MMUSIC

Happy Eyeballs Extension for ICE

draft-reddy-mmusic-ice-happy-eyeballs-00

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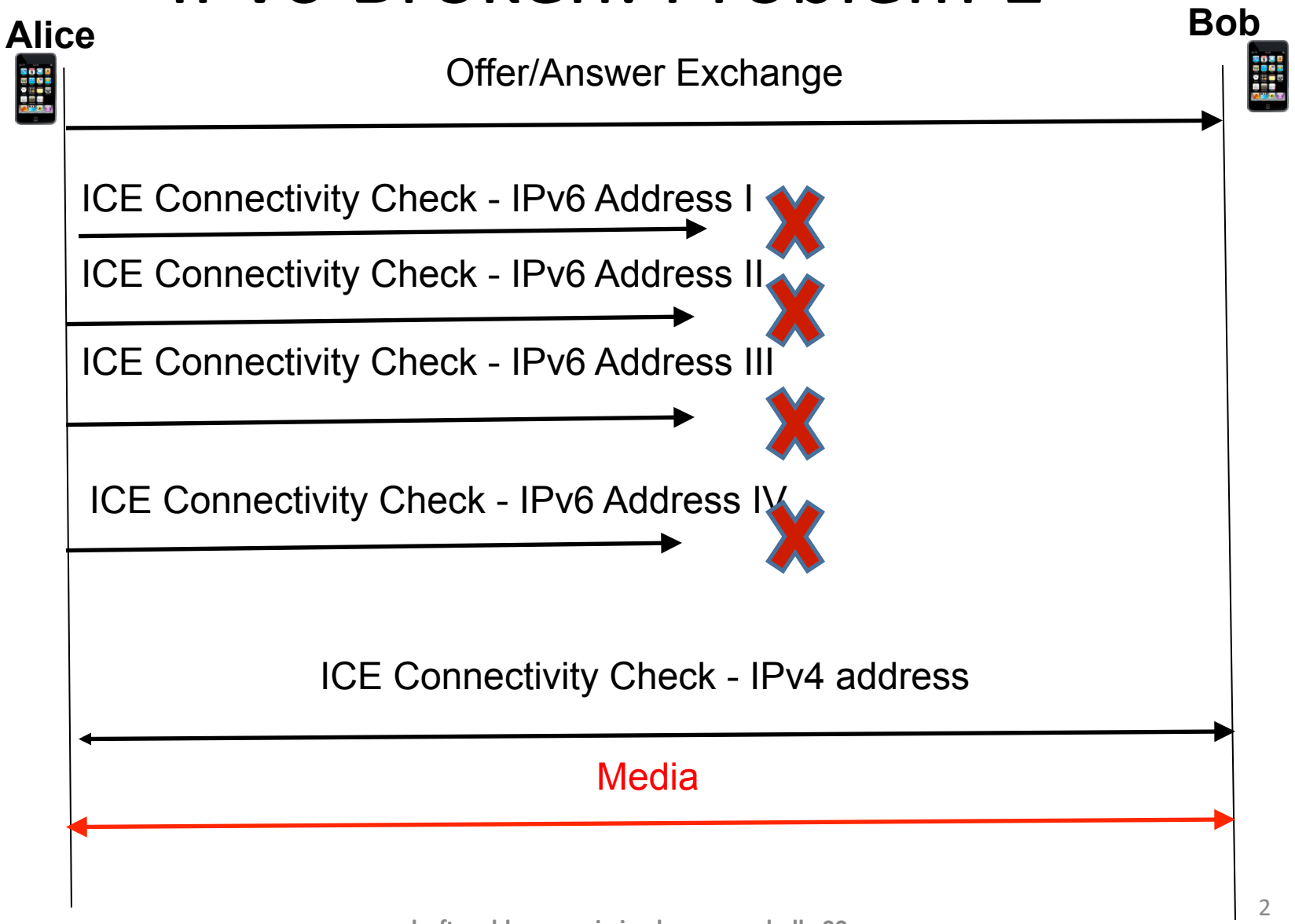
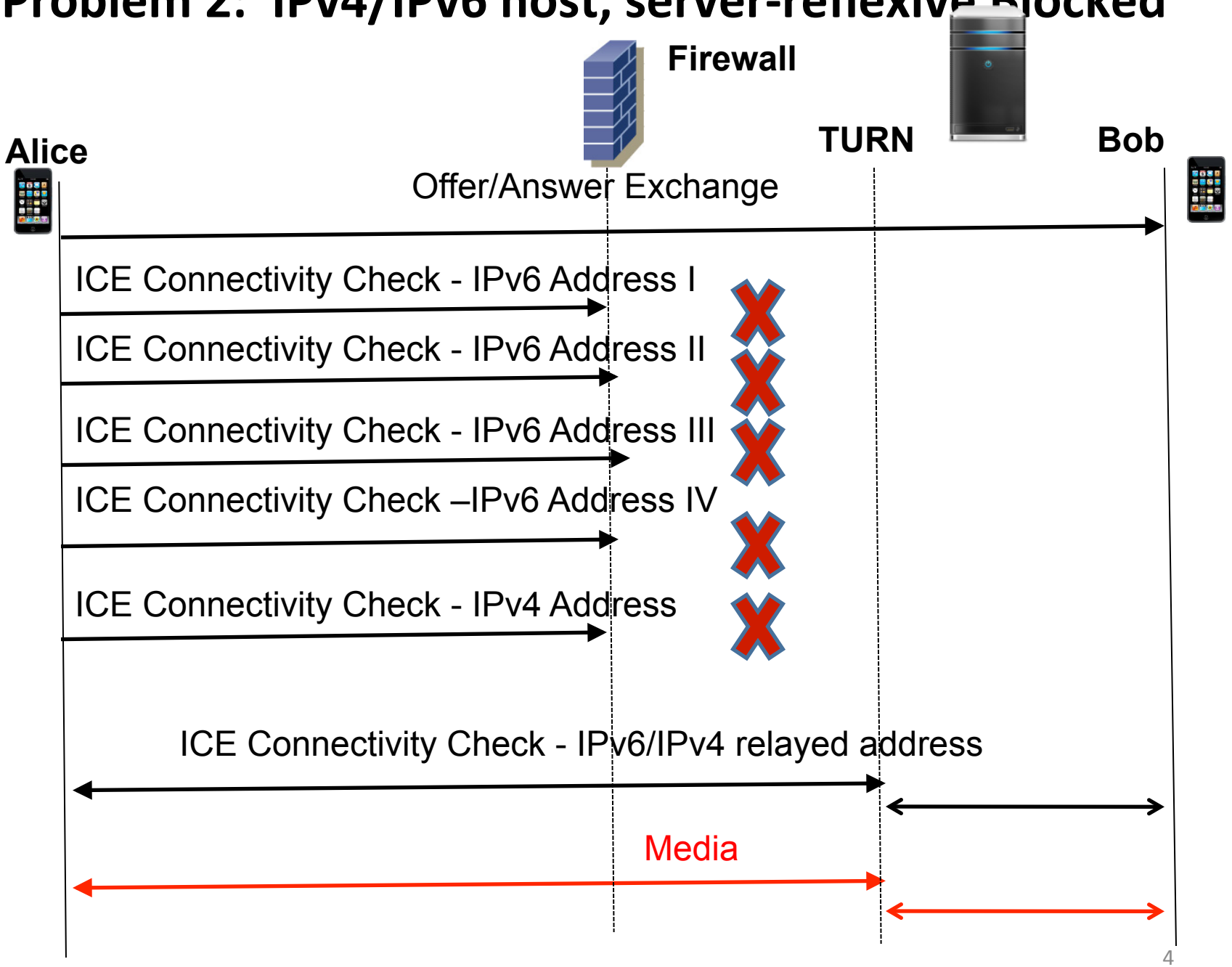
IPv6 Broken: Problem 1



Problem 1

- **Several seconds to learn IPv6 is broken!**
  - Hosts with Multiple Interfaces (Wifi, 3G) could have multiple IPv6 addresses
  - Host with 10 IPv6 addresses trying to reach remote peer with 10 IPv6 addresses, with Ta = 50ms
  - Time before IPv4 addresses are tested would be 50ms*10*10 = 5000ms
- Dual stack hosts behave worse than IPv4-only hosts!

Problem 2: IPv4/IPv6 host, server-reflexive Blocked



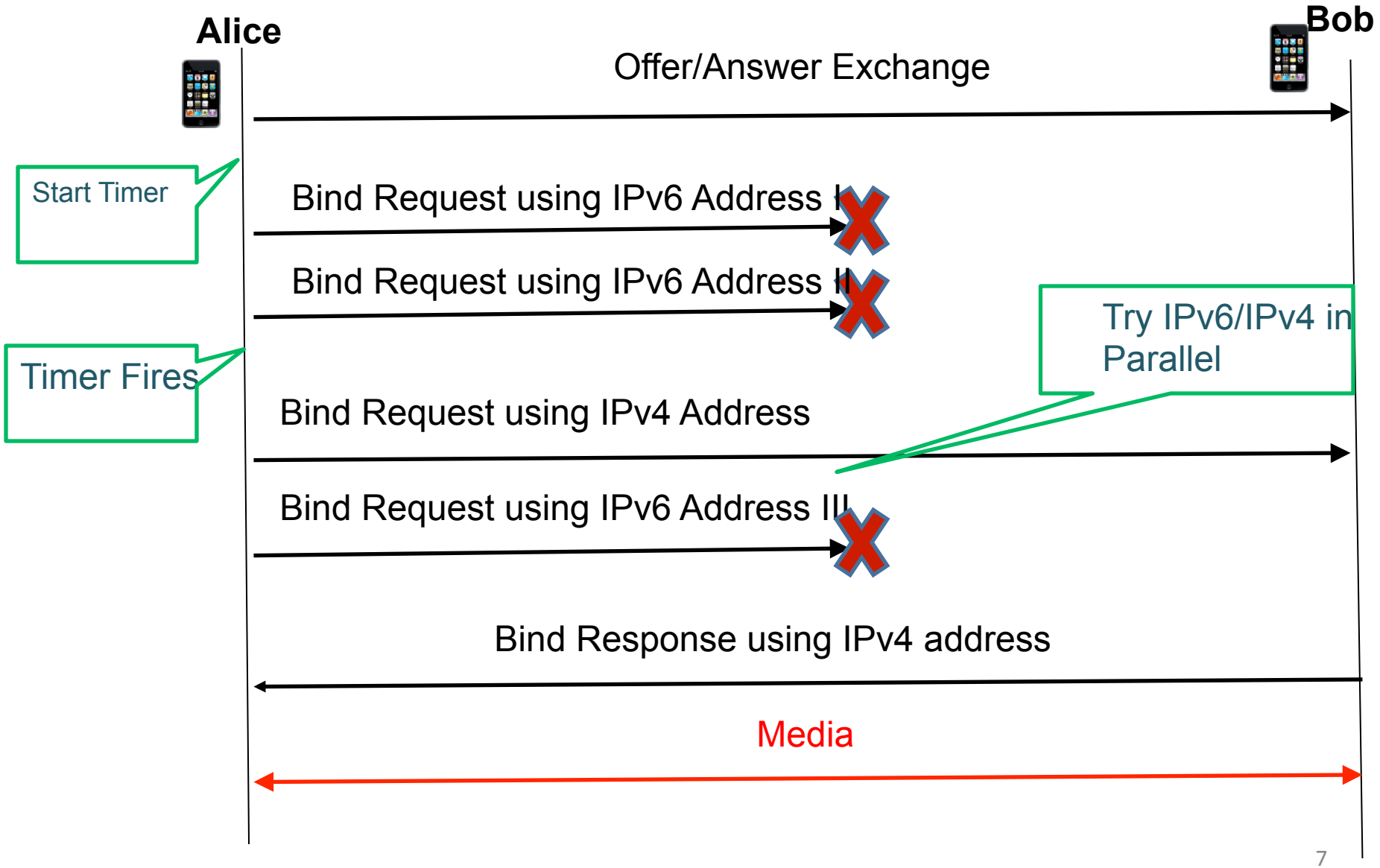
Problem 2 – Multihoming with Firewalls

- **Several seconds to fall back to TURN server**
  - Hosts with Multiple IPv6 host addresses, IPv4 server-reflexive addresses
  - Host with 8 IPv6 host addresses, 4 server-reflexive addresses trying to reach remote peer with 12 IPv6/IPv4 host/server-reflexive addresses with Ta = 100ms
  - Time before IPv4/IPv6 relayed addresses are tested would be 50ms*(8 + 4)*12 = 14.4 seconds

- Hosts with many IP addresses suffer!

PROPOSED SOLUTIONS

The Happy Eyeballs ICE Solution



The Happy Eyeballs ICE Solution

- Problem 1 avoided (Dual Stack Hosts, IPv6 broken)
  - Faster response even if IPv6 path is down, host has global IPv6 address but is disconnected from the IPv6 Internet.
- Problem 2 avoided (Multi-homing Firewall blocks P2P)
  - Faster response even if IPv4/IPv6 connectivity checks using host and server-reflexive candidate pairs is not successful