Scope

- Main specification for structured email → allow to describe content of email messages in a machine-readable format
- Security and trust considerations → separate draft

Content
- Foundations (Structured data representation)
- Structured data IN messages
- Structured data ACROSS messages
Structured data representation

● Formal language: RDF (W3C standard)

● Serialization format
  ○ JSON-LD
  ○ Microdata
  ○ (RDF-XML)
  ○ (Turtle)

● Options
  ○ Focus on JSON-LD (SHOULD? MUST?)
  ○ Also allow Microdata?
    ■ Already in use; may be required in some legacy cases
Structured data vocabularies

- **Options**
  - Restrict to certain vocabulary (e.g., Schema.org)
  - Restrict to (IANA) registered vocabularies
  - No restrictions

- **Proposal**
  - Recommend Schema.org if it fits the sender’s use case
  - Allow any vocabulary otherwise, similar to MIME body parts
  - IANA registry?
Structured data in messages: Placement

● “Partial representation”
  ○ Options:
    ■ Embed JSON-LD in text/html SCRIPT-tag
      ● Pro: already in use; more legacy software-friendly
    ■ Leverage “multipart/related”
      ● Pro: “clean”

● “Full representation”
  ○ Add “application/ld+json” to “multipart/alternative”
    ■ Pro: “clean”
  ○ Alternative: also embed JSON-LD in text/html SCRIPT-tag
    ■ Pro: More legacy software-friendly

● Side question: how to deal with complex MIME trees?
Structured email: Identifiers

- Structured data → message parts
  - Simply use “cid:”/”mid:” URIs in JSON-LD IRIs?

- text/html message content → structured data
  - Recommend “data-id” of HTML elements to reference JSON-LD entities?
    - Con: HTML sanitization issue in MUAs?
  - Any value in specific URI scheme similar to “cid:”/”mid:”?
Structured data across email messages

- **Forwarding**
  - (to be discussed)

- **Replies**
  - Structured email sent in response to a structured email
    - Based on “potentialAction”
  - How to capture reply status (flag?)

- **Error replies**
  - No general auto-response to broken/unknown structured email
  - But: probably need to signal for a structured reply (to a structured message)?
  - vs. DSN/MDN?

- **Updates**
  - How to recall/update structured information in a machine-readable way?
  - Use SUPERSEDES (RFC4021)
Additional topics

● Signal presence of structured data in a message
  ○ Useful for efficient processing by MUAs (similar to $hasAttachments flag)
  ○ Options
    ■ Header
    ■ Message flag
    ■ Both?

● Subaddressing?
● Other?
Next steps

- Request WG adoption
- Reference implementation
  - Structured Email plugin for Roundcube Webmail