

# A Communication Middleware Quality Enhancement with Qt Framework

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## Abstract

In this work, a Peer-to-Peer communication middleware for mobile environment is developed using the Qt framework and the Qt Mobility extension. The Peer-to-Peer middleware – called as PeerHood – is for service sharing in network neighborhood. In addition, the PeerHood enables service connectivity and device monitoring functionalities.

The concept of the PeerHood is already available in native C++ implementation on Linux platform using services from the platform. In this work, the PeerHood concept is reimplemented to be based on use of the Qt framework. The objective of the new solution is to increase PeerHood quality with using functionalities from the Qt framework and the Qt Mobility extension. Furthermore, by using the Qt framework, the PeerHood middleware can be implemented to be portable cross-platform middleware.

The quality of the new PeerHood implementation is evaluated with defined quality factors and compared with the existing PeerHood. Reliability, CPU usage, memory usage and static code analysis metrics are used in evaluation. The new PeerHood is shown to be more reliable and flexible than the existing one.

**Index Terms:** PeerHood, Qt, Qt Mobility, Quality, Peer-to-Peer, Wireless.