

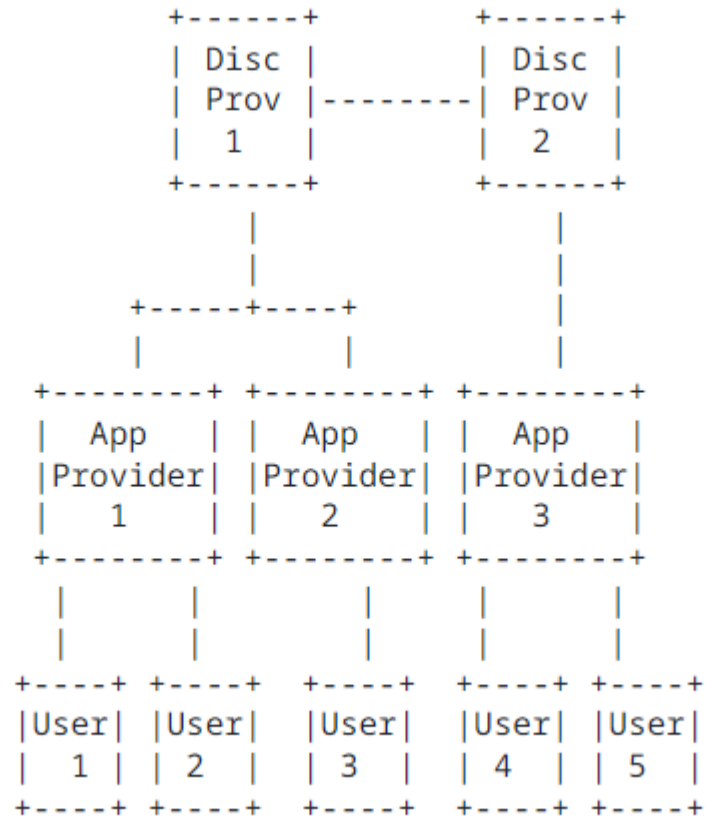
MIMI Requirements

draft-rosenberg-mimi-discovery-reqs-00

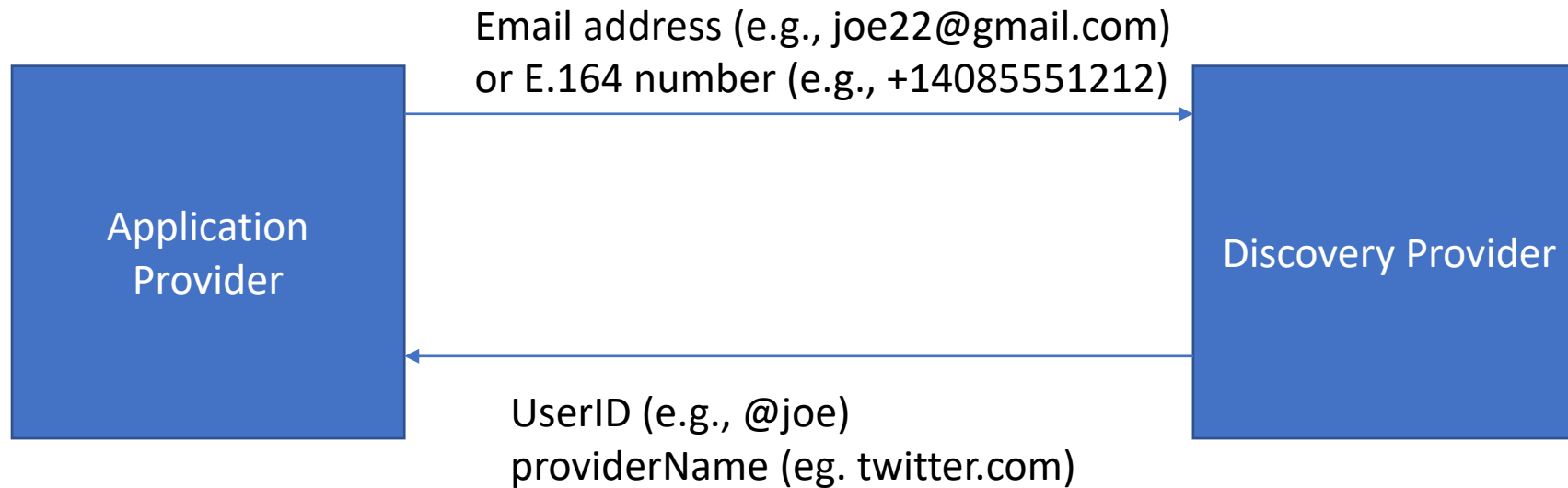
MIMI Interim

30 August 2023

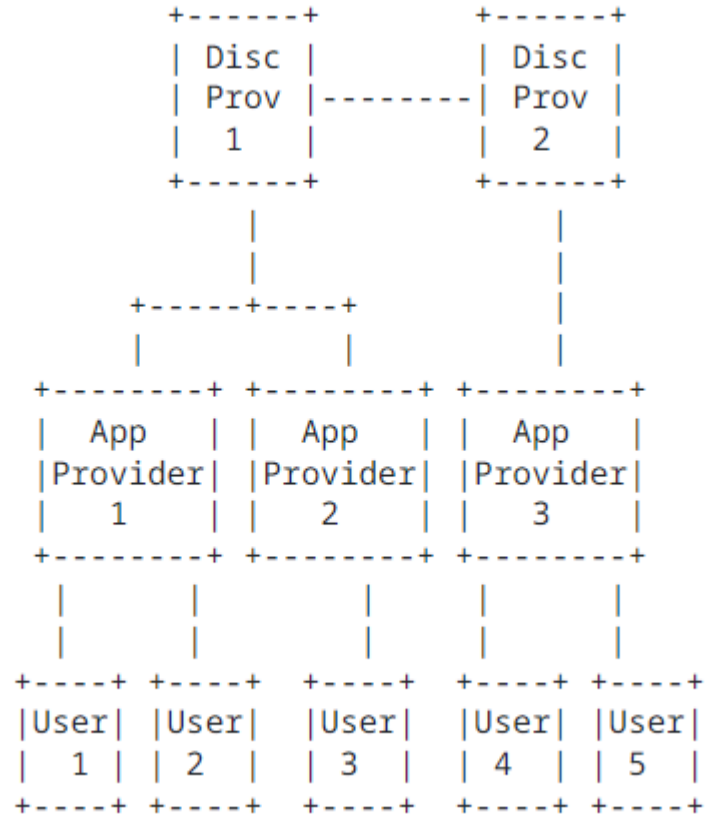
Is this the picture we are solving for?



Is this the protocol it provides?



Cardinality and Trust Requirements



← Could be dozens of these.
Their mappings are trusted.

← Could be THOUSANDS of these.
They are not trusted.

Use Cases that Drive the Cardinality Requirement

- Consumer OTT
 - WhatsApp, Wire, Facebook Messenger, iMessage (debatable which category)
- Consumer Operator Aligned
 - Google Messages
- Enterprise Cloud
 - RingCentral, Zoom, Webex, Five9
- Enterprise On-Prem
 - someone like a BoA
- Consumer On-Prem
 - Joe Tinkerer

Four Core Requirements

- Perform the mapping
- Mappings must be valid and trustable
- Solve the network effect problem
- Incentivize population of mappings into discovery services

Three Types of SII – are these the ones?

- Mobile Phone Numbers E.164
- Landline Phone Numbers E.164
- Email addresses

Consumer to AP Cardinality Use Cases: No Provider

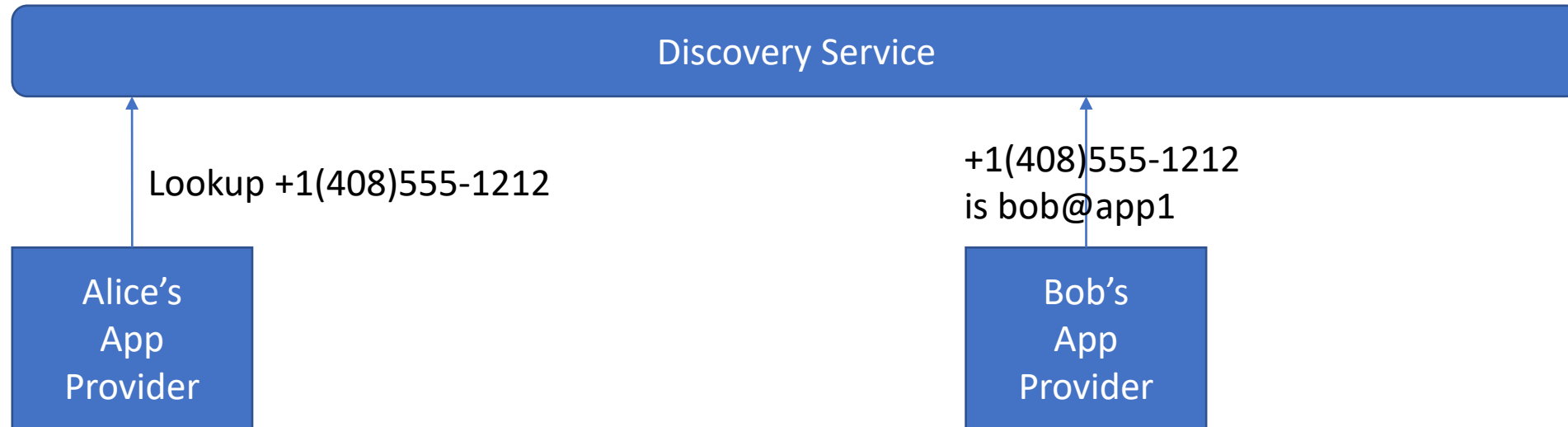


+1(408)555-1212
is bob – he has no apps

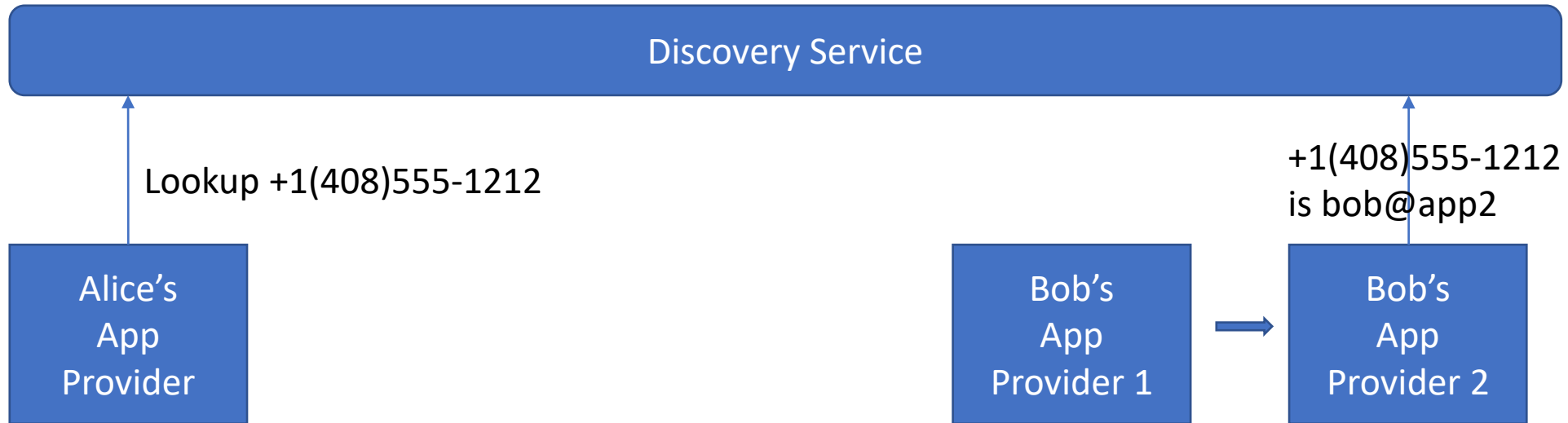


Should Alice be
told that Bob is
unreachable?

Consumer to AP Cardinality Use Cases: 1 Provider

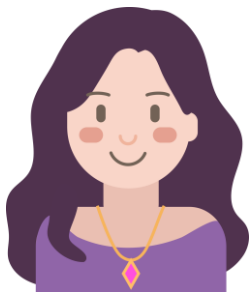
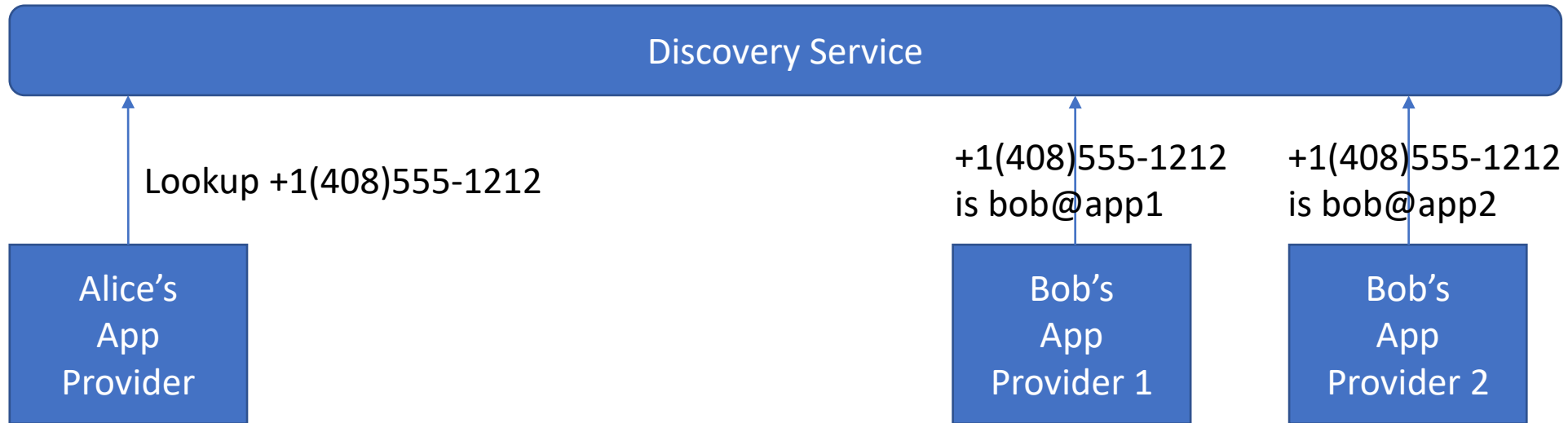


Consumer to AP Cardinality Use Cases: Change Provider



Should this work without involvement of app provider 1? I think YES.

Consumer to AP Cardinality Use Cases: Two Providers



Which provider is selected if Bob is using BOTH?

Bob prefers one for all lookups?

It depends on who Alice is?

Number Portability Cases

- Depends on whether the App Provider is also the Number Provider (e.g., mobile operator with a number-linked service – RCS/Android Messages)

Donating Number Provider	Receiving Number Provider	Result
Is not the App Provider	Is not the App Provider	No change
Is not the App Provider	Is the App provider	Adds a second AP for this user
Is the App Provider	Is not the App Provider	Removes the AP for this user
Is the App Provider	Is the App Provider	Changes the AP for this user

SII Release and Reclaim

- When can this happen?
 - Consumer ends service with their mobile or landline operator – i.e., cancel service
 - Consumer ends service with their email provider – i.e., cancel my Gmail account
- What is the problem?
 - User could continue to existing apps associated with their SII, even though they no longer own that SII
 - Not by itself a huge issue – and extremely common today!
 - Another user could be allocated the same SII – resulting in messages being routed to the wrong person
- This is not a new problem or unique to MIMI.
 - It affects intra-app user discovery already, and has done so for a decade
 - Telcos typically have a multi-month cooldown period before reassigning numbers to new users
 - There are database services which typically support telcos – which can indicate when number ownership changes
 - Don't throw the baby out with the bathwater – the reassignability of numbers (and emails!) is not a reason to discard them as identifiers – do we agree?

Privacy and Data Requirements

- Social Graph Discovery
 - Wish to avoid the DPs learning about who connects to who
 - Wish to avoid all DPs knowing all users
- Data Residency
 - A mapping contains PII and it should be possible for it to be stored only in-country/in-region
 - The mapping transits out of country only upon a connection request, to route it

Spam Prevention

- This is not just an issue for the MIMI transport protocol – discovery should do its part too (do we agree?)
- Protect against malicious AP that seek to use the discovery service to generate spam, by:
 - Reducing enumeration – it should not be possible for an AP to enumerate mappings
 - Introducing rate limits that are appropriate for the AP