

IETF – BIER WG

<https://datatracker.ietf.org/doc/draft-trossen-bier-frm/>

# Realizing Forward Requests Return Multicast Semantic with BIER

IETF 113

Dirk Trossen

23.03.2022

## Legacy of this Draft

- Draft originates from <https://www.ietf.org/archive/id/draft-ietf-bier-multicast-http-response-06.txt> (now expired)
  - Applicability-oriented draft to realize HTTP-based scenarios in BIER environments
- Was in BIER WG last call
  - Returned with (very useful!) comments/feedback from application areas
- No strong interest from author set to continue on this draft due to organizational changes

**Interest in original draft drove interest in creating this draft as successor albeit with more general slant**

# Structure of this Draft

1. Introduction .....	2
2. Abbreviations .....	3
3. Definition of FRRM Semantic .....	4
4. Use Cases .....	5
4.1. HTTP-based Streaming .....	5
4.2. Intra-CDN Content Distribution .....	6
4.3. Distributed Reasoning .....	6
5. Requirements .....	6
6. BIER Architecture .....	6
7. Protocol Interactions .....	9
7.1. BIER Multicast Overlay Operations .....	9
7.2. Achieving Multicast Responses .....	11
7.3. BIER Multicast Overlay Traffic Management .....	12
8. Upper Layer Considerations .....	13
8.1. Application (Protocol) Considerations .....	13
8.2. Transport Protocol Considerations .....	13
9. Conclusions .....	13

Generalization towards a new communication semantic

More than just HTTP

Adapted from original draft towards supporting more general FRRM semantic

Placeholder to incorporate more from the discussions/comments received from APP area

# Core Change: Introducing FRRM Semantic

FRRM semantic defined as

A datagram with source address  $\mathbf{S}$  towards destinations  $\mathbf{D}_1, \dots, \mathbf{D}_n$  is formed as one or more responses to adequate requests from  $\mathbf{D}_1, \dots, \mathbf{D}_n$  to  $\mathbf{S}$ , where the ephemeral group address  $\mathbf{R}$  is defined through an identifying characteristic across all received requests from  $\mathbf{D}_1, \dots, \mathbf{D}_n$ .

Where

identifying characteristic is an implementation-specific parameter used to distinguish among different requests (e.g., identifiers such as URIs) from any of the  $\mathbf{D}_1, \dots, \mathbf{D}_n$  to  $\mathbf{S}$ .

The nature of FRRM multicast is **inherently dynamic**, i.e. multicast responses are formed in response to incoming requests and may differ in extremely short timeframes.

## Next Steps

1. Firm up details on Sections 6 and 7, following the FRRM generalization
2. Incorporate comments on list from APP area review into Section 8
3. Incorporate any feedback/comments from this list on this work

IETF – BIER WG

<https://datatracker.ietf.org/doc/draft-trossen-bier-frm/>

Is this work (still) of relevance to this group?

Is this work more widely applicable beyond this group (i.e. the FRRM semantic)? If so, any thoughts?

Are there any contributors to this work out there, willing to drive the draft forward?

**THANKS!**

**QUESTIONS? / COMMENTS?**

**23.03.2022**