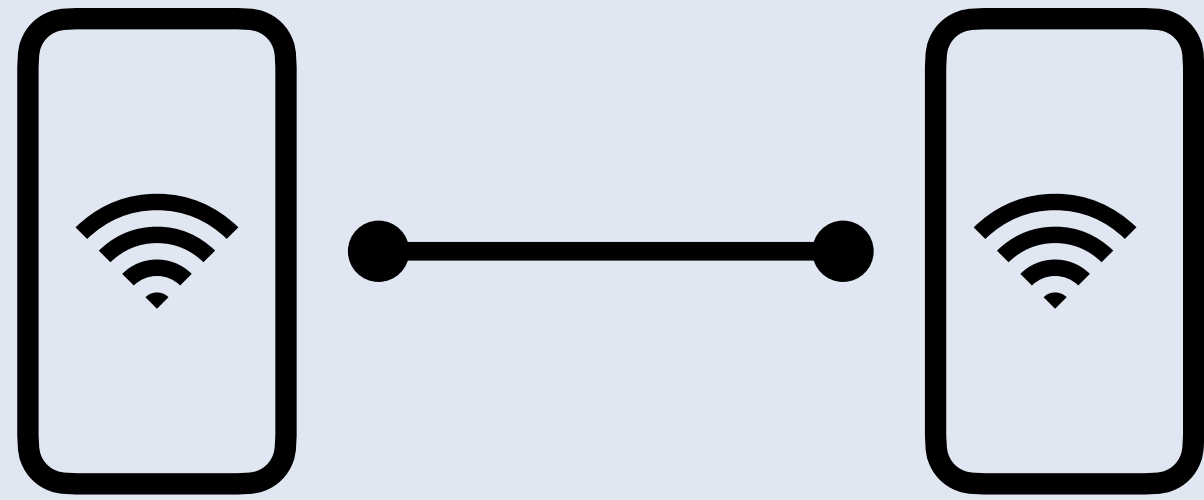
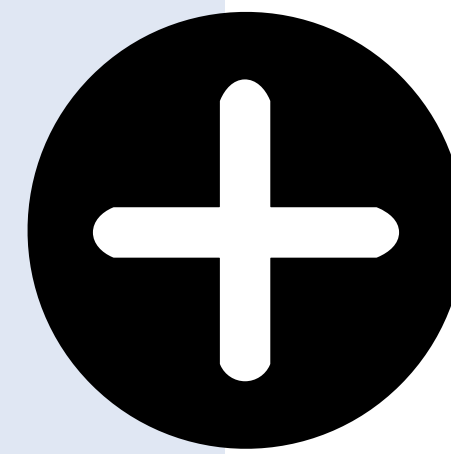




Multipeer- Connectivity



Better Together

Cooperative game

Developed in the iOS Appl. Dev.

Course 2021

Agenda

1. Small repetition of MultipeerConnectivity Framework

For more check out Felix Wehnert's presentation:

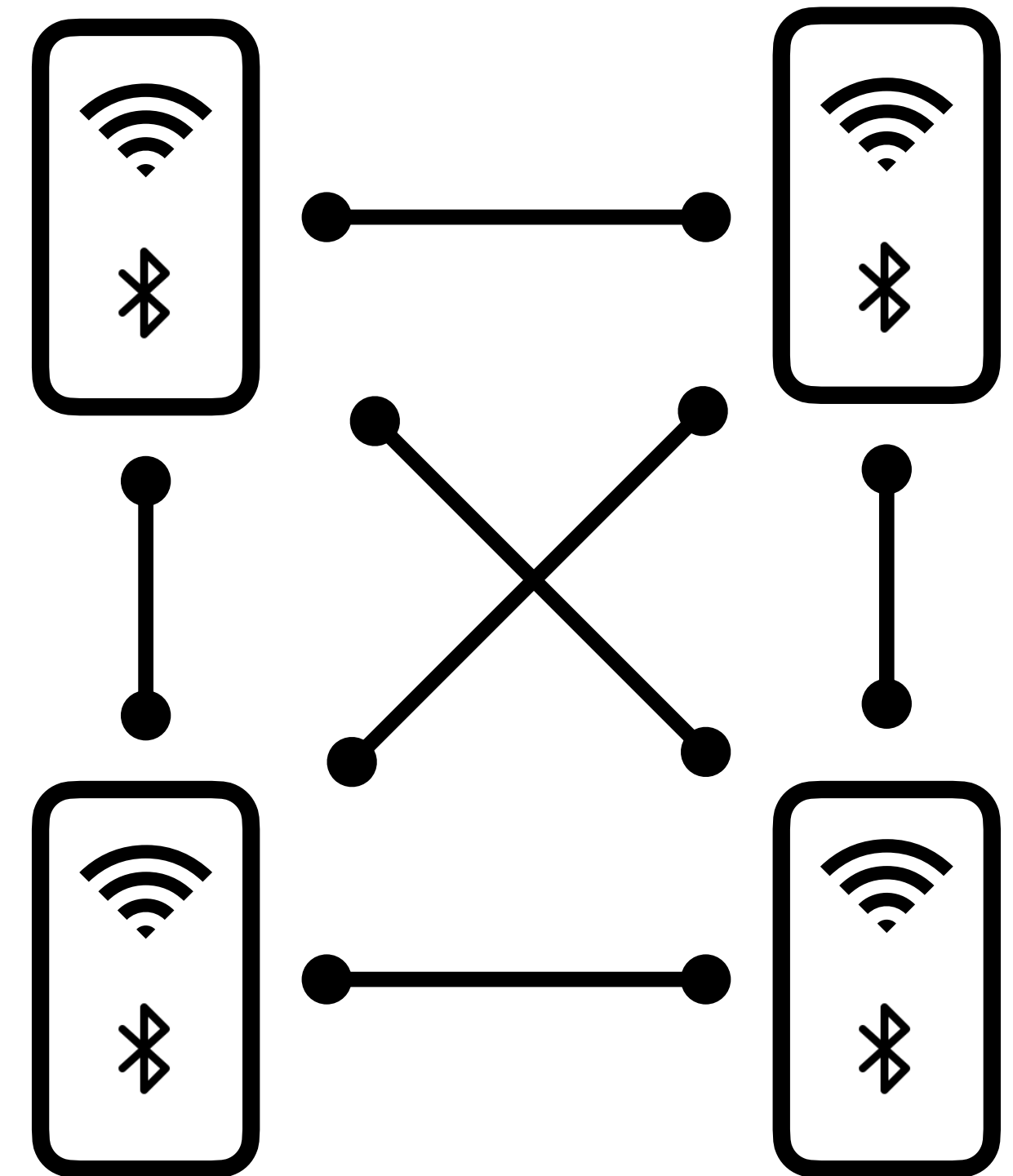
https://hci.rwth-aachen.de/index.php?option=com_attachments&task=download&id=2551

2.1 Better Together Cooperative Game

2.2 Journey to „real time interaction“

MultipeerConnectivity Framework

- **Connects devices**
- **for exchanging Data**
- **using a Mesh Network**
- **organised in Sessions**



For more check out Felix Wehnert's presentation:

https://hci.rwth-aachen.de/index.php?option=com_attachments&task=download&id=2551

Usage

MultipeerConnectivity Framework

0.0 Set string for key `NSLocalNetworkUsageDescription`

0.1 Instantiate `MCSession`

1. **Discovery Phase** - Connection establishment

↳ `MCNearbyServiceAdvertiser` → `MCNearbyServiceBrowser` & `MCBrowserViewController`

↳ `NSNetService`

2. **Session Phase** - Direct communication to one or all devices

↳ `MCSession` & `MCSessionDelegate`

↳ `MCSession` → `send(_:toPeers:with:)`

↳ `MCSessionDelegate` → `func session(MCSession, didReceive: Data, fromPeer: MCPeerID)`

For more check out Felix Wehnert's presentation:

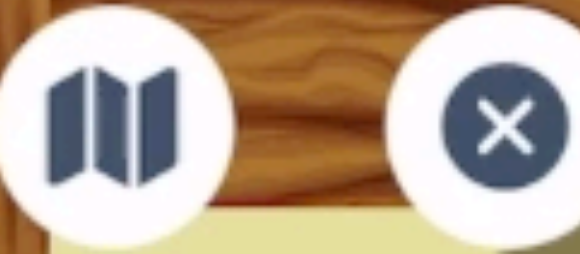
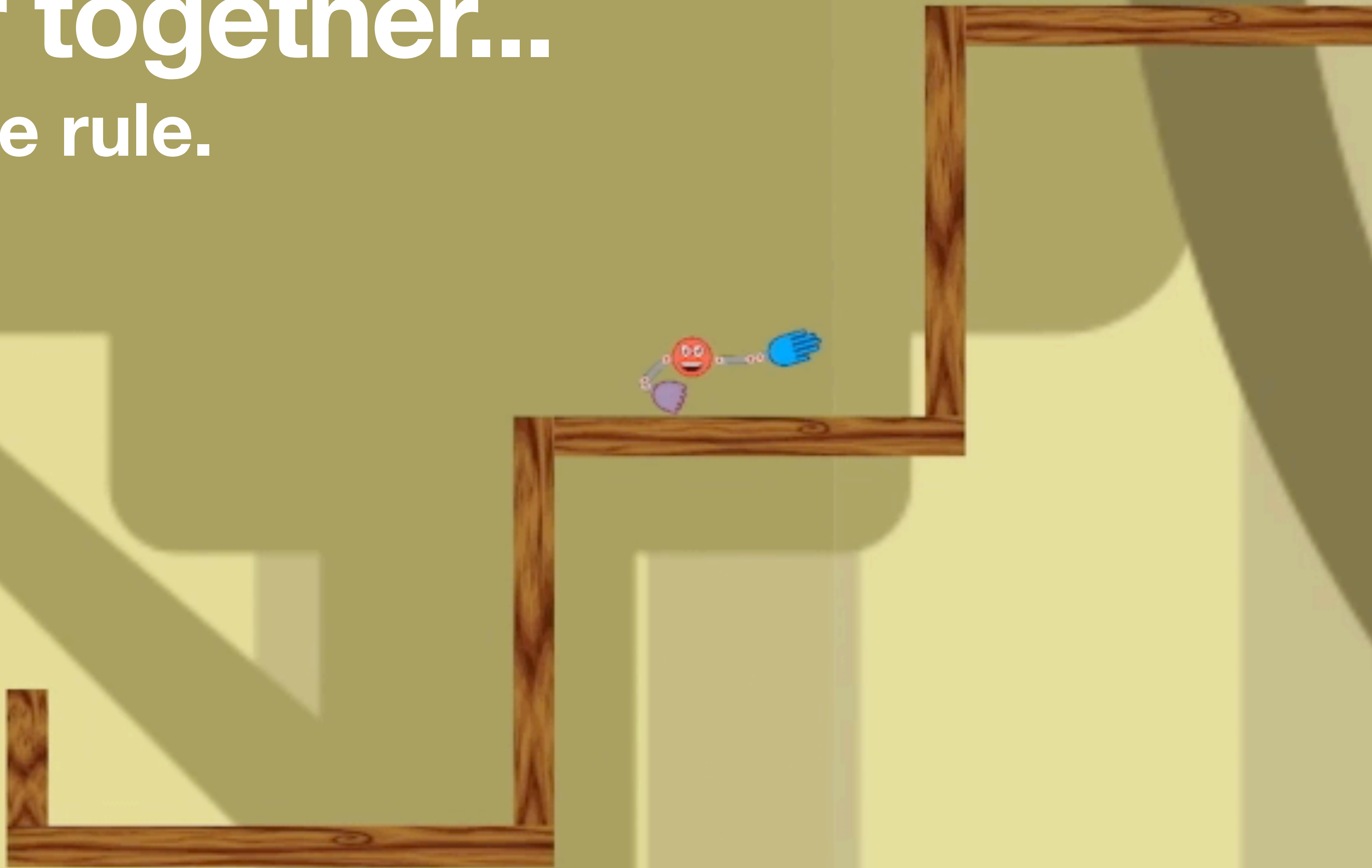
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Better Together

Cooperative game

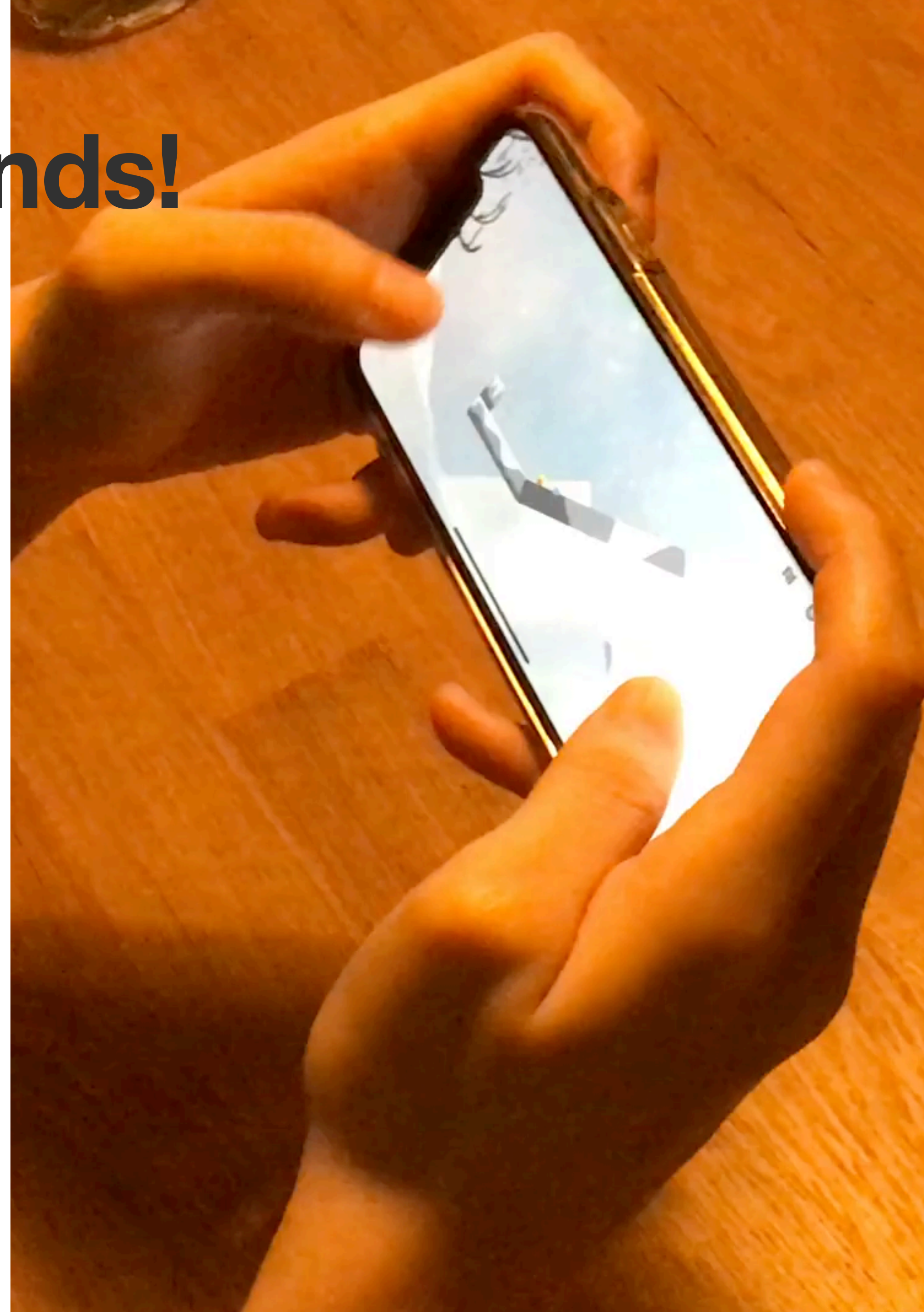
Better together...
... is game rule.



Move and feel with your hands!

Core Motion

- Control character's movement
- Use `accelerometerData` on 3-axis
 - calculation vector using simd
 - controller-like behaviour

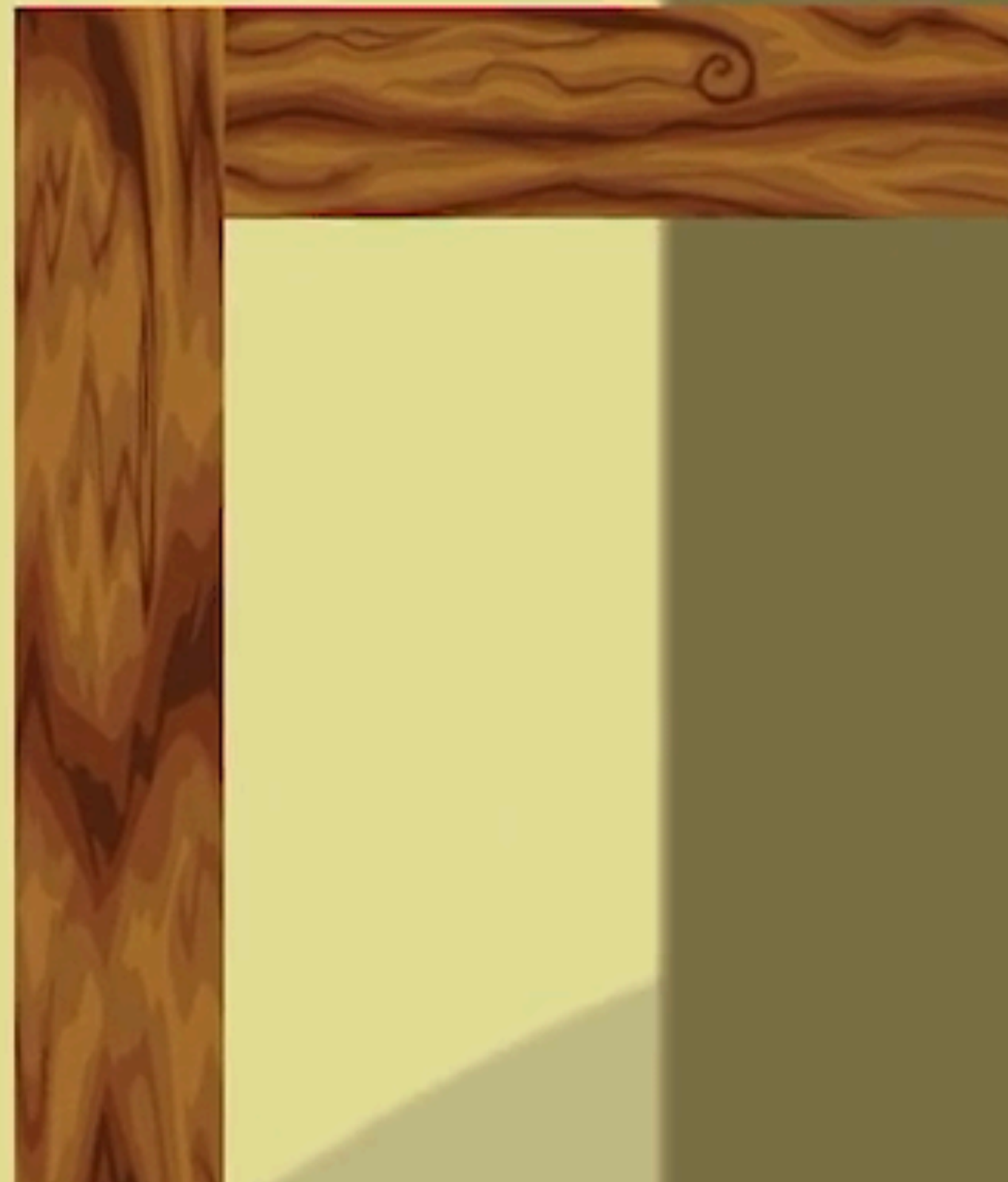
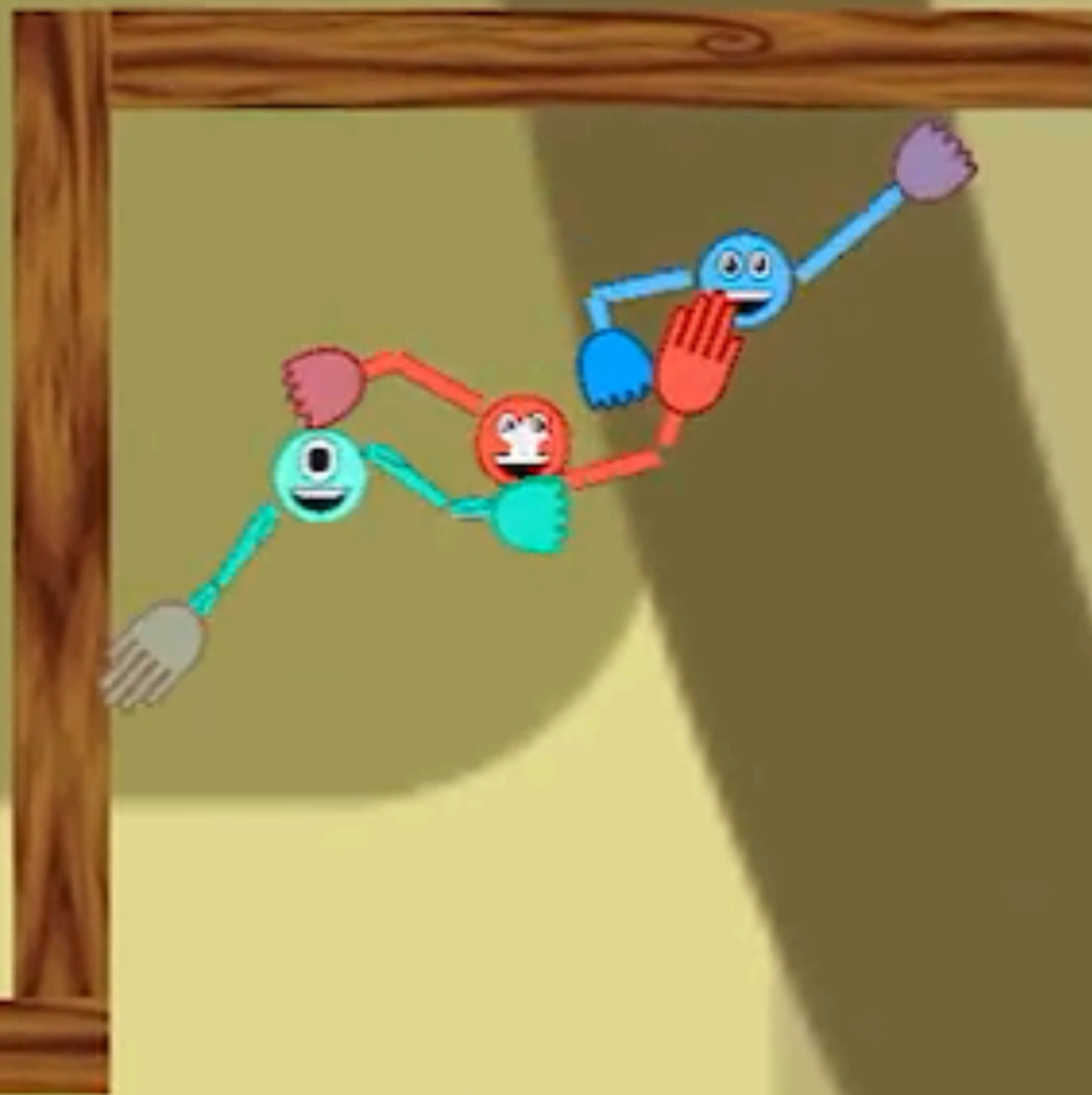


Customize your character!



Play with your friend!

Team play mode



Journey to “real time interaction”

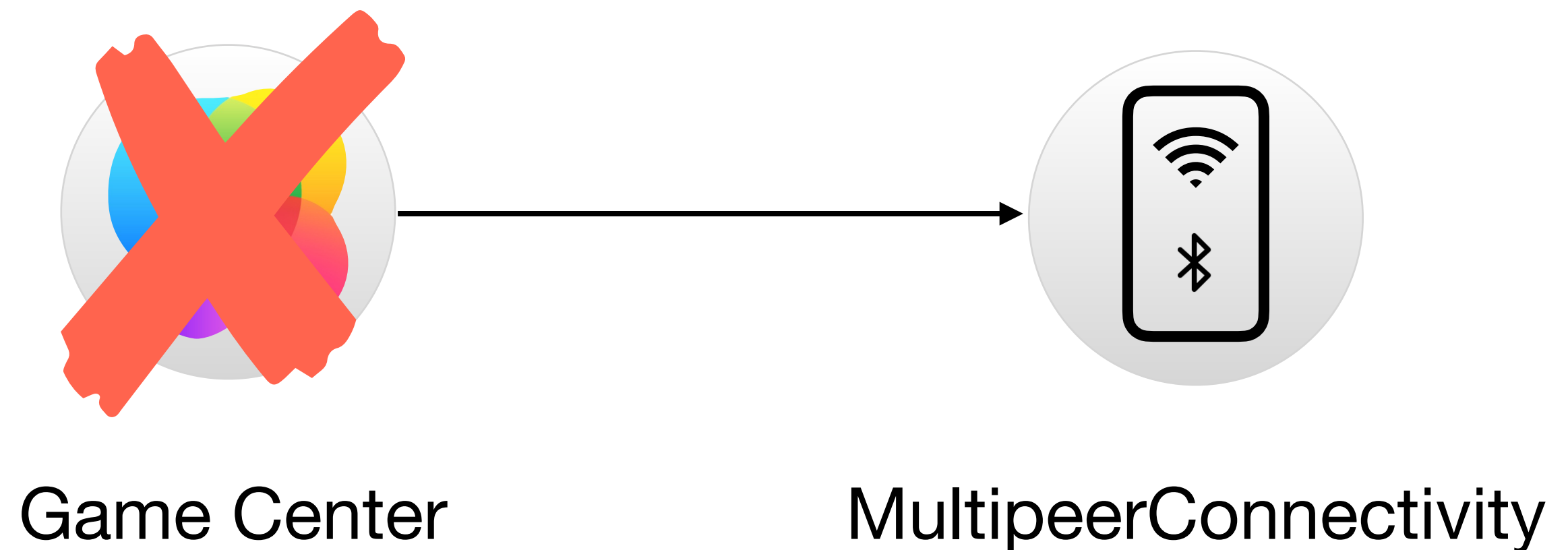
Better Together Game

1. Use MultiplerConnectivity Framework
2. Use unreliable package delivery (use UDP)
3. Use custom decoded object
4. Implement Host-Client structure

Multiplayer Integration - Making it real time

Better Together Game

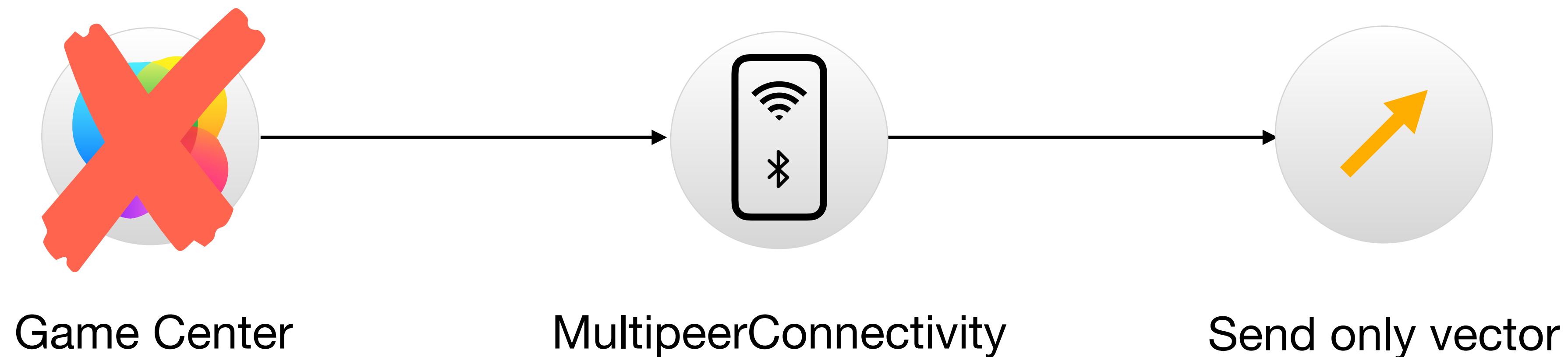
1. Use Multipler Connectivity Framework



Multiplayer Integration - Making it real time

Better Together Game

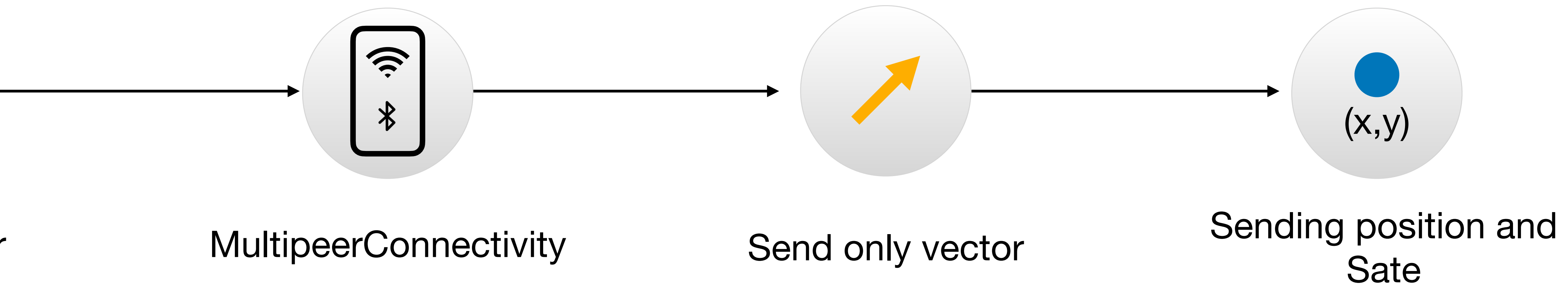
1. Use Multipler Connectivity Framework



Multiplayer Integration - Making it real time

Better Together Game

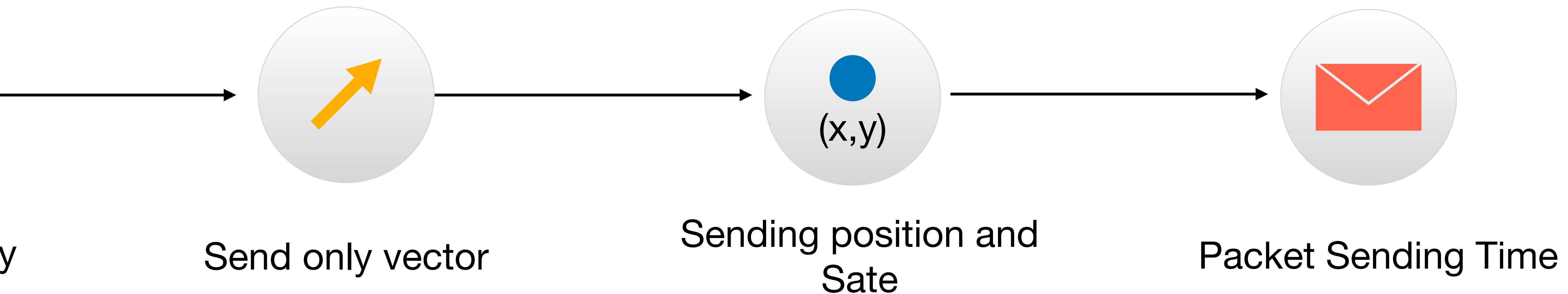
1. Use Multipler Connectivity Framework



Multiplayer Integration - Making it real time

Better Together Game

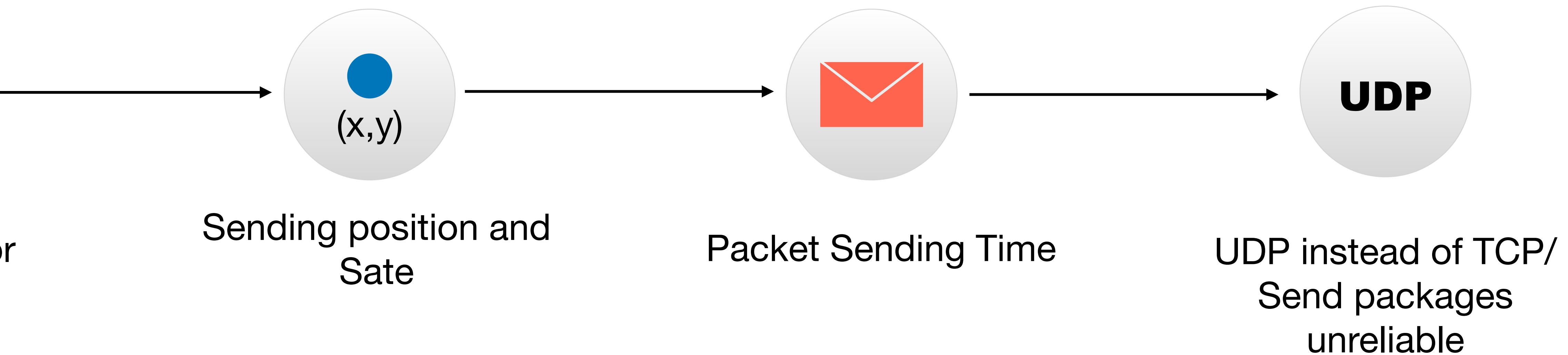
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Multiplayer Integration - Making it real time

Better Together Game

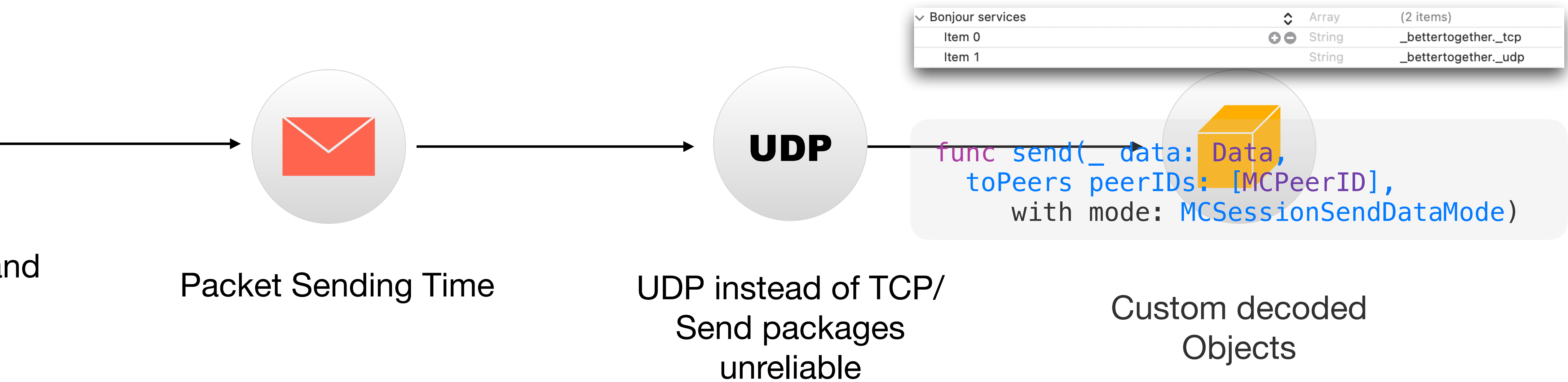
1. Use Multipler Connectivity Framework



Multiplayer Integration - Making it real time

Better Together Game

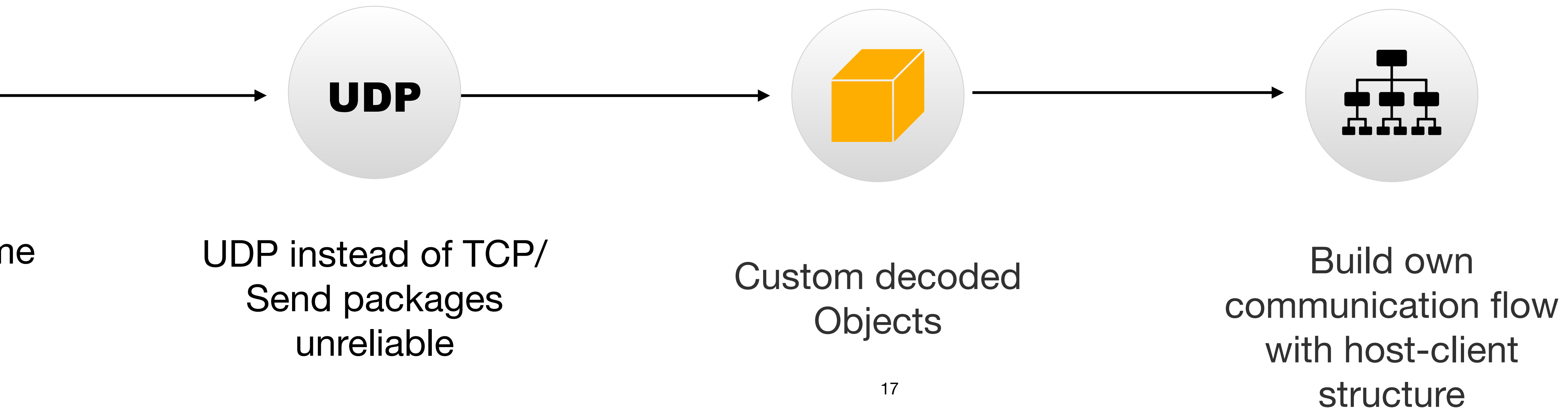
2. Use unreliable package delivery (use UDP)



Multiplayer Integration - Making it real time

Better Together Game

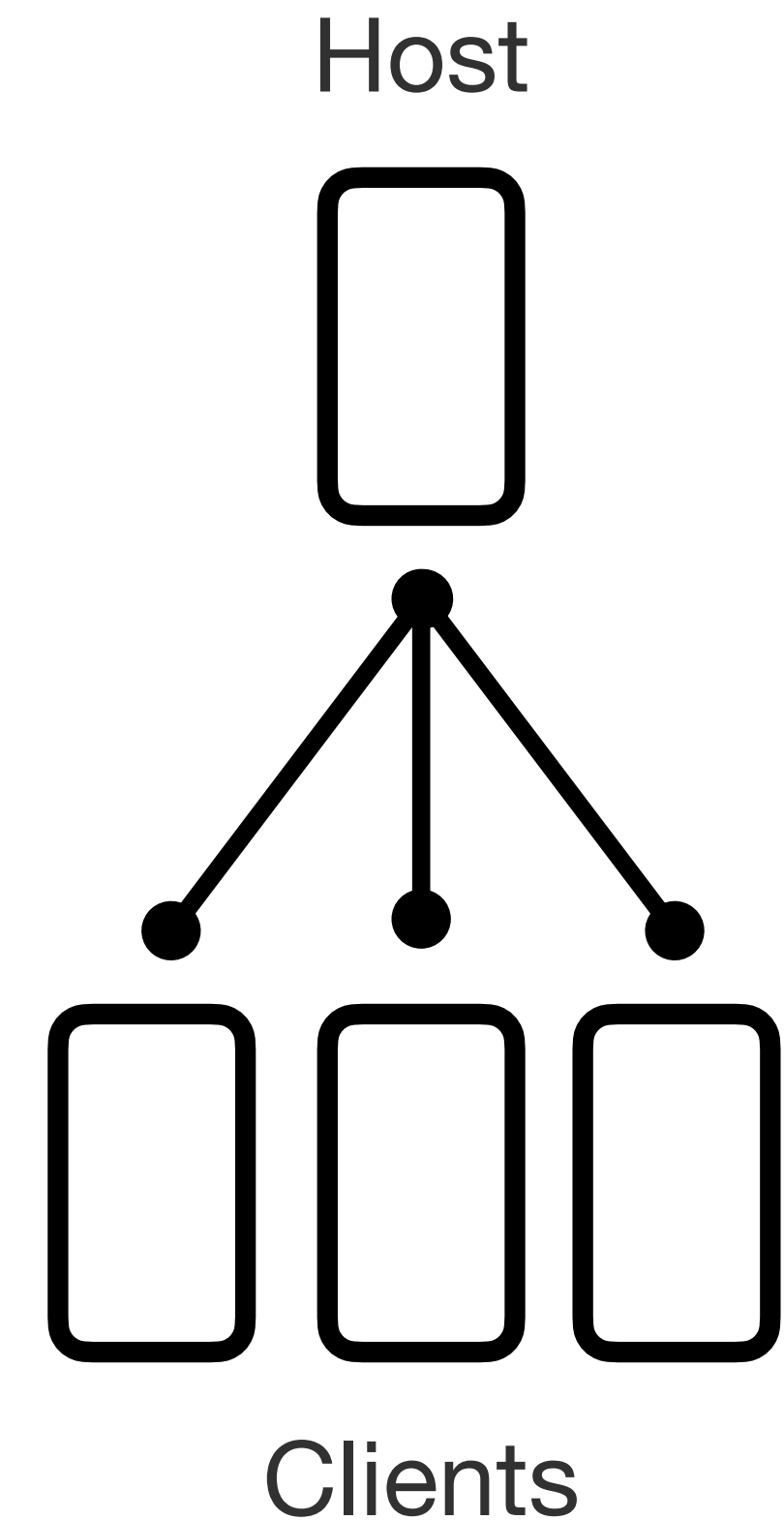
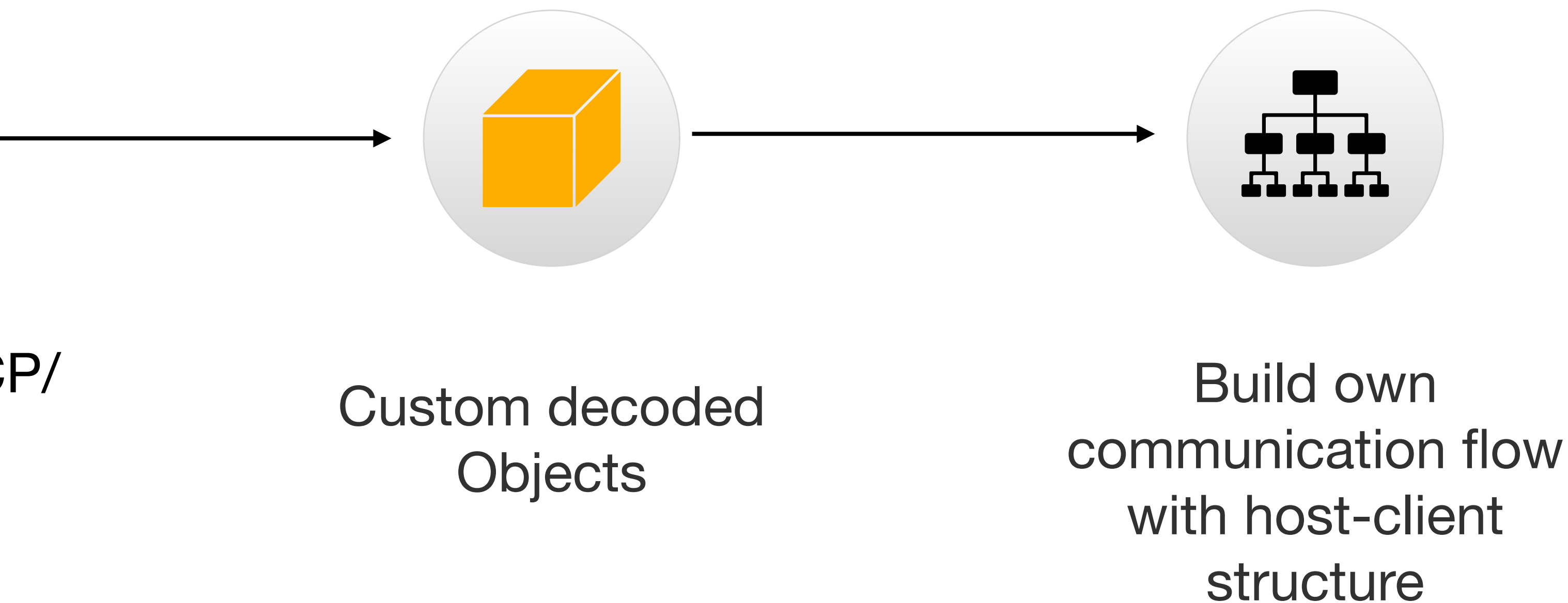
3. Use custom decoded object



Multiplayer Integration - Making it real time

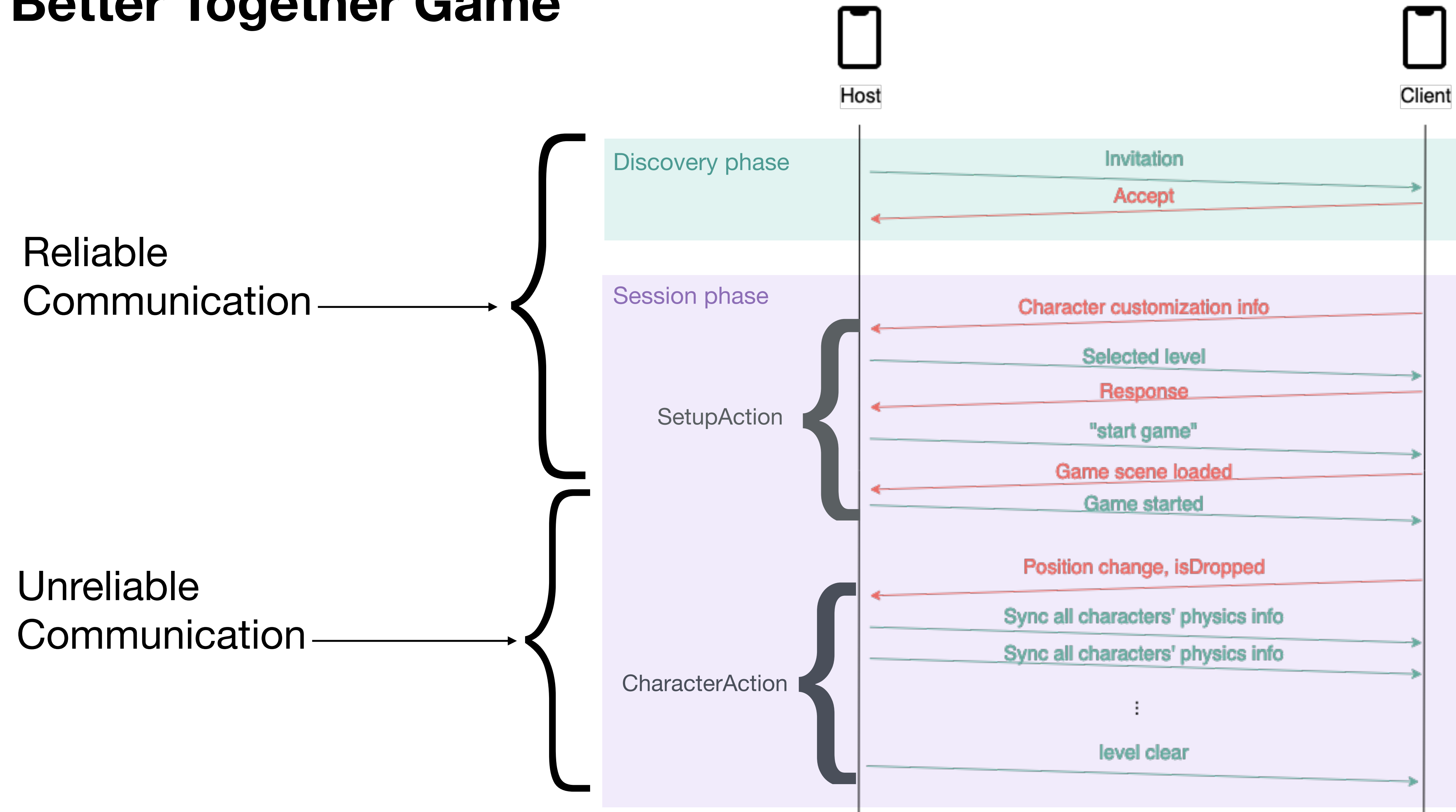
Better Together Game

4. Implement Host-Client structure



Multiplayer Integration - Connection procedure

Better Together Game



Demo

Check it out on:

<https://git.rwth-aachen.de/ios-dev-group-i/better-together>

