



FICHE-PROJET DE RECRUTEMENT D'UN INGENIEUR-EXPERT

Centre de recherche ou Direction : **Sophia Antipolis - Méditerranée**
Equipe ou service d'accueil: **Planète**

Titre du contrat de recherche devant servir de support pour le recrutement projeté : **Design and Implementation of an architecture for data sharing over wireless networks**

Entreprise, administration ou organisme contractant **INRIA**

Montant du contrat de recherche : **282 419**

Durée : **27 mois**

Date de début des travaux : **1/4/2007**

Date de signature : **7/8/2007**

Catégorie d'ingénieur expert : **L'ingénieur expert de développement (Catégorie II)**

Intitulé de la fonction :

Résumé des objectifs et de l'activité (contexte, travaux prévus) : **File sharing and wireless networks are two domains gaining a lot of interest nowadays. Solutions like BitTorrent and Emule are known to perform very well over wired networks where end-to-end performances are almost guaranteed. However, in wireless networks especially in the ad hoc mode, many constraints appear as the lack of resources, the mobility, and the fact that nodes are at the same time hosts and routers, which pose question marks on the performances of these protocols with their default configuration. Difficulties are both in the lookup for data and in their transfer once localized. Current research in this direction is trying to choose between a cross layer approach where lookup is merged with routing or a layered approach where both functions are done in separate layers. For the data transfer, it is still not clear how the neighborhood is to be constructed for an efficient sharing. The Planète group-team is studying the problem within the framework of the ITEA Expeshare European project (<http://virtual.vtt.fi/virtual/expeshare/>). Our current research aims at the design of an architecture that allows both the look up and sharing of digital content over a wireless network. This architecture will provide developers with a set of primitives that they can use in building secure P2P file sharing applications. Our architecture will be developed and validated in collaboration with the other partners involved in the Expeshare project. In addition to relying on existing solutions, this architecture will have to integrate the solutions proposed by the Planète researchers in this direction. Some code exists for file sharing, lookup and routing. The candidate will have to understand current solutions and try to merge them together and develop new ones when needed. This will be very probably done with either C++ or JAVA. There is a possibility to use Python for writing the P2P stack. As for the underlying technology, the candidate will have to work with wireless ad hoc routing and develop his/her code on both laptops and small wireless devices like PDAs and SmartPhones.**

Environnement de travail (cadre dans lequel s'inscriront les activités, liaison(s) fonctionnelle(s), collaborations internes, relations avec les partenaires extérieurs, moyens à disposition...) **This position will be funded by the ITEA Expeshare European project: <http://virtual.vtt.fi/virtual/expeshare>. In addition to INRIA, this project groups around 40 partners in Europe, both industrials and academic. The candidate will participate to the management of the project and will implement INRIA's architecture to be used by the other partners.**

Compétences et aptitudes requises (formation et spécialité(s), connaissance ou maîtrise d'outils, de technique, de méthodes et de matériels spécifiques...) **Three to five years of experience. Strong experience in C++, JAVA, and Python. Programming on Windows Mobile is a plus for the candidate.**

Modalités de recrutement :

Niveau de rémunération envisagé : **between 2500 and 3040 euros (depending on experience and degree) (en brut**

mensuel)

Date visée pour le recrutement : **1/3/2008**

Durée projetée pour le recrutement : **15 months**

Publicité envisagée pour l'offre de recrutement : **largest possible**

Dates et signatures Le chef d'équipe	Le(la) responsable des ressources humaines	Le(la) chargé(e) des relations industrielles
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Direction des Ressources Humaines - Note de procédure du 01/05/2004
Procédure de recrutement et de gestion des ingénieurs experts - annexe 4.2