# HW5 – Reliable Communication

Communication Protocols

This documents contains some diagrams of implemented protocols. Following figures illustrate how defined protocols work.

- ✓ Each box indicates each objects exists in the game (i.e. Player, Fight Manager).
- ✓ Each row shows a message sent and its label indicates the type of that message.
- ✓ Numbers in labels show orders of messages sent.
- ✓ Reliable communication used in objects colored in green.
- ✓ Red objects are newly added to each protocol.
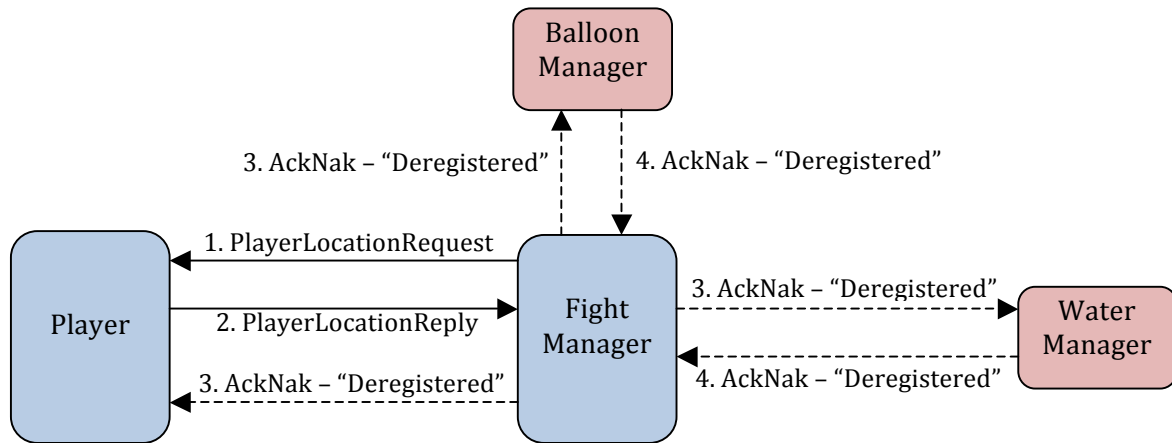
1. Registration
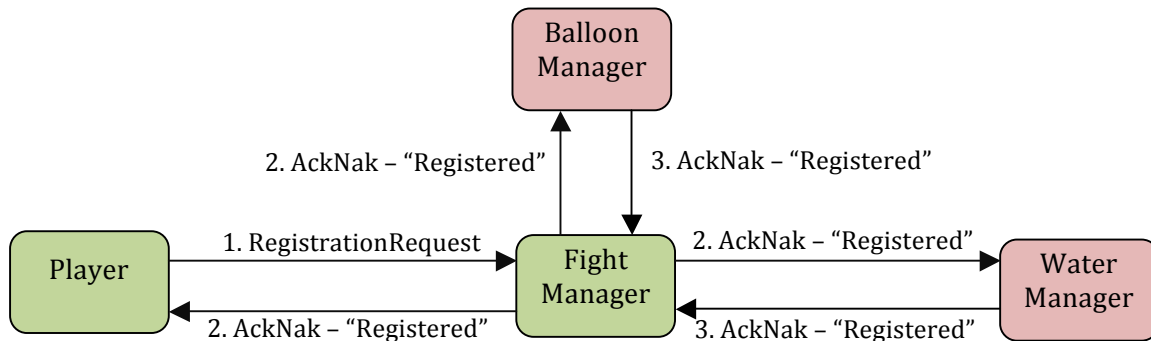
2. Deregistration
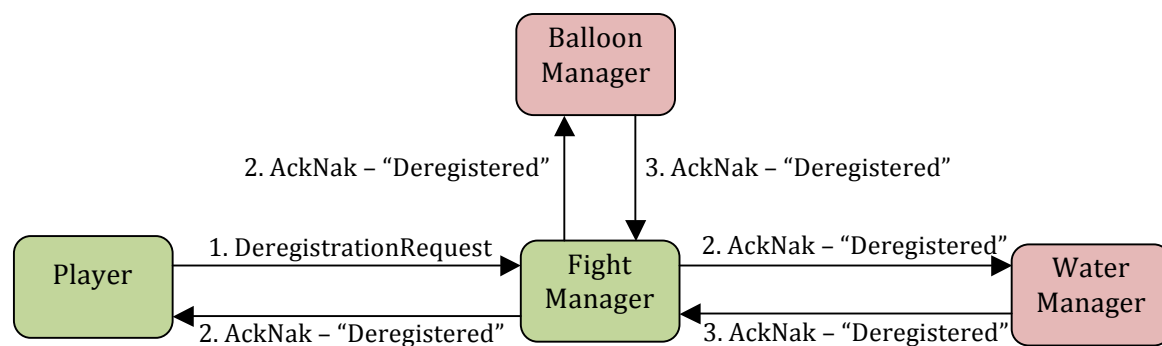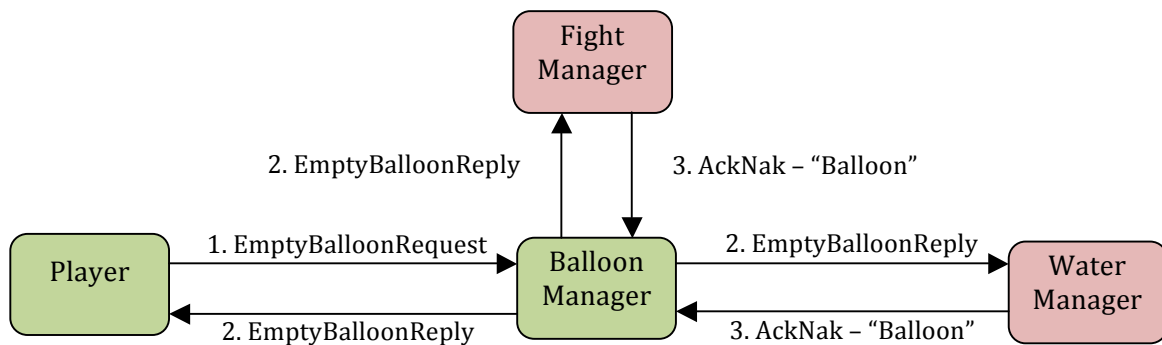
3. Player's Location

Player will be deregistered:

- ✓ If the movement speed of player is greater than 15 per second
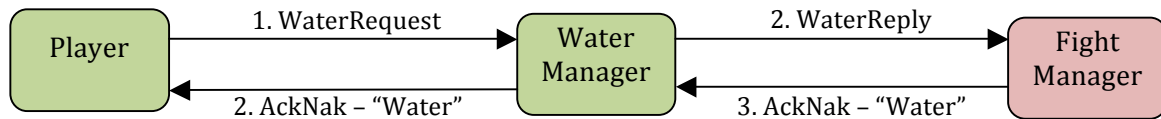- ✓ If the player replies later than 10 s

4. An Empty Balloon Request
   - ✓ Each player is allowed to have at most 4 balloons at the same time.
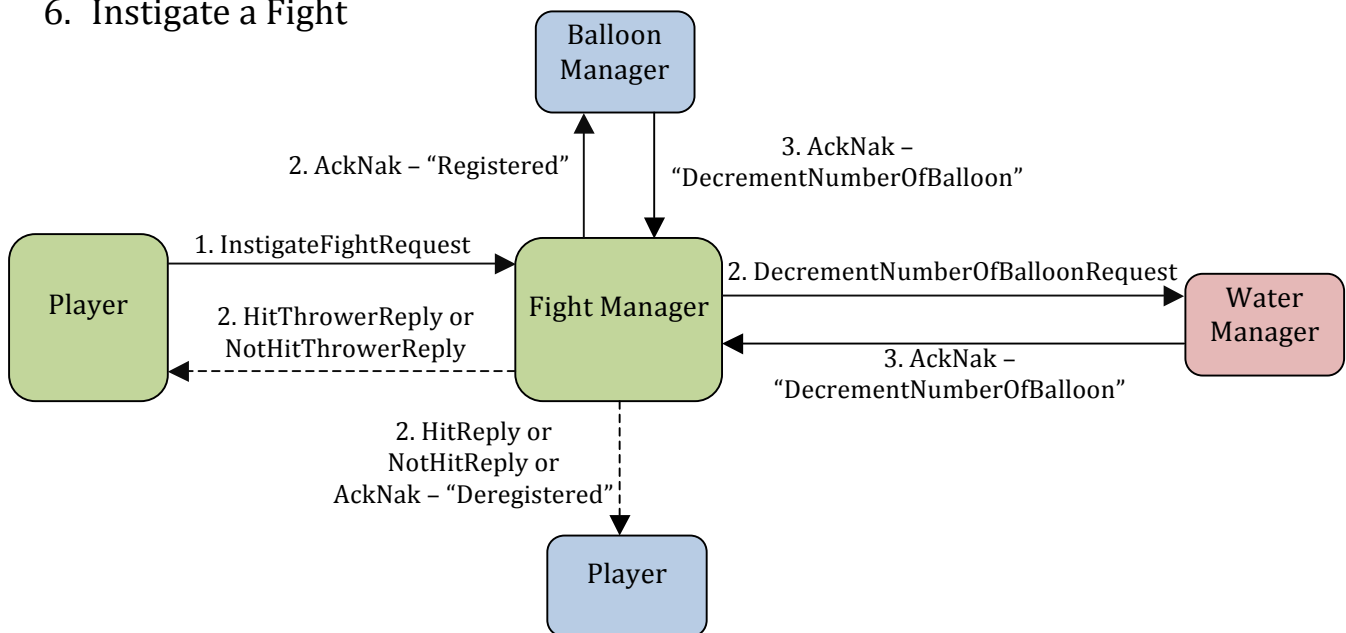   - ü NumberOfFightRequest Message has been deleted.

5. Amount Of Water Request
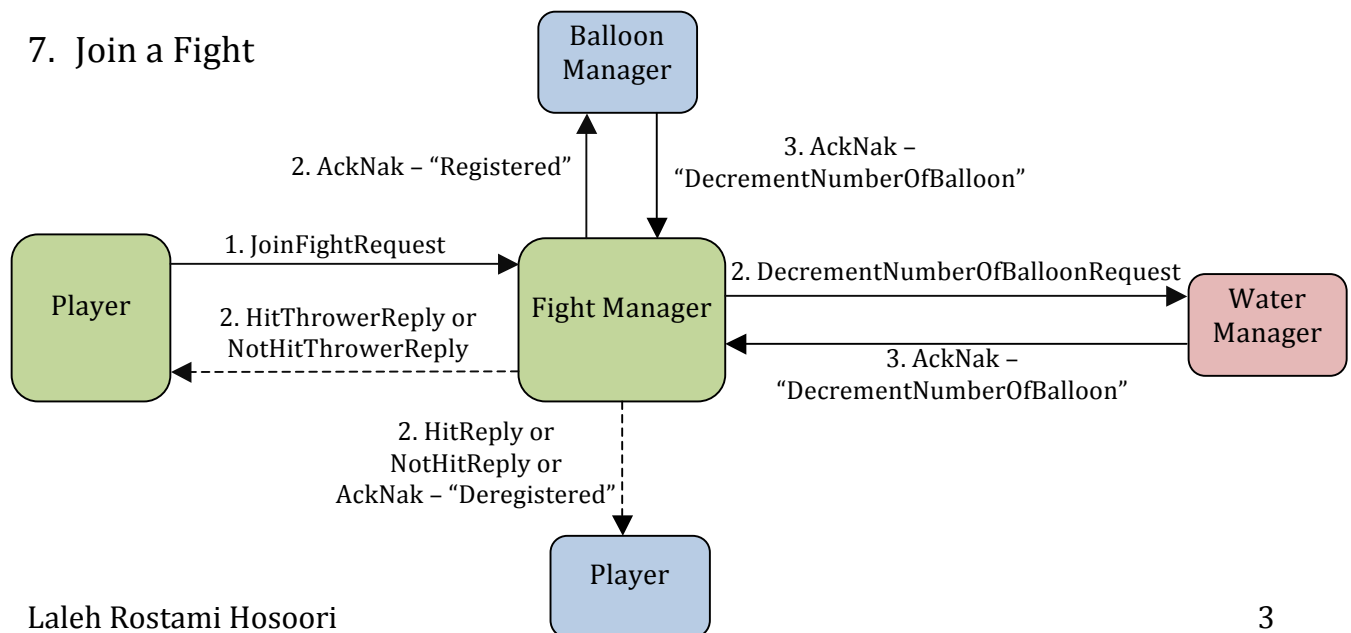- ✓ WaterReply Message has been added.
- ü NumberOfBalloon Message has been deleted.

Player → 1. WaterRequest → Water Manager → 2. WaterReply → Fight Manager

Fight Manager → 3. AckNak – "Water" → Water Manager → 2. AckNak – "Water" → Player

6. Instigate a Fight

Balloon Manager

2. AckNak – "Registered"

3. AckNak – "DecrementNumberOfBalloon"

Player → 1. InstigateFightRequest → Fight Manager

2. HitThrowerReply or NotHitThrowerReply (Fight Manager → Player)

2. DecrementNumberOfBalloonRequest → Water Manager

3. AckNak – "DecrementNumberOfBalloon" (Water Manager → Fight Manager)

2. HitReply or NotHitReply or AckNak – "Deregistered" → Player

7. Join a Fight

Balloon Manager

2. AckNak – "Registered"

3. AckNak – "DecrementNumberOfBalloon"

Player → 1. JoinFightRequest → Fight Manager

2. HitThrowerReply or NotHitThrowerReply (Fight Manager → Player)

2. DecrementNumberOfBalloonRequest → Water Manager

3. AckNak – "DecrementNumberOfBalloon" (Water Manager → Fight Manager)

2. HitReply or NotHitReply or AckNak – "Deregistered" → Player

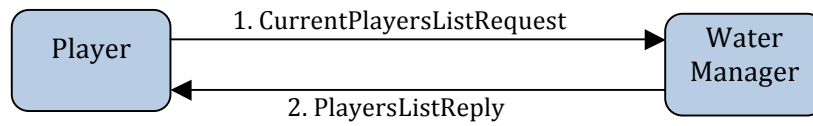## 8. Current Player List

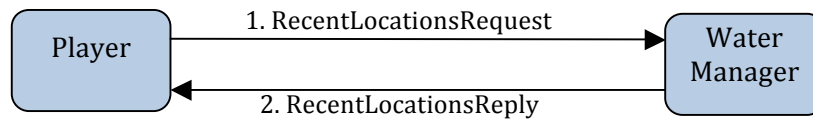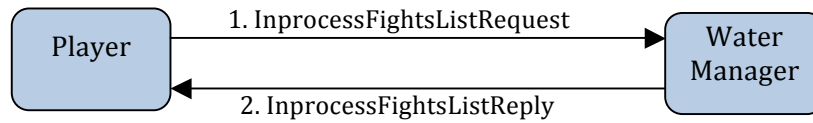## 9. Player's Most Recent Location

10.   In-process Fight List

11.   Players of a Specific Fight