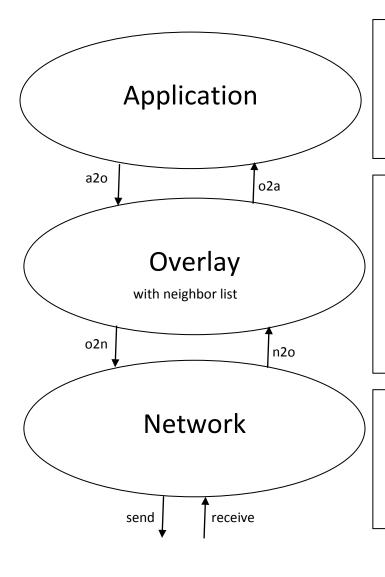
Software Specification "Folder Sync"

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
- {build-up connection}
- {terminate connection}
- 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:

Ping

```
incoming ping (n2o) := ("ping", pingID, ttl, hops, senderUsername, senderIP, senderPort)
outgoing ping (o2n) := ("ping", pingID, ttl, hops, ownUsername, ownIP, ownPort, targetIP, targetPort)
Pong
incoming pong (n2o) := ("pong", id, [(username1, ip1), (username2, ip2), ...])
outgoing pong (o2n) := ("pong", id, [(username1, ipP1), (username2, ip2), ...], targetIP, targetPort)
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, targetPort)
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, targetPort)
sendFile (permission to network layer to send the file)
downgoing sendFile (a2o) := ("sendFile ", filePath, targetUsername, targetPortTCP)
downgoing sendFile (o2n) := ("sendFile ", filePath, targetIP, targetPortTCP)
```