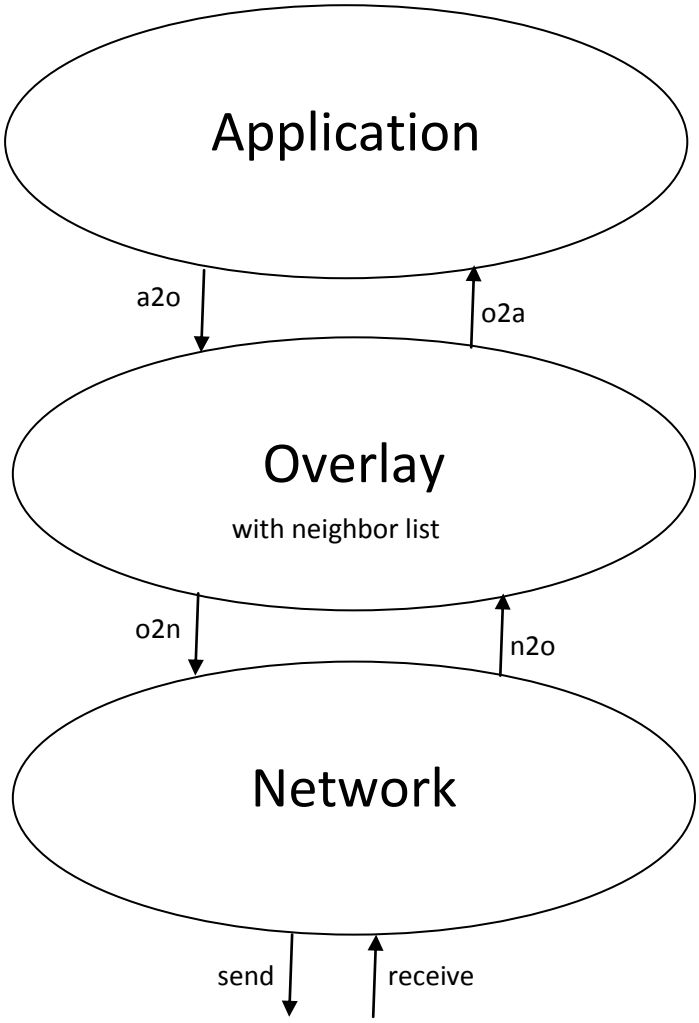
Software Specification „Folder Sync“

3-Layer-Architecture



- periodically sending file list to neighbors
- sending request for file x from neighbor y
- sending file x to neighbor y

- receive ping and react with pong for peer exploration
- refresh neighbor list (delete neighbors with expired timeouts)
- analyze messages from application and outreach them to the network

- send messages
- receive messages
- file transfer

Message Specification:

External Messages (to be sent)

Ping

incoming ping (n2o) := ("ping", pingID, ttl, hops, senderUsername, senderIP, senderPort)

outgoing ping (o2n) := ("ping", pingID, ttl, hops, ownUsername, ownIP, ownPort, targetIP, targetPortUDP)

Pong

incoming pong (n2o) := ("pong", id, [(username1, ip1), (username2, ip2), ...])

outgoing pong (o2n) := ("pong", id, [(username1, ipP1), (username2, ip2), ...], targetIP, targetPortUDP)

RefFL (refresh filelist)

incoming refFL (n2o) := ("refFL", fileList, senderUsername, senderIP, senderPort)

incoming refFL (o2a) := ("refFL", fileList, senderUsername, urgentFlag)

outgoing refFL (a2o) := ("refFL", fileList)

outgoing refFL (o2n) := ("refFL", fileList, ownUsername, ownIP, ownPort, targetIP, targetPortUDP)

reqFile (request file)

incoming reqFile (n2o) := ("reqFile", fileName, fileHash, senderIP, senderPortUDP , senderPortTCP)

incoming reqFile (o2a) := ("reqFile", fileName, fileHash, senderUsername, senderPortTCP)

outgoing reqFile (a2o) := ("reqFile", fileName, fileHash, targetUsername)

outgoing reqFile (o2n) := ("reqFile", fileName, fileHash, ownIP, ownPort, targetIP, targetPortUDP)

Internal Messages (only between the layers)

sendFile (permission to network layer to send the file)

downgoing sendFile (a2o) := ("sendFile ", filePath, partNumber, targetUsername, targetPortTCP)

downgoing sendFile (o2n) := ("sendFile ", filePath, partNumber , targetIP, targetPortUDP, targetPortTCP)

fileTransSend (file transfer sent)

upgoing fileTransSend (n2o) := ("fileTransSend ", targetIP, targetPortUDP, filePath, successflag)

upgoing fileTransSend (o2a) := ("fileTransSend ", targetUsername, filePath, successflag)

fileTransRecv (file transfer received)

upgoing fileTransRecv (n2o) := ("fileTransRecv ", fileName, fileHash, partNumber, successflag)

upgoing fileTransRecv (o2a) := ("fileTransRecv ", fileName, fileHash, partNumber, successflag)