Distributed Actors

Frank Lefebvre / FrenchKit 2022

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Agenda

- Presentation
- From Local to Distributed
- Deconstructing Actor System

Sample Project

- https://github.com/franklefebvre/DistributedActors-FrenchKit.git

From Local to Distributed

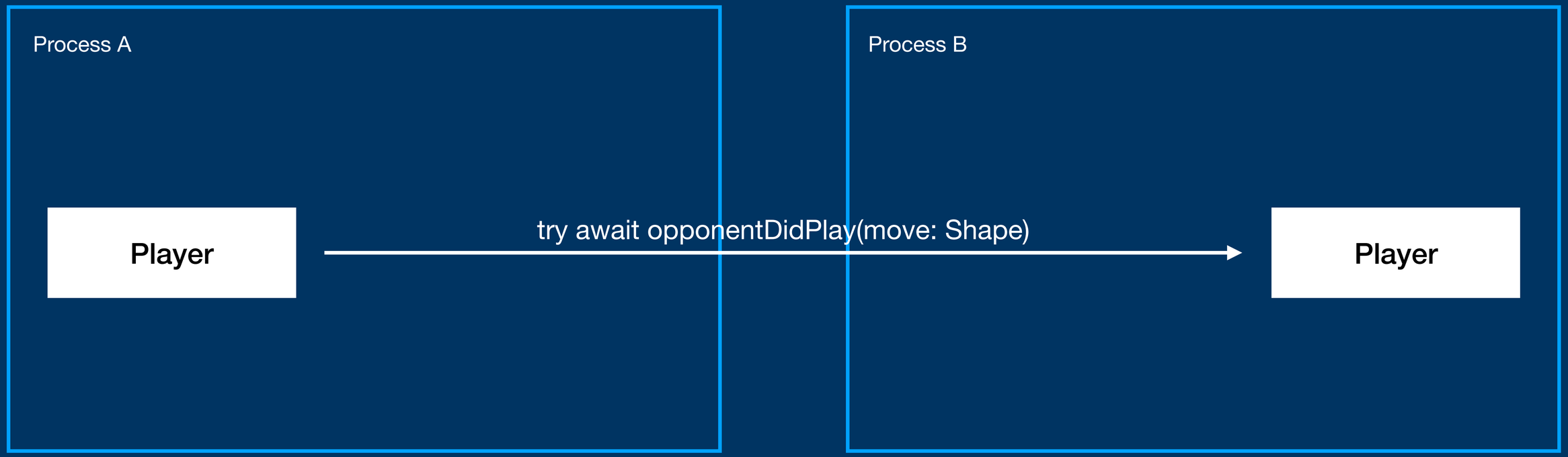
Distributed Actor Systems

Method call

Local Actor

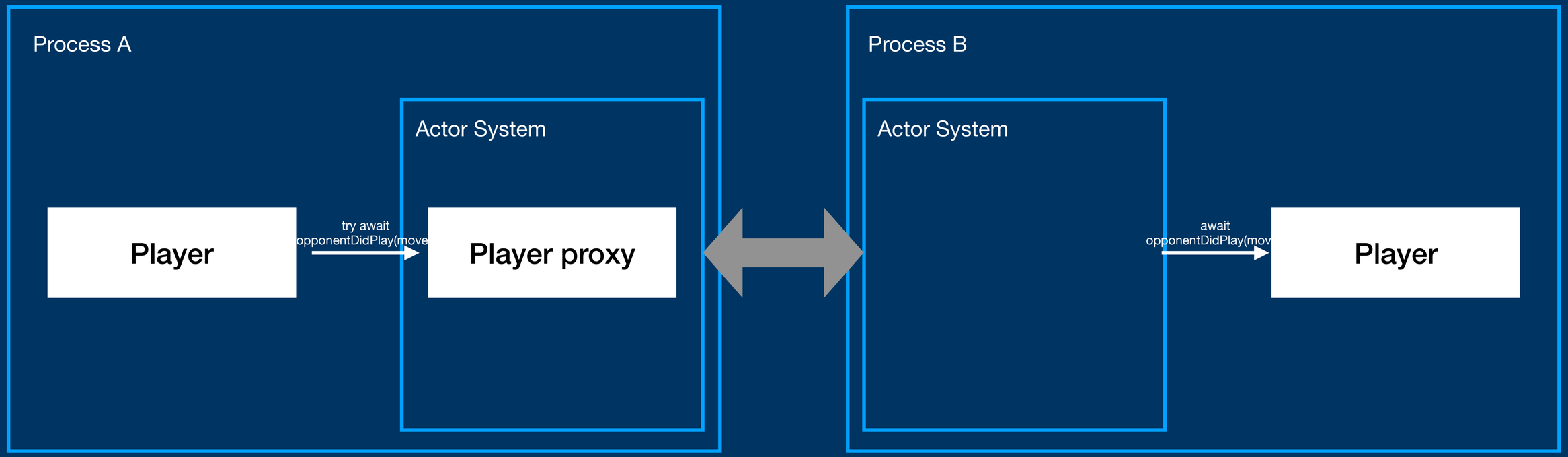
Method call

Distributed Actor



Method call

Distributed Actor

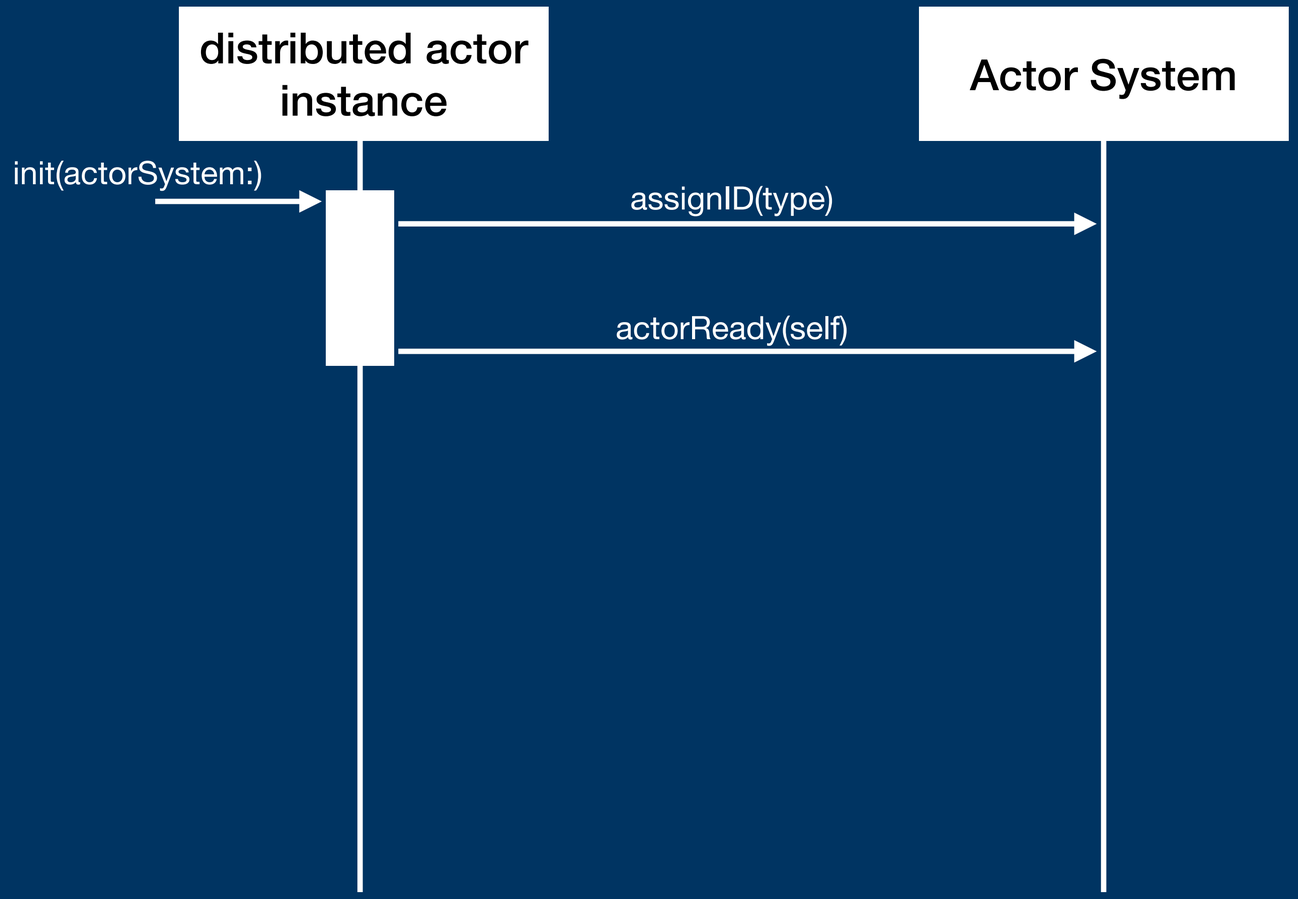


Distributed Actor System

- Actor Identification
- Invocation encoding/decoding
- Transport

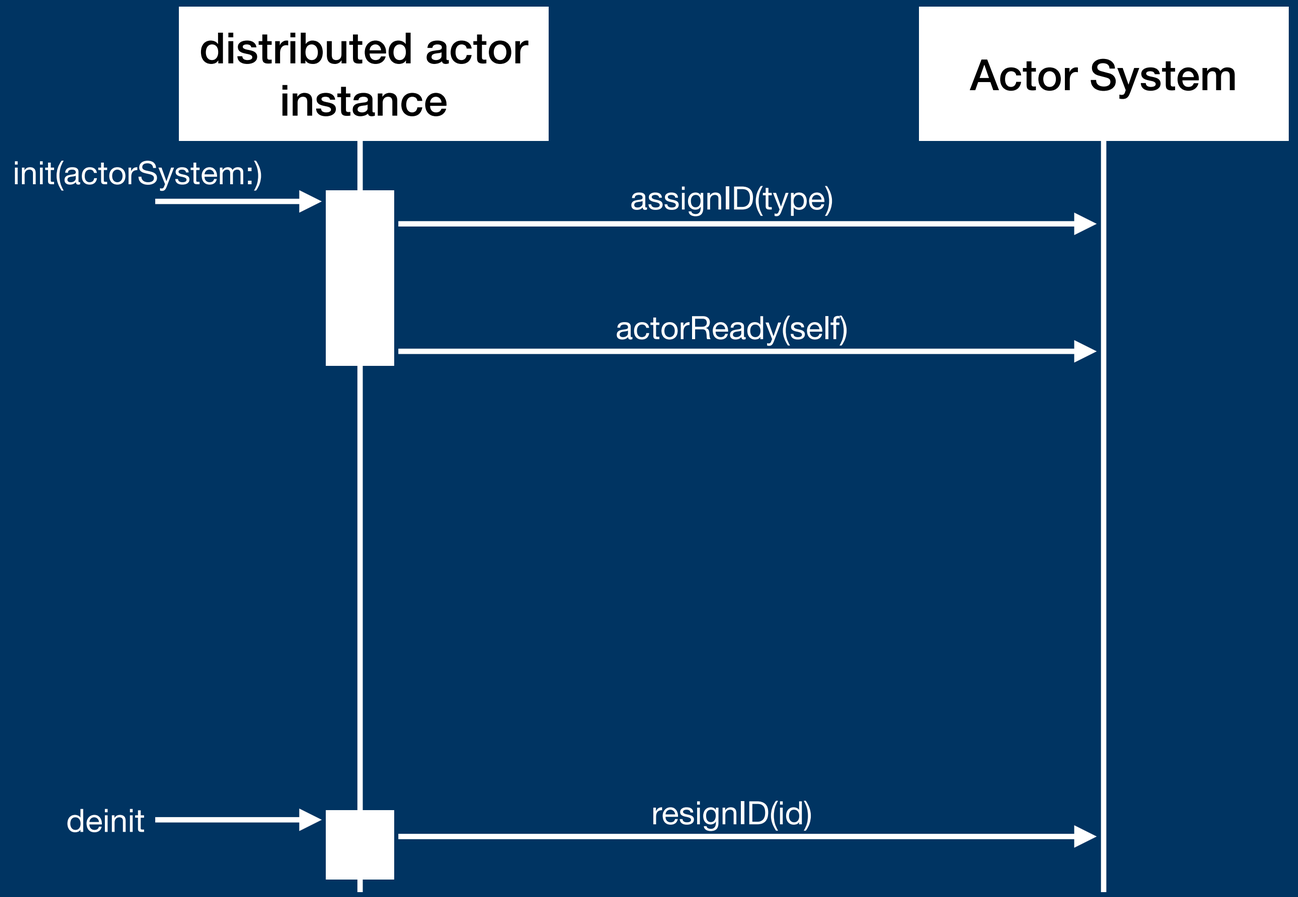
Actor Identification

ActorID



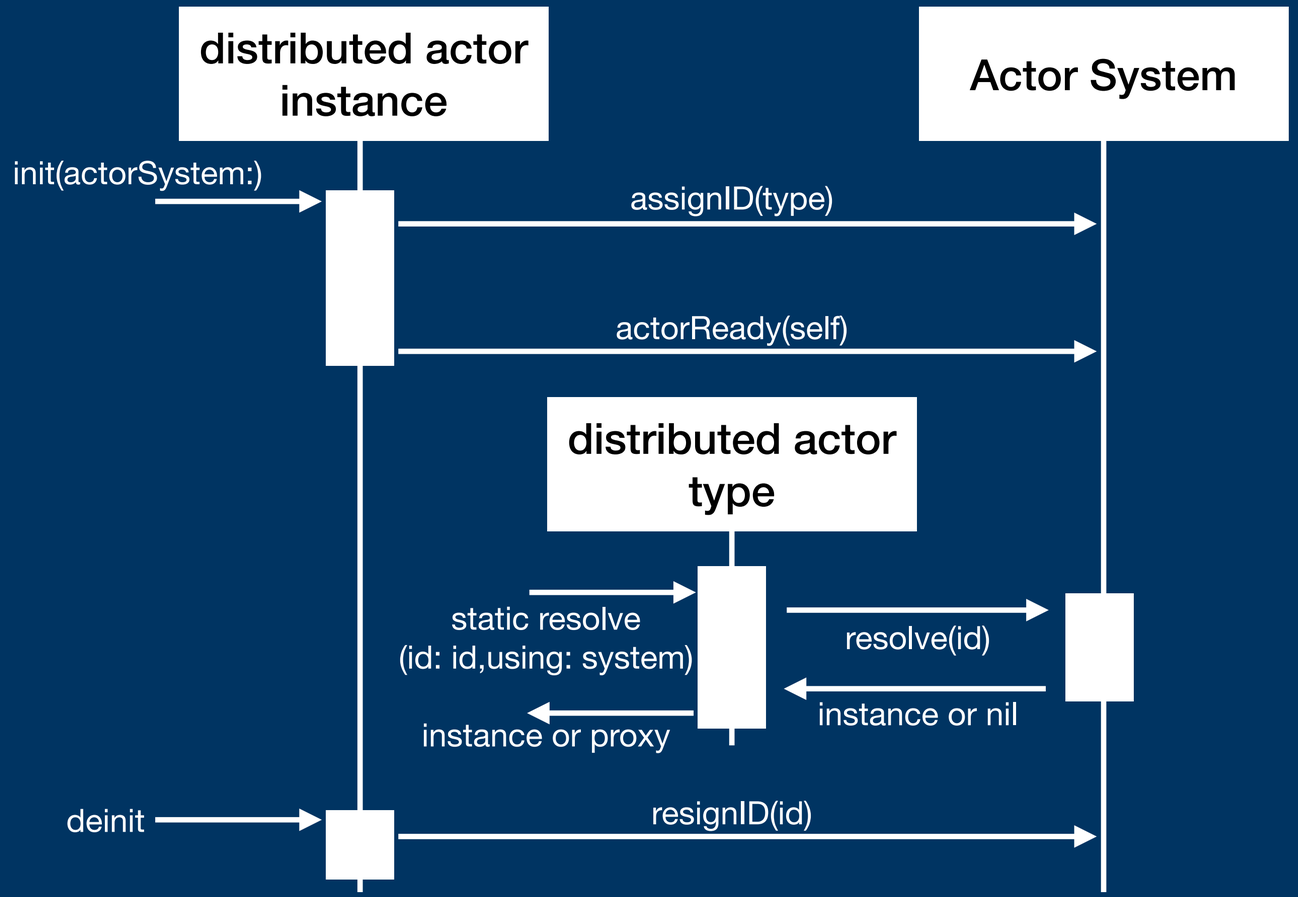
Actor Identification

ActorID



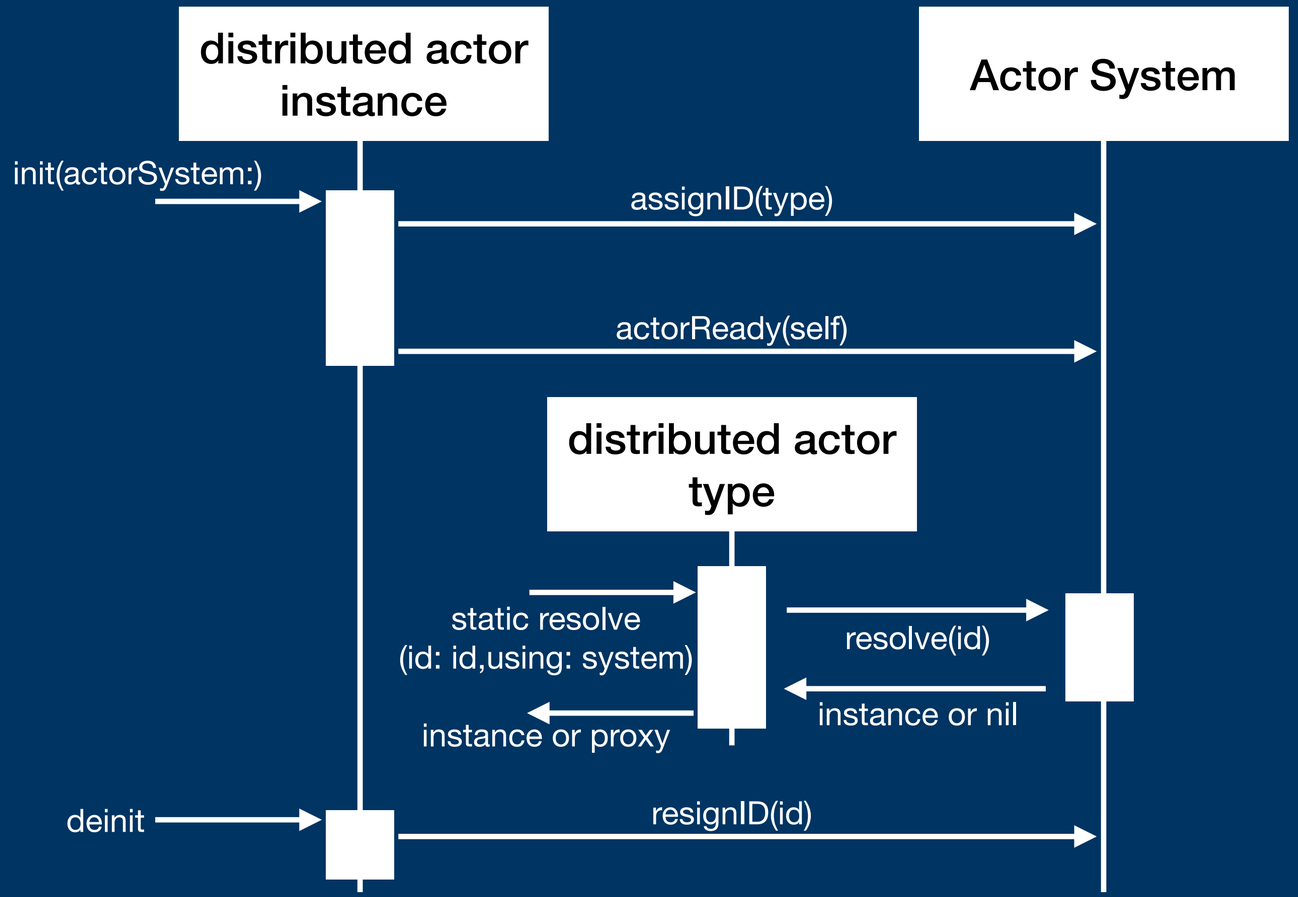
Actor Identification

ActorID



Actor Identification

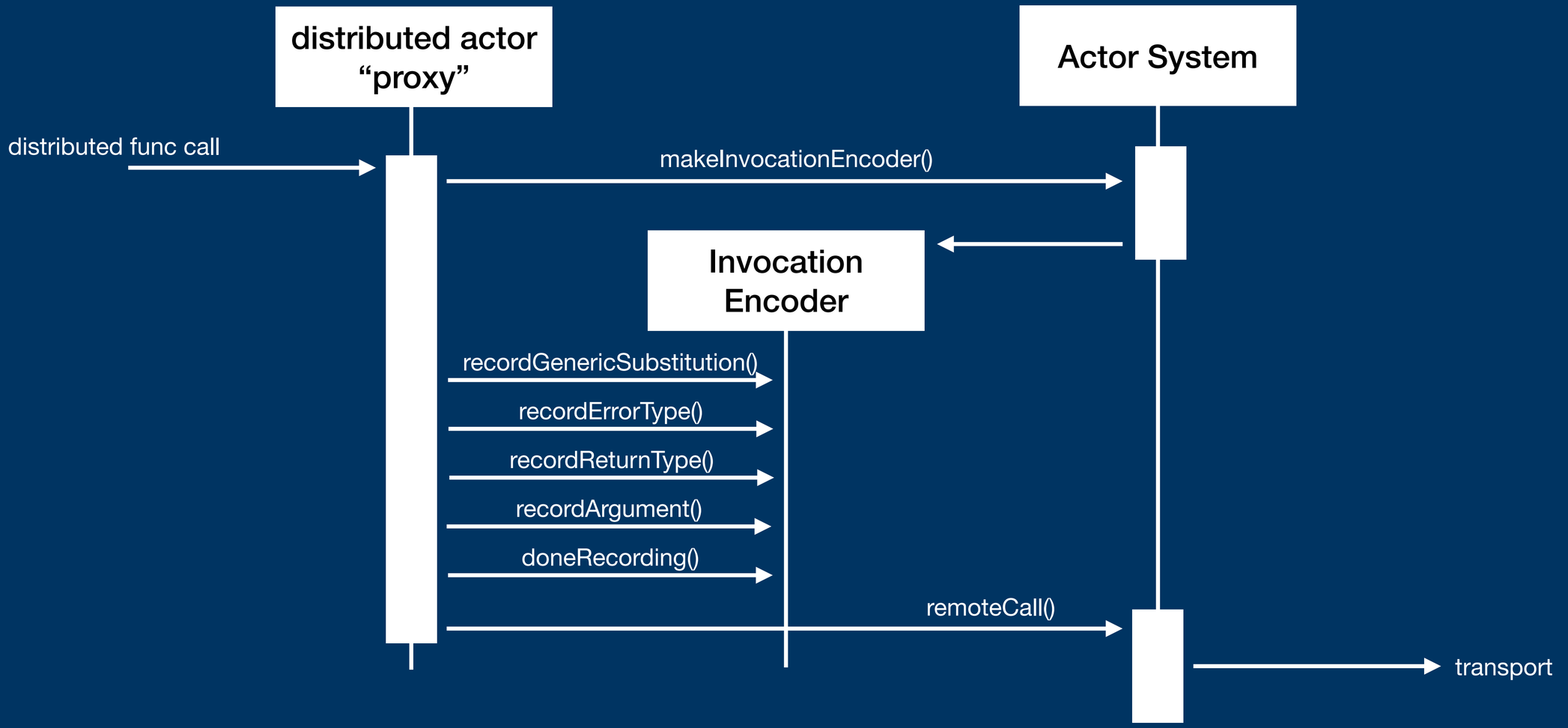
ActorID



- Synthesized at init/deinit time
- Local-only
- Synchronous
- ActorID must be serializable

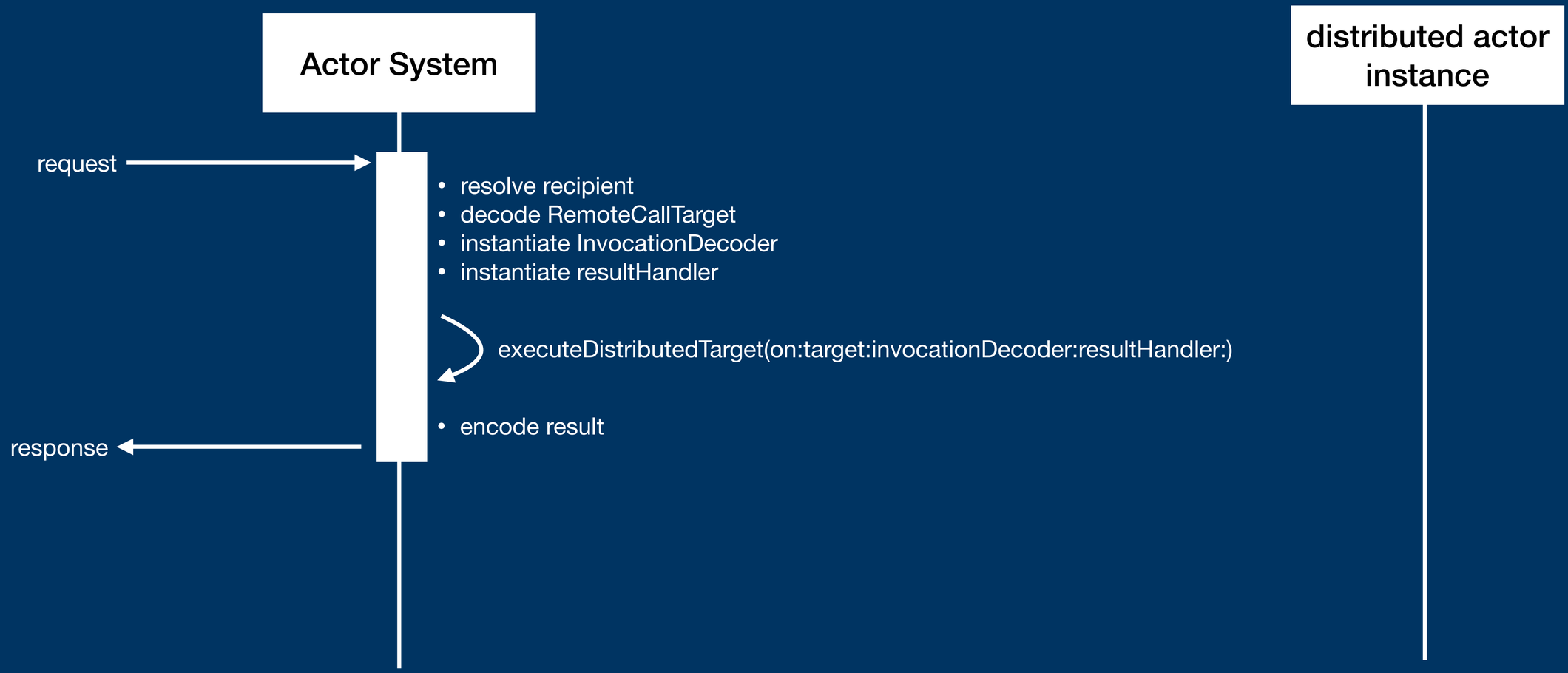
Invocation (sender)

InvocationEncoder



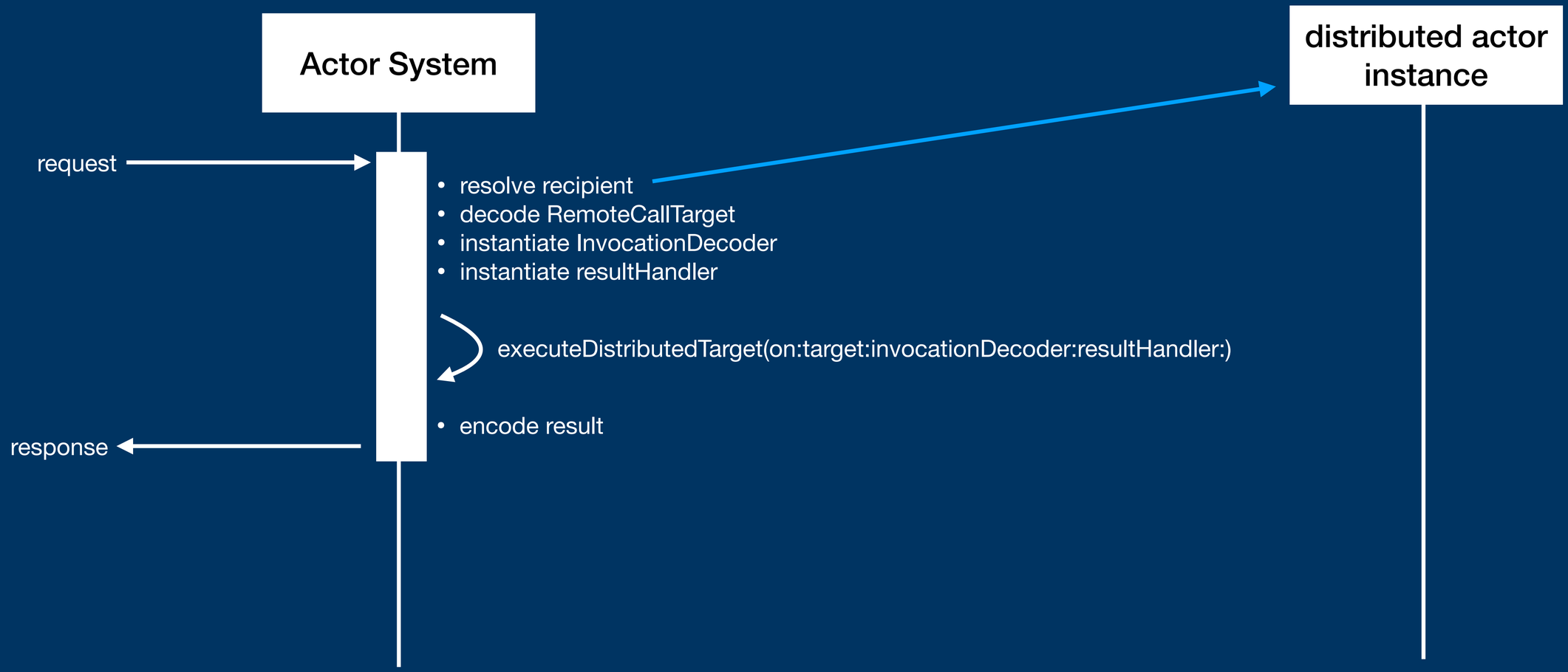
Invocation (receiver)

InvocationDecoder, ResultHandler



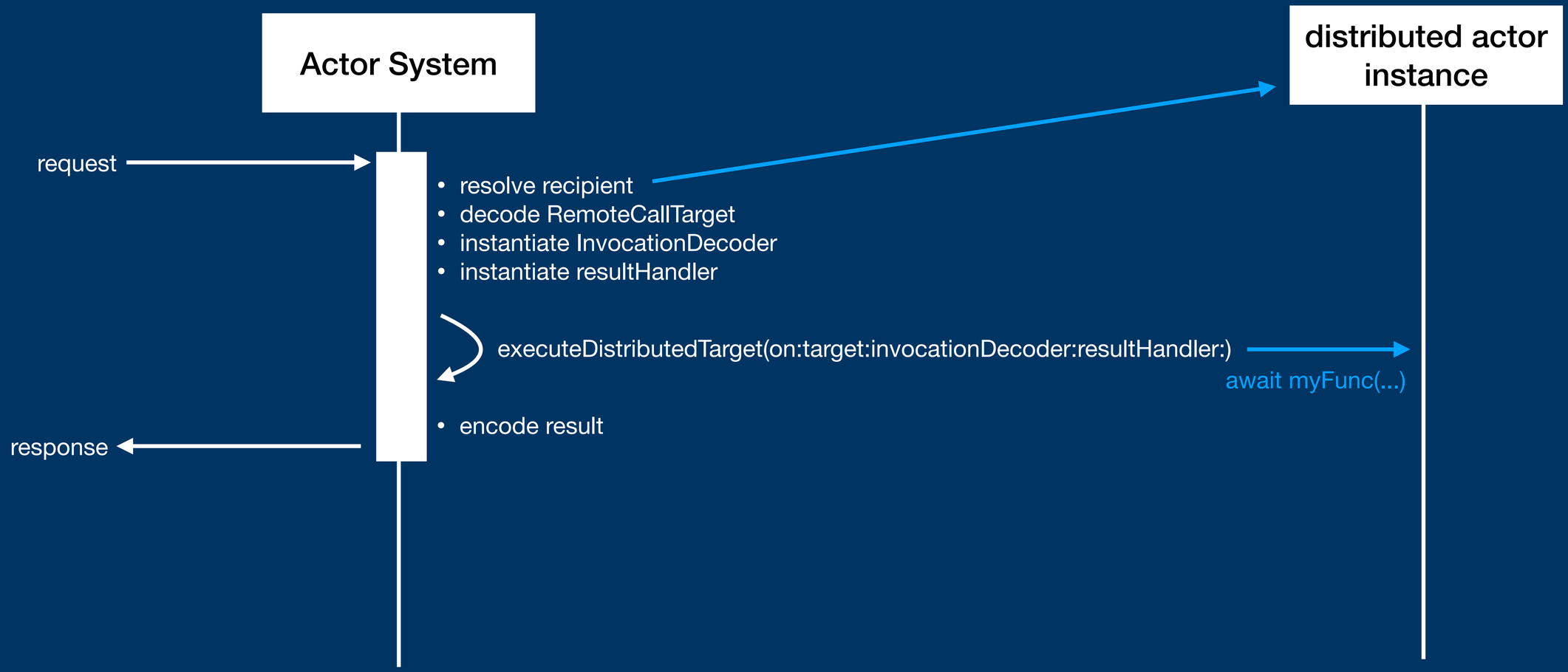
Invocation (receiver)

InvocationDecoder, ResultHandler



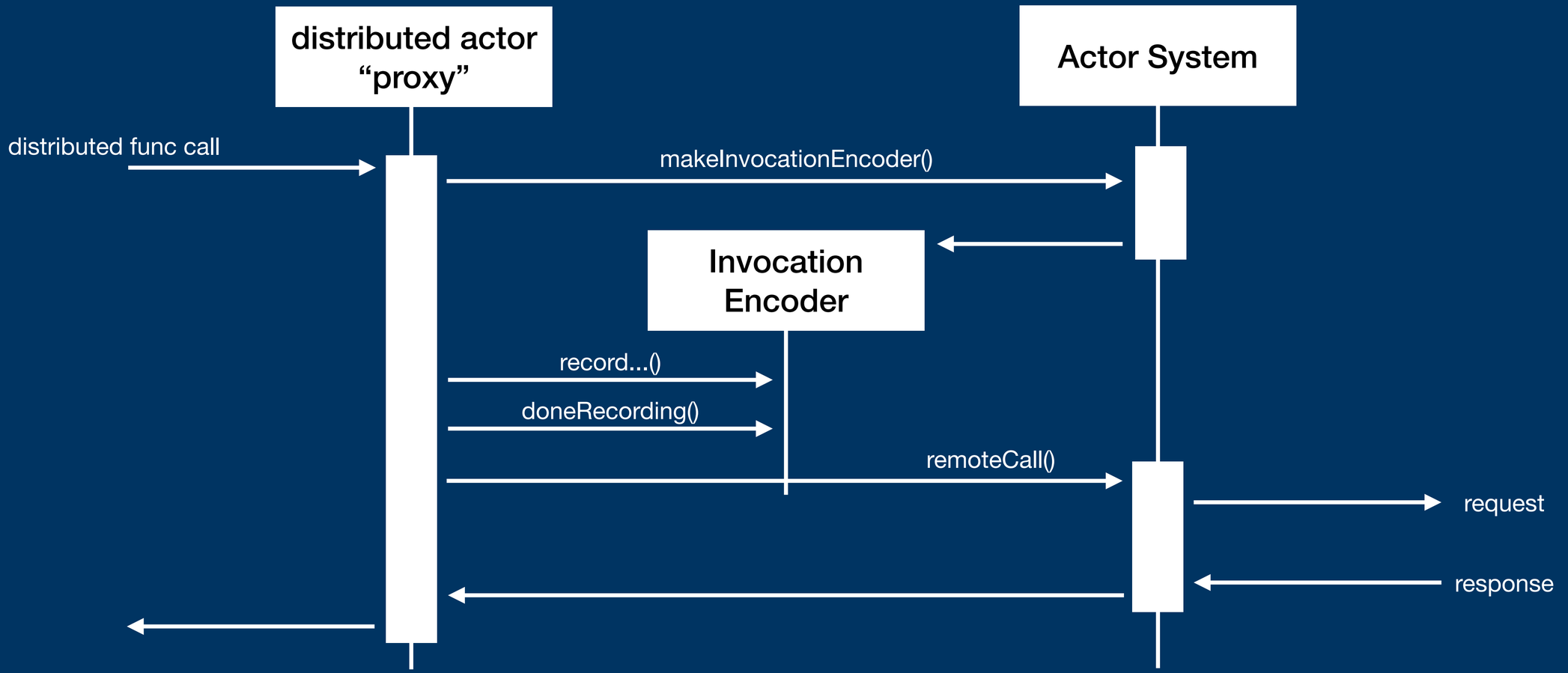
Invocation (receiver)

InvocationDecoder, ResultHandler



Invocation (sender)

Retrieving results



Hands On

More Contents

- Introducing Swift Distributed Actors
  - https://www.swift.org/blog/distributed-actors/
- Swift Evolution Proposals
  - SE-336 - Distributed Actor Isolation
  - SE-344 - Distributed Actor Runtime
- WWDC 2022
  - Meet Distributed Actors in Swift