HIP Rendezvous Options
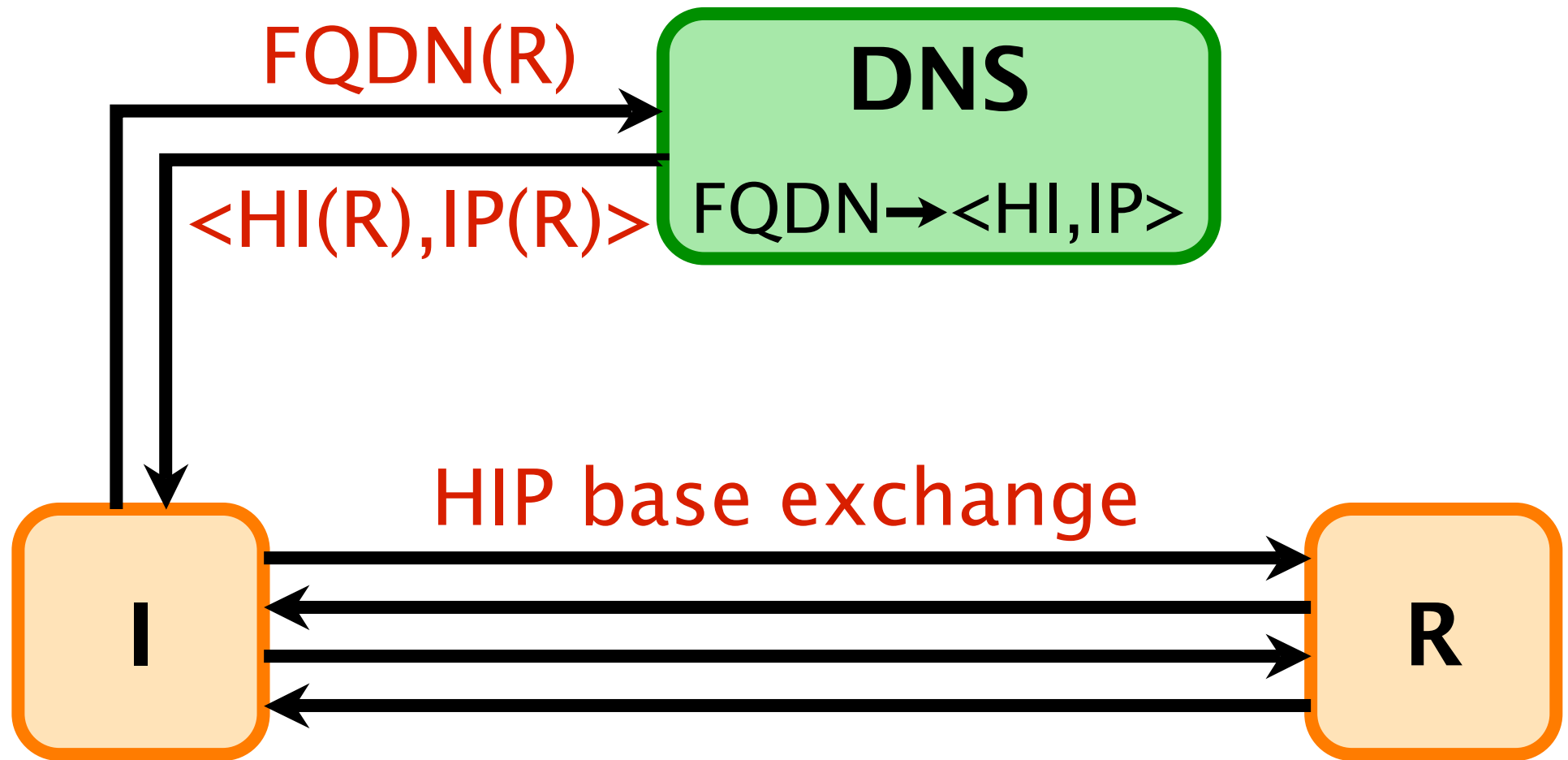
Lars Eggert

NEC

Introduction

- draft-eggert-hip-rendezvous
  - ID is -00, talk is newer
  - **design options, not solutions**

- ID has 2 rendezvous scenarios
  - among HIP nodes
  - between HIP and non-HIP nodes

Basic HIP-to-HIP Scenario

FQDN(R)

DNS

FQDN→<HI,IP>

<HI(R),IP(R)>

HIP base exchange

I

R

Focus

▶ IP address changes
  ▶ **mobility**, etc.

▶ readdress ongoing associations
  ▶ REA: draft-nikander-hip-mm

▶ new associations?
  ▶ DNS has FQDN➤<HI,IP> map
  ▶ **Strawman:**
    IP change ➤ DNS update

Strawman Limitations

DNS
FQDN➙<HI,IP>

← dynamic DNS
update IP(R)

R

▶ stale DNS cache ➙ no connection
▶ IP lookup still requires FQDN
▶ zone signatures costly (currently)
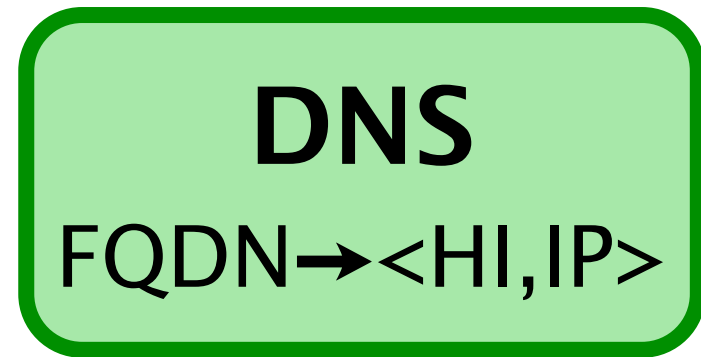
Analysis

▶ DNS maintains FQDN➡<HI,IP>

▶ combines **2** maps

> **DNS**
> FQDN➡<HI,IP>

  ▶ FQDN➡HI   **#1**

  ▶ FQDN➡IP   **#2**

▶ #1 in DNS for app compatibility
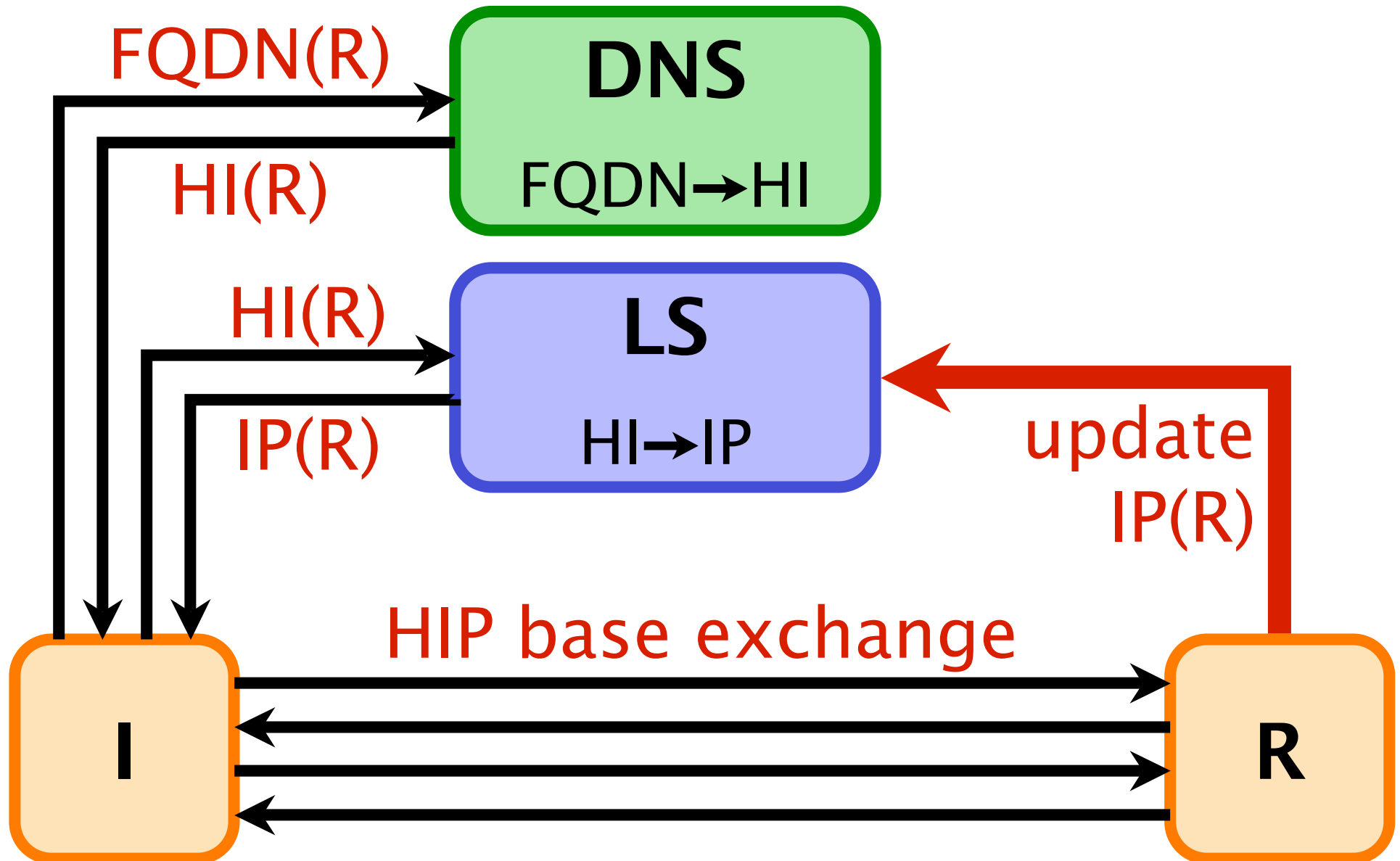
▶ #2 only used by HIP ➡ **move**

  ▶ and need only HI➡IP for HIP

Some Alternatives

▶ **lookup service (LS)**

  ▶ return IP(R) given HI(R)

  ▶ 2-phase HIP lookup: FQDN➡HI➡IP

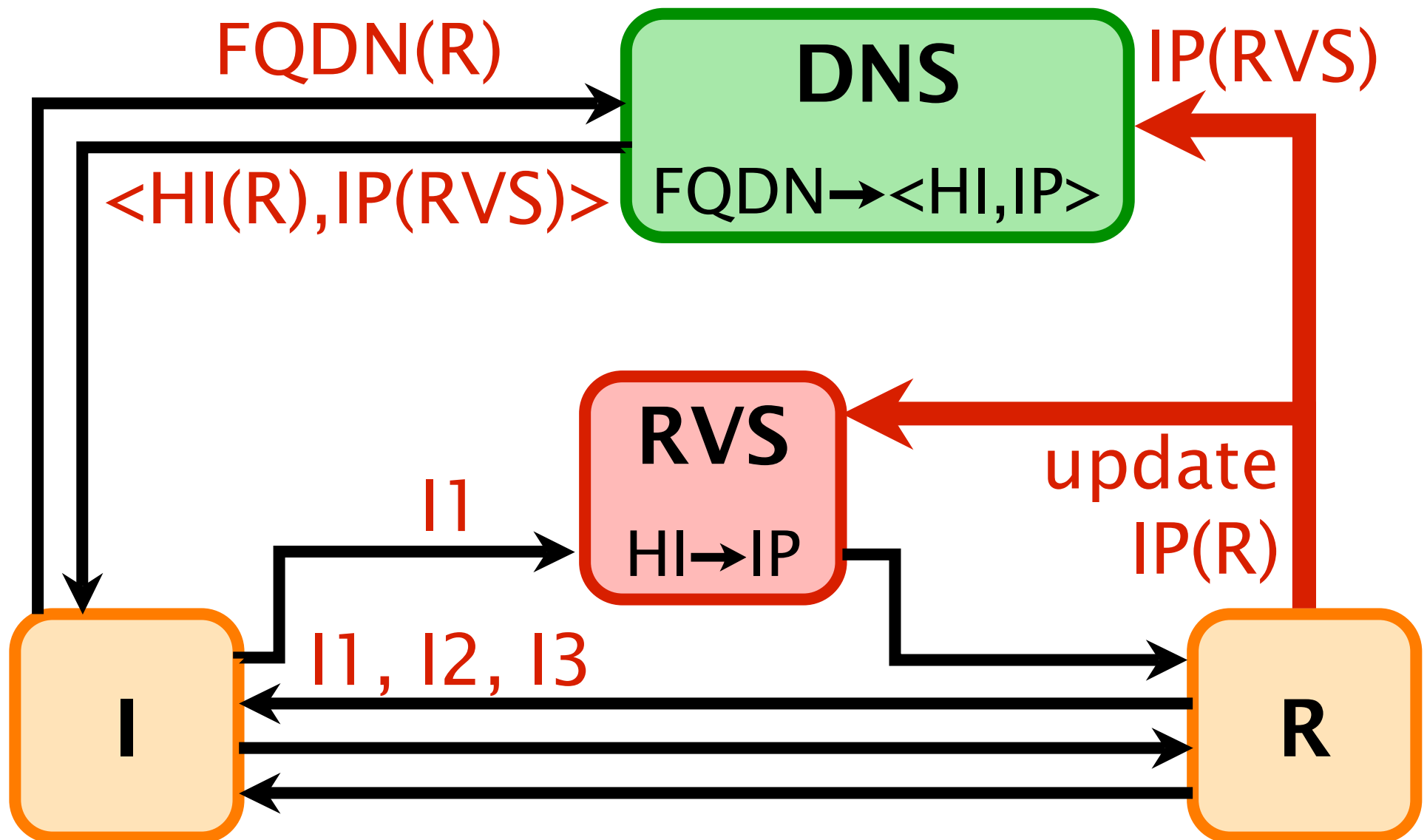▶ **rendezvous server (RVS)**

  ▶ use HI➡IP to relay to current IP(R)

Lookup Service

LS Discussion

- can look up IP based on HI
  - inverse may be easier, too
- can tune data structure
  - DHT, etc.
- all traffic end-to-end
- extra round-trip
- how to locate?

Rendezvous Server

DNS

FQDN→<HI,IP>

FQDN(R)

IP(RVS)

<HI(R),IP(RVS)>

RVS

HI→IP

update
IP(R)

I1

I1, I2, I3

I

R

RVS Discussion

▶ currently described in arch ID

▶ how to relay?

  ▶ forward, NAT, etc.

▶ how to locate?

  ▶ arch ID: **use IP(RVS) in DNS A**

Issue

- changes semantics of DNS entry
  - IP of node ≠ IP of relay for node
- **affects rendezvous w/non-HIP**
- RG topic, but consider for I1-only
- **proposal:**
  - reword HIP arch ID
  - sent email yesterday

Meta Issue

▶ **WG:** I1-only rendezvous
▶ **RG:** general rendezvous

▶ desired: integrated mechanism
▶ how? group schedules differ

Questions

lars.eggert@netlab.nec.de