

## Software quality assurance service-package for open document format applications

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Name of co-ordinator enterprise	<b>MultiRáció Economic and Finance Information Developing and Consulting Ltd.</b>
Name of project leader (person representing the consortium)	<b>Dr. Miklós Banai</b>

The members of the consortium:

1. MultiRáció Ltd.
2. Polygon Ltd. (a business partner of IBM)
3. Sun Microsystems Hungary Ltd.
4. University of Szeged (SZTE),
5. Eötvös University (ELTE)
6. Technical University Of Budapest (BME)

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### Summary

#### *The main goals of the project*

These days there are more than *one billion* personal computers in the world, which may be doubled within a couple of years. We can use writers and spreadsheets as document editors, on computers and on the mobile tools, since these are spreading rapidly. *Software industry* has become a *very important part* of the economy, as it already yields the 25% of the GDP in the USA.

One of the most important targets of software development is to provide *stable* applications. Stability can only be guaranteed by *high quality*, this is why software quality assurance has become an important part of development and production. As electronic document processing became more and more a common task, document exchange and cooperation among different users made *compatibility* and *interoperability* a central issue of document editor applications.

The first overall solution of this problem was the ***Open Document Format*** (ODF) developed by OASIS, an organization of various large computer users and producers. ODF was accepted as ISO standard in 2006. Application of this standard format has been supporting by the European Union by making it one of the obligatory standards of document exchange in public institutions. A number of countries (e.g. the Netherlands, France, South Africa, Brazil, etc.) ordered the application of the standard by law, ***NATO*** also applies it as one of the obligatory document exchange formats. The Brazilian government organizations already use ODF as document exchange format. ODF is also supported by the market leader Microsoft Office in its new version to be released in 2009. Some dominant software developer companies of the world, like Sun Microsystems and IBM, tend to promote various technologies to encourage the effective involvement of independent software companies in their large software projects. ***Service Oriented Architecture*** (SOA) promoted by IBM was the first step in this direction. Sun followed this line soon by the UNO model of its OpenOffice.org (OOo). In the segment of office productivity applications, the organization OASIS developed ODF, a standard file format enabling ***100% compatibility and interoperability*** among office applications. Independent software developer companies can join to these solutions by developing new functions as extensions or add-on modules.

As ODF becomes more and more accepted worldwide, ***effective development and maintenance of robust applications*** conforming to the standard is even more necessary.

This work plan concentrates on the informatics segment of industry. The specific R&D area: developing source code monitoring tools and services for the desktop computing, servers, mobile and telecommunications world, using source code- and process metrics and impact analysis, including the elaboration of an ISO 9126 and CMMI based quality assurance process.

The forecomer of the proposed project is the software quality assurance project “OpenOffice++”, successfully completed by SZTE and MultiRacio. The resulting monitoring system is currently on line at the OpenOffice/StarOffice software developer department of Sun Microsystems in Hamburg. The purpose of the new project is to continue this work for ODF conforming software applications by including extension modules in this monitoring process. Technologies of the mobile environment and Erlang would be also included to extend the range of the services.

The quick spreading of these ODF applications is shown, by the data of Sun Microsystems: the number of OpenOffice.org and StarOffice users has raised to 75 Million worldwide. The major gains are in the Pacific Areas, including Japan and China.

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This rapidly increasing demand in the Pacific required a new version of StarOffice, called StarSuite, which fulfils the specific needs of the geographical area. And now the OpenOffice.org downloads have already reached the 2 Million per week.

The Companies of IBM, Sun Microsystems and Novell have switched or are switching to ODF applications, which means hundred thousand new users more worldwide

The IBM this spring marketed its own ODF application, the OpenOffice.org based Lotus Symphony 1.0. The support of this application for companies can be bought based on number of users from the world leading IT company.

This Summer Brazil specified the ODF as the National institutional document exchange format. This decision increases the number of ODF application users substantially in Brazil of population 170 million as well.

Since last year more than hundred thousand users have downloaded the global add-on extensions of MultiRáció Ltd to OpenOffice.org and StarOffice.

It is important to note that the race, between data exchange within connected systems, which are conditioning the protocols and standard formats has not finished yet. The aims laid down in this proposal, assure the spread of the applicability of the leading document standard.

The development of service oriented architectures, widely accepted by the software developers, is in the first stage. The compatibility of data exchange is the key of the usage of processes, provided by independent developers. This is the common interest of the big software companies and the smaller software companies as well, who are developing extensions, add-ons and processes.

The software quality assurance service-package, along ODF applications can be easily adopted for other software as well. Because this benefit, most of the national and international software industry segments can be covered during the sales process

The consortium aims to enter in the competition of services in the field of software quality monitoring and assurance.

That service can reach market success, which is available in time and in accordance with the critical development processes.

To reach the leader position the critical factors are the strong scientific base and the continuous development of the methods behind the analytical- appraising-monitoring service

**Main purpose of the project:** developing software quality assurance services for the applications of the ISO standard Open Document Format. Some applications conforming to this standard: OpenOffice.org and its derivatives like Sun StarOffice, IBM Lotus Symphony, MultiRáció EuroOffice 2008, and extensions and add-on modules connected to these applications.

**Secondary purpose:** developing software quality assurance tools and services for the mobile and telecommunications environment, and XML (ODF) verification of document exchange.

In the last few years the usage of Erlang functional programming language has dynamically spread. Only in the first half of 2008 41 thousand users have downloaded one of the Erlang versions. Major industrial applications has developed in this language. Along Ericsson other companies use Erlang like the British T-Mobile, Motorola, the Erlang Training and Consulting for telecommunication software, the Swedish Kreditor for electronic payment, the Quviq for producing software-testing tools.

There is emerging demand for refactoring tools on the mobile telecommunication recently. As one research reports: 20% of the asked Erlang developers, have heard about the RefactorErl, developed by ELTE (Number 5 of the Consortium), supported by Ericsson. And 5% are using this prototype.

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*The main outcome:* Promoting ODF applications (extended to mobile environments) in the software market by making the development and maintenance of these applications more effective.

The members of the consortium will be entitled to count on that they will base a competitive servicing environment with their former results and with attainment of planned goals during this joined project. In this way they could allocate the intellectual achievements of the participant universities to the rapidly developing service market.

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