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Project Acronym: PEPITO
Title: PEer-to-Peer Implementation and TheOry
Distributed directory service
Due date: project month 38
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Responsible Partner: KTH
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Deliverable no:	D2.2
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Short Description

This deliverable presents work on diffusion algorithms in work package 2 to construct fault-tolerant, dynamic, scalable, and decentralized algorithms. Diffusion algorithms were introduced in the seminal work of Dijkstra and Scholten in the early eighties. Their distributed algorithm assuming little about the underlying network structure of a distributed computation, but construct a spanning tree which is used to diffuse messages. Highly influenced by their work, work package 2 designed a diffusing broadcast algorithm intended for peer-to-peer overlay networks which constructed a spanning tree on-top of the overlay and diffused messages onto it.
The diffusing broadcast algorithm proved useful in making the system fault-tolerant, as it is now the basis of the topology maintenance in DKS. Furthermore, it is used in the replication scheme of DKS to maintain the replication degree in presence of failures. It is also the basis of the application-level multicast provided by DKS.

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