

Evaluation Summary Report

Proposal : 248590
Acronym : REACTION
Program : FP7
Call : FP7-ICT-2009-4
Funding scheme : Large-scale integrating project - CP-IP
Duration : 48 months
Activity : ICT-4-5.1 - Personal Health Systems

REACTION

Remote Accessibility to Diabetes Management and Therapy in Operational healthcare Networks

Proposal submitted by :

| N° | Proposer name | Country | Total cost (€) | % | Grant requested (€) | % |
|----|--|----------------|----------------|-------|---------------------|-------|
| 1 | ATOS ORIGIN SOCIEDAD ANONIMA ESPANOLA | Spain | 1,064,048 | 6.00 | 754,288 | 5.80 |
| 2 | CNet Svenska AB | Sweden | 1,976,130 | 11.15 | 1,526,345 | 11.74 |
| 3 | Danish Electronics, Light & Acoustics | Denmark | 1,775,344 | 10.01 | 1,309,272 | 10.07 |
| 4 | INSTITUT FUER MIKROTECHNIK MAINZ GMBH | Germany | 2,179,985 | 12.30 | 1,665,163 | 12.81 |
| 5 | FOUNDATION FOR RESEARCH AND TECHNOLOGY HELLAS | Greece | 1,170,130 | 6.60 | 885,373 | 6.81 |
| 6 | FRAUNHOFER-GESELLSCHAFT ZUR FOERDERUNG DER ANGEWANDTEN FORSCHUNG E.V | Germany | 1,293,020 | 7.29 | 989,538 | 7.61 |
| 7 | Hellenic Telecommunications & Telematics Applications Company | Greece | 777,300 | 4.38 | 403,800 | 3.11 |
| 8 | IN-JET APS | Denmark | 886,000 | 5.00 | 744,900 | 5.73 |
| 9 | Applied Logic Laboratory | Hungary | 596,400 | 3.36 | 454,320 | 3.50 |
| 10 | MEDIZINISCHE UNIVERSITAT GRAZ | Austria | 752,880 | 4.25 | 582,080 | 4.48 |
| 11 | JOANNEUM RESEARCH FORSCHUNGSGESELLSCHAFT MBH | Austria | 1,005,623 | 5.67 | 766,397 | 5.90 |
| 12 | Chorleywood Health Centre | United Kingdom | 548,400 | 3.09 | 423,600 | 3.26 |

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|----|--------------------------------|----------------|-------------------|-------------|-------------------|-------------|
| 13 | BRUNEL UNIVERSITY | United Kingdom | 1,163,760 | 6.56 | 905,360 | 6.97 |
| 14 | VRIJE UNIVERSITEIT BRUSSEL | Belgium | 451,600 | 2.55 | 344,600 | 2.65 |
| 15 | BAYER TECHNOLOGY SERVICES GMBH | Germany | 1,375,004 | 7.76 | 698,893 | 5.38 |
| 16 | SOLIANIS MONITORING AG | Switzerland | 714,000 | 4.03 | 542,250 | 4.17 |
| | Total | | 17,729,624 | 100% | 12,996,179 | 100% |

Abstract :

The REACTION project will develop an integrated approach to improved long term management of diabetes; continuous blood glucose monitoring, clinical monitoring and intervention strategies, monitoring and predicting related disease indicators, complemented by education on life style factors such as obesity and exercise and, ultimately, automated closed-loop delivery of insulin. The REACTION platform will feature an interoperable peer-to-peer communication platform based on a (SoA) service oriented architecture – all functionalities, including devices, are represented as services and applications consisting of a series of services orchestrated to perform a desired workflow. The REACTION platform also features a Model Drive Application Development environment based on extensive use of dynamic ontologies and advanced Data Management capabilities with algorithms for clinical assessment and rule-based data processing. The intelligent, interoperable platform developed by REACTION will provide integrated, professional, management and therapy services to diabetes patients in different healthcare regimes across Europe, including 1) professional decision support for in-hospital environments, 2) safety monitoring for dosage and compliance, 3) long term management of outpatients in clinical schemes, 4) care of acute diabetic conditions and 5) support for self management and life-style changes for diabetic patients. A range of REACTION services will be developed targeted to insulin-dependent type 1 diabetic patients. The services aim to improve continuous blood glucose monitoring (CGM) and insulin therapy, by both basal dose adjustment and contextualised glycaemic control based on patient activity, nutrition, stress level, etc. Decision support will assist healthcare professionals, patients and informal carers to better manage diabetes therapy and make correct choices about e.g. good blood glucose control, nutrition and exercise.

Evaluation :

| 1.Scientific and/or technological excellence (relevant to the topics addressed by the call) (Threshold 3.0/5 ; Weight 1.00) | Mark : |
|---|---------------|
| <p>The proposal presents a fully integrated approach to diabetes management with better integrated care, in a closed loop system. The aims presented go beyond the state of art addressing both hypoglycaemia and hyperglycaemia controls. The objectives comply fully with the call.</p> <p>An excellent and thorough analysis of relevant work, including a good understanding of other projects in the field, is given. Ambitious objectives build on state of the art developments to achieve further innovation and development in: multiparametric monitoring system, BAN supporting patient mobility, closed loop glycaemic control, integrated solution for management interfaced with hospital information systems and improved sensors, with a convincing approach to achieving the 5% target for accuracy of glucose measurement.</p> <p>A comprehensive workflow including: a professional decision support plan, risk analysis and a sizeable validation. Strong user centric development leading to lesson learnt and change analysis in each iteration supporting: architecture design, clinical protocol, prototype development, trials and acceptance testing. The majority of tasks are well described. However, insufficient detail is presented for:</p> <ul style="list-style-type: none"> - semantically based information retrieval tools - control algorithms and their link to patient personalisation | 4.50 |

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|---|--|
| - interfacing to the insulin pump Trial sub task 8.2.3 is not appropriate at this early stage. The clinical trials need more concrete details of study design and the number of patients involved. | |
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| 2.Quality and efficiency of the implementation and the management (<i>Threshold 3.0/5 ; Weight 1.00</i>) | Mark : |
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| <p>Management structures and procedures are clearly described; key managers are identified, lines of communication are given, dispute and change management procedures are covered.</p> <p>The individual partners are skilled and experienced, most are key players in their domains. The description of out-patient diabetic expertise needs further elaboration.</p> <p>The consortium includes major stakeholders: technical, academic, clinical and industrial players. Most partners have collaborative experience from previous projects. The consortium is diverse and complimentary.</p> <p>The allocation of resources is appropriate, with the exception of : - the appropriateness of resources for clinical trials can not be judged without a more detailed breakdown of costs and patient numbers. - the level of indirect costs for partner 4 needs justification.</p> | 4.50 |

| 3.The potential impact through the development, dissemination and use of project results (<i>Threshold 3.0/5 ; Weight 1.00</i>) | Mark : |
|---|---------------|
| <p>The project has the potential to deliver highly relevant and directly applicable results for major economic and societal impacts in Europe. Other advantages include: the closed loop solution, empowering the patient to be an active participant in the healthcare process, and a contribution to standards. All stakeholders, including health policy makers, are taken into consideration. The proposal plans to study the suitable socio-economic conditions for deployment of the technology, thus contributing to rapid uptake.</p> <p>Detailed dissemination plans, with a step by step approach each year, are given including: a website, newsletters, publications and conferences, and leading to demonstration and site visits to policy makers and other national health organisations. However, the proposal is missing key target journals. The proposal foresees an annual European conference on “Remote Accessibility to Diabetes Management and Therapy”. The target audience will be healthcare providers, health professionals, service providers, pharmaceutical companies.</p> <p>Overall exploitation planning is addressed but is not detailed. Individual exploitation plans are included for a number of the partners. However, it is unclear how the overall system/service will be exploited.</p> <p>IPR issues are addressed including ownership and patents.</p> | 4.00 |

| 4.Remarks (<i>Threshold 10.0/15</i>) | TOTAL |
|---|--------------|
| | : |

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| <p>The description of out-patient diabetic expertise needs further elaboration.</p> <p>More details need to be given on:</p> <ul style="list-style-type: none"> - semantically based information retrieval tools, - control algorithms and their link to patient personalisation, - interfacing to the insulin pump. <p>Provide risk mitigation and contingency plans for sensor development.</p> <p>Justify the level of indirect costs for partner 4.</p> <p>A detailed costing of the trials and the numbers of patients needs to be given. If technical developments are successful, human trials with the automated closed loop should be considered.</p> <p>The activities and related resources for the trial with pregnant women (subtask 8.2.3) should be removed.</p> | 13.00 |
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| Does this proposal have ethical issues that need further attention? (If yes, please complete an ethical issues report form (EIR)) | Y |
|--|---|

For each criterion under examination, score values are interpreted as follows:
0- The proposal fails to address the criterion under examination or cannot be judged due to missing or incomplete information ; **1-** Poor. The criterion is addressed in an inadequate manner, or there are serious inherent weaknesses. ; **2-** Fair. While the proposal broadly addresses the criterion, there are significant weaknesses. ; **3-** Good. The proposal addresses the criterion well, although improvements would be necessary. ; **4-** Very Good. The proposal addresses the criterion very well, although certain improvements are still possible. ; **5-** Excellent. The proposal successfully addresses all relevant aspects of the criterion in question. Any shortcomings are minor.