

draft-happel-structured-email-00

IETF 118

# 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