DECADE Usage in PPSP

draft-le-ppsp-decade-interoperation-00

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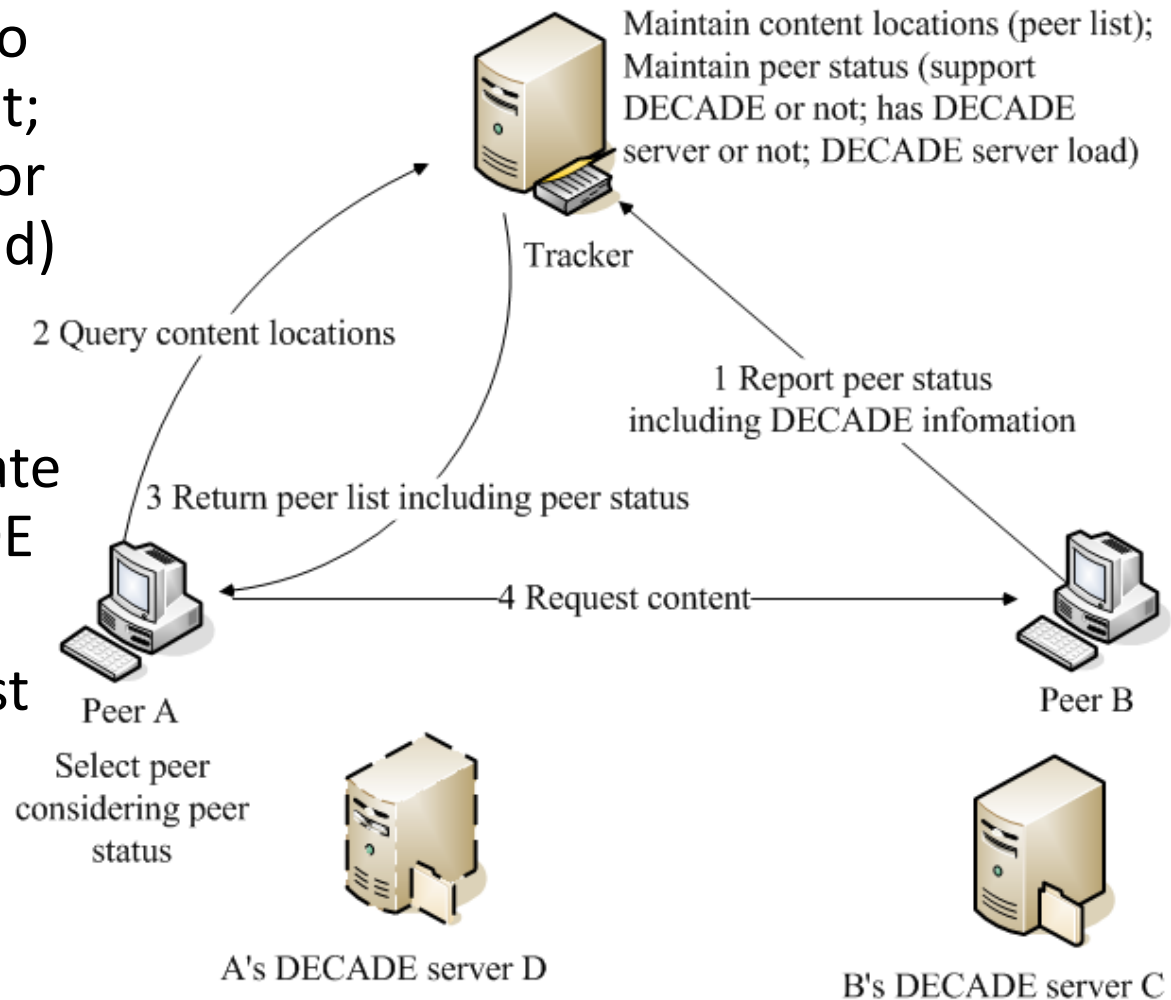
li.lichun1@zte.com.cn

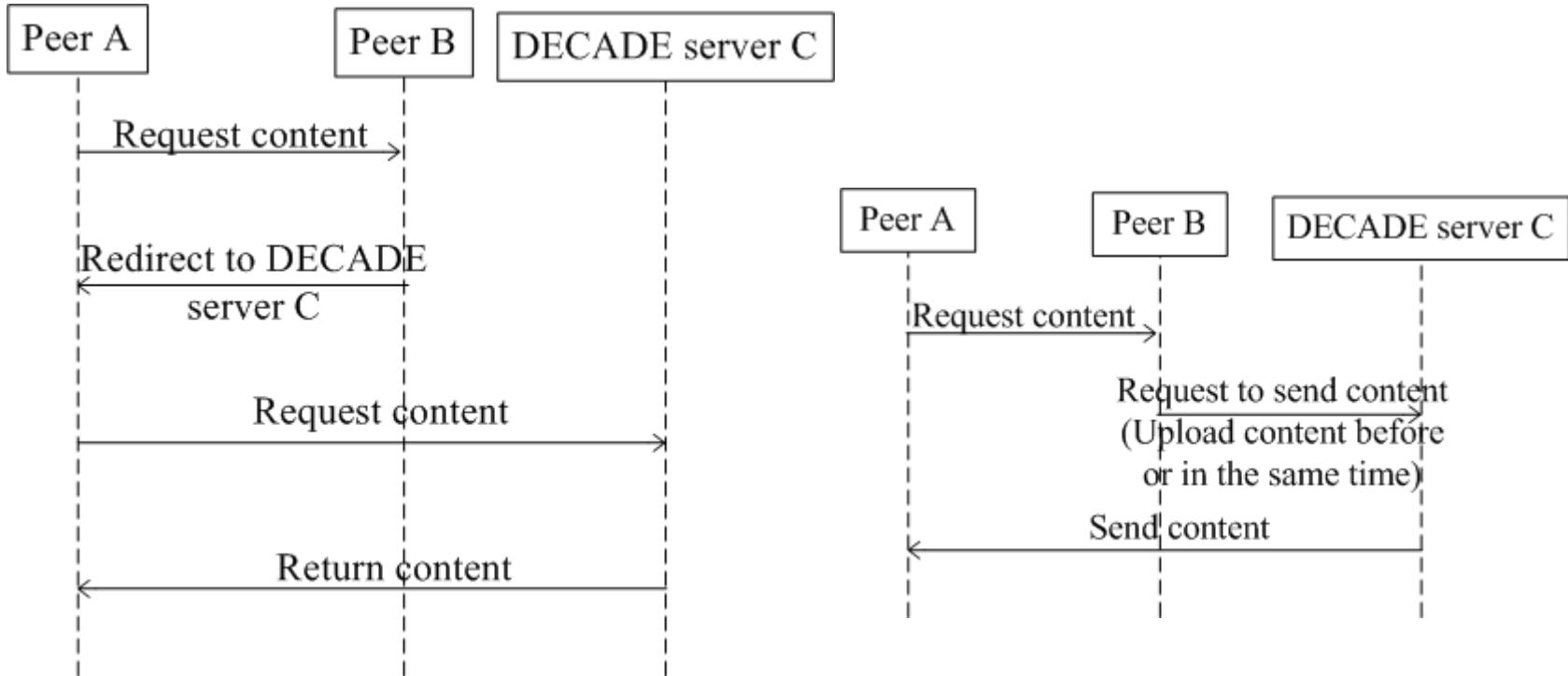# Introduction & Motivation

- ## What's DECADE?
  - Application-agnostic P2P cache
- ## Benefits of introducing DECADE
  - Reducing upload & cross-domain traffic
  - Increasing QoS
- ## Differences from existing DECADE usage work
  - Modifying both tracker and peer to support DECADE: loose coupling and close coupling approaches
  - Efficient to locate remote DECADE server
  - Proposing requirements on PPSP and DECADE

Loose coupling: locating the peer having DECADE server

- Put DECADE related info (support DECADE or not; having DECADE server or not; DECADE server load) in peer status
- With extended peer status, A can easily locate the peer having DECADE server
- A sends content request to the remote peer B with DECADE server C

Maintain content locations (peer list); Maintain peer status (support DECADE or not; has DECADE server or not; DECADE server load)

Tracker

2 Query content locations

1 Report peer status including DECADE infomation

3 Return peer list including peer status

4 Request content

Peer A
Select peer considering peer status

Peer B

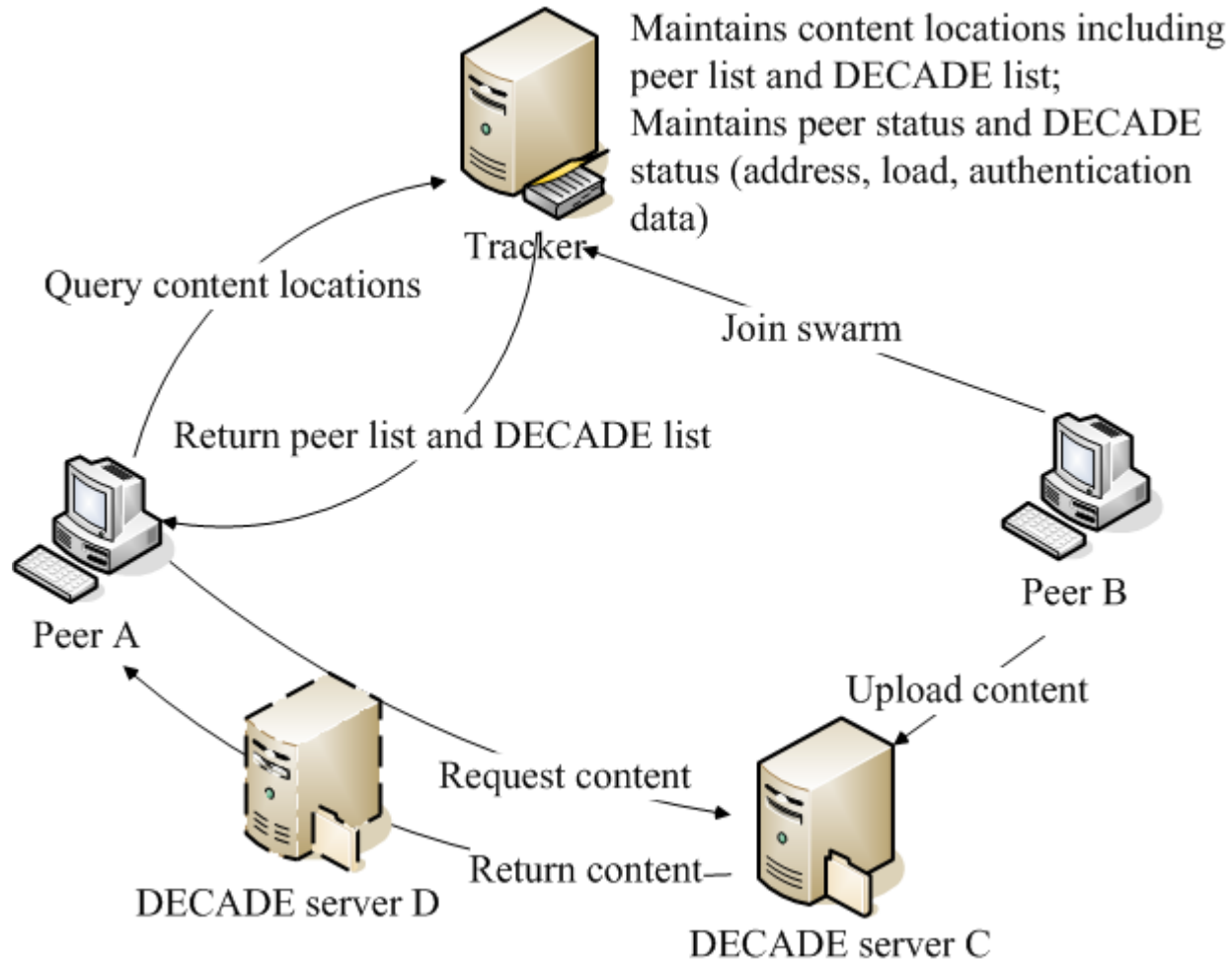A's DECADE server D

B's DECADE server C
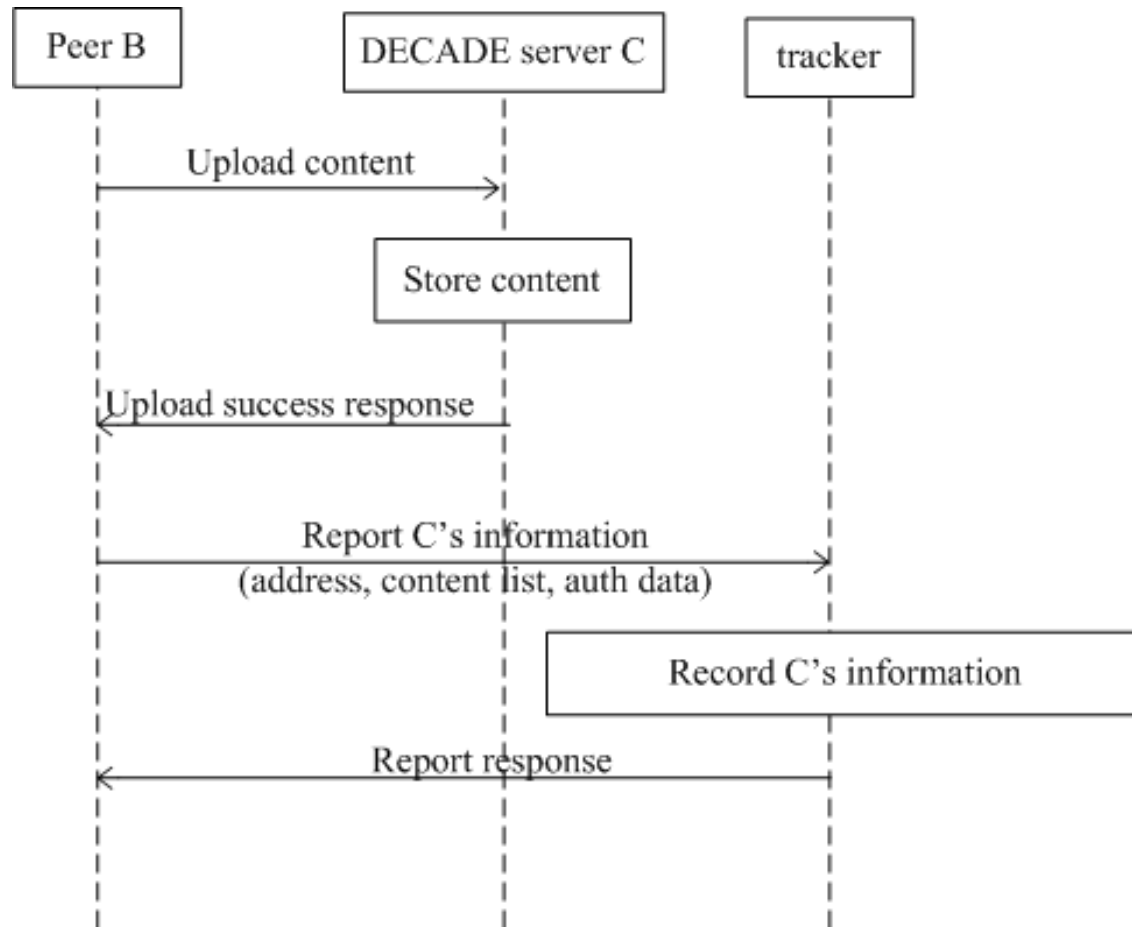
Loose coupling: content transfer

- Content request from A to B could be DECADE message or extended PPSP message.
- Peer B redirects A to DECADE C, or asks C to send content to A.
- A may also use its DECADE server D to proxy the download.

Close coupling

Maintains content locations including peer list and DECADE list; Maintains peer status and DECADE status (address, load, authentication data)

Tracker

Query content locations

Return peer list and DECADE list

Join swarm

Peer A

Peer B

Upload content

Request content
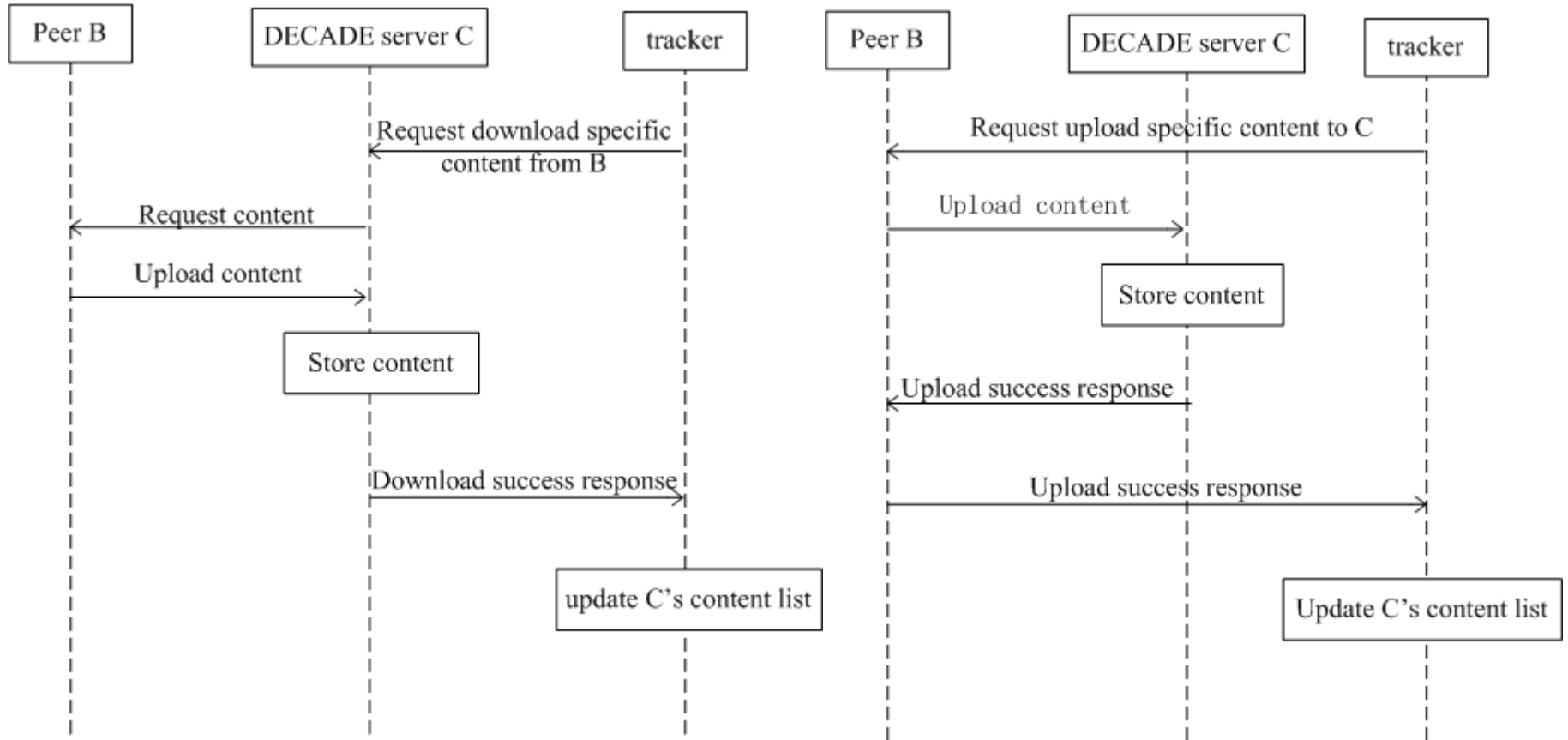
Return content

DECADE server D

DECADE server C

- DECADE service could be rent by peers, or rent and then provided to peers by P2P streaming service provider.

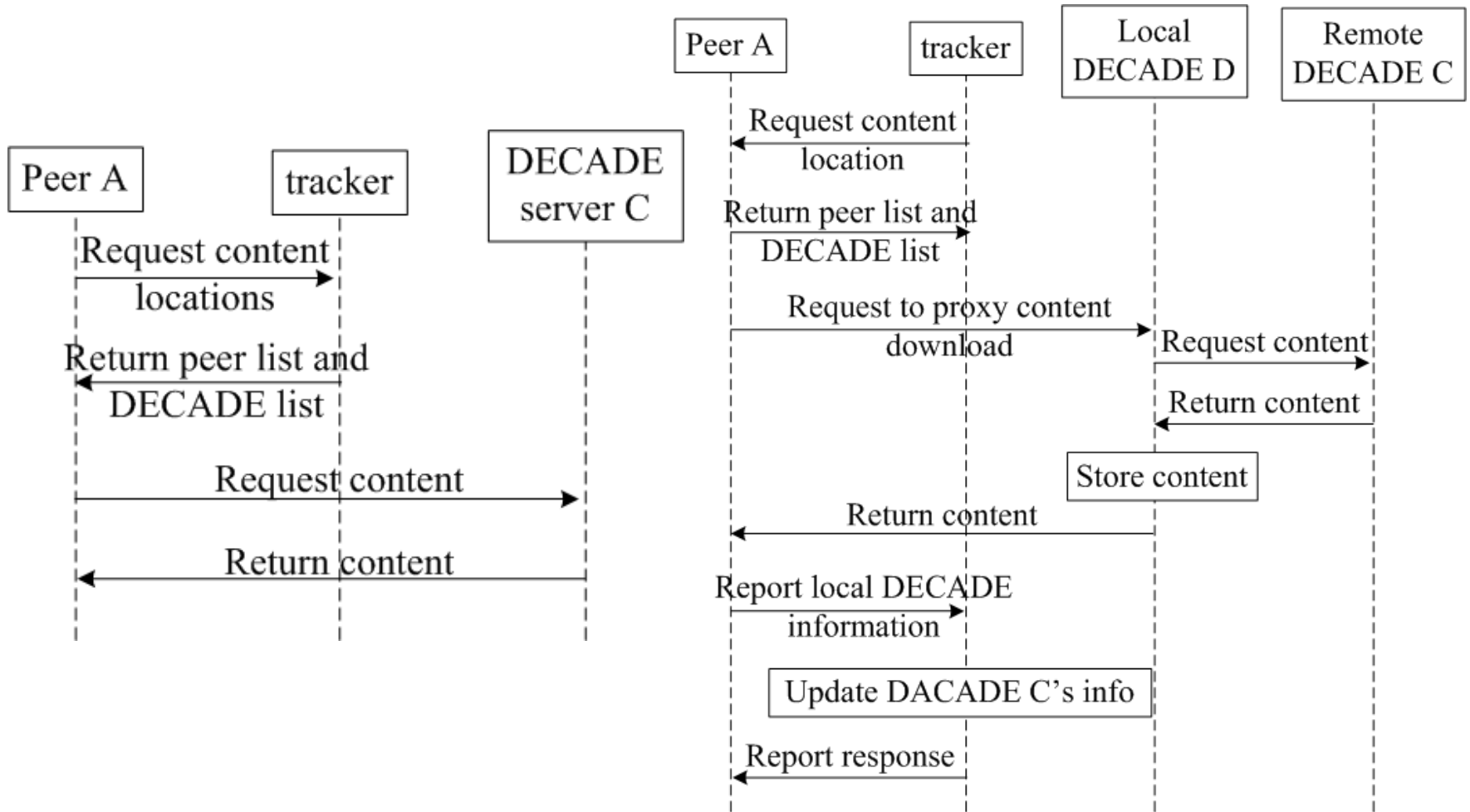# Close coupling: transfer content to DECADE server rent by peer

Close coupling: transfer content to DECADE server rent by P2P streaming SP

- Tracker requests DECADE to download content from peer, or peer to upload content to DECADE

Close coupling: downloading content from remote DECADE server

Loose coupling VS close coupling

- Loose coupling and close coupling both locate remote DECADE server efficiently.

- Different advantages
  - loose coupling requires only simple extension to tracker and tracker protocol.
  - Close coupling allows tracker to control the contents stored in DECADE, which can make better use of DECADE resources.

Requirements on PPSP and DECADE

- PPSP
  - Modifying tracker and peer
  - Extending tracker protocol
  - Loose coupling may require extending peer protocol
- DECADE
  - Close coupling requires redistributing auth data via tracker

Thank you!

Questions?