

Aktuelle Partnersuchen für europäische Forschungsprojekte im Bereich IKT

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Bei Fragen oder für weitere Details stehen wir Ihnen gerne zur Verfügung:

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Inhaltsverzeichnis

FINDECOS - Ontology based finding, determination and composition of web services to enhance business processes (ICT-2011.1.2, Partner Search PS-DE-4960)	3
Open Cloud Computing Platform as a Service framework "OCCPaaS" (ICT-2011.1.2, Partner Search PS-EG-4806)	5
ARES - bringing cloud infrastructure closer to the mobile user (ICT-2011.1.2, Partner Search PS-BE-73784).....	7
REinCloud - Virtualizing Requirements Engineering through Cloud Technologies (ICT-2011.1.2, Partner Search PS-DE-73906)	9
SeHyP - Selfadapting Anomaly Detection and Diagnosis Assistants for Hybrid Production Systems (ICT-2011.2.1, Partner Search PS-DE-4966)	11
Illicit Chemicals & Intentions Detected by Stand-Off Sensing (ICT-2011.3.5, Partner Search PS-IL-73766).....	13
FWFLIDAR - Full waveform LiDAR data processing (ICT-2011.4.4, Partner Search PS-SI-4998)	15
PerfectReason (ICT-2011.4.4, Partner Search PS-DE-73602)	17
Seamless interactivity with and within your home (Oblo) (ICT-2011.6.1, Partner Search PS-RS-4954).....	19
Smart Energy-Efficient Buildings for Smart Energy Grids (SEBEG) (ICT-2011.6.1, Partner Search PS-BY-4969).....	21
Embedded Computer Engineering Learning Platform (E2LP) (ICT-2011.8.1, Partner Search PS-RS-4957).....	24
Simulearn: Creating a framework to enhance teaching technological and mathematical subjects in secondary school, through robotics (ICT-2011.8.1, Partner Search PS-ES-4755)	26
EDEN - Environment for Dynamic Educational Networks (ICT-2011.8.1, Partner Search PS-HU-73627)	28

FINDECOS - Ontology based finding, determination and composition of web services to enhance business processes (ICT-2011.1.2, Partner Search PS-DE-4960)

PROJECT OVERVIEW

Status: Open

Call Identifier: ICT Call 8 (FP7-ICT-2011-8)

Objective: ICT-2011.1.2 Cloud Computing, Internet of Services and Advanced Software Engineering

Funding Schemes: STREP

Evaluation Scheme: One step proposal

Closure Date: 17/1/2012

Country: Germany

FINDECOS - Ontology based finding, determination and composition of web services to enhance business processes.

PROJECT DESCRIPTION

Proposal Outline:

Development of an innovative cloud platform to 1. registering, 2. searching for, 3. finding, 4. composing web services such that enterprises are able to align them individually according to their business processes. The FINDECOS cloud platform will be embedded in a service-oriented architecture and augments this paradigm with semantic components to automate the steps 2-4 (searching, finding, and composing). Not only will the above technological aspects be taken into consideration but also security issues (i. e. private/personal/corporate data, critical enterprise data, and so on) and the capability of current cloud security standards. Furthermore, state-of-the-art cloud computing billing models will be analyzed. This is important for enterprises that act as service providers. With the consideration of existing billing models benchmarking the provided services comes along. This is another facet that will be analyzed in this project.

Goals: FINDECOS focuses on the implementation of a prototypical cloud platform where web services can be registered. Cloud infrastructures have to be thought of as a technological foundation. This approach augments Software as a Service (SaaS) platforms with semantic concepts. Nowadays, SaaS mainly provides holistic software (i. e. complete Office-, CRM- or ERP applications). Nevertheless, Gartner forecasts a total worldwide SaaS revenue of \$16 billion in 2013. This revenue is achieved through the dynamic character of "pay as you go" models. The increasing usage of SaaS models causes two main problems: market saturation (provider view) and a high usage of standard software (customer view). Due to these challenges, SaaS customers must find new ways how they can stand out from their competitors.

Keywords:

semantic search, ontological engineering

PARTNER PROFILE SOUGHT

Required skills and Expertise:

We are searching for national and international research partners/centers/institutes/corporations. The highly generic context addresses project partners of all industries and research facilities of all fields where business processes resp.

their underlying services represent their core competency. According to the partners' demands the generic context of this proposal can be adapted to domain specific requirements (e. g. CRM, ERP, etc.). Partners that are able to provide cloud infrastructures (public/private/hybrid). Partners that are looking forward to introducing service-oriented architectures (in the cloud). Partners that already work in service-oriented contexts (i. e. service provider) and want to enrich their services with state-of-the-art semantic technologies.

Description of work to be carried out by the partner(s) sought:

Profile 1: Project leader

Profile 2: Project coordinator

Profile 3: Infrastructure provider Partners that are able to provide cloud infrastructures (public/private/hybrid).

Profile 4: SMEs

According to the partners' demands the generic context of this proposal can be adapted to domain specific requirements (e. g. CRM, ERP, etc.).

Partners that are looking forward to introducing service-oriented architectures (in the cloud).

Partners that already work in service-oriented contexts (i. e. service provider) and want to enrich their services with state-of-the-art semantic technologies.

Type of partner(s) sought:

Research partners/centers/institutes/corporations. Industry partners.

Looking for a Coordinator for your proposal:

Yes

PROPOSER INFORMATION

Organisation: University of Applied Sciences Mannheim

Department: Business and Computer Science

Type of Organisation: University

Country: Germany

Open Cloud Computing Platform as a Service framework "OCCPaaS" (ICT-2011.1.2, Partner Search PS-EG-4806)

PROJECT OVERVIEW

Status: Open

Call Identifier: ICT Call 8 (FP7-ICT-2011-8)

Objective: ICT-2011.1.2 Cloud Computing, Internet of Services and Advanced Software Engineering

Funding Schemes: STREP

Evaluation Scheme: One step proposal

Closure Date: 17/1/2012

Open Cloud Computing Platform as a Service framework "OCCPaaS"

PROJECT DESCRIPTION

Proposal Outline:

The Infrastructure as a Service IaaS business has been emerging rapidly for the past few years and a vast number of businesses have already migrated to cloud-based solutions. PaaS however is different, developers have been struggling to build cloud-based solutions without being locked into specific PaaS providers, without much success. Development frameworks that embrace the open standards in both the development and production terms are quite few, if any. Developers are required to choose the bundled choice of hosting service along with a specific programming language and/or development framework

The proposed project is an infrastructure agnostic cloud computing Platform as a Service PaaS framework with IaaS integration. The framework should leverage various open-source components and may be open-sourced on a core level, such that end-users (which are web-scale developers themselves) would be ensured their code is not locked into the platform. They are free to run the code on their own infrastructure or a public cloud of their choosing.

Important characteristics include

- Code is IaaS provider agnostic. Pluggable drivers for monitoring, management, scaling ..etc written for every major cloud platform (public or private as needed)
- A missing state-of-the-art web-scale ready web development framework that fits perfectly in the proposed PaaS framework
- Different building blocks (databases, shared file systems, Message buses, caching layer...etc) are offered that cover various trade-off corner cases
- Worker language agnostic. Various languages and run-times are implemented using pluggable drivers

Target Market

Target customers are developers who want to build web applications that can start small and scale up to millions of users in no time. Developers and web application owners who are willing to pay for their exact ...

PARTNER PROFILE SOUGHT

Required skills and Expertise:

1. Architects and developers of high performance, multi-tenant cloud scale web development framework

2. Experience deploying, automating, performance monitoring, and controlling various open source and proprietary cloud IaaS layers
3. Experience with distributed NoSQL databases, as well as scalable caching layer
4. Experienced web developers with large scale projects

Description of work to be carried out by the partner(s) sought:

Profile 1: Research and Development for creating and/or modifying a high performance multi-tenant scalable web development framework into the OCCPaaS, as well as integrating with a scalable message bus

Profile 2: IaaS Cloud deployment, automation, monitoring as well as Implementation of drivers for cloud providers (OpenStack, Amazon EC2, etc.)

Profile 3: Design and Implementation of a distributed NoSQL DB with an integrated caching layer.

Profile 4: Design and Implementation of web-enabled management web user interface as well as testing of the PaaS with real life projects

Type of partner(s) sought:

1. Web-Framework developers, designing and developing high performance, multi-tenant cloud scale web development framework
2. Software development firm experienced in operations of and integration with IaaS providers
3. Distributed database developers with experience integrating a scalable caching layer
4. Designers and developers of web-enabled management APIs and user interfaces. Software development firm that needs to migrate sample web applications to the cloud-based scalable PaaS platform

Looking for a Coordinator for your proposal:

Yes

PROPOSER INFORMATION

Organisation: Cloud Niners Information Systems

Department: R&D

Type of Organisation: Industry - SME

Country: Egypt

ARES - bringing cloud infrastructure closer to the mobile user (ICT-2011.1.2, Partner Search PS-BE-73784)

PROJECT OVERVIEW

Status: Open

Call Identifier: ICT Call 8 (FP7-ICT-2011-8)

Objective: ICT-2011.1.2 Cloud Computing, Internet of Services and Advanced Software Engineering

Funding Schemes: STREP

Evaluation Scheme: One step proposal

Closure Date: 17/1/2012

The main objective of the ARES project is to fill the gap between the current cloud infrastructure and the rapidly growing expectations of mobile device users to **outsource components of real-time, interactive and demanding applications**. To reduce device-cloud latency, **additional cloud infrastructure will be deployed in the (mobile) network edge**. This results in a 3-tier architecture, comprising the mobile device, low-latency nearby cloud infrastructure and traditional “deep-cloud” solutions. Application components will be dynamically distributed between the mobile terminal, the cloudlet and the (traditional cloud).

PROJECT DESCRIPTION

Proposal Outline:

ARES is proposal being built for Objective 1.2 of Call 8, that addresses the integration of small-scale cloud infrastructure (so-called cloudlets) in the (mobile) network edge. Because the latency to existing cloud infrastructure such as Amazon EC2 or MS Azure is too high and too variable, currently only services can be deployed in the cloud that have limited interaction with the client and that mainly fetch their data from integrated storage subsystems. Consequently, these cloud solutions are of little use for mobile users. Indeed, mobile applications typically have a tight coupling with the mobile device and operate on data provided by the device sensors.

Therefore, ARES will introduce small-scale cloudlet infrastructure in the mobile network.

Mobile users can profit from this nearby infrastructure: the low-latency connection allows to offload resource intensive application components from the mobile device to the cloudlet, while maintaining real-time communication.

ARES will tackle the complete vertical integration stack of the cloudlet architecture, including infrastructure management (IaaS) and platform management (PaaS).

Goal: The goal is to arrive to a holistic solution, ready to be integrated in mobile networks by telco operators.

Keywords:

mobile, cloud, real-time, use case, Software-as-a-Service, SaaS

PARTNER PROFILE SOUGHT

Required skills and Expertise:

An additional partner is sought to bring in a use case in the project proposal (i.e. the SaaS layer).

Partners should bring in a strong use case, targeting a potentially huge user base and clearly demonstrating the advantages of the cloudlet approach (= having low-latency cloud infrastructure available for use by mobile devices).

The use case should be an application, of which some components are offloaded from the mobile device to the nearby cloud infrastructure. The partitioning of application components between the device, the nearby cloud and the traditional cloud can be dynamic, depending on parameters such as device capabilities, wireless signal, availability of nearby cloud infrastructure, dependencies on user data that is stored in the cloud etc...

Ideally, the use case application involves significant amount of processing on the mobile terminal (i.e. not or nearly not feasible today on even the most recent smartphones) and a significant amount of network bandwidth consumption when this application would be offloaded to the cloud. As such, the use case will help to highlight the benefits of the ARES approach.

Description of work to be carried out by the partner(s) sought:

- development of the use case/application
 - integration of the application within the ARES architecture
- In addition, the new partner could do some work on the IaaS or PaaS level as well, but the primary focus should be on the development of the use case

Type of partner(s) sought:

Industrial, SME with experience in FP6/FP7 projects

Looking for a Coordinator for your proposal:

No

PROPOSER INFORMATION

Organisation: IBBT

Department: IBCN

Type of Organisation: Research Center

Country: Belgium

REinCloud - Virtualizing Requirements Engineering through Cloud Technologies (ICT-2011.1.2, Partner Search PS-DE-73906)

PROJECT OVERVIEW

Status: Open

Call Identifier: ICT Call 8 (FP7-ICT-2011-8)

Objective: ICT-2011.1.2 Cloud Computing, Internet of Services and Advanced Software Engineering

Funding Schemes: STREP

Evaluation Scheme: One step proposal

Closure Date: 17/1/2012

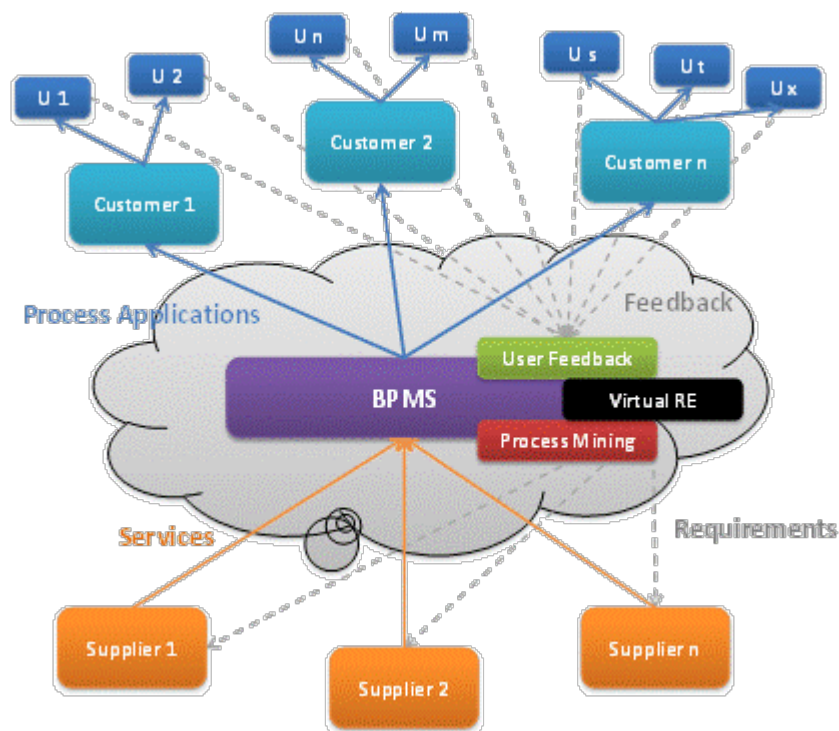
REinCloud - Virtualizing Requirements Engineering through Cloud Technologies

PROJECT DESCRIPTION

Proposal Outline:

An important characteristic of cloud computing is the multi-tenant hosting of software on the provider side instead of operating individual instances on the customer side. This enables software providers to monitor at runtime how their products are actually used, which helps them to detect and correct weaknesses more quickly.

However, the software industry in general is not yet fully aware of the benefits that usage monitoring in the cloud may offer. In particular, by still focusing on an isolated software product, interconnections with other software systems or the integration of the product into the overall business processes cannot be monitored and understood. Yet when adapting the idea of usage monitoring to the domain of business process management suites (BPMS), significant value for larger ecosystems can be provided.



Business process management suites (BPMS) are software platforms that allow the design, implementation and execution of organization-specific business processes. Thus, when

realizing a BPMS in the cloud, not only the usage of the BPMS itself but also the performance of each business process application that is part of the suite can be monitored. BPMS providers will thus be able to learn which business processes are implemented in which variants by different customers, and which of these process variants are most effective in the given context. Through process mining, best practices for business processes and corresponding requirements for the BPMS as well as for external solutions provided by suppliers can then be derived.

However, BPMS in the cloud will not only provide the automatic recognition of requirements through mining technologies, but will also offer end users the possibility to give immediate feedback during run time to the provider. By implementing such a feedback mechanism, BPMS providers are then able to collect ideas and wishes from hundreds to thousands of real users in order to derive additional requirements for future solutions. BPMS providers may therefore use these two instruments to add another service to their portfolio, i.e., that of virtual requirements engineering in the cloud: Needs, room for improvement, best practices, as well as end user wishes are collected and turned into requirements that are of immediate value both for internal development departments and external suppliers (e.g., software houses that provide certain functionality in terms of services). These requirements consumers will then be able to deliver more appropriate solutions as they have a better understanding of what is either implicitly needed or explicitly desired in their markets.

Furthermore, by providing corresponding solutions to these requirements as integrable cloud services within the BPMS, customers of the BPMS can use and test these solutions directly. The resulting cloud-based communities and collaborations between end users, BPMS vendors (i.e., integration partners) and specialized suppliers allow networking, sharing of knowledge, and collection of feedback, entailing benefits for all market players in terms of more high-quality solutions, or shorter time-to-value.

Keywords:

Business process management, Cloud computing, requirements engineering

PARTNER PROFILE SOUGHT

Required skills and Expertise:

Service consumers who:

- are willing to have their business processes supported and monitored by the proposed solution, so that the project results can be evaluated;
- (advantageous) have used a human-centric BPMS to better perform their business processes.

Description of work to be carried out by the partner(s) sought:

Usage and testing of solutions developed in the project.

Type of partner(s) sought:

SME

PROPOSER INFORMATION

Organisation:

Department: Information Systems Development

Type of Organisation: Research Center

Country: Germany

SeHyP - Selfadapting Anomaly Detection and Diagnosis Assistants for Hybrid Production Systems (ICT-2011.2.1, Partner Search PS-DE-4966)

PROJECT OVERVIEW

Status: Open

Call Identifier: ICT Call 9 (FP7-ICT-2011-9)

Objective: ICT-2011.2.1: Cognitive Systems and Robotics

Funding Schemes: IP

Evaluation Scheme: One step proposal

Closure Date: 17/4/2012

SeHyP - Selfadapting Anomaly Detection and Diagnosis Assistants for Hybrid Production Systems

PROJECT DESCRIPTION

Proposal Outline:

Solution Approach: 1) In a first step, the data acquisition problem is tackled. For this, data from all parts of the plant (sensors, actors, MES-systems, ERP-systems, energy consumptions) must be gathered and synchronized. As a result, plant operators are able to visualize a synchronized overall status of their plant. 2) In a second step, these data is recorded, analyzed and abstracted. This is done by means of statistics, machine learning, and data mining. At the end of this step, a model of the normal and of the faulty plant behavior over a period of time is identified. This model can already be used to predict the plant behavior and to identify optimization potentials. 3) Finally, by comparing the real plant behavior to the behavior predicted by the learned models, non-normal or suboptimal situations can be identified automatically during the plant operation. Furthermore, error causes can also be identified.

Keywords: Monitoring, anomaly detection, Energy management

PARTNER PROFILE SOUGHT

Required skills and Expertise:

plant operators, companies which operate large production systems, system integrators, automation experts, companies in the field of plant engineering and construction, tool suppliers in the field of automation, component suppliers in the field of automation, engine builders, MES companies

Description of work to be carried out by the partner(s) sought:

PROFILE 1: Application and verification of the solutions using complex plants and production systems

PROFILE 2: Implementation of the solution in the automation systems (PLCs, MES, ...)

PROFILE 3: Analysis of the technical and economical impacts of the results

Type of partner(s) sought:

- (i) Industrial end-users
- (ii) Machine construction companies
- (iii) Suppliers of automation technologies
- (iv) System integrators

(v) Plant operators

Looking for a Coordinator for your proposal:

No

PROPOSER INFORMATION

Organisation: Fraunhofer IOSB-INA

Department: IOSB-INA

Type of Organisation: Research Center

Country: Germany

Illicit Chemicals & Intentions Detected by Stand-Off Sensing (ICT-2011.3.5, Partner Search PS-IL-73766)

PROJECT OVERVIEW

Status: Open

Call Identifier: ICT Call 8 (FP7-ICT-2011-8)

Objective: ICT-2011.3.5 Core and disruptive photonic technologies

Funding Schemes: STREP

Evaluation Scheme: One step proposal

Closure Date: 17/1/2012

Illicit Chemicals & Intentions Detected by Stand-Off Sensing

PROJECT DESCRIPTION

Proposal Outline:

Screening of suspects with increasing traffic through airports, border checkpoints and public mass events poses an almost insurmountable challenge. To meet this challenge, a combination of orthogonal technologies have to be integrated. In this project, we propose to investigate and combine remote-spectral image sensing technologies with novel biometric and behavioral detection methods. In this context, we also wish to exploit the fact that suspects of illicit intentions suffer under emotional stress. The proposed RTD shall therefore include the following methods and technologies:

1. Laser based molecular spectroscopic detection methods will be investigated. The purpose of the research is to achieve the goals set to detect illicit chemicals (explosives, drugs, hazardous chemicals and bio-chemicals) within the finger-print IR region, and this from a stand-off distance of a few meters and detection sensitivities of the sub-microgram level. In order for these goals to be achieved, the project will first investigate and setup stand-off IR imaging laser spectroscopic sensors. In addition, a molecular specific data base will be collected and a dedicated algorithm will be developed for matching the detected spectra to the data base. Finally, the optimal results of the components will be integrated into a demo-system.
2. The above spectroscopic tools will also be exploited to sense hormones excreted into sweat by emotional stress.
3. The above emotional stress also results in typical behavioral (body language) patterns and thermal signatures on the suspects. These aspects will be investigated and their correlations with the above results established.

The advantages sought for the outcome of such a system are very high detection sensitivities for contamination detection, contactless probing at stand-off distances of a few meters, reduced false-alarm rates due to biometric and behavioral backup, negligible operator interaction, large person throughput, very long operation durability and consumables-free .

Keywords:

Illicit chemicals, laser spectroscopy, stand-off, thermal sensors, person screening, biometric, behavioral analysis, emotional stress

PARTNER PROFILE SOUGHT

Required skills and Expertise:

- Homeland Security Endusers,
- Illicit Chemicals (Explosives, Drugs, et,) Analysts
- Behavioral Research (Body Language)
- Bioanalytic - Biometric Research,
- Chemical Analytic Spectral Data Matching Algorithms
- QCL Research and Manufacture
- CO2 Laser Research and Manufacture
- Compact MWIR-LWIR Monochromator Design & Manufacture
- Tunable Spectral Filter Technology and Devices

Description of work to be carried out by the partner(s) sought:

- Specifying person screening security, safety and privacy requirements, setting up of field-test experiments, providing test samples,
- Defining and designing test station (setup, dimensions, stand-off distances, throughput, etc.)
- Research on the influence of emotional stress on behavioral patterns, biochemistry and thermal signatures
- Explosives and illicit drugs sample preparation on a variety of backgrounds and aggregation states
- IR Spectroscopy databases and matching algorithm development
- Scanning QCL medium power RTD in the 7-11 micron region
- CO2 medium power broadband or tunable laser RTD in the 7-11 micron region
- Design and fabrication of high-resolution compact monochromators
- Tunable spectral filter design and fabrication

Type of partner(s) sought:

Industrial homeland security enduser

Governmental law enforcement agency endusers

Applied Academic Research (universities and institutes) or industrial RTD on

- MWIR lasers (QCL, CO2, etc.) of medium power
- large format and ultrafast SWIR-MWIR-LWIR sensors
- IR spectroscopy of explosives, drugs and stress biochemistry
- behavioral researchers (body language and body thermal signatures)

PROPOSER INFORMATION

Organisation: Elbitsystems - ELOP

Department: Thermal Imaging Systems

Type of Organisation: Industry - Large Company

Country: Israel

FWFLIDAR - Full waveform LiDAR data processing (ICT-2011.4.4, Partner Search PS-SI-4998)

PROJECT OVERVIEW

Status: Open

Call Identifier: ICT Call 8 (FP7-ICT-2011-8)

Objective: ICT-2011.4.4 Intelligent Information Management

Funding Schemes: STREP

Evaluation Scheme: One step proposal

Closure Date: 17/1/2012

FWFLIDAR - Full waveform LiDAR data processing

PROJECT DESCRIPTION

Proposal Outline:

Solution Approach: 1) In the first step, the data compression and visualization is undertaken. As a result, the data can be efficiently stored, transmitted over the network, and visualized in real-time. In order to cope with huge data sizes, sufficient data structures are developed and parallelisation of algorithms is studied. 2) In the second step, automatic object recognition is performed by machine learning and statistical analysis. As a result, each LiDAR point carries information about the type of the object that it represents (e.g. ground, building, bridge, road, and tree). 3) In the last step, the LiDAR data, supplemented with the data from other sources (e.g. multispectral satellite imaging, additional sensor systems and external data bases), is analysed in order to extract information about the observed area for situation awareness and decision making support (e.g. evaluation of changes in the terrain, estimation of forest biomass, transportability evaluation of roads).

Keywords:

LIDAR, remote sensing, Pattern Recognition, data analysis, environmental planning

PARTNER PROFILE SOUGHT

Required skills and Expertise:

- manufactures of remote sensing instruments (LIDAR, multi-spectral imaging, SAR);
- remote sensing data providers;
- experts in algorithms for: data compression, computational geometry, pattern recognition, data structures and parallel processing;
- civil engineering, environmental monitoring, geographic information systems;

Description of work to be carried out by the partner(s) sought:

PROFILE1: Remote sensing infrastructure providers

PROFILE2: Remote sensing data gathering

PROFILE3: Data compression and information extraction algorithm development

PROFILE4: Geo-spatial analysis

Type of partner(s) sought:

Research partners/centers/institutes/corporations

Industry partners

Looking for a Coordinator for your proposal:

No

PROPOSER INFORMATION

Organisation: University of Maribor, Faculty of Electrical Engineering and Computer Science

Department: Laboratory for Geometric Modeling and Multimedia Algorithms

Type of Organisation: University

Country: Slovenia

PerfectReason (ICT-2011.4.4, Partner Search PS-DE-73602)

PROJECT OVERVIEW

Status: Open

Call Identifier: ICT Call 8 (FP7-ICT-2011-8)

Objective: ICT-2011.4.4 Intelligent Information Management

Funding Schemes: STREP

Evaluation Scheme: One step proposal

Closure Date: 17/1/2012

PROJECT DESCRIPTION

Proposal Outline:

This project aims to improve current practices in the usage of digital semantic information as for instance its extraction, aggregation and correlation by combining latest advancements in High-performance Computing with those in the field of Semantic Technologies. New parallel programming models and novel hardware architectures will allow for the first time to apply large-scale reasoning on semantically annotated data from different sources including rapidly time-varying data sets. Furthermore, complex reasoning strategies will be explored and handled through usage of parallelization strategies applied at an high-performance computing centre.

Semantic annotation as the foundation for reasoning on data from various sources is becoming more and more widespread. The use of semantic standards, such as the Resource Description Framework Schema (RDFS), for data description enables radically new possibilities for combining data from different domains, as for instance open or proprietary databases or ontologies on the public or corporate Web, news articles, blog entries, and so forth. The amount of semantically annotated data has exploded in the past few years, e.g. in the year 2010 around 25 billion RDF triplets from the Linking Open Data alone (interlinked by around 395 million RDF links), and keeps growing rapidly. Microformats such as RDFa, which allow to embed semantic descriptions in web pages, and semantic enrichment of existing data repositories are paving the way to semantic annotation of the entire global digital information.

Reasoning and inference on semantically annotated data is a key technology for any future application aiming at exploiting digital information. The sheer volume of data and the complexity of reasoning necessarily requires efficient use of large computational resource. However, the data volume expected cannot be handled with today's mainstream computing infrastructure, both hardware and software.

The next-generation mainstream hardware will most likely consist of processors combining large numbers of specialised computing cores, as a logical continuation of today's multi-core desktop processors. As such, they will not be utilized efficiently by current mainstream serial programming models, but requires massive parallelization in order to execute many inter-dependent tasks concurrently. Such programming models are well established in the high-performance computing world, but have not yet percolated into the mainstream partly due to their complexity requiring highly specialized skills.

This project will build upon existing semantic reasoning platforms and deliver an open, flexible and scalable set of tools that efficiently exploits the next generation of computing hardware for generic semantic reasoning problems. In particular, we will address the following two bottlenecks: 1) the actual inference engine, by re-implementing it based on

state-of-the-art parallel programming models, and 2) data aggregation and format conversion. Through this, three main issues of this project will be tackled:

- Usage of very large data sets and complex reasoning algorithms
- Applying parallelization methods by use of HPC infrastructure
- Reasoning by consideration of issue a. and b.

The performance of this set of tools will be demonstrated by empirical testing on a realistic large-scale use-case. The project concludes with the transition into an open source community project in order to guarantee continued software development and maintenance.

Keywords:

reasoning, Inference, semantic reasoning, semantic inference, Semantic Web, RDF, OWL, data-provider, use-case

PARTNER PROFILE SOUGHT

Required skills and Expertise:

We seek a partner or a group of partners with a strong background in the application of semantic reasoning and inference techniques to real-world use-cases.

In addition, the partners have a specific reasoning problem at hand that is too complex / time consuming to be solved with their current reasoning workflow. Your situation is the following:

You know how to predict, for instance, tomorrow's weather with your reasoning workflow (either proprietary or based on open technologies). However, producing this answer takes 30 days. Obviously "weather prediction" and the timescales indicated are only examples and need to be replaced with your particulars.

The aim of the project is to reduce the computation time using high-performance computing techniques (parallelization) sufficiently to make your available reasoning workflow useful in the first place. To that end we will require a description of your reasoning workflow and inference engine before proposal submission in order to assess the technical feasibility of parallelization.

Note however, that the partner or group of partners must necessarily have access to the data.

Description of work to be carried out by the partner(s) sought:

Use-case provider and data-provider, either as a single partner or a group of partners.

Type of partner(s) sought:

Use-case provider and data-provider, either as a single partner or a group of partners.

PROPOSER INFORMATION

Organisation: HLRS - University of Stuttgart

Department: SANE

Type of Organisation: University

Country: Germany

Seamless interactivity with and within your home (Oblo) (ICT-2011.6.1, Partner Search PS-RS-4954)

PROJECT OVERVIEW

Status: Open

Call Identifier: ICT Call 8 (FP7-ICT-2011-8)

Objective: ICT-2011.6.1 Smart Energy Grids

Funding Schemes: STREP

Evaluation Scheme: One step proposal

Closure Date: 17/1/2012

Seamless interactivity with and within your home (Oblo)

PROJECT DESCRIPTION

Proposal Outline:

The project objective is to build smart grid that can assist in management of the electricity distribution within energy efficient household. Such infrastructure will also enable intelligent home automation in an optimized controlled, secure and user friendly manner. Further, collecting real-time data on energy consumption and interface definition for management of smart household appliances is expected.

R&D targets includes design of hardware and software components for smart home energy grid configuration, residential gateway implementation for providing personalized services with remote home monitoring, definition of unified wireless interface to all household appliances: A/V equipment, white goods, communication equipment and system integration.

The project results can be used for making energy efficient buildings with affordable intelligent home automation for residential users distributed to the level of each unit and with 19tandardiza energy consumption management. Further, research results will lead towards easy-to-use products for high quality indoor environment control including light ambient, temperature and humidity control, monitoring of electric household appliances, etc. New energy metering service for power distribution network operators and new user services for communication network operators are also feasible though residential gateway 19tandardization.

Expected impact includes (i) Reduction of energy consumption in home, (ii) Planning of energy requirements in urban and rural residential areas, (iii) Intelligent power management service for autonomous energy preservation and (iv) Full comfort, safety and energetic efficiency of home electronic appliances.

Keywords:

smart home, Smart grid, Home automation, Light control, Power consumption, Energy monitoring, Energy management

PARTNER PROFILE SOUGHT

Required skills and Expertise:

experienced FP project coordinator

smart grid modeling specialists

building construction company experts in human behavior analysis, etc.

Description of work to be carried out by the partner(s) sought:

PROFILE 1: Project management and coordination of activities within project. Dissemination of project results.

PROFILE 2: Perform a comprehensive study on the energy efficiency in smart energy grids. Model a electrical energy distribution within a modern energy efficient building.

PROFILE 3: The partner would be involved in implementation of the project results into building and putting Oblo concept into real user conditions.

PROFILE 4: Perform a comprehensive study on the end user acceptance of the proposed solution

Type of partner(s) sought:

- (1) Coordinator
- (2) researchers for modelling efficiency in smart energy grids
- (3) building construction companies for exploitation of results
- (4) human acceptance research
- (5) other

Looking for a Coordinator for your proposal:

Yes

PROPOSER INFORMATION

Organisation: RT-RK Computer Based Systems LLC

Department: Embedded Systems

Type of Organisation: Industry - SME

Country: Serbia

Smart Energy-Efficient Buildings for Smart Energy Grids (SEBEG) (ICT-2011.6.1, Partner Search PS-BY-4969)

PROJECT OVERVIEW

Status: Open

Call Identifier: ICT Call 8 (FP7-ICT-2011-8)

Objective: ICT-2011.6.1 Smart Energy Grids

Funding Schemes: STREP

Evaluation Scheme: One step proposal

Closure Date: 17/1/2012

Smart Energy-Efficient Buildings for Smart Energy Grids (SEBEG)

Proposal Subject: Project SEBEG will develop an integrated system for effective monitoring and management of energy effective usage in buildings and neighbourhood, leveraging geographic information systems and decision-support systems with smart energy grids functionality.

The project realization is in accordance to the following key research challenges:

c) Data management infrastructures to allow electricity production and consumption to be measured, reported and controlled (and eventually credited or billed).

Result of the project implementation is to reduce power consumption gracefully, without adversely affect safety, comfort or productivity.

PROJECT DESCRIPTION

Proposal Outline:

According to the European Union Directive on the Energy Performance of Buildings (EPBD 2002/91/EC), more than 40% of the energy consumption in Europe is due to heating, cooling and lighting operations within buildings. Moreover, buildings are the largest source of CO₂ emissions in the EU (including their electric power consumption), and their total energy has been rising since 1990.

Buildings components (cement, steel, insulation, glass windows) and systems (lighting, heating, ventilation and air conditioning appliances) are developed by independent companies whose products are tested for individual performance independently of each other. A whole building approach to the design and operation of buildings, where these components are integrated in a way that they reduce consumption through cooperation, is rarely used. This often leads to significant system-level inefficiencies.

Efficient monitoring, storage and analysis of meter data are essential to decisions about load distribution, future infrastructure investments, and other planning. However, it's just part of the picture. The Energy Control Unit is the most critical element of incorporating intelligence into the grid, buildings, streetlights, etc. It's at the heart of what we can do for thousands of utility and commercial customers.

Objectives: to develop an integrated system for effective monitoring and management of energy effective usage in buildings and neighbourhood, leveraging geographic information systems and decision-support systems with smart energy grids functionality.

The developed system will allow to:

1. Automatically create energy design of house(s) having AutoCAD based drawings (e.g. Autodesk). This provides possibilities to conduct cluster analysis of certain type of buildings saving substantial investments.
2. Use of smart energy-efficient house as hub that will collect real-time data on energy consumption from smart household appliances and enable intelligent automation using smart energy grids.
3. Create data management infrastructures to allow electricity production and consumption to be measured, reported and controlled.
4. Create WEB-platform for on-line control of energy consumption in buildings for their optimization. This platform can serve as “on-line hot-line” consultancy center.
5. Allow each energy user to define preferences as for energy usage time distribution;
6. Support the grid operator in defining energy costs for each user so as to encourage a better use (for example, to avoid demand peaks and to achieve load balancing) of the available energy while at the same time satisfying each user preferences and guaranteeing price fairness;
 - Evaluate real benefits from energy-effective technologies implementation for buildings such as: Demand side and demand response management enabled by innovative decision support systems.
 - User friendly software which include database on energy consumption and intensity of the different kinds of building and neighbourhood technologies, characteristic of technologies and environment impact of energy use
7. Allow producers and consumers playing a novel role in the management of their energy consumption and to create strategies for building and maintaining customer relationships to achieve customer loyalty.
8. Reduce maintenance by relying on cloud-based customer service applications.
9. Identify the new roles of online and energy display information and its impact on its customer relationships.
10. Demonstrate success in key billing and payment programs.

To achieve the above goals this project will develop a set of software services enabling effective smart grid management. Such services will have an open interface in order to foster interoperability and development of new services/businesses starting from those developed within the project framework.

We intent to contribute with the integration of a communication solutions with the smart grid infrastructure targeted in the project. We plan to integrate with new sensor and actuator types and to perform experiments on the deployed infrastructure. We shall demonstrate the potential of correlating the energy consumption of a building/neighbourhood with other external data sources such as weather information to detect is e.g. a heater is performing at its maximum efficiency.

It is of essential interest for the project to provide a detailed model of energy consumption and create various consumer profiles. Such detailed models should include the ambient data profiles, construction details of households, aggregated economic profiles and behaviour of the inhabitants, combined thermal and electrical demand etc. The fine profiling will enable creating various scenarios for the grid management and can be also used for the testing of the devised algorithms.

Such new levels of innovation and quantifiable benefits will require partnerships between process engineering specialists, software companies and standardization experts as well as specific user communities.

Keywords:

Energy – environment system; Decision support system; Software development; Integrated resource planning; Demand side analysis; Supply side analysis; Sustainable development; energy effective technologies; smart grid

PARTNER PROFILE SOUGHT

Required skills and Expertise:

- Experience in the FP7 and other International Projects
- Broad experience in analyzing energy-economy-environment linkages
- Developer and researcher on GIS technology
- Life-cycle assessment of energy technologies, energy and sustainable development, evaluation of strategies for reducing of greenhouse gas emissions, and the development and improvement of simulation and optimization process engineering models

Description of work to be carried out by the partner(s) sought:

Prototyping, Programming, System Integration, Dissemination, Engineering

- Dissemination and Exploitation of project result
- Web and mobile platform development
- Develop real case study to test the system and improve contribution of partners to research

Type of partner(s) sought:

- University/Research Institution
- Sensor Manufacturers and developer
- GIS, software system provider
- Dissemination and Exploitation of project result
- Web platform developer and mobile application developer

Looking for a Coordinator for your proposal:

Yes

PROPOSER INFORMATION

Organisation: Joint Institute for Power and Nuclear Research

Department: Energy Systems Analysis

Type of Organisation: Research Center

Country: Belarus

Embedded Computer Engineering Learning Platform (E2LP) (ICT-2011.8.1, Partner Search PS-RS-4957)

PROJECT OVERVIEW

Status: Open

Call Identifier: ICT Call 8 (FP7-ICT-2011-8)

Objective: ICT-2011.8.1 Technology-enhanced learning

Funding Schemes: STREP

Evaluation Scheme: One step proposal

Closure Date: 17/1/2012

Embedded Computer Engineering Learning Platform (E2LP)

PROJECT DESCRIPTION

Proposal Outline:

OBJECTIVES

- Systematic approach to bring more creativity and innovation into global engineering and science education
- Provide unified platform for embedded engineering education
- Encourage problem-solving approach for enriching personal knowledge
- Foster creativity in interdisciplinary learning processes in computer engineering curriculum
- Promote collaborative-education between different scientific institutions

IMPACT

- Improve education efficiency in lab, with strong accent on hands-on experience
- Adaptation of educational technologies for improved learning process
- Introduce more interaction between the education and further R&D in embedded systems
- New learning model for supporting growing need for embedded system engineers

LEARNING TARGETS:

- Embedded microprocessors & computer architectures programming,
- Digital signal processing (audio, video and data) and its real-time implementation,
- Reconfigurable digital system design and testing,
- Computer networks & interfaces and
- System integration

STRONG POINTS:

- Single comprehensive platform for the complete curriculum
- Open Source Library of laboratory exercises for main courses in the study program for embedded systems
- Fostering creativity through sharing of computational tools among different curriculum subjects
- Encouraging new knowledge generation above limitations of lab equipment with keeping focus on learning process not on platform used

Keywords:

Education, learning, Embedded systems

PARTNER PROFILE SOUGHT

Required skills and Expertise:

- experts in embedded engineering teaching (university or high-school)
- company that develops embedded systems

Description of work to be carried out by the partner(s) sought:

- definition of embedded engineering curriculum
- design of E2LP system
- development of E2LP based lab courses
- application of E2LP in the teaching process
- dissemination

Type of partner(s) sought:

1. university with embedded engineering curriculum
2. high-school with background in teaching computer programming (C/C++)
3. industry partner for guiding E2LP design for fast inclusion of graduates into workplace

Looking for a Coordinator for your proposal:

No

PROPOSER INFORMATION

Organisation: RT-RK Computer Based Systems LLC

Department: Embedded Systems

Type of Organisation: Industry - SME

Country: Serbia

Simulearn: Creating a framework to enhance teaching technological and mathematical subjects in secondary school, through robotics (ICT-2011.8.1, Partner Search PS-ES-4755)

PROJECT OVERVIEW

Status: Open

Call Identifier: ICT Call 8 (FP7-ICT-2011-8)

Objective: ICT-2011.8.1 Technology-enhanced learning

Funding Schemes: STREP

Evaluation Scheme: One step proposal

Closure Date: 17/1/2012

Simulearn: Creating a framework to enhance teaching technological and mathematical subjects in secondary school, through robotics.

PROJECT DESCRIPTION

Proposal Outline:

Objective: Creating a framework, through robotics, as a means of facilitating learning and motivation in technological and mathematics subjects.

Scope: Secondary schools.

Simulearn is an educational methodology that will:

- Promote teamwork
- Build the theoretical concepts with empirical experiments
- Enter-based learning project development
- Using multimedia tools for the assimilation of contents
- Work on simulation environments for the application of mathematical concepts, physical ...
- Perform analysis of motion trajectories, reference systems, connectors, sensors applied to physics ..
- Develop textual functions of gestures: help psychomotor
- Improve students' spatial vision (3D).

Learning environment: The key objective of the project is creating an e-learning platform that includes some modules, corresponding to the different technical subjects that students have to learn. Each of these modules will be split in sub-modules.

For example:

- Module 1. - Mathematics: It will incorporate different modules referring to geometry, algebra, trigonometry...
- Module 2. - Physics: It will include sub-modules of acceleration, dynamics, movement trajectories...
- Module 3. - Computer Science: I will include a programming module. Students will have to prepare a project involving all the technical subjects they learn and they will use the platform as a means to get this objective. The platform will also include a robotics simulator where different parts of a real robot could be seen and mounted. Lego's Robot could be an appropriate one due to its educational characteristics. It will also include a programming robots tool so once the code is compiled it can be executed by the virtual robot. Support for learning: It would be a good complementary tool, but not necessary, the use of real robots in the classroom.

Keywords:

Simulation, robotics, learning, teaching, mathematics

PARTNER PROFILE SOUGHT**Required skills and Expertise:**

- Experts in robotics development
- Experience in school improvement works
- Experience in e-learning platforms and simulators
- Technological expertise

Description of work to be carried out by the partner(s) sought:

- Develop a real case study to test the framework and contribute to the project requirements definition
- Organisation of WPs, Dissemination of Project Results, IPRs
- Perform a comprehensive study on the end to end connectivity with the pupil
- Carry out research and development work to create the e-learning platform and the robotics simulator

Type of partner(s) sought:

- Research institutions
- Educational and governmental bodies
- Robotics developers
- Software developers
- End-user for user needs analysis and testing

Looking for a Coordinator for your proposal:

No

PROPOSER INFORMATION

Organisation: University of Oviedo

Department: InfobÃ³tica Research Group

Type of Organisation: University

Country: Spain

EDEN - Environment for Dynamic Educational Networks (ICT-2011.8.1, Partner Search PS-HU-73627)

PROJECT OVERVIEW

Status: Open

Call Identifier: ICT Call 8 (FP7-ICT-2011-8)

Objective: ICT-2011.8.1 Technology-enhanced learning

Funding Schemes: STREP

Evaluation Scheme: One step proposal

Closure Date: 17/1/2012

EDEN - Environment for Dynamic Educational Networks

The project's goal is to develop and provide the technological background for a new educational model consisting of dynamic networks in the form of real and virtual studios, which are collectively organized into "school parks" offering high-standard educational services. The educational space of the studios, which efficiently supports skill and knowledge development, will be supported by appropriate ICT solutions relying on semantic search, cognitive reasoning and speech/sound technologies.

PROJECT DESCRIPTION

Proposal Outline:

1. Theoretical framework

(a) The prior value of the proposed project is the **development of an educational philosophy** which opens a real prospect to revolutionarily improve the mass schooling education system. It permits (a) the organisation of highly productive educational spaces, (b) the organisation of individual education within the system of mass schooling, (c) to take into account the quickly changing educational, scientific and technological environment, (c) to stop the contradiction between the educational goal of the society and that of the individuals.

(b) **We introduce an educational philosophy to give a special content to the concepts of knowledge and knowledge formation.** Especially, the proposed philosophy deals with the concepts of information and knowledge in real and virtual environments. Therefore, an appropriate theory of mind is proposed, according to which knowledge is a special organ of the mind. Humans acquire knowledge, and the growth of the knowledge-organ goes through freedom-based self-regulating activities. At the same time, a new theory of learning is formulated, shifting towards cognition-based learning from authority-based learning. Education processes in this framework will be connected to self-regulating development, which can be represented in the proposed model of mind. The proposed educational philosophy deals with educational space and environment, and also with methods able to support efficient personal development, through which students can effectively realise their potentials. The proposed philosophy also deals with practical education processes and with the education model that permits to realise them. It assumes replacement of knowledge transfer with growing knowledge and competences, while at the same time it maintains active interest and mobilises all individual capacities of the students. We suggest to create such an educational environment (open and self-structured with balanced use of real and virtual components) in which each student can find a sphere of activity according to his

individual interests and capacities. This environment will use both technical and human resources; it will allow each student to grow his corresponding competences and thus result in personal satisfaction.

(c) The suggested education model is realised by so called **school parks**, which are a corporation of real and virtual studios. The studios can provide high-standard educational services for students. A studio is of mixed age-groups and can be subject-centred, e.g. on biology, physics, literature, or activity-centred e.g. on design, research etc.

The suggested model provides a solution for **individualized education**. In a school park each student has a possibility to **follow his or her own educational pathway**, in the course of which he encounters the basic educational competences thus constantly developing them. A school-park's major role is to provide access to choosing the appropriate place and speed of learning, and the profundity of cognition in the knowledge area chosen by the student.

2. The main innovative educational components of the proposal:

(a) The proposal supports the effort to **initiate students into a knowledge creating culture**. Accordingly, it involves not only student's developing knowledge-building competencies but also their coming to see themselves and their work as part of the civilization-wide effort to advance knowledge frontiers. In this context, the Internet becomes the first realistic means for students to connect with civilization-wide knowledge building and to make their educational work a part of it.

(b) The cognitive premise for the proposal is that **learning is a constructive, not a receptive process**. Making this statement is to insist on the fact that learning is not so much knowledge and skill acquisition but the construction of meaning and the development of knowledge by the learner. Knowledge is not simply acquired. It is created and recreated on the basis of previous learning. An important characteristic of school parks is network learning, which is realized within the studios of the school park. The individuals in a studio (the physical nodes) are embedded in the information flow of the network. Each learner uses and processes information in his/her pace. A network model of learning (an attribute of connectivism) distributes some of the processing and interpreting functions of information flow among the physical and virtual nodes of the network. This view of learning scales well with the increasing complexity and pace of knowledge development.

(c) A cognitive theory is considered that describes technology-related factors affecting individual learning and cognitive growth **to enable insight into the role of technology in the education environment** (e.g. classroom interaction) and **knowledge construction**.

(d) **An important metacognitive ability** is being **able to handle information adequately**. Not only to manage, but to recognize the absence of some information, and the efficient way of finding it, and to identify the value of information – shortly, information literacy. Information literacy is a very complex, but most needed skill. **Our project is aimed at enhancing the information literacy skills of students** together with a strong **critical literacy skill** development.

3. The main innovative technological components of the proposal:

(i) **Semantic technology to perform meaning-based search** in pure natural language vocal and written texts. The proposed method of “ontology capsules” interprets the concept of search more deeply and takes man–machine synergy more seriously. This type of search relies on the user's semantic competence to a much greater degree than existing search engines. An ontology capsule is a partial model of the sought-for information in the form of an ontology fragment (instead of a set of simple keywords). Ontology capsules created by

the user guide the actual search process and help the precise identification of relevant information in the text through various linguistic heuristics.

(ii) The school park supports self-organized competence development. The abilities needed for this development process will be supported by appropriate ICT solutions such as serious games, discussion forums, etc. These solutions also help selecting individual learning paths and can be a basis for developing abilities suitable for participating in knowledge creating enterprises.

(iii) **Cognitive technology** called “Cognitive Reasoning Framework” which makes it possible to develop cognitive systems, which helps in the acquisition and application of cognitive capabilities (e.g., establishing patterns in input data, classification, conceptualization, reasoning, planning) for enhancing the performance and manageability of complex multi-component and multi-degree-of-freedom teaching systems. This technology also supports the learning of various cognitive reasoning methods. It also supports the combined use of model-based reasoning with various types of plausible reasoning (like probabilistic, fuzzy, statistical, possibility etc.).

(iv) **Speech- and sound-technology** offering innovative solutions for dialogue information exchange.

(v) The proposal **emerging cognitive science**: in order to influence students’ behaviour regarding their knowledge and problem solving, we shall use a “captology” technology which explores the overlapping space between persuasion and interactive computing technologies in order to make students change their attitudes. We will focus on the use of serious games as a component of this technology.

Keywords:

Collaborative Learning, Collaborative internetworking, semantic search, Adhoc virtual team, cognitive reasoning

PARTNER PROFILE SOUGHT

Required skills and Expertise:

We seek

- educational institutions teaching several different age groups (from elementary school age to secondary school age)

We also seek partners with expertise in

- developing interactive educational technologies (e.g. serious games)
- the principles and methodology of assembling e-learning curricula
- e-learning personalisation
- the methodology of controlling and operating e-learning processes
- the development of web-based collaboration solutions
- dependency grammars
- frame semantics
- cognitive education science

Description of work to be carried out by the partner(s) sought:

Our partners will

- develop software modules for structuring and organising content that is collected by semantic search processes

- develop web-based portal software for creating and operating real and virtual learning studios
- provide theoretical and technological background for developing skills required for information literacy, critical media literacy etc.
- help the development of the semantic search-based component by participating in the linguistics-related tasks

Type of partner(s) sought:

Our prospective partners are

- Educational institutions (from elementary schools to high schools)
- Research institutions (working on the field of linguistics and the methodology of education)
- SME-s with expertise in
 - E-learning
 - developing web-based collaboration solutions

PROPOSER INFORMATION

Organisation: Applied Logic Laboratory

Department: researcher

Type of Organisation: Industry - SME

Country: Hungary