SMTP over Bundle Protocol

draft-blanchet-dtn-email-over-bp

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Rationale

• Motivation: run applications over BP. Let’s start with email.

• Send email from/to/between planetary bodies

• Bundle Protocol used between planetary bodies (and also on)

• IP network on planetary bodies (see various space agencies architecture documents)

• Instead of inventing a new Email protocol (and applications) over BP, then re-use Internet Email (protocol and applications) but encapsulate into BP.

• Both sides are using « regular » Internet Email software and protocols
An example
Email Encapsulation into BP

- SMTP is chatty: many back and forth between MTAs. Make no sense to encapsulate every exchange. Instead put the whole email including headers in a single bundle.

- -00: encapsulate [RFC5322]. Comments from Card, Resnick and Levine: RFC5322 does not include the envelope. Use instead Batch SMTP [RFC2443]

- -01 encapsulate [RFC2443]
Considerations

• If email is « big » (including media or else), use bundle fragmentation.

• Not doing the SMTP « chat » means that both ends know each other « feature set »: no negotiation. (Extensions are pretty stable). If not, then « just » gets an error message back.

• Request IANA BP service number assignment (25 would be cool).

• Degenerated case: a spacecraft is a BP node. The Mail server, the BP node, the mail client may all be on the same host.

• Operations of IP networks and domain name infrastructure: yes, there are operational considerations on running DNS (and IP network in general) on planetary body: out of scope of this document but it is being worked on.
Next Steps

• WG Adoption

• Working on an implementation using Postfix and uD3TN (AAP is simple and easy for quick implementation). When done, will post so people can join and try.

• If you plan to implement, please send me a note so we can arrange some interop testing.

• Specification: draft-blanchet-dtn-email-over-bp

• Looking for more comments

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