Service Discovery in Homenet with Multiple Domains: Problem Statement
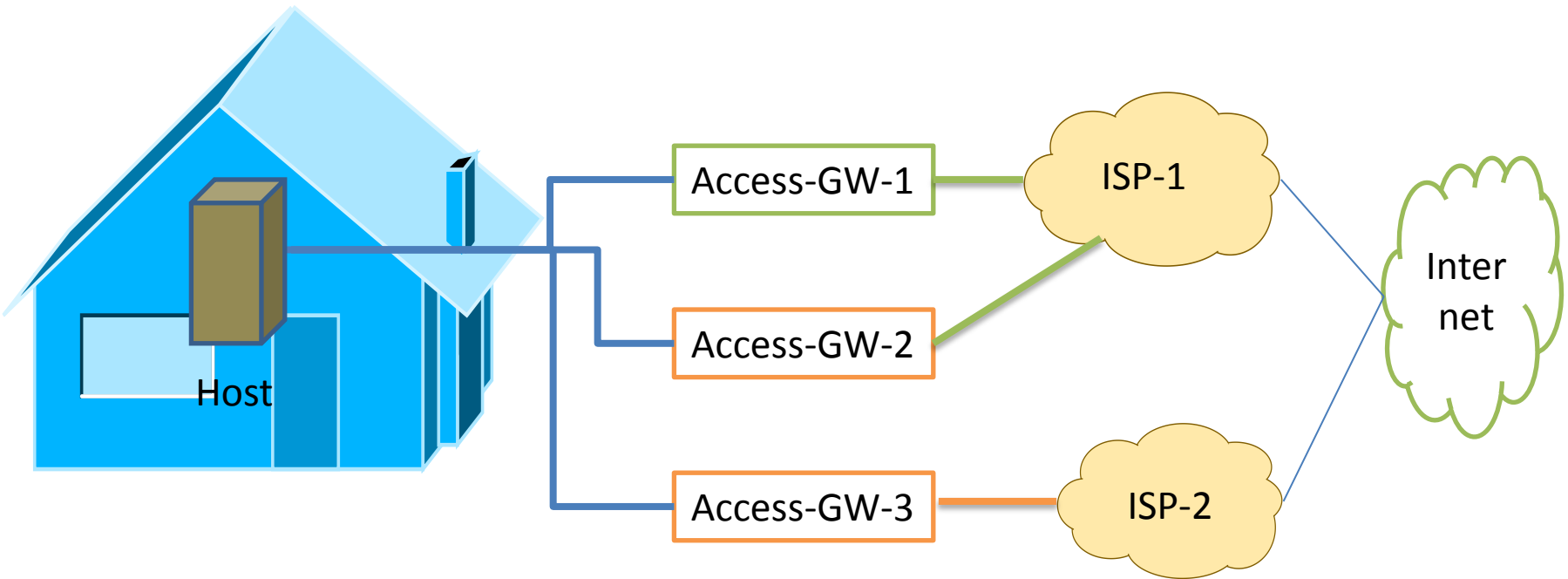
draft-cao-homenet-mif-srvdis-00

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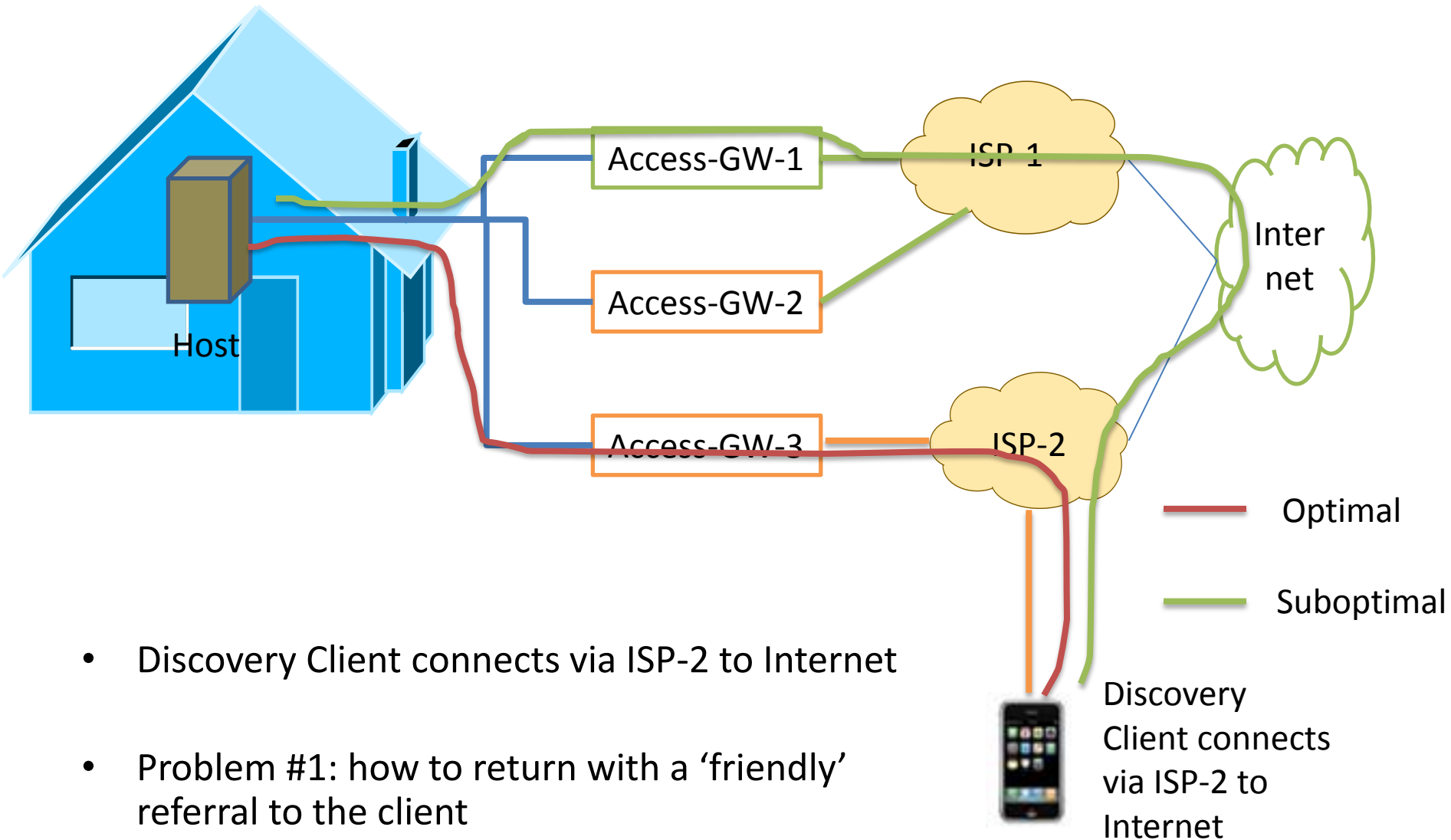
Background

- In draft-ietf-homenet-arch-11 #section-2.1
  - The homenet needs to be able to handle or provision at least
    - o Routing
    - o Prefix configuration for routers
    - o Name resolution
    - o Service discovery
    - o Network security
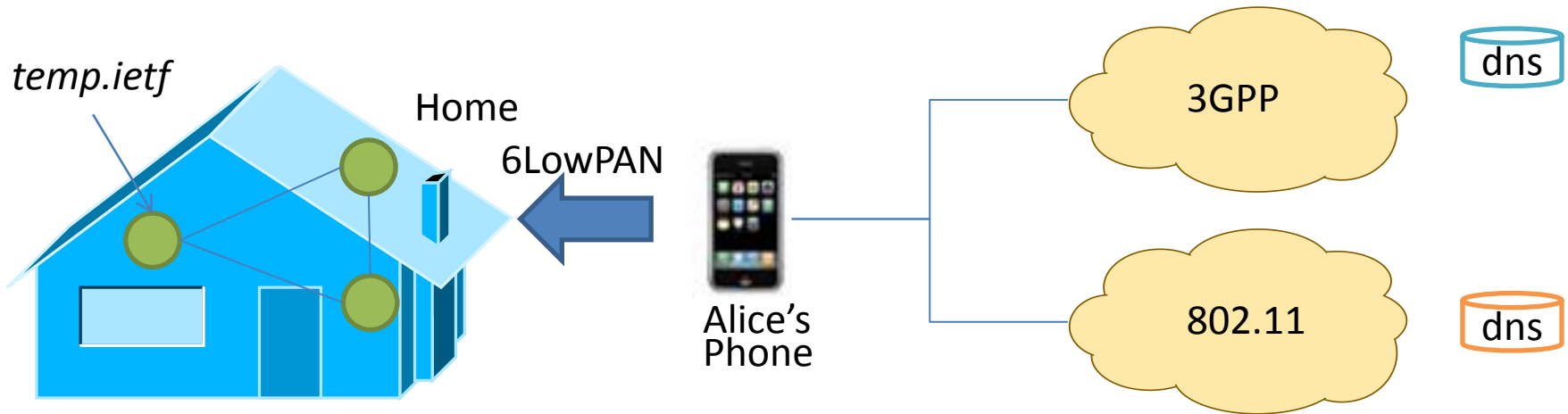
Multihoming Service Discovery

- Access -1: ADSL from SP-1
- Access -2: Cable from SP-1
- Access -3: WiFi from SP-2

Multihoming Service Discovery

Access-GW-1

Access-GW-2

Access-GW-3

ISP-1

ISP-2

Inter net

Host

Optimal

Suboptimal

Discovery Client connects via ISP-2 to Internet

- Discovery Client connects via ISP-2 to Internet

- Problem #1: how to return with a 'friendly' referral to the client

Service Instance Access Issues

- Suppose there is one service named with the private domain name, say 'temperature.ietf', within M-DNS discovery domain

- The 'Discovery Client' is connecting to the homenet domain, 3GPP domain and a WLAN domain (internet face)

- Two unicast name domains and one multicast name domain

- The unicast domain can preconfigure information using DHCP / RFC6731

- But the multicast domain is supposed to be 'zero configuration '

Matter of Fact

- **Ideal**: Given a type of service a multiple-interfaced client is looking for, the discovery progress ought to return a correct pointer to the service instance that the client is able to access without trying every available channel. (Exhaustive testing works but may be inefficient for constrained hosts.)

- **Real Life**: not always true

- **Reason:** "protocols and services become complex day-by-day, but users don't. We can memorize many IP address, domain names, or URLs to select/specify communication endpoint. But we cannot expect our home customers to do so"

Next Steps

- Comments and suggestion are welcome

- Interested partners are welcome