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More Instant Messaging Interoperability
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# Requirements of Interoperable Messaging

## Abstract

This document describes a set of requirements for messaging services to interoperate.

These requirements are independent of any particular protocol or messaging service, describing the set of features an interoperable messaging service should support. Services should expect to go beyond the requirements listed here, as MIMI's future content format evolves.

## About This Document

This note is to be removed before publishing as an RFC.

The latest revision of this draft can be found at https://turt2live.github.io/ietf-mimi-messaging-requirements/draft-ralston-mimi-messaging-requirements.html. Status information for this document may be found at https://datatracker.ietf.org/doc/draft-ralston-mimi-messaging-requirements/.

Discussion of this document takes place on the More Instant Messaging Interoperability Working Group mailing list (mailto:mimi@ietf.org), which is archived at https://mailarchive.ietf.org/arch/browse/mimi/. Subscribe at https://www.ietf.org/mailman/listinfo/mimi/.

Source for this draft and an issue tracker can be found at https://github.com/turt2live/ietf-mimi-messaging-requirements.

## Status of This Memo

This Internet-Draft is submitted in full conformance with the provisions of BCP 78 and BCP 79.

Internet-Drafts are working documents of the Internet Engineering Task Force (IETF). Note that other groups may also distribute

working documents as Internet-Drafts. The list of current Internet-Drafts is at https://datatracker.ietf.org/drafts/current/.

Internet-Drafts are draft documents valid for a maximum of six months and may be updated, replaced, or obsoleted by other documents at any time. It is inappropriate to use Internet-Drafts as reference material or to cite them other than as "work in progress."

This Internet-Draft will expire on 14 September 2023.



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## 1. Introduction

MIMI's charter seeks to establish an extensible set of messaging features which make use of a future content format published by MIMI. The charter also states that MIMI will use End-to-End Encryption (E2EE), and that the content format must support E2EE.

This document describes a possible set of features that messaging services should support. By extension, it also includes what MIMI should support in its future content format. This document also explores extensibility by contrasting a minimum and maximum feature set for interoperability over MIMI.

## 2. Minimum Feature Set

The following are the minimum features for an interoperable messaging service. We consider group communication on the basis that 1:1 communication can typically be modelled as a subset of group communication.

* Encryption, as required by MIMI's charter, and all associated features (device tracking, etc).

* Reliable synchronisation of messages between messaging services, avoiding gaps.

* Text and rich text to represent nearly all features persisted to the conversation history.

* Ability to redact, remove, or delete a message, both as an individual and as a room moderator.

* Invite, kick, ban, and leave membership states within a conversation.

* Display names and avatars for users, to allow for personalization beyond their identifier or username.

* Direct messaging, or conversations of exactly 2 users. The underlying protocol might choose to treat DMs no different from multi-user conversations, though messaging services might apply semantics to represent DMs usefully to users.

* Differentiation between users and their abilities. For example, roles for Moderators, Admins, etc.

## 3. Maximum Feature Set

This list is not exhaustive, but outlines some examples for what the content format should be capable of supporting. The features that messaging services currently support are:

* Names, topics/descriptions, and avatars for conversations for personalization. Messaging services which don't support these aesthetic features would ignore them.

* Read receipts/indicators when others in the room have read the message. If a messaging service doesn't support them, that service would not produce receipts and ignore received receipts. This is a safe failure mode for the feature.

*Typing notifications when others in the room are writing a message. Like read receipts, services have the same safe failure mode.

*Presence or online state. Like read receipts or typing notifications, presence has the same safe fallback mode.

*Ability to reliably synchronize visible conversation history between messaging services.

*Ability to port conversation history between messaging services.

*Images, videos, files, and audio in messages. The content format would specify a fallback to (rich) text to support messaging services that are primarily text-based, such as by specifying a URL for users to click on to view the relevant media.

*Voice messages are semantically distinct from file transfers, but can be represented as audio file uploads with minor decoration metadata in the content format.

*Replies (also called "rich quoting") to reference specific messages or parts of messages. A content format specification might define a fallback format to ensure messaging services that do not support replies can still render something which looks vaguely like a reply.

*Threads to organize a conversation. A content format specification might define a fallback to Replies to keep a reader's context in tact when using a messaging service that doesn't support threads.

*1:1 VoIP. Messaging services which don't support VoIP could be asked to say "a call is happening, but you can't join on this device" under a content format, or, if the conference protocol allows, a link for the user to click and join the call externally.

*Multi-party VoIP.

*Message editing. A content format could define a fallback which references the edited message with a reply and using a difference syntax to highlight applicable changes.

*Reactions. A content format might decide to provide a fallback by using replies to associate an emoji or textual reaction to a given message, or simply ignore it.

As implied above, a future content format document would be responsible for describing the exact details of how features fall back, if at all. This document offers non-binding suggestions.

### 3.1. Moderation and Personal Safety Functionality

Currently out of scope for MIMI, moderation, anti-spam, etc functionality would likely be considered part of the "Maximum Feature Set". A suitable protocol could support functionality such as ignoring or blocking individual users, "who can send invites to me" controls, and similar features without needing to have a specific content format specification necessarily. For example, preventing invites from being received could simply be a rejected action over the delivery and transport layer.

## 4. Security Considerations

Security considerations for these features would be handled by other documents, such as a content format document.

## 5. IANA Considerations

This document has no IANA actions.

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