Trickle ICE

Incremental Provisioning of Candidates for the Interactive Connectivity Establishment (ICE) Protocol

draft-rescorla-mmusic-ice-trickle

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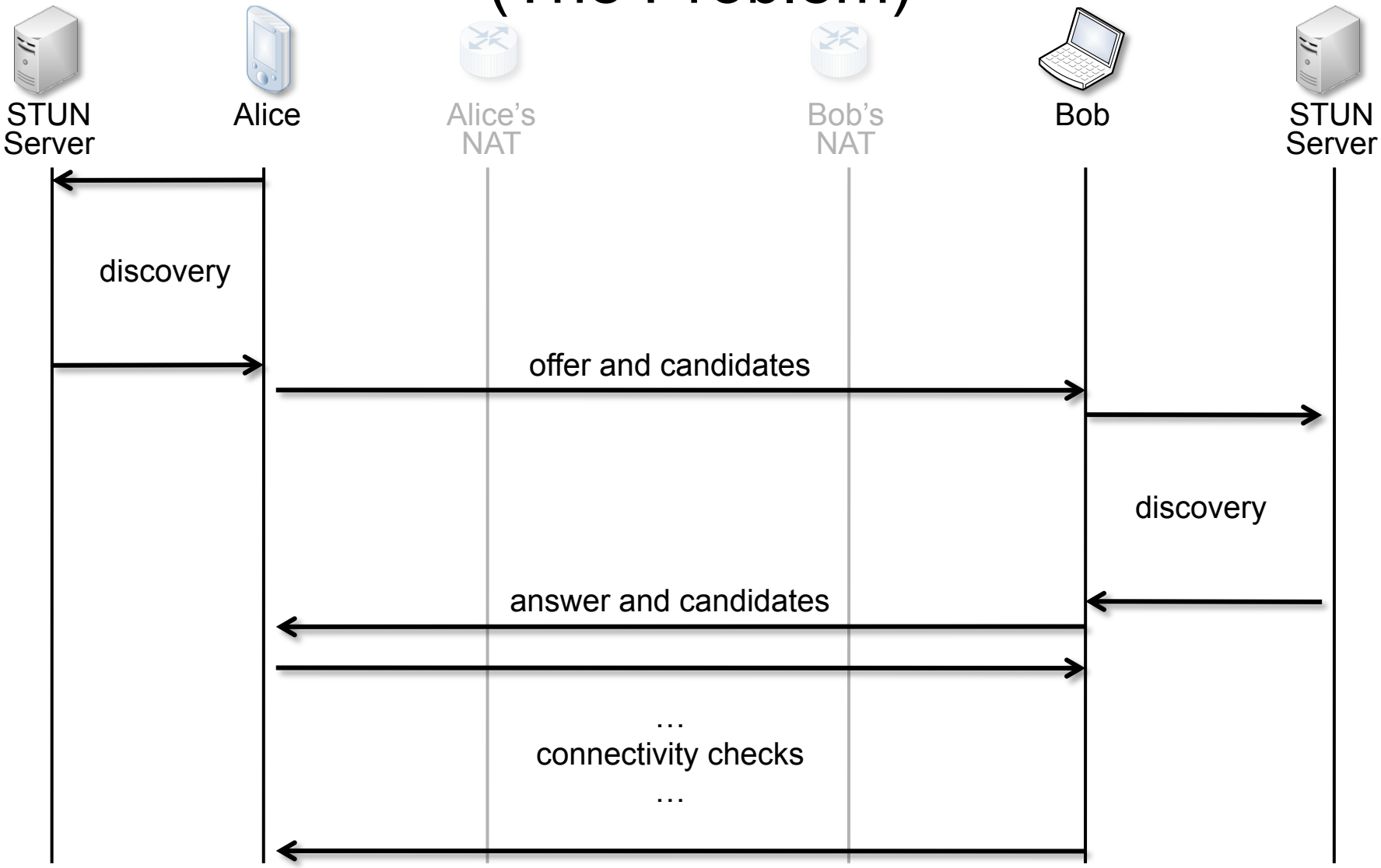
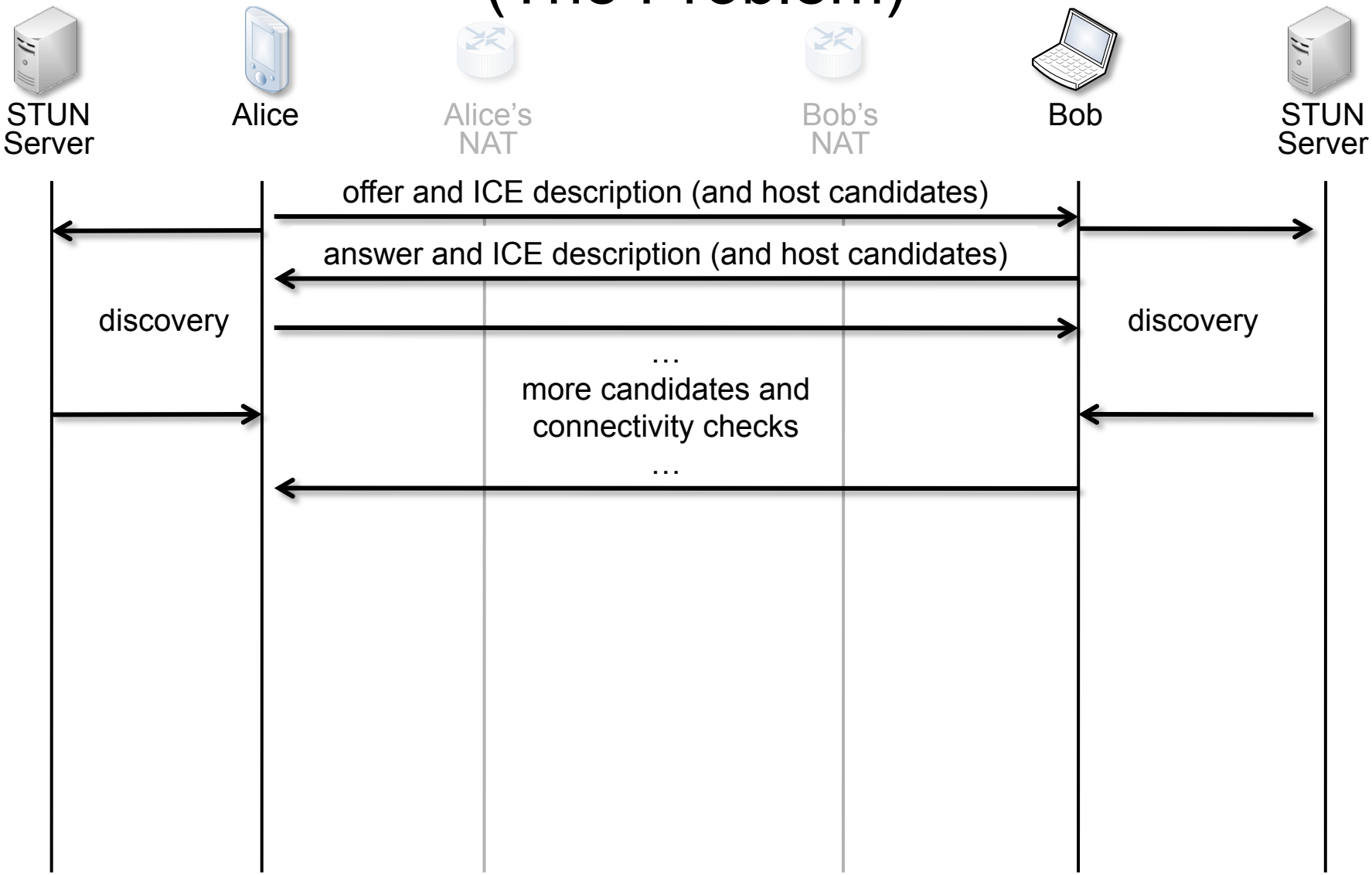
What is this about?
(The Problem)



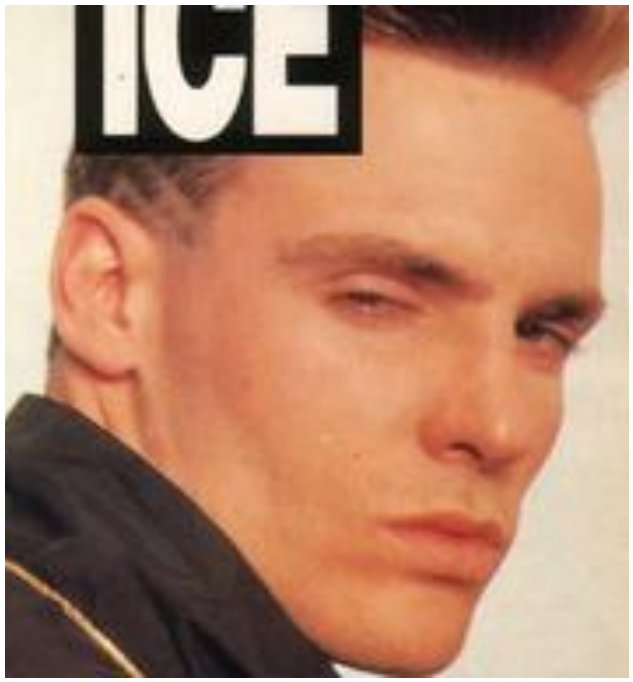
Vanilla ICE Operation as per RFC 5245

What is this about?
(The Problem)



Trickle ICE

… or in other words



Vanilla ICE

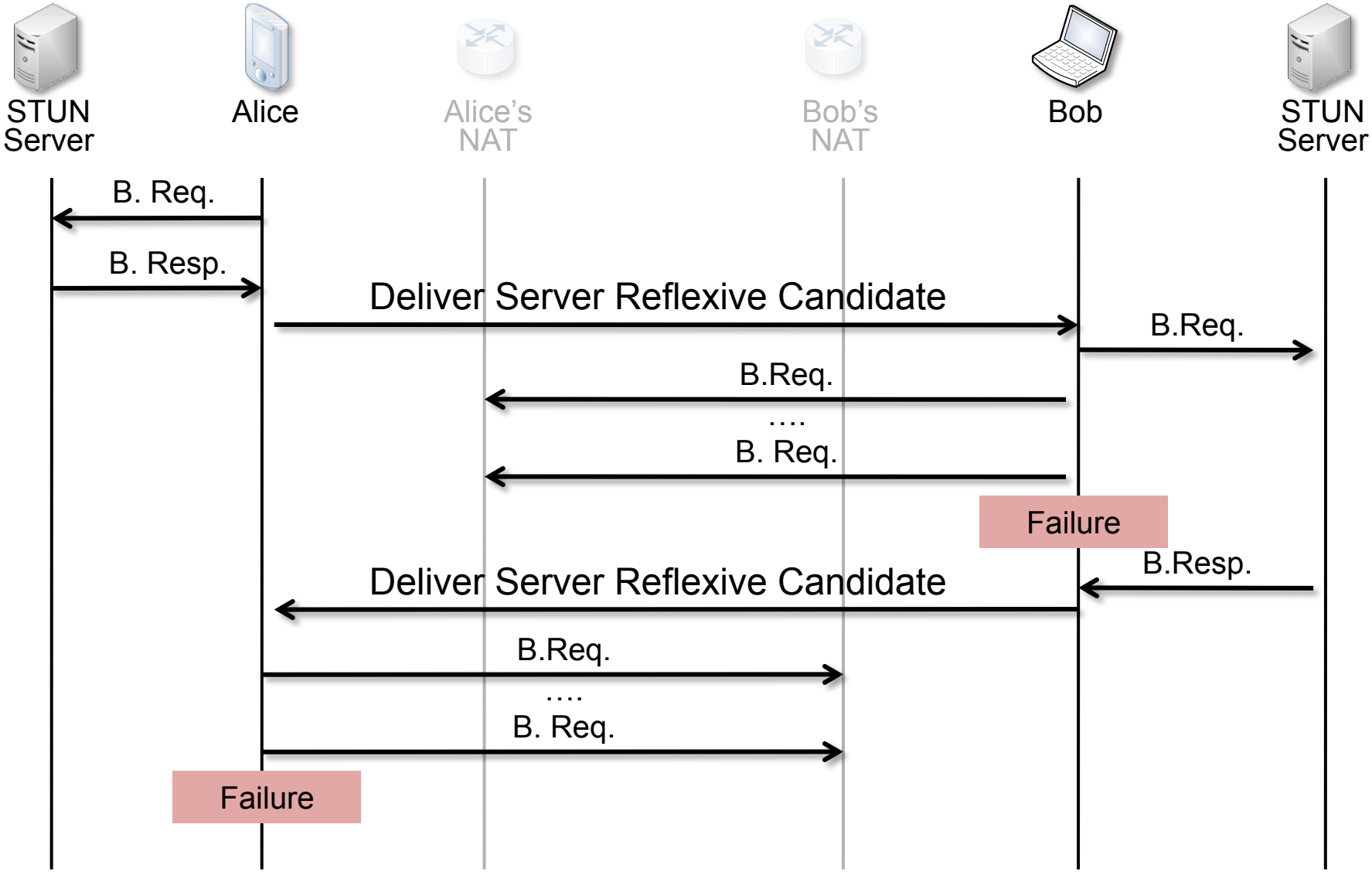
vs

Trickle ICE

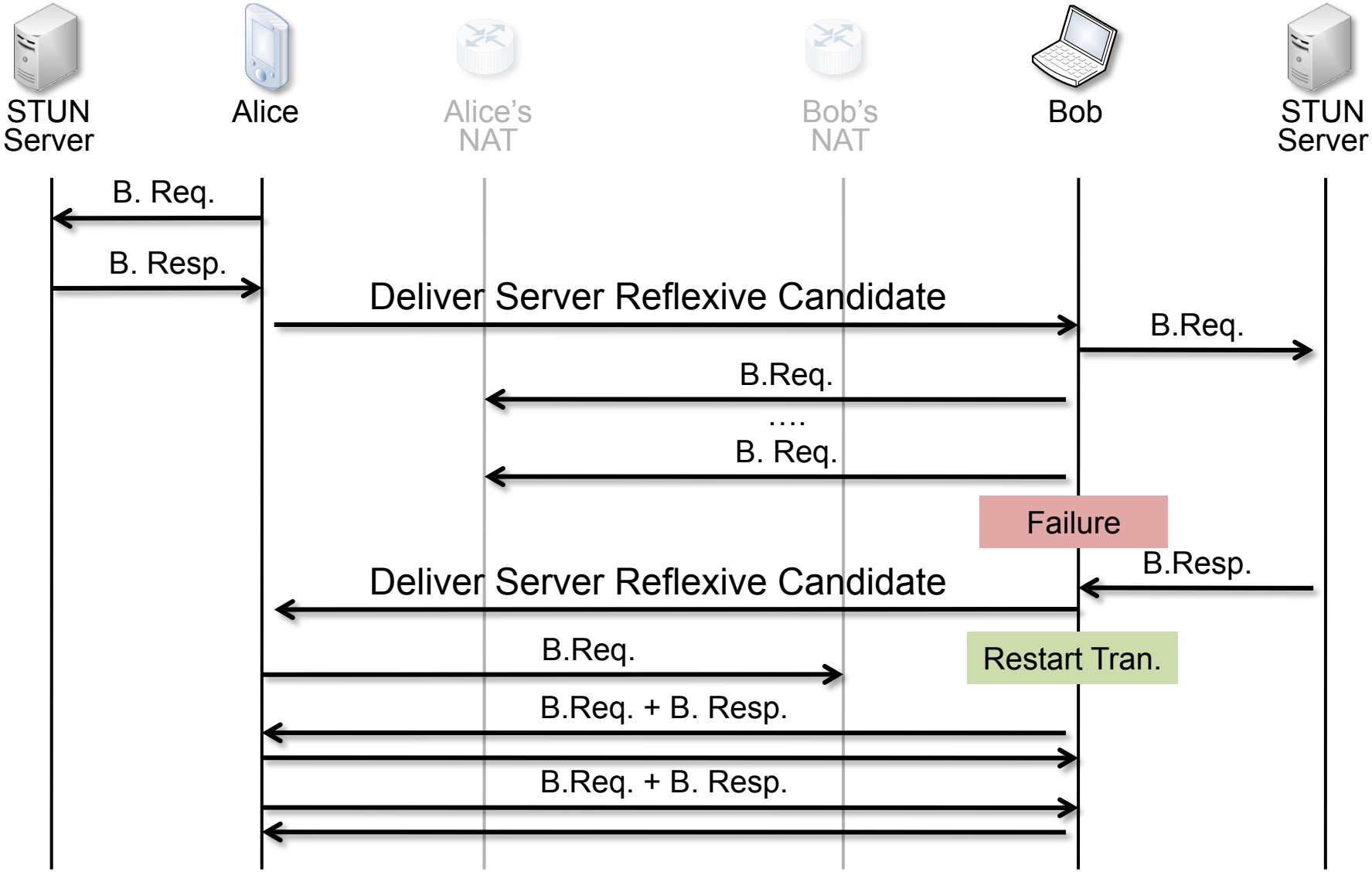
What's missing in RFC5245
Why is trickling not currently compatible

- Not clear how to deliver additional candidates
- We need to know how long to wait for additional candidates (an end-of-candidates message)
- We need to know exactly how to update check list states
- We need to keep checks synchronized from both ends (since we can no longer rely on stream and pair ordering)
- Even if we deliver them additional candidates are likely to be ignored or cause problems with Vanilla ICE implementations
  - Lack of host candidates in an offer/answer would probably result in a failure
  - Premature failures in cases where lack of connectivity for the first set of candidates can be easily determined

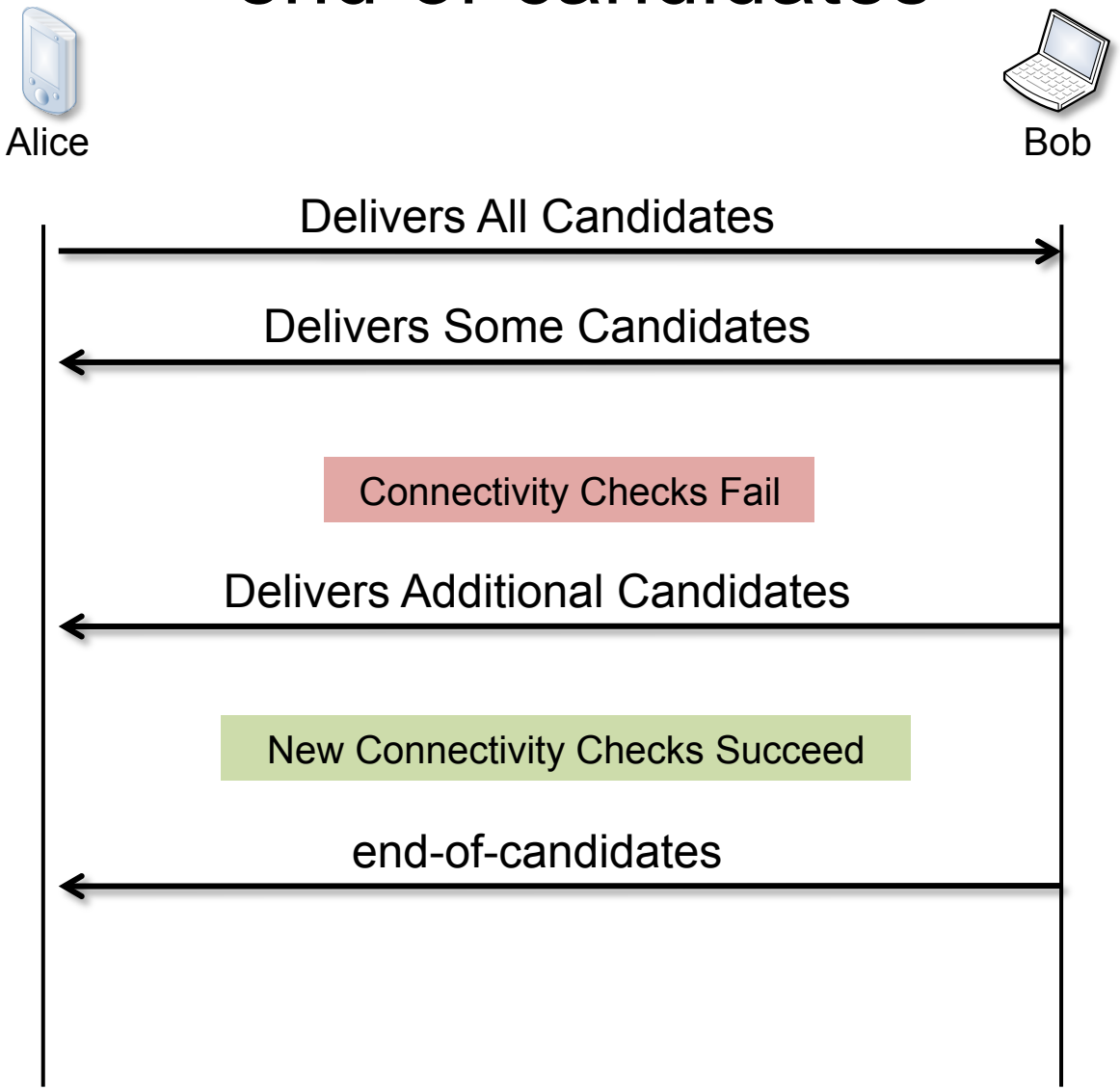
Ensuring Simultaneous Checks (Problem?)



Ensuring Simultaneous Checks (Solution)



end-of-candidates



Relationship to SIP, Offer/Answer and SDP

- Keeping SIP out of it. Work on specific signaling protocols should happen in usage specifications **but** work on them should happen in parallel (at least for SIP)

- Currently
  - We have a stub on the relationship to Offer/Answer
  - We only depend on ICE Description for the semantics

- How dependent should we be on Offer/Answer
  - Completely and exclusively dependant on Offer/Answer, RFC3264 and SDP
  - We keep O/A in a separate section but we still specify it
  - We leave it all to a separate spec

Open Questions

- Verifying support (required by lack of backward compatibility).
  - Strictly before ICE processing
    - Similar to XMPP Disco Info (XEP-0030 and XEP-0015)
    - Potentially using RFC3840
  - At the beginning of ICE processing
    - No problems for controlled agents
    - Controlling agents can try to cause a failure for Vanilla ICE agents and then restart without trickling
      - What would the failure be?