Bundle-in-Bundle Encapsulation (BIBE): Current Status

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24 July 2025

Current status

- Most recent draft (draft-ietf-dtn-bibect-05) was posted on 15 March 2025: https://datatracker.ietf.org/doc/draft-ietf-dtn-bibect/. Minimal changes from previous two drafts.
- Current BPv7 implementations conforming (mostly) to the current draft: ION, DTNME, uD3TN, Unibo-BP.

Revisions proposed (1 of 2)

During the June 9-13 meetings of the CCSDS DTN Working Group, two significant changes to the draft protocol specification were discussed.

1. Remove BRM (BIBE Retransmission Mechanism, adapted from the aggregate custody signaling variant of RFC 5050's Custody Transfer procedures) from the protocol.
   - It was argued that BRM makes BIBE unduly complex.
   - Very similar procedures are being proposed in the CCSDS "Orange Book" for "Compressed Custody Signaling And Bundle Status Reporting".
   - Broad WG consensus on adopting this change.

Revisions proposed (2 of 2)

2. Add procedures for segmenting the to-be-encapsulated serialized bundle into segments of reduced size, then encapsulating the segments and reassembling the original serialized bundle at the destination of the encapsulating (BIBE) bundles.
   - BPv7 fragmentation/reassembly is known to be fundamentally flawed; an alternative is needed.
   - BIBE reassembly will enable the original serialized bundle to be reassembled, bit-for-bit, so that all standard BPv7 processing can be applied to that received bundle. In particular, security applied to the segment bundles is wholly decoupled from security applied to the original bundle.
   - General WG agreement on this, but apparently still with some reservations.

Further remarks – Alberto Montilla