

Work Description

Scientific Report of Short Visit Grant to the University of Ulm

Filipe Araújo

Universidade de Lisboa

Portugal

July 5, 2004

1 Purpose of the visit

The main purpose of the visit of Filipe Araújo to the University of Ulm was to enable the groups from the University of Lisbon and from the University of Ulm to develop joint work on some of the topics that are of common interest, namely publish/subscribe systems and wireless *ad hoc* networks. More precisely, this visit should contribute to initiate work on the topic of publish/subscribe system for wireless environments.

As a more indirect result, this visit should also open new perspectives of collaboration between the visitor's and the host's research groups in any of the forms to be mentioned ahead.

2 Description of the work carried out during the visit

Prior to and during the early stages of the visit, the visitor surveyed the work developed in the host research group. Furthermore, the visitor had the opportunity to be involved in a number of stimulating technical discussions with the members of the receiving group that eventually led to the idea of developing a new architecture for a publish/subscribe system based on earlier work developed at the University of Ulm.

3 Description of the main results obtained

The new publish/subscribe system architecture aims to extend the scope of applicability of previous work developed at the University of Ulm, in particular of the Content and Cell based Predictive Routing Protocol (CCPR). More precisely, this new projected system should build a backbone by using topological information alone, thus not relying on geographical location to build a dissemination tree for the subscribed events. It is therefore applicable to wireless *ad hoc* settings where location may not be widely available, although some location hints may still be used to improve the scalability of the system and to offer more powerful services to the subscribers. Despite having an independent value of its own, one of the purposes of building such a topologically-based system is also to use it as a benchmark to evaluate the original CCPR developed at the University of Ulm.

4 Future collaboration with host institution

This visit has allowed to identify ongoing common topics of research from both visitor's and host's research groups (wireless *ad hoc* networks and publish/subscribe systems). In the near future, the following types of collaboration can be foreseen:

- on-line technical discussion;
- writing of papers;
- common participation in European research projects.

5 Projected publications

One conference paper may result in the following year from this Short Term Visit. The subject of this paper was described in Section *Description of the main results obtained* and, at the time this report is being written, the paper does not yet have a title.