



Funded Lostesc proposals

Leveraging on Space Technologies to Enhance SMEs' Competitiveness

European Space Agency

Agence Spatiale Européenne

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ATASDAS

Automating Target Analysis to Speed-up the Dependability Analysis of complex real time Software modules

Proposal Objectives:

ATASDAS has six operational objectives, transferring a space-based real time software safety methodology developed by SURLOG for medical and industrial use:

1. To build a prototype the ATASDAS software tool based on the specifications of the industrial partners (SURLOG).
2. To validate the use of ATASDAS within quality departments of 3 medical software houses (SPACEBEL, TAM TELESANTE and XLAB).
3. To validate the use of ATASDAS within dependability expert groups of a quality software companies (CRITICAL SOFTWARE).
4. To measure productivity gains using ATASDAS in the target analysis phase of complex dependability analysis (ALL).
5. To develop interfaces of the ATASDAS tool with existing downstream software reliability tools (SURLOG) based on specifications of CRITICAL SOFTWARE6.
6. To have signed the final distribution agreement of the ATASDAS tool between SURLOG and CRITICAL SOFTWARE taking into account the industrialization costs to be supported by SURLOG.

Description of the Work:

The project has 7 work packages.

WP1: Experimental validation of the ATASDAS specification to meet the specified industrial objectives. Preliminary work by SURLOG is taken into account to prepare the specification phase of the software mock-up.

WP2: Specification and mock-up development. From month 1 to 12, a mock-up of the new software tool is built to validate the various end users interfaces. Non experts can use the new automated analysis approach in a safe, reliable and efficient way thanks to the specifications and the first tests of the new analysis software.

WP3: Mock -up validation at bench scale. At mid term review, the first appraisal of the benefits brought by an automated methodology are made. Four test cases are chosen to measure the added value brought by this automated methodology.

WP4: Development of the ATASDAS prototype tool. From month 12 to 24, a prototype software is built to be tested in parallel by the 4 industrial partners on the 4 real life test cases. Impacts on the exploitation plan will be inferred, in particular with regards to industrialisation costs of the resulting software products.

WP5: Industrial testing and evaluation of the ATASDAS prototype on the basis of four industrial test cases. Improved measurements of the added value brought to software developers and software development quality managers will be performed.

WP6: dissemination package aiming at demonstrating the benefits of the new methodology to the real time control software community.

WP7: project management work package based on a common management tool accepted by all the involved partners.

Keywords: Dependability Analysis, Real Time Control Software

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SME Proposers: Critical Software (P) / Xlab (SL) / TamTélésanté (F)

RTD Performers: SURLOG (F)

DEMARITS

DEvelopment of design and MANufacturing Rules of an Innovative Thin Shell technology improving the vibration and/or acoustic response of components in cars, ships and civil engineering machines

Proposal Objectives:

The DEMARITS project has six operational objectives which aim at transferring a space-based vibration damping technology (SPADD) developed by ARTEC to the car, naval and civil engineering machinery sectors under the management of MARMONIER (a car third tier supplier):

1. To build and test a prototype of a design software tool for the SPADD technology (ARTEC).
2. To validate the use of the SPADD design methodology within the design department of a car third tier supplier (MARMONNIER)
3. To validate the use of the SPADD design methodology within the design departments of two manufacturers of machinery for civil engineering (NUOVA FERRERO, TECNICAS HIDRAULICAS).
3. To validate the use of SPADD design methodology within the design department of a naval system designer (SIREHNA).
4. To validate the SPADD manufacturing capability of the four end users through prototype add-ons construction.
5. To have signed a license agreement for the use of the design methodology dedicated to the SPADD

Description of the Work:

The program is 24 month long with 9 work packages:

- WP1: Detailed specifications of the vibration damping technologies. The SPADD device adaptation to three areas of application is defined (car, naval, civil engineering machinery).
- WP2: Building a first numerical mock-up platform to model and to design a new SPADD technology.
- WP3: Manufacturing of elementary test structures and damping devices to validate the design methodology.
- WP4: Validation of the device performances using experimental tests on elementary real life cases. The mid term review is reached with mock-ups for the software-based design methodology and for the three types of devices which would be added to existing designs in order to reach the pre specified vibration levels. The mid-term review allows to validate the work progress regarding the design tool capability and to launch the manufacturing studies of the dedicated devices for the three application areas.
- WP5: Adjustment of the design methodology to take care of manufacturing issues in the design recommendations.
- WP6: Development of a prototype design software tool for the devices to be included in the design methodology
- WP7: Validation of the design methodology using the simulation based methodology on the basis of real life structures.
- WP8: dissemination package aiming at describing the results obtained for automotive, naval and civil engineering communities.
- WP9: project management work package led by Marmonier.

Keywords: Vibration and/or Acoustic Issues, Smart Passive Damping Device

Coordinator Marmonier

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SME Proposers:

Nuova Ferrero (I) / Ferrari (F) /
Tecnicas Hidráulicas (E) /
Sirehna (F)

RTD Performers:

ARTEC (F)

EOLES

Earth Observation Linking SMEs to face real time natural disaster management

Proposal Objectives:

The EOLES project has 7 operational objectives:

1. To have demonstrated that large images can be delivered through the Internet and processed within acceptable time frames.
2. To have demonstrated that GIS coupling can be performed within 3 hours of processing time.
3. To have demonstrated that storm-induced forest damages and flood damages can be assessed.
4. To have validated that new land classification services can be provided to the associated service providers (Rapid Eye)
5. To have validated the integration of the generic and specific functions implemented during the project at a prototype level within the MASS environment.
6. To have prepared dissemination of the obtained RTD results through the availability of the new generic and specific functions in a dedicated version of the MASS portal.
7. To have signed an exploitation agreement of the resulting services between SPACEBEL, the four service providers and the four RTD providers.

Description of the Work:

The project is 24 months long, with a mid term review at the end of mock-up tests under laboratory conditions of the new functions introduced in the MASS portal (both generic and application oriented). It is made of 7 work packages with two main parts:

From month 1 to 12: a mock-up of the two generic or two dedicated software tools will be built. Such mock-ups aim primarily at validating the various service provider interfaces to make sure that the improved MASS environment can use the new generic solutions in a safe, reliable and efficient way for natural disaster management.

From month 12 to 24: a prototype version of the improved functionalities will be built to be tested in parallel by the 4 industrial partners on 4 real life test cases. It may be considered that the software modules will then be ready to be industrialised and marketed after the end of the present RTD project, in order to be made available as complementary MASS components. The prototype tests will be made using the MASS environment as it stands at month 18 of the project.

Keywords: Internet Tools, Internet Portal, Image Delivering, MASS, Damage Assessment

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SME Proposers: RSS (D) / GIM (B) / Rapid Eye (D) / EFTAS (D) / GIM (B)

RTD Performers:

ISO (F) / GAEL (F) / GSC (F) / Joanneum (A)

HEARING

Development of a sound synthesis set for audiometric Stations and Self Diagnosis

Proposal Objectives:

The objective of HEARING project is to create a strongly innovative Multipurpose Digital Audiometric Workstation, the so called HEARING System, well beyond the state of the art, able to:

- . completely replacing the existing clinical currently available heavy audiometers based on analogue technology;
- . provide an easy and reliable tool to perform periodical checks for workers involved in industrial activities with heavy acoustic pollution.

The intention of the HEARING project is not to completely re-develop a new extraordinary audiometer or some innovative "sensors", but rather to analyse all medical and patients' requirements and to validate and integrate the various existing and promising technologies relevant to this area for an easy tool that really responds to the demand of doctors and patients.

Description of the Work:

The intended HEARING project will be developed on 5 main processing phases:

Requirement definitions. The analysis and the identification of user requirements will be performed in order to define the exact specifications and the architecture of the system.

System development. This is the phase, which require the major effort of the Consortium. The system will be implemented in every part, HS and SW components, with particular attention to the DSP card development, the impedancemeter equipment and the micro camera; this first version of the system will be, then, tested at laboratory level.

Prototype construction. The system will be refined in all its aspects according to the suggestion coming from laboratory tests; finally, the HEARING System prototype will be realised with an appropriate user-friendly interface.

Validation. The prototype realised in the previous phase will be tested according to precise evaluation criteria which take into account the European standards for medical equipment.

Dissemination and Exploitation. SMEs involved in the project have the potential to bring the HEARING System to the market, so that a wide action of dissemination of the achieved result will be performed in all the European interested districts.

Keywords: Digital Audiometric, Acoustic

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OPTEC (I) / Aray (UK)

**RTD
Performers:**

Sintef (N) / University of Bologna
(I) / IMQ (I) / Acta Service (I)

MERMOTH

MEdical ReMote control for clothes

Proposal Objectives:

The main objective of MERMOTH is to develop a comfortable, wearable monitoring unit, which will be based on a "wearable interface":
It is implemented by integrated smart sensors, advanced signal processing techniques and new telecommunication systems on a textile platform.
A parallel data management will be designed and tested in order to provide the first two markets with a whole prototype unit for extensive testing.
This overall objective is split into three separate sub objectives:
O1: To design a combined textile/hardware and software architecture for a family of wearable clothes which provide continuous ambulatory monitoring of patients in academic research and the clinical trials of drugs.
O2: To build prototype sets of garments which address the two applications market with different compromises between power/distribution and consumption, user friendliness, relevance of the collected data and cost of ownership.
O3: To gather sufficient experimental data (data around the clock while people go about their duties) to assess the cost of ownership of these technology solutions.

Description of the Work:

The work programme has been divided into eight work packages. The work packages have been organised to separate the mock-up stage of the MERMOTH clothe (reached at month 12) from the prototype of the final clothe version which will be tested by month 24.
WP1, WP2 and WP3 are specifications and service software work packages which sits the frame for the two more important workpackages (WP4 and WP5).
WP4 is the most risky development work package since it includes the clothing choices and the links with the sensor. CENTEXBEL will lead that workpackage, since technological risk lies on the textile.
WP5 is the issues on board data processing workpackage, where energy consumption has to be optimised through agile data pre processing. TAM TELESANTE will lead this workpackage.
WP6 is the integration workpackage with intensive testing. TAM TELESANTE will lead also that workpackage, thanks to its past experience at testing bio clothe.
WP7 deals with dissemination under the responsibility of CENTEXBEL as well as WP8 (project coordination and management).

Keywords: Medical Remote Monitoring for Clothes

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SME Proposers:

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Netsmart S.A. (EL) / ADDS (F) /
Information & Image Systems
S.A. (ES) / Elasta Ind.Nv (B) /
Bonnerte Fernad Dubois Sprl
(B)

RTD Performers:

Tam Télésante (F) / University
College Cork, National University
of Ireland (UK)