



Security with Aspects in SOA

Opportunity for a 6 months internship

SAP RESEARCH - SAP LABS FRANCE

NICE-SOPHIA ANTIPOLIS

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This internship is based in the SAP Labs France Research Lab, in Sophia-Antipolis. The work will be performed in the context of the Research Program "Security & Trust", and deals with security which enforces more abstract, high-level security requirements and obligations on SOA applications.

Security in SOA is a major challenge in today business applications and is currently covered by implementing standards at web-services level. However, security is a non-functional property which has the particularity to be spread across administrative and technological domains as well as among different levels of abstraction (Collaboration, Processes, Services and Resources). In the scope of the CESSA Project (<http://cessa.gforge.inria.fr>), we aim at enforcing security at the different level of abstraction while the SOA application evolves. In order to support this research activity, we are searching for an ambitious student for an internship of 6 months.

The goals of the work will be to analyze solutions and develop practical examples of secure aspects which cross administrative domains and impact the aforementioned levels on SAP's development tools. The student will also be able to contribute with his ideas to the team and project at each phase of the internship.

Within this internship, the student will deal with most of the following tasks:

- Familiarize with SAP Netweaver and related tools
- Apply these tools to the CESSA project use cases
- Develop example applications based on these tool's APIs
- Show in proof-of-concept implementation the feasibility of new solutions

We expect that 40% of time will be dedicated to research activities, and 60% to development

Technologies involved:

Java, SAP Netweaver, Web Services, AOP, XML, SQL, ABAP

Candidate Profile

- University Level: Last year of MSc or less if the student has a good profile
- Experience in an object oriented programming language, preferably Java
- Knowledge of Web Services standards and Security would be a strong plus
- Knowledge of Aspect-Oriented Programming would be a plus
- Interest in research work
- Fluency in English (working language)
- Good oral and written communication skills

Internship Context

SAP & SAP Research

As the world's leading provider of business software, **SAP** delivers products and services that help accelerate business innovation for our customers. We believe that doing so will unleash growth and create significant new value – for our customers, SAP, and ultimately, entire industries and the economy at large. Today, more than 47,800 customers in more than 120 countries run SAP applications – from distinct solutions addressing the needs of small businesses and midsize companies to suite offerings for global organizations.

SAP Research –*Systematic Thought Leadership for Innovative Business*– As the global technology research unit of SAP, SAP Research significantly contributes to SAP's product portfolio and extends SAP's leading position by identifying and shaping emerging IT trends through applied research and corporate venturing.

In contrast to SAP's product groups, which work on new functions and releases, SAP researchers explore opportunities that haven't yet been developed into products. We track technology trends, evaluate the potential impact on SAP solutions and customers, and generate breakthrough technologies. The business model of SAP Research is based on co-innovation through

collaborative research. Working with leading universities, partners, customers, and SAP product groups, SAP Research oversees the development of promising ideas and prototypes into market-ready software for maximum customer value.

SAP Research is headquartered in Walldorf, Germany. SAP Research has identified six long-term and global research programs, among them the **Security & Trust Research** Program, which is lead by SAP Research at SAP Labs France.

SAP Research Sophia Antipolis, SAP Research Center Sophia Antipolis is located in the setting of one of the most important scientific parks worldwide. A high concentration of IT and telecommunication industries within walking distance, proximity to partners and customers, as well as the educational establishments in the region provide SRC Sophia Antipolis with an ideal working environment. Based at SAP Labs France, the focus of SRC Sophia Antipolis is mainly in the research field of security and trust. However, of great interest is the work on e-government and public safety applications. Local collaborations with external partners and educational organizations in the region, such as Inria, Eurécom Institute, and the University of Nice Sophia Antipolis, provide a strong benefit to these research activities. SAP Research also participates to the French poles de competitivites *Risques* (Risk) and *Solutions Communicantes Securisees* (Secure Communicating Solutions). Beyond that, SAP Research Sophia Antipolis is collaborating with industrial partners and customers which provide a strong benefit to the research activities.

30 researchers are working at SAP Labs France (among ~200 employees) and are mainly involved on European Research Projects in the area of Security & Trust with applications to eGovernment, Mobility and Public Security.

Standard Internship Package

- **Salary:** depending on the length of the internship and your diploma
- **Lunch:** SAP Labs France has a local cafeteria; interns contribute 2,18 Euro/lunch, like other SAP employees.
- **Holidays:** based on French holidays
 - 2011: January 1st; April 25th, May 1st, May 8th, June 2nd ; July 14th; August 15th , Nov 1st and 11th; December 25th, are French bank holidays.
- **Travel:** no personal travel (your trip to and from Nice) will be paid by SAP.
- **Accommodation:** we can propose to you an accommodation for the duration of your internship. If you accept SAP will take care of the rent but 275 Euros will be deducted from your monthly salary. Otherwise you are on your own.

Contacts and Procedure

Please send your CV and any relevant documents to the following persons stating the title of the Internship in the Subject **[Internship Application] Security with aspects in SOA**

Supervisor

Gabriel Serme
Gabriel.Serme@sap.com
Tel. 0033-(0)4-92286485

Administrative point of contact

Sylvine Eusebi
Sylvine.Eusebi@sap.com
Tel. 0033-(0)4-92286477