188,000.00	198,396.00	395,604.00	594,000.00
ALMA	ES	656,614.00	109,654.54	284,314.00	393,968.54
ATOS	ES	921,200.00	153,840.40	214,640.00	368,480.40
CEIT	ES	556,547.00	92,943.35	185,330.00	278,273.35
CIMNE	ES	401,569.00	67,062.02	133,723.00	200,785.02
ESI-TECNALIA	ES	460,183.00	76,850.56	153,241.00	230,091.56
IBERMATICA	ES	853,900.00	142,601.30	198,959.00	341,560.30
CARD	GB	179,997.00	30,059.50	56,190.00	86,249.50
SOTON	GB	529,086.00	88,357.36	440,728.00	529,085.36
SUHT	GB	316,540.00	52,862.18	263,678.00	316,540.18
ICOM	GR	312,014.00	52,106.34	96,576.00	148,682.34
ISI	GR	580,125.00	96,880.88	483,244.00	580,124.88
BME	HU	312,400.00	52,170.80	260,229.00	312,399.80
ED	IT	1,131,000.00	188,877.00	311,373.00	500,250.00
FIMI	IT	1,771,625.00	295,861.38	511,515.88	807,377.26
I+	IT	326,750.00	54,567.25	101,495.25	156,062.50
ITS	IT	237,384.00	39,643.13	72,455.00	112,098.13
MRE	IT	816,574.00	136,367.86	205,819.00	342,186.86
UNIBO	IT	945,450.00	157,890.15	314,835.00	472,725.15
units	IT	326,500.00	54,525.50	108,724.50	163,250.00
UOR	IT	1,285,245.00	214,635.92	362,927.84	577,563.76
WLAB	IT	524,600.00	87,608.20	174,691.80	262,300.00
PHILIPS	NL	2,042,300.00	341,064.10	304,771.00	645,835.10
ZG	NL	561,600.00	93,787.20	158,933.00	252,720.20
JSI	SI	458,243.00	76,526.58	221,331.00	297,857.58
MOBILI	SI	368,900.00	61,606.30	190,419.00	252,025.30
TOTAL		**18,064,346.00**	3,016,745.78	6,205,747.27	**9,222,493.05**

The CHIRON Project intends to combine state-of-the art technologies and innovative solutions into an integrated framework designed for an effective and person-centric health management along the complete care cycle.

In this vision,

- CHIRON will address and harmonize the needs and interests of all the three main beneficiaries of the healthcare process, i.e., the citizens using the services, the medical professionals and the whole community;
- CHIRON will position the citizens at the core of the whole healthcare cycle by considering them as "persons" with specificities and identities and will empower them to manage their own health;

- CHIRON will enlarge the boundaries of healthcare by fostering a seamless integration of clinical setting, at home setting and mobile setting in a concept of a continuum of care;
- CHIRON will speed up the move from treatment of acute episodes to prevention;
- CHIRON will provide the physicians with extensive support for treatment monitoring and management, timely decisions and appropriate actions in both the clinical and home environments;

More specifically CHIRON intends:

- to design – according to this integrated approach – a reference architecture for personal healthcare which will ensure the interoperability between heterogeneous devices and services, a reliable and secure patient data management and a seamless integration with the clinical workflow;
- to develop sophisticated solutions of complex data analysis, feature extraction and knowledge management;
- to introduce beyond state of the art solutions in various specific parts of the system;
- to provide new, advanced tools for real time processing, computer-aided analysis and accurate visualization of medical images; and
- to validate the result of the research and assess the proposed solutions in relation to their technical and clinical aspects and from a socio-economic perspective.

The CHIRON system will provide powerful supporting ICT tools and at the same time it will ensure that the patients and the doctors remain the protagonists of the healthcare process that has been designed around them.

4) eSONIA – 100223

Duration of the project (months): 36
Project start date: 01/01/2010
Total Costs: 12.1 M€

Partner	Country	Total eligible costs	Total JU contribution	Total national funding	Total funding
HER	FI	410,000.00	68,470.00	196,800.00	265,270.00
Integrasys	ES	465,928.00	77,809.98	201,747.00	279,556.98
ST Italy	IT	1,042,000.00	174,014.00	266,136.00	440,150.00
BUT	CZ	549,265.00	91,727.26	457,537.00	549,264.26
TUT	FI	1,920,612.00	320,742.20	1,056,336.60	1,377,078.80
ACCIONA	ES	607,080.00	101,382.36	141,450.00	242,832.36
Fatronik-Tecnalia	ES	761,514.00	127,172.84	198,086.00	325,258.84
ESI-Tecnalia	ES	599,390.00	100,098.13	199,597.00	299,695.13
PDT	FI	933,279.75	155,857.72	447,974.28	603,832.00
UNIS	CZ	382,846.00	63,935.28	229,353.00	293,288.28
Fluidhouse Oy	FI	851,000.00	142,117.00	408,480.00	550,597.00
COMAU	IT	1,520,000.00	253,840.00	449,910.00	703,750.00
POLIMI	IT	625,000.00	104,375.00	208,125.00	312,500.00
SEN	FI	-	-	-	-
CRF	IT	895,640.00	149,571.88	233,248.00	382,819.88
IBERMATICA	ES	521,341.00	87,063.95	107,203.00	194,266.95
TOTAL		**12,084,895.75**	2,018,177.59	4,801,982.88	**6,820,160.47**

In Europe, manufacturing represents approximately 22% of GDP, and it is estimated that 75% of GDP and 70% of employment is related to manufacturing. The direct cost of maintenance is equivalent to 4% to 8% of the total sales turnover [Naijar2004]. Depending on the industry, maintenance costs can represent between 15% (food-related industries) and 60% (iron and steel, pulp and paper and other heavy industries) of production cost [Mobley2002].

However today's factories plant states are isolated and cannot be fully understood since there is no infrastructure for holistic and continuous measurement and visualization of relevant information. This lack of insight prevents efficient decision taking in real-time (e.g. recovery from undesired situations).

The objective of the eSONIA project is to realize the asset-aware and self-recovery plant through:

- pervasive heterogeneous (wirelines and wireless) IPv6-based embedded devices
- bringing on-board specialized services
- glued through a middleware capitalizing the service oriented approach

All that will be used for the first time in industry to support continuous monitoring/diagnostics/prognostics/control of assets, regardless of their physical location.

The delivered information will be elaborated and visualized in 3D-geolocation mode to infer:

- efficient automatic maintenance schedules
- improved operator dispatch and repair performance

- efficient runtime planning of product/supplies routes (for continuous track & trace systems), automatic triggering of re-sequencing and line-balancing processes in response to unscheduled maintenance actions or equipments' failure.
- The expected deliverables of eSONIA include:
- Tools for 3D visualization of operations at the factory floor,
- An In-plant (Indoor & Outdoor) Geo-location System for Real-time Asset Management
- A Service Management System for Enhanced Manufacturing Control.
- Reference models and tools for Services Oriented Architecture implementation in a factory environment
- A set of processes running on embedded devices and offered to the outside world as Web Services to support (asset) health assessment, prognostics, maintenance scheduling (i.e. the best mix of cyclic, condition-based and predictive maintenance);
- Tools for seamless and flexible networking

The expected outcomes of eSONIA are: greater predictability of plant behaviour and visibility, reduced safety risks, enhanced security and cost efficiency.

For example, the following figures ask for improvements in work and maintenance safety:

- 70% of industrial accidents are caused by human errors during complex operations [Venkatasubramanian2005],
- 5% of all mortal work accidents in Spain in 2007 took place during the carrying out of maintenance-related activities.

On the other hand, several studies have indicated that a significant increase in Overall Equipment Effectiveness (OEE), (from today's 60% to 75% ([Ahlmann1997]), entailing important profit improvements, is achievable through maintenance improvements by using new technology, modern high-tech equipment and better planning.

5) iFEST – 100203

Duration of the project (months): 36
Project start date: 01/04/2010
Total Costs: 15.8 M€

Partner	Country	Total eligible costs	Total JU contribution	Total national funding	Total funding
Honeywell	CZ	363,411.00	60,689.64	121,016.00	181,705.64
MU	CZ	323,780.00	54,071.26	269,709.00	323,780.26
Siemens	DE	1,656,880.00	276,698.96	449,842.92	726,541.88
ESI-Tecnalia	ES	613,725.00	102,492.08	204,370.00	306,862.08
TCP	ES	262,575.00	43,850.03	61,180.00	105,030.03
Visure	ES	516,912.00	86,324.30	223,823.00	310,147.30
ENSIETA	FR	351,883.00	58,764.46	293,119.00	351,883.46
SODIUS	FR	319,168.00	53,301.06	42,449.00	95,750.06
TRT	FR	1,190,980.00	198,893.66	98,851.00	297,744.66
ART	GB	560,475.00	93,599.33	186,638.00	280,237.33
LU	GB	158,304.00	26,436.77	131,920.00	158,356.77
SELEX	GB	1,475,052.00	246,333.68	451,661.00	697,994.68
SYS	GB	395,300.00	66,015.10	131,538.00	197,553.10
@-portunity B.V.	NL	977,936.00	163,315.31	276,756.00	440,071.31
DUT	NL	975,000.00	162,825.00	324,675.00	487,500.00
ABB NO	NO	1,403,657.00	234,410.72	467,418.00	701,828.72
UiO	NO	349,646.00	58,390.88	174,823.00	233,213.88
ABB SE	SE	1,855,117.00	309,804.54	339,486.00	649,290.54
Enea	SE	854,906.00	142,769.30	156,448.00	299,217.30
KTH	SE	1,190,000.00	198,730.00	753,270.00	952,000.00
TOTAL		**15,794,707.00**	2,637,716.07	5,158,992.92	7,796,708.99

iFEST will specify and develop an integration framework for establishing and maintaining tool chains for engineering of complex industrial embedded systems; a significant technical contribution in the field of embedded systems technology.

Specific emphasis is placed on open tool chains targeting HW/SW co-design for heterogeneous and multi-core solutions, and life cycle support for an expected operational life time of several decades.

iFEST results will demonstrate a potential reduction by 20% of both time-to-market and engineering lifecycle costs, including cost of poor quality.

iFEST will enable engineers to explore the architectural design space at a high level of abstraction, select a cost effective design, and from the abstract models produce semi-automatically the hardware and software implementations in a cost effective balance.

A major innovation in this respect is the targeted integration of tools from the world of model driven engineering with traditional HW/SW co-design tools.

Several iFEST industrial case studies will validate the integration framework and two tool chains, for control and streaming applications. The project will define and validate a set of

tool integration technologies that will be used to integrate various combinations of tools into a tool chain. The integration framework will permit tools to be readily replaced within the tool chain; thus dealing with issues such as tool obsolescence and tool lock-in.

iFEST will promote standardisation of project results to encourage industrial up-take, aligned with the ARTEMISIA Work Groups on standardisation and tool platforms.

iFEST will bring the industry from a state where efficient tool usage in practice is low, to a state where innovative products and services can be designed much more efficiently due to well-functioning tool chains. Having a greatly improved design capacity will create new markets and redefine existing ones for industrial embedded systems.

6) ME3GAS - 100266

Duration of the project (months): YY
Project start date: 01/XX/2010
Total Costs: 15.7 M€

Partner	Country	Total eligible costs	Total JU contribution	Total national funding	Total funding
ELSTER	DE	2,072,110.40	346,042.44	-	346,042.44
HUM	DE	153,423.80	25,621.77	-	25,621.77
ITRON	DE	1,928,744.00	322,100.25	-	322,100.25
sizedn	DE	420,514.00	70,225.84	-	70,225.84
Gas Natural	ES	2,043,576.00	341,277.19	128,901.94	470,179.13
KROMS	ES	704,902.20	117,718.67	68,373.50	186,092.17
SAC	ES	1,168,420.80	195,126.27	58,175.03	253,301.31
SENSE	ES	590,375.00	98,592.63	106,798.50	205,391.12
TID	ES	785,975.00	131,257.83	76,505.03	207,762.86
Arup Consulting Engineers	IE	219,561.00	36,666.69	65,868.00	102,534.69
RK	IE	332,233.00	55,482.91	166,117.00	221,599.91
TNI	IE	603,107.00	100,718.87	484,158.00	584,876.87
ITALGAS	IT	1,074,120.00	179,378.04	266,350.00	445,728.04
CNet	SE	1,452,427.00	242,555.31	483,658.00	726,213.31
CRL	SE	443,040.00	73,987.68	147,532.32	221,520.00
SICS	SE	1,398,550.00	233,557.85	465,717.15	699,275.00
Thya	SI	341,450.00	57,022.15	199,065.00	256,087.15
TOTAL		**15,732,529.20**	**2,627,332.38**	**2,717,219.47**	**5,344,551.86**

The goal of ME³Gas is to put consumers in control of their appliances to effortlessly optimise energy efficiency usage without compromising comfort or convenience. ME³Gas specifically addresses reduction in energy usage and CO2 footprint in households and the commercial buildings sector. The utilization of intelligent concepts is what makes energy smart, and is the heart of energy-efficient technologies. Through energy-intelligent control, regulation and communication we can expect to see further improvements in energy yield.

Due to their high concentrations of population and energy consumption, it is particularly important to improve energy efficiency in urban areas. ME³Gas will make use of the service-oriented middleware for embedded systems being developed in the Hydra project and use its

huge potential to create services and applications across heterogeneous devices to develop an energy-aware middleware platform.

ME³Gas only has commercial and residential relevance if it can be used to save energy in real-world applications. To demonstrate this capability, without impacting user comfort or convenience, the program includes a critical step of retrofit installation of the developed hardware and GUI platforms into real applications. ME³Gas will use real-time energy information as energy-awareness services for all residents and combine household specific services with a community portal. This will enable collective, community activity motivating positive competition in saving energy, complemented by courses on energy efficiency, sustainability and clarifying complicated legislation aspects.

In this context, ME³Gas project addresses the development of a new generation of smart gas meters, based on embedded electronics, communications and the remote management of a shut-off valve, which shall offer a whole range of added values: management of multiple tariffs and payment modalities, remote gas cut off, security alarms, absolute index, temperature correction....

ME³Gas will also contribute to the standardization work being carried out currently in Europe in the smart metering field (under the M/441 mandate of the EC mainly). Thanks to the position and involvement of ME³Gas partners in these standardization initiatives, the work to be carried out in ME³Gas will be valuable for the standardization work and at the same time ME³Gas project will apply and benefit from the available results of the standardization work. The standardization work will result in the proposal for a standard of a European Gas Metering Infrastructure, which can be a part of a multi-utility platform to be made within the project.

7) POLLUX – 100205

Duration of the project (months): 36
Project start date: 01/03/2010
Total Costs: 33.3 M€

Partner	Country	Total eligible costs	Total JU contribution	Total national funding	Total funding
AIT	AT	261,115.00	43,606.21	154,058.00	197,664.21
ams	AT	980,362.00	163,720.45	245,090.00	408,810.45
ARSENAL	AT	139,605.00	23,314.04	82,366.00	105,680.04
AVL	AT	1,654,048.00	276,226.02	413,511.00	689,737.02
CISC	AT	995,966.00	166,326.32	448,184.00	614,510.32
FH-J	AT	632,193.00	105,576.23	372,993.00	478,569.23
IFAT	AT	1,484,915.00	247,980.81	371,228.00	619,208.81
TTT	AT	789,811.00	131,898.44	276,433.00	408,331.44
ViF	AT	229,939.00	38,399.81	135,663.00	174,062.81
ON Semi	BE	1,295,600.00	216,365.20	560,995.00	777,360.20
Triphase	BE	218,418.00	36,475.81	138,259.00	174,734.81
BUT	CZ	611,000.00	102,037.00	508,963.00	611,000.00
IMA	CZ	465,000.00	77,655.00	154,845.00	232,500.00
NXP-D	DE	790,309.00	131,981.60	214,568.89	346,550.49
SFR	DE	1,607,818.00	268,505.61	436,552.59	705,058.20
AICIA	ES	549,160.00	91,709.72	182,870.00	274,579.72
CNM	ES	601,200.00	100,400.40	200,200.00	300,600.40
FICOSA	ES	1,314,774.00	219,567.26	306,342.00	525,909.26
gpt	ES	730,034.00	121,915.68	243,101.00	365,016.68
CEA	FR	1,163,003.00	194,221.50	270,980.00	465,201.50
CONTI	FR	1,749,603.00	292,183.70	145,217.00	437,400.70
PSA	FR	618,074.00	103,218.36	51,300.00	154,518.36
IFX UK	GB	1,799,257.00	300,475.92	599,153.00	899,628.92
QinetiQ	GB	653,082.00	109,064.69	217,476.00	326,540.69
USFD	GB	382,816.00	63,930.27	223,182.00	287,112.27
CRF	IT	2,800,000.00	467,600.00	869,900.00	1,337,500.00
INTEGRA	IT	208,500.00	34,819.50	62,930.50	97,750.00
POLITO	IT	450,000.00	75,150.00	149,850.00	225,000.00
ST Italy	IT	2,400,000.00	400,800.00	659,570.00	1,060,370.00
UNIPI	IT	300,000.00	50,100.00	99,900.00	150,000.00
DuraCar	NL	914,000.00	152,638.00	258,662.00	411,300.00
NXP-NL	NL	2,921,700.00	487,923.90	534,671.00	1,022,594.90
Elbil	NO	460,000.00	76,820.00	153,180.00	230,000.00
SINTEF	NO	930,000.00	155,310.00	465,000.00	620,310.00
Think	NO	144,000.00	24,048.00	47,952.00	72,000.00
TOTAL		**33,245,302.00**	5,551,965.43	10,255,145.98	**15,807,111.41**

The objective of Pollux is to develop a distributed real time embedded systems platform for next generation electric vehicles, by using a component and programming-based design methodology. Reference designs and embedded systems architectures for high efficiency innovative mechatronics systems will be addressed with regard to requirements on composability, networking, security, robustness, diagnosis, maintenance, integrated resource management, evolvability and self-organization.

Next generation EVs will begin the convergence between computer and automotive architectures: future automobiles will be mechatronic systems comprising a multitude of plug-and-play and self configurable peripherals. Peripherals will be embedded systems containing hardware, algorithms, software. The architecture will be based on distributed energy while the propulsion systems will adopt radical new control concepts. Sensing, actuation, signal processing and computing devices will be embedded in the electronic equipment, electrical motors, batteries and the mechanical parts as well.

The systems used to control the chassis and the power train will form the "computing engine" that automates lower level tasks during vehicle use (driver assistance, terrain evaluation, predictive battery management) and will enable future higher level functionalities (auto pilot), by means of novel human-machine interfaces.

Pollux addresses the embedded system needs for the next generation electric vehicles by exploiting the synergy with the ENIAC E3Car project which aims to develop nanoelectronics technologies, devices, circuits, and modules for EVs in preparation for the launch of a massive European EV market by 2015-2020.

The project considers both vertical integration and horizontal cooperation between OEMs, hardware/software/silicon providers to build a solid, embedded-systems European industry while establishing standard designs and distributed real-time embedded-systems platforms for EVs.

8) R3-COP – 100233

Duration of the project (months): 36
Project start date: 01/03/2010
Total Costs: 18.3 M€

Partner	Country	Total eligible costs	Total JU contribution	Total national funding	Total funding
AIT	AT	995,500.00	166,248.50	300,000.00	466,248.50
BUT	CZ	672,178.00	112,253.73	559,924.00	672,177.73
CAMEA	CZ	302,280.00	50,480.76	100,659.00	151,139.76
FAU	DE	179,690.00	30,008.23	149,681.77	179,690.00
FHG (FHG/IPA, FHG/IDMT)	DE	731,711.00	122,196.00	609,515.16	731,711.16
IFAG	DE	2,400,528.00	400,888.18	639,740.71	1,040,628.89
SIE	DE	1,644,016.00	274,550.67	438,130.26	712,680.93
TUBS	DE	172,196.00	28,756.73	143,439.27	172,196.00
TÜV	DE	899,451.00	150,208.32	239,703.69	389,912.01
DTI	DK	639,202.00	106,747.00	321,701.00	428,448.00
ACCIONA	ES	645,685.00	107,829.40	150,445.00	258,274.40
ESI (Tecnalia)	ES	426,030.00	71,147.70	141,868.00	213,015.70
KIN	FI	120,000.00	20,040.00	57,600.00	77,640.00
PFI	FI	80,000.00	13,360.00	38,400.00	51,760.00
PRO	FI	105,000.00	17,535.00	50,400.00	67,935.00
SIM	FI	150,000.00	25,050.00	72,000.00	97,050.00
TEK	FI	80,000.00	13,360.00	38,400.00	51,760.00
VTT	FI	535,000.00	89,345.00	294,250.00	383,595.00
HAI	GR	951,579.00	158,913.69	316,876.00	475,789.69
NTUA	GR	297,507.00	49,683.67	247,823.00	297,506.67
TSI	GR	92,000.00	15,364.00	76,636.00	92,000.00
BME	HU	429,000.00	71,643.00	357,357.00	429,000.00
E80	IT	924,000.00	154,308.00	293,067.00	447,375.00
INN	IT	356,000.00	59,452.00	118,548.00	178,000.00
TIT	IT	1,650,000.00	275,550.00	486,950.00	762,500.00
IMCS	LV	266,000.00	44,422.00	221,578.00	266,000.00
Demcon	NL	387,772.00	64,758.00	55,256.00	120,014.00
PAT	NL	982,590.00	164,093.00	90,540.00	254,633.00
PCL	NL	990,332.00	165,385.00	91,253.00	256,638.00
TUE	NL	214,413.00	35,807.00	35,951.00	71,758.00
TOTAL		**18,319,660.00**	**3,059,384.58**	**6,737,692.86**	**9,797,077.44**

Safe and robust autonomous systems are one of the – if not the – most important instantiation of embedded systems in middle-range future, simply because the application domains are extremely manifold, from transportation over manufacturing to farming, surveillance (indoor, land, air, and sea) to care as well as entertainment. Consequently, at the ARTEMIS SummerCamp 2009, the Strategy Group identified "Autonomous Systems" as one of the targets of the next ARTEMIS SRA. However, today a large number of different approaches and platforms exist, rendering an economic realisation of such systems currently unrealistic (perhaps besides the manufacturing domain, where robots are already industrially exploited). Simultaneously, as such systems increasingly share environment – and even closely cooperate – with humans, there is an urgent need for providing any possible means and measures to

assert and guarantee their dependability, in particular safety and robustness. While a huge log of analysing and testing strategies and methods for conventional systems exist, these are of limited value for mobile autonomous systems with complex sensors and behaviour. Hence, R3-COP will progress autonomous systems in two directions: technology and methodology.
Technology: R3-COP will develop a fault-tolerant high-performance processing platform, based on a multi-core architecture, as well as innovative system components for robust perception of the environment including sensor fusion, and for reasoning and reliable action control. Energy-efficient drivetrains will also be considered.

Methodology: a methodology-based development framework will enable economic development of reference platforms for various robotic application domains as well as dedicated solutions. A tool platform will allow for guarded application of the design methodology, including new test strategies and tools. The outcomes will be applied in a series of demonstrators from ground-based, airborne and underwater domains.

9) RECOMP – 100202

Duration of the project (months): 36
Project start date: 01/04/2010
Total Costs: 25.8 M€

Partner	Country	Total eligible costs	Total JU contribution	Total national funding	Total funding
BUT	CZ	494,632.00	82,603.54	412,029.00	494,632.54
CAMEA	CZ	652,990.00	109,049.33	380,693.00	489,742.33
Honeywell	CZ	330,266.00	55,154.42	109,979.00	165,133.42
Sysgo CZ	CZ	759,184.00	126,783.73	398,798.00	525,581.73
Delphi DE	DE	1,085,786.00	181,326.26	294,790.90	476,117.16
EADS DE	DE	644,351.00	107,606.62	174,941.30	282,547.91
EADS IW	DE	1,595,365.00	266,425.96	433,141.60	699,567.55
EBA	DE	615,152.00	102,730.38	167,013.77	269,744.15
fortiss	DE	578,592.00	96,624.86	481,967.14	578,592.00
SYM	DE	592,047.00	98,871.85	219,945.46	318,817.31
SYSGO	DE	498,758.00	83,292.59	160,350.70	243,643.28
TUBS	DE	654,381.00	109,281.63	545,099.37	654,381.00
TUV	DE	684,919.00	114,381.47	185,955.51	300,336.98
Validas	DE	416,401.00	69,538.97	133,872.92	203,411.89
AAL	DK	304,569.00	50,863.02	177,564.00	228,427.02
Danfoss	DK	485,322.00	81,048.77	64,548.00	145,596.77
DTU	DK	350,000.00	58,450.00	204,050.00	262,500.00
PAJ	DK	304,569.00	50,863.02	147,107.00	197,970.02
SDU	DK	312,690.00	52,219.23	182,298.00	234,517.23
SKOV	DK	159,391.00	26,618.30	21,199.00	47,817.30
7S	ES	487,200.00	81,362.40	210,958.00	292,320.40
ESI-TECNALIA	ES	531,259.00	88,720.25	176,909.00	265,629.25
ESPELSA	ES	420,300.00	70,190.10	97,930.00	168,120.10
Integrasys	ES	719,850.00	120,214.95	311,695.00	431,909.95
UGR	ES	578,550.00	96,617.85	192,657.00	289,274.85
AAU	FI	1,387,580.00	231,725.86	763,169.00	994,894.86
Kone	FI	895,431.00	149,536.98	179,086.00	328,622.98
Metso	FI	761,410.00	127,155.47	90,282.00	217,437.47
Spinet	FI	164,334.00	27,443.78	78,880.00	106,323.78
SSF	FI	262,173.00	43,782.89	125,843.00	169,625.89
TKK	FI	545,594.00	91,114.20	300,077.00	391,191.20
CEA	FR	865,326.00	144,509.44	201,621.00	346,130.44
Delphi-FR	FR	828,400.00	138,342.80	68,757.00	207,099.80
PSA	FR	185,091.00	30,910.20	15,363.00	46,273.20
SR	FR	419,250.00	70,014.75	55,760.00	125,774.75
THALES	FR	914,796.00	152,770.93	75,928.00	228,698.93
IFX UK	GB	1,951,168.00	325,845.06	490,281.00	816,126.06
TRT-UK	GB	522,100.00	87,190.70	173,859.00	261,049.70
WA&S GB	GB	410,850.00	68,611.95	171,051.00	239,662.95
ISL	IE	946,193.00	158,014.23	283,857.00	441,871.23
ISEP	PT	456,000.00	76,152.00	379,848.00	456,000.00
TOTAL		**25,772,220.00**	**4,303,960.74**	**9,339,154.66**	**13,643,115.40**

The proposed RECOMP (Reduced certification cost for trusted multi-core platforms) research project will establish methods, tools and platforms for enabling cost-efficient certification and re-certification of safety-critical systems and mixed-criticality systems, i.e. systems

containing safety-critical and non-safety-critical components. RECOMP recognizes the fact that the increasing processing power of embedded systems is mainly provided by increasing the number of processing cores.

The increased numbers of cores is commonly regarded as a design challenge in the safety-critical area, as there are no established approaches to achieve certification. At the same time there is an increased need for flexibility in the products in the safety-critical market. This need for flexibility puts new requirements on the customization and the upgradability of both the non-safety-critical and safety-critical part. The difficulty with this is the large cost in both effort and money of the re-certification of the modified software, which means that companies cannot fully leverage the advantages of modular software system.

RECOMP will provide reference designs and platform architectures together with the required design methods and tools for achieving cost-effective certification and re-certification of mixed-criticality, component based, multicore systems. The aim of RECOMP is to define a European standard reference technology for mixed-criticality multi-core systems supported by the European tool vendors participating in RECOMP.

RECOMP project will bring clear benefits in terms of cross-domain implementations of mixed-criticality systems in all domains addressed by project participants: automotive systems, aerospace systems, industrial control systems, lifts and transportation systems.

10) p.S.HI.E.L.D. – 100204

Duration of the project (months): 12
Project start date: 1/03/2010
Total Costs: 5.4 M€

Partner	Country	Total eligible costs	Total JU contribution	Total national funding	Total funding
AS	ES	115,800.00	19,338.60	-	19,338.60
ESI	ES	62,400.00	10,420.80	-	10,420.80
MGEP	ES	56,296.00	9,401.43	-	9,401.43
ATHENA	GR	121,200.00	20,240.40	-	20,240.40
HAI	GR	198,940.00	33,222.98	-	33,222.98
ISD	GR	248,750.00	41,541.25	-	41,541.25
ASTS	IT	590,000.00	98,530.00	154,318.25	252,848.25
ED	IT	591,207.50	98,731.65	161,427.36	260,159.01
ETH	IT	536,000.00	89,512.00	164,589.97	254,101.97
SCOM	IT	576,343.75	96,249.41	164,464.61	260,714.02
SESM	IT	705,250.00	117,776.75	195,847.55	313,624.30
TRS	IT	107,415.52	17,938.39	24,328.66	42,267.05
UNIGE	IT	124,992.00	20,873.66	39,996.36	60,870.02
UOR	IT	240,012.00	40,082.00	77,499.96	117,581.96
CWIN	NO	249,040.00	41,589.68	124,519.32	166,109.00
MAS	NO	85,335.00	14,250.95	28,416.56	42,667.51
TAS	NO	22,825.00	3,811.78	7,601.22	11,413.00
CS	PT	255,600.00	42,685.20	85,114.80	127,800.00
THYIA	SI	505,402.30	84,402.18	294,649.54	379,051.72
TOTAL		**5,392,809.07**	**900,599.11**	**1,522,774.16**	**2,423,373.27**

This Project is a pilot version (hence: "p.S.HI.E.L.D") of the original S.HI.E.L.D. (100204) proposal. The SHIELD consortium proposes a pilot project (pSHIELD) which is a reduced R&D project addressing the core concepts of SHIELD, participated by the core/key partners and extended to a new group of partners coming from Norway, Sweden and Portugal.
The pilot is foreseen to be a pioneer investigation to be enhanced with R&D activities that will be proposed in the future ARTEMIS Calls.

pSHIELD wants to investigate and validate a reduced but still consistent and coherent set of innovative concepts behind the SHIELD project, in a restricted scenario with a rearranged consortium tailored on the pilot's scope.

The SHIELD project aims at addressing Security, Privacy and Dependability (SPD) in the context of Embedded Systems (ESs) as "built in" rather than as "add-on" functionalities, proposing and perceiving with this strategy the first step toward SPD certification for future ES.

The leading concept is to **demonstrate composability** of SPD technologies. Starting from current SPD solutions in ESs, the project will develop **new technologies** and consolidate the available ones in a solid basement that will become the reference milestone for a new generation of "SPD-ready" ESs. SHIELD will approach SPD at 4 different levels: node, network, middleware and overlay. For each level, the state of the art in SPD of single technologies and solutions will be improved and integrated (hardware and communication technologies, cryptography, middleware, smart SPD applications, etc.). The SPD technologies

will be enhanced with composable functionality, in order to fit in the SHIELD architectural framework.

The composability of SHIELD architectural framework will have great impact on the system design costs and time to market of new SPD solutions in ESs. At the same time, the integrated use of SPD metrics in the SHIELD framework will have impact on the development cycles of SPD in ESs because the qualification, (re-)certification and (re-)validation process of a SHIELD framework instance will be faster, easier and widely accepted.

11) SIMPLE – 100261

Duration of the project (months): 36
Project start date: 01/09/2010
Total Costs: 7.43 M€

Partner	Country	Total eligible costs	Total JU contribution	Total national funding	Total funding
Prolab	EE	356,000.00	59,452.00	296,548.00	356,000.00
Secuenzia	ES	500,000.00	83,500.00	216,500.00	300,000.00
UPM	ES	500,000.00	83,500.00	166,500.00	250,000.00
HAI	GR	590,632.00	98,635.00	196,680.00	295,315.00
SLG	GR	899,250.00	150,175.00	299,450.00	449,625.00
Infomatix	HU	400,000.00	66,800.00	253,200.00	320,000.00
CAEN	IT	708,000.00	118,236.00	200,014.00	318,250.00
ED	IT	600,000.00	100,200.00	165,050.00	265,250.00
INSIEL	IT	886,000.00	147,962.00	255,662.00	403,624.00
Almende	NL	589,988.00	98,528.00	166,967.00	265,495.00
PCL	NL	546,897.00	91,332.00	100,082.00	191,414.00
UNINOVA	PT	342,000.00	57,114.00	284,886.00	342,000.00
GRN	SI	514,700.00	85,954.00	197,428.00	283,382.00
TOTAL		**7,433,467.00**	**1,241,388.00**	**2,798,967.00**	**4,040,355.00**

The main goal of the SIMPLE project is to research and deliver an intelligent, self-organizing embedded middleware platform, with particular emphasis on the integration of manufacturing and logistics. SIMPLE will address the issue of supporting the self-organization and cooperation of wireless sensors and smart (RFID) tags for federated, open and trusted deployment environments in the manufacturing and logistics application domains.

The primary idea is to enable the dynamic interworking of ultra heterogeneous sensors and tags, which should autonomously organize in hierarchies, thus leveraging the development of a new class of secure, scalable, cost-effective, and easy-to-deploy "smart factory" and logistics applications. The SIMPLE outcomes aim at compensating the current lack of solutions capable of monitoring the state of shipments at different grouping levels (e.g., at the crate and case levels) and, more generally, of tracing goods along the whole supply chain, (e.g., storing/ reporting environmental conditions in the scope of production/shipment processes).

To this end, the project will develop a novel and complete sensor and RFID based embedded middleware platform for manufacturing and logistics applications that will:

- Collect, filter and process readings from a variety of sensors, tags and sensor networks and accordingly delivering them as reports.
- Map and correlate the above reports to business events associated with user-defined business contexts and processes for integrated manufacturing and logistics.
- Interoperate with business IT systems (e.g., ERP, WMS), manufacturing execution systems (MES), as well as distributed control systems (DCS) towards executing commands on manufacturing devices.
- Enable invocation of actuating services, towards configuration and/or activation of machines, devices and actuators.
- Provide techniques and graphical tools for managing sensors, devices, as well as business contexts and processes.
- Provide transparency in the manufacturing and logistics processes, by enabling remote access to the production and transportation chain.
- Prototype, test and validate the above technologies under real conditions in two testbeds under normal production: a) a complete manufacturing plant solution, and b) a complete logistics supply chain.

12) SMARCOS – 100249

Duration of the project (months): 36
Project start date: 01/01/2010
Total Costs: 13.5 M€

Partner	Country	Total eligible costs	Total JU contribution	Total national funding	Total funding
BARCO	BE	1,100,274.00	183,745.76	366,391.00	550,136.76
HIGroup	BE	745,500.00	124,498.50	471,902.00	596,400.50
Sirris	BE	195,000.00	32,565.00	123,435.00	156,000.00
Honeywell	CZ	228,158.00	38,102.39	75,977.00	114,079.39
ESI-Tecnalia	ES	324,010.00	54,109.67	107,895.00	162,004.67
INDRA	ES	1,449,417.00	242,052.64	337,713.00	579,765.64
Nokia	FI	1,500,000.00	250,500.00	300,000.00	550,500.00
Valve	FI	442,688.00	73,928.90	212,490.00	286,418.90
VTT	FI	1,508,041.00	251,842.85	829,422.00	1,081,264.85
Fjordnet	GB	720,000.00	120,240.00	239,760.00	360,000.00
CNR-ISTI	IT	619,729.00	103,494.74	206,369.72	309,864.46
Intecs	IT	668,845.00	111,697.12	222,725.39	334,422.51
Evalan	NL	391,000.00	65,297.00	110,653.00	175,950.00
PCL	NL	438,476.00	73,225.49	80,241.00	153,466.49
PHIi	NL	254,700.00	42,534.90	72,080.00	114,614.90
PRLE	NL	1,964,520.00	328,074.84	359,507.00	687,581.84
UT	NL	911,383.00	152,200.96	303,491.00	455,691.96
TOTAL		**13,461,741.00**	**2,248,110.75**	**4,420,052.11**	**6,668,162.86**

SMARCOS helps users of interconnected embedded systems by ensuring their inter-usability. Many products today connect with web services (media players, refrigerators, e-books, even cars). This distributed computing is becoming the norm in embedded systems.

However, connection problems, firmware incompatibilities, incomprehensible dialogue boxes and just plain bugs plague many commercial offerings. New challenges have also come up for

user interaction: multiple platforms, multi-user applications, internet synchronisation, and application and service adaptation to the changing situational contexts. For instance, which device should give notifications and which one to use for input? What device should decide on automatic actions? What service should track user actions?

Existing efforts towards interoperability (e.g. Artemis project Sofia) have largely focused on architectures, e.g. micro-service interfaces, protocols, parameters. We extend these efforts on the user level. Smarcos allows devices and services to communicate in UI level terms and symbols, exchange context information, user actions, and semantic data. It allows applications to follow the user's actions, predict needs, and react appropriately to unexpected actions.

We construct use cases in three complementary domains: attentive personal systems, interusable devices and complex systems control. The scientific and technical areas include nomadic computing, advanced human computer interfaces and distributed computing. We then carry out several pilots that implement the use cases, including one large trial in a major public event (2012 London Olympics). Along the project, several smaller prototypes will be implemented.

Our results will be applicable to all embedded systems that interact with their users, which is a substantial fraction of today's market. The results will also help web services that are integral parts of such systems.

13) SMECY – 100230

Duration of the project (months): 36
Project start date: 01/02/2010
Total Costs: 20.5 M€

Partner	Country	Total eligible costs	Total JU contribution	Total national funding	Total funding
BUT	CZ	520,960.00	87,000.32	433,960.00	520,960.32
CIP plus s.r.o.	CZ	131,400.00	21,943.80	76,803.00	98,746.80
UTIA	CZ	356,606.00	59,553.20	297,053.00	356,606.20
DTU	DK	821,485.00	137,188.00	478,926.00	616,114.00
NetHawk Oyj	FI	1,137,000.00	189,879.00	227,400.00	417,279.00
Tellabs	FI	135,086.00	22,559.36	27,017.00	49,576.36
VTT	FI	1,258,776.00	210,215.59	692,327.00	902,542.59
CEA	FR	1,641,671.00	274,159.06	382,509.00	656,668.06
GVF	FR	1,131,242.00	188,917.41	93,893.00	282,810.41
HPC	FR	659,672.00	110,165.22	87,736.00	197,901.22
SKYLAB	FR	326,160.00	54,468.72	43,379.00	97,847.72
ST-GNB2	FR	511,856.00	85,479.95	42,484.00	127,963.95
TRT-FR	FR	1,394,294.00	232,847.10	115,726.00	348,573.10
UJF/VERIMAG	FR	362,690.00	60,569.23	302,120.00	362,689.23
TRT-UK	GB	555,062.00	92,695.35	184,836.00	277,531.35
AUTH	GR	109,241.00	18,243.25	90,998.00	109,241.25
HAI	GR	329,122.00	54,963.37	109,598.00	164,561.37
UOI	GR	98,583.00	16,463.36	82,119.00	98,582.36
POLIMI	IT	500,000.00	83,500.00	166,500.00	250,000.00
POLITO	IT	600,000.00	100,200.00	199,800.00	300,000.00
SELEX SI	IT	1,650,000.00	275,550.00	466,950.00	742,500.00
ST Italy	IT	1,400,000.00	233,800.00	396,200.00	630,000.00
UNIBO	IT	597,000.00	99,699.00	198,801.00	298,500.00
ACE	NL	1,123,200.00	187,574.40	317,865.00	505,439.40
PMS	NL	417,995.00	69,805.17	76,493.00	146,298.17
TUDelft	NL	897,500.00	149,882.50	298,868.00	448,750.50
F2M	SE	677,512.00	113,144.50	207,839.00	320,983.50
HH	SE	599,080.00	100,046.36	268,665.00	368,711.36
RTE	SE	392,130.00	65,485.71	120,293.00	185,778.71
SMW	SE	202,182.00	33,764.39	26,213.00	59,977.39
TOTAL		**20,537,505.00**	**3,429,763.34**	**6,513,371.00**	**9,943,134.34**

SMECY envisions that recently emerged multi-core technologies will rapidly develop to massively parallel computing environments, which due to improved performance, energy and cost properties will, in a few years, extensively penetrate the embedded system industry sectors. This will affect and shape the whole business landscape, e.g. semiconductor vendors need to be capable of offering advanced multi-core platforms to diverse application sectors, Intellectual Property (IP) providers need to re-target existing and develop new solutions to be compatible with evolving multi-core platforms and the need of embedded system houses, in addition to product architecture adaptations and renewing their system, architecture, software and hardware development processes.

The complexity of future smart multi-core embedded systems requires holistic system integration because of stringent constraints on e.g. performance and time to market that can only be mastered using a design approach that optimizes interaction between SoC design and

Embedded Software approaches. Therefore, many companies that traditionally have a culture rooted in nano and microelectronics express an urgent need in acquiring know-how and competences in embedded software. Equally urgent is the need of embedded system houses to be able to transform their current product assets to use multi-cores and at the same time to establish development processes in order to fully exploit them.

The mission of the SMECY project is to develop new programming technologies enabling the exploitation of many (100s) core architectures. Multi-core technologies are strategic to keep and win market shares in all areas of embedded systems. ARTEMIS covers well most aspects of embedded systems, but efficient programming of multi-core architectures for various resources-constrained embedded system applications, such as consumer, wireless and some transportation fields, is still a grand challenge waiting to be solved. The goal of this ARTEMIS project is to launch an ambitious European initiative to allow Europe to catch up with Asia (e.g. teams funded by JST/CREST programmes) and USA (e.g. PARLAB in Berkeley, Parallel@illinois and Pervasive Parallelism Laboratory in Stanford) and to enable Europe to become the leader.

The key outcomes of the SMECY project are programming and design methods, multi-core programmable architectural solutions and associated supporting tools that enable a holistic integration of multi-core SoC design and embedded software to master smart system design of future smart multi-core embedded systems in different applications, e.g. consumer, wireless, communication and transportation.