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Title: PEer-to-Peer Implementation and TheOry
Distributed directory service
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Responsible Partner: KTH
Participating Partners: KTH

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Short Description

This deliverable presents a final report on Distributed Algorithms. The report is intended as a final overview of the major achievements accomplished in PEPITO work package 2. Work package 2 developed during the course of the project a formal framework for structured peer-to-peer systems. The framework shows how most existing structured peer-to-peer systems can be formalized around the concept of a virtual k-ary tree, which is embedded into a logical identifier space. The framework was used to derive the Distributed k-ary System (DKS), which is a structured peer-to-peer system supporting name-based communication, group communication, and directory services. DKS has been implemented in the DKS middleware. The work on DKS has been synergical as DKS have been used and implemented in DSS, developed by work package 3, to provide a decentralized self-managing mobile home protocols. Moreover, DKS has been used in the Tango system, which improves on the scalability of DKS. In collaboration with work package 1, formal methods were used to verify the DKS lookup algorithms using CCS. DKS is also used in the mBlog application to enable the distribution of blogs in a peer-to-peer fashion, without using central servers. Moreover, DKS was used to develop a general purpose file-system called KESO. The report also includes a list of attached papers and an indication of papers being written for publication.


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| Partner owning: | KTH |
| Partner contributing: | KTH, SICS, INRIA, UCL, UCAM, and EPFL |
| Available to: | Public |