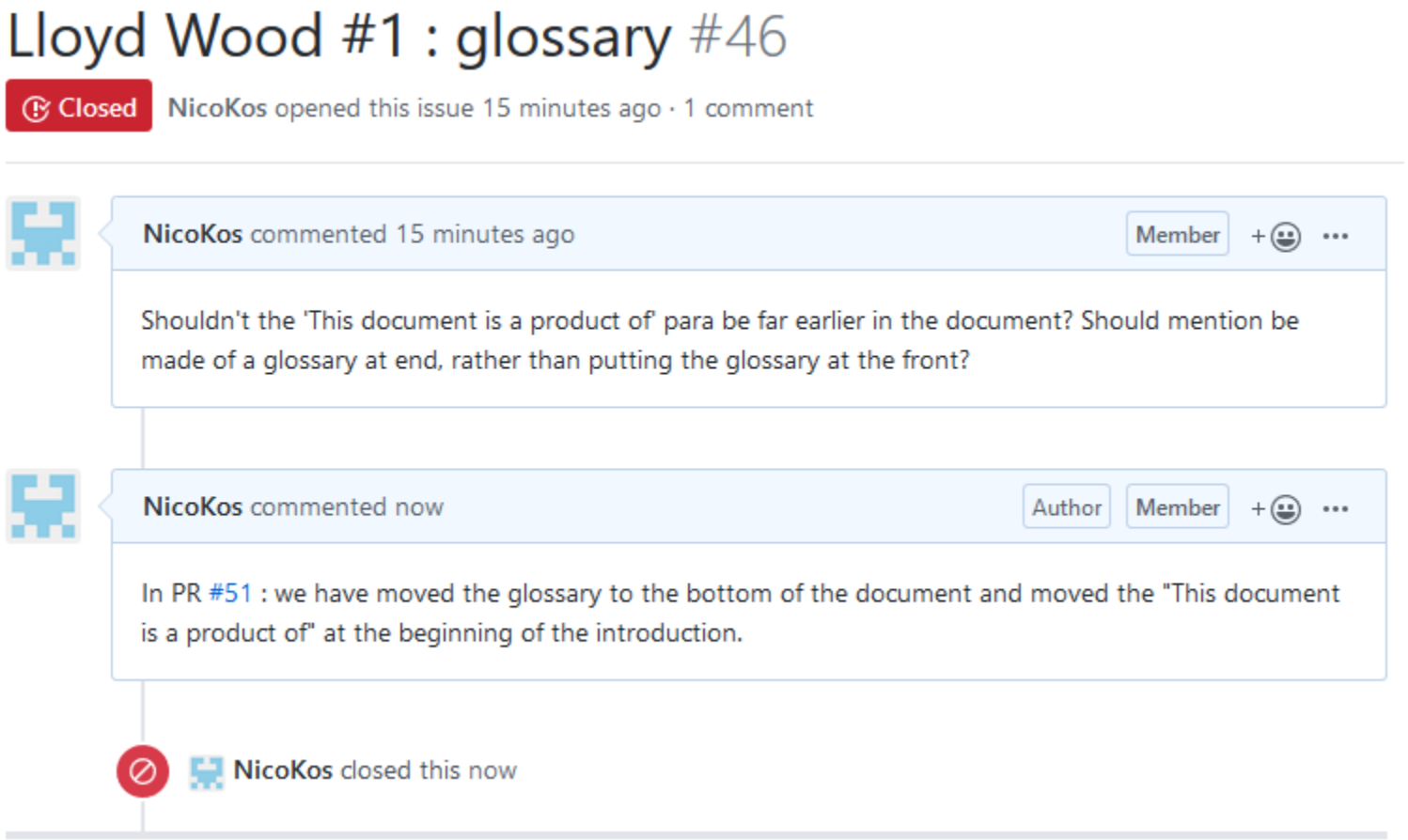
Updates on Coding techniques for satellite systems draft-irtf-nwcrg-network-coding-satellites-07

Nicolas KUHN
Emmanuel LOCHIN

From *-06 to *-07

- First RG Last Call in April 2019
- Second RG Last Call 15th of October
- Reception of comments from Lloyd Wood the 26th of October

Comment on glossary



Comment on the scope

Lloyd Wood #2 : channel and link coding out of the scope of the document #47

Closed NicoKos opened this issue 35 minutes ago · 2 comments

NicoKos commented 35 minutes ago — Member

I'm puzzled as to how this document claims that channel and link codings are out of scope - and then talks about channel mode, dealing with varying channel conditions (yet without using channel codings), etc.
They're stated as out of scope...

NicoKos commented 34 minutes ago — Member, Author

If the intent is treating the overall end-to-end path as some sort of virtual 'channel' that coding packets are applied to, this needs to be said explicitly upfront. If 'channel' means more than one concatenated physical path here, this needs to be said. Unless your audience is only network coding people... the title should likely be '*network* coding applicability to satellite-based scenarios' or similar, too. Needs to be really specific for clarity.

NicoKos commented now — Author, Member

In PR #52 , we have changed:
"Channel and link codings are gathered in the PHY layer coding and are out of the scope of this document."
by
"Channel and link codings are gathered in the PHY layer coding and are out of the scope of this document. It focuses on situations where coding is not widely deployed in current SATCOM systems."

For the comment on the end-to-end path, the notion of virtual 'channel' depends on the use-case and coding is not applied at the same level.

For the title, we have moved from "Network coding and satellites" to "Coding techniques for satellite systems" from version 04 and 05 of the document to be more generic. I guess we should not go back to the "network coding"-like title.

NicoKos closed this now

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Comment on BBFRAME vs FECFRAME

Lloyd Wood #3 : BBFRAME and FECFRAME #48

Closed NicoKos opened this issue 41 minutes ago · 1 comment

NicoKos commented 41 minutes ago — Member

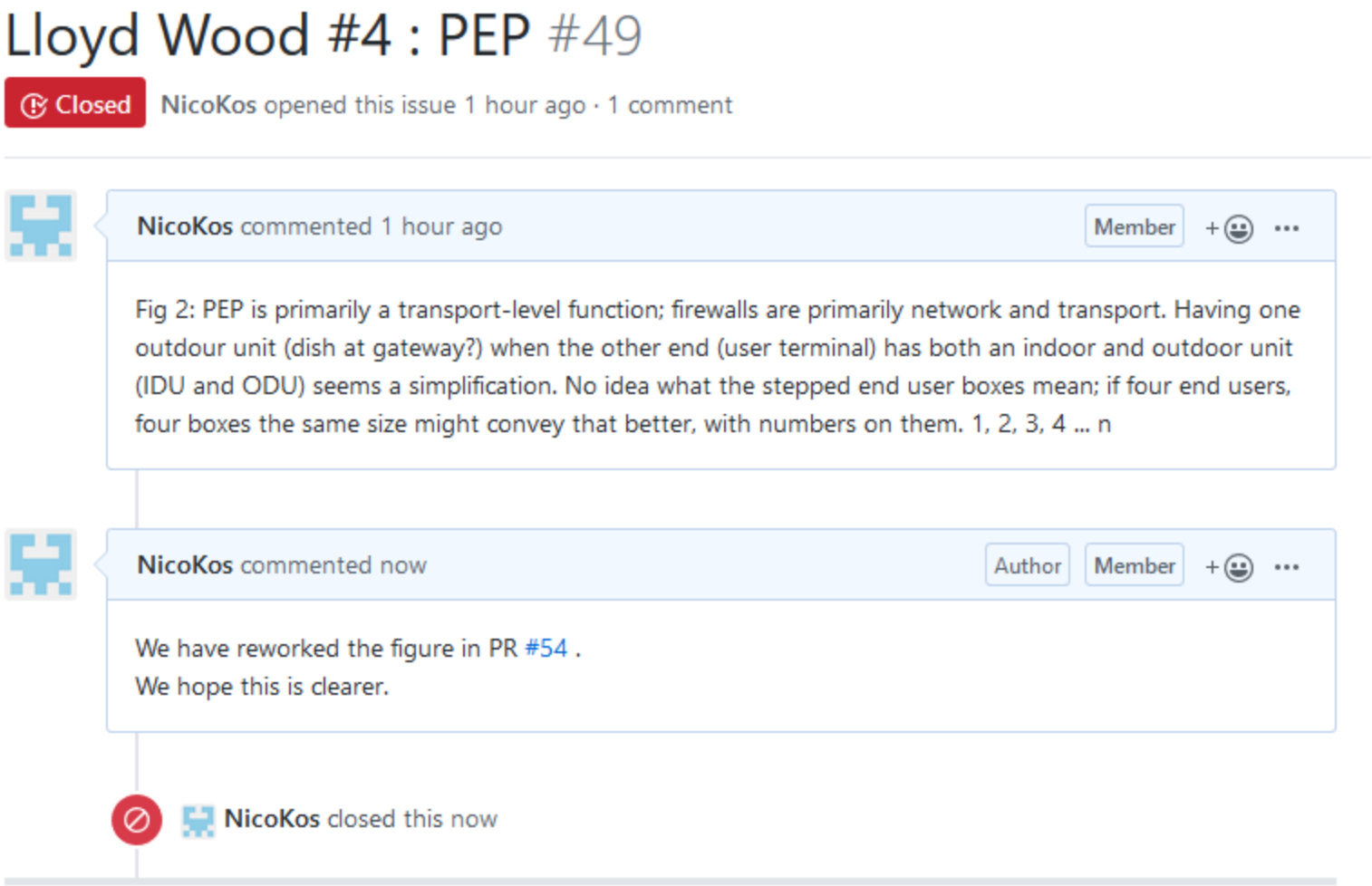
Discussion of BBFRAME without discussing the FECFRAME (BBFRAME with coding) appears to be an omission. Is this imagining a world where FECFRAME, and its convolutional layers of coding are considered completely unnecessary due to path coding within the BBFRAME?
If so (and it won't gain much traction) this would need to be stated.
I don't think claiming that FECFRAME is link/channel and out of scope really flies; BBFRAME is a link construct too.

NicoKos commented now — Author Member

In the representation that is proposed in Fig 2, we consider that the physical gateway turns BBFRAME into PLFRAME. We did not want to go more into the details on how this is achieved.
We have added in PR #53

NicoKos closed this now

Comment on PEP



Lloyd Wood #4 : PEP #49

Closed NicoKos opened this issue 1 hour ago · 1 comment

NicoKos commented 1 hour ago — Member

Fig 2: PEP is primarily a transport-level function; firewalls are primarily network and transport. Having one outdour unit (dish at gateway?) when the other end (user terminal) has both an indoor and outdoor unit (IDU and ODU) seems a simplification. No idea what the stepped end user boxes mean; if four end users, four boxes the same size might convey that better, with numbers on them. 1, 2, 3, 4 ... n

NicoKos commented now — Author Member

We have reworked the figure in PR #54 .
We hope this is clearer.

NicoKos closed this now

Comments on ACM

Lloyd Wood #5 : minor nits #50

Closed **NicoKos** opened this issue 1 hour ago · 1 comment

NicoKos commented 1 hour ago — Member

section 4.1 - PEP is Enhancing, not Enhancement. PEP_s_ usually split...

section 4.2 - quickly varying channel conditions - if on the satellite link (where discussing channel conditions is out of scope?) that's what ACM, which is defined in the glossary, does -- and where network coding does not do as well.

ASMS - spell out the conference name. No need to abbreviate journal names - this isn't an academic paper with a page limit. Do provide document object idenitifiers (DOIs) of papers where they exist

NicoKos commented now — Author Member

Thanks for the nits on the PEP.
For the comment on ACM, we have updated the text (PR #55) : "This problem has been tackled in the past for physical-layer code, but there remains questions on how to adapt the overhead for, e.g., the quickly varying channel conditions use-case where ACM may not be reacting quickly enough."

We have updated the conference in PR #56 and PR #57

NicoKos closed this now

From *-07 to *-08

- Received comments from Vincent
- * Glossary: FEC defined as an **error** correction technic is misleading in the present document
  - DONE
- Introduction : better wording
- Confusing Figure 1 : Figure removed
- Confusion on the usage of “payload” (satellite payload)
- Bidirectionnal NORM / FLUTE
- Multipath use case justification improved
- Section 3.5 – ACM and mobile/Q-V bands : section rewritten
- Challenge on PEP : wider scope than just TCP

Next step

- RG Last Call ?