A view of the MIMI discovery problem

as described in draft-bertola-mimi-discovery-dns-00

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Vittorio Bertola, Open-Xchange
<vittorio.bertola@open-xchange.com>
Part 1
Problem requirements
Defining the discovery problem

Service-independent user identifier
(one, but users may have more)
(human-friendly)
(either MIMI-specific or from another service, such as email address or telephone number)

Service-dependent account identifier
(one or more)
(machine-friendly)
(in standard format, including all the necessary information to establish a connection)

multiple 1-to-many non-exclusive unidirectional relations
Use cases

1. User A wants user B to contact them, and gives them a MIMI-specific identifier.

2. User A wants user B to contact them, and gives them an «external» identifier from another service (email address, telephone number).

3. User B already knows user A’s «external» identifier in another service (email address, telephone number) and wants to try contacting them.
Requirements on user identifiers

• Being reachable on MIMI by an external identifier is optional and subject to the identified user’s active consent
  • This implies that we also need MIMI-specific user identifiers

• MIMI-specific identifiers should be simple and human-friendly (writeable, speakable, transmittable)

• Both users and providers (and anyone else) could create, own and manage MIMI-specific identifiers

• The MIMI-specific identifier does not change when the user changes MIMI service, unless it is owned by the old service provider

• Identifiers cannot be easily guessed if the user wants so
Requirements on the solution

• Supports any number of 1-to-many non-exclusive unidirectional relations; can easily scale
• As decentralised as possible, to prevent points of surveillance
• Offers security and privacy; it is not easy to learn other people’s identifiers in transit or acquire batches of identifiers and connections
• Allows for any number of discovery providers; anyone should be able to (self-)host a MIMI service, including discovery at least of their MIMI-specific identifiers
• Uses open standards, with as many implementations as possible; barriers to entry should be as low as possible
Requirements on the solution (non-tech)

• Does not create intellectual property issues (e.g. ownership of identifiers)
• Does not pose significant legal and regulatory issues, or require significant regulatory work; in particular, it is compatible with the main data protection regimes
• Is cost-effective
• Has a business model
Part 2
Can DNS be useful?
Why (not) DNS?

• DNS is already the discovery technology for most basic applications
  • Email, web etc...
  • Readily available, tons of implementations, well known, well regulated

• However, DNS works if the identifier is in a hostname-like format
  • Totally suitable for new, MIMI-specific identifiers that we could define
  • Also suitable for e-mail addresses, but with ownership issues (should my email provider supply the discovery record for my MIMI provider, and why, if they are not the same?)
  • Hardly suitable for telephone numbers

• We almost certainly still need «oracles» for «external» identifiers
Straight DNS-based discovery

1. Start with a hostname-like MIMI identifier
2. Query for a discovery record (TXT or new RR)
3. Get all the information you need (even on multiple MIMI accounts)
4. Done

mymimi.example.com MIMI
"v=MIMI1; p=2; a=+15551234567; e=mimi.whatsapp.com; s=whatsapp"

mymimi.example.com MIMI
"v=MIMI1; p=1; a=mynname99; e=im.telegram.org; s=telegram"
More privacy-friendly DNS-based discovery

1. Start with a hostname-like MIMI identifier
2. Query for a discovery record (TXT or new RR)
3. Get the list of providers
4. Contact one or more of them for the private information (account name)
5. Done

mymimi.example.com MIMI
"v=MIMI1; p=2; e=mimi.whatsapp.com; s=whatsapp"
mymimi.example.com MIMI
"v=MIMI1; p=1; e=im.telegram.org; s=telegram"
The preliminary question

Should we at least consider the possibility of new, MIMI-specific identifiers?