

25 January 2024

# IETF ROLL Interim

**Chairs:** Dominique Barthel, Ines Robles

**Secretary:** Michael Richardson

This session is being recorded

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Definitive information is in the documents listed below and other IETF BCPs. For advice, please talk to WG chairs or ADs:

- [BCP 9](#) (Internet Standards Process)
- [BCP 25](#) (Working Group processes)
- [BCP 25](#) (Anti-Harassment Procedures)
- [BCP 54](#) (Code of Conduct)
- [BCP 78](#) (Copyright)
- [BCP 79](#) (Patents, Participation)
- <https://www.ietf.org/privacy-policy/> (Privacy Policy)

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# Resources - Remote Participation

This session is being recorded

- **Meetecho:** <https://meetings.conf.meetecho.com/interim/?group=025a2104-3160-4a62-8905-489015dae0f6>
  - Make sure your audio and video are *off* unless you are chairing or presenting during a session
  - Use of a headset is strongly recommended
- **Note taking:** <https://notes.ietf.org/notes-ietf-interim-2024-roll-01-roll>
  - Minute takers: **Please volunteer, thank you :)**
- **Zulip:** <https://zulip.ietf.org/#narrow/stream/roll>
- All material: <https://datatracker.ietf.org/meeting/interim-2024-roll-01/session/roll>

# ROLL Agenda

Time (CET)	Duration	Draft/Topic	Presenter
13:00 - 13:05	5 min	WG Introduction	Ines/Dominique
13:05 - 13:15	10 min	Status: <a href="#">draft-ietf-roll-dao-projection</a>	Chairs/Authors
13:15 - 13:25	10 min	Status: <a href="#">draft-ietf-roll-rnfd-02</a>	Chairs/Authors
13:25 - 13:35	10 min	Status: <a href="#">draft-ietf-roll-mopex-07</a>	Chairs/Authors
13:35 - 13:45	10 min	Status: <a href="#">draft-ietf-roll-enrollment-priority-09</a>	Chairs/Authors
13:45 - 13:55	10 min	Status: <a href="#">draft-ietf-roll-nsa-extension-12</a>	Chairs/Authors
13:55 - 14:00	5 min	Open Floor	Everyone

# Draft status

Supporting Asymmetric Links in Low Power Networks: AODV-RPL <a href="#">draft-ietf-roll-aodv-rpl-18</a>	Submitted to the IESG for publication Aug 17th
Root initiated routing state in RPL <a href="#">draft-ietf-roll-dao-projection-33</a>	Submitted to the IESG for publication Aug 3rd Rtg Dir issues addressed
Common Ancestor Objective Function and Parent Set DAG Metric Container Extension <a href="#">draft-ietf-roll-nsa-extension-12</a>	Submitted to IESG, comments addressed. Author considering rewriting.
Controlling Secure Network Enrollment in RPL Networks <a href="#">draft-ietf-roll-enrollment-priority-09</a>	Addressing Open Issues
Mode of Operation extension <a href="#">draft-ietf-roll-mopex-07</a>	Addressing Open Issues
RNFD: Fast border router crash detection in RPL <a href="#">draft-ietf-roll-rnfd-02</a>	work in progress, addressing reviews
RPL Capabilities <a href="#">draft-ietf-roll-capabilities-09</a>	waiting for attention
RPL Storing Root-ACK <a href="#">draft-jadhav-roll-storing-rootack-03</a>	waiting for attention

# Milestones

## Milestones

Date	Milestone	Associated documents
Dec 2024	Recharter WG or close	
Nov 2024	Initial submission of a proposal to augment DIS flags and options to the IESG	<a href="#">draft-ietf-roll-dis-modifications</a>
Jun 2024	Initial submission of Capabilities for RPL to the IESG	<a href="#">draft-ietf-roll-capabilities</a>
Mar 2024	Initial submission of Fast Border Router Crash Detection in RPL to the IESG	<a href="#">draft-ietf-roll-rnfd</a>
Feb 2024	Initial submission of Mode of Operation extension for RPL to the IESG	<a href="#">draft-ietf-roll-mopex</a>
Jan 2024	Initial submission of Controlling Secure Network Enrollment in RPL networks draft to the IESG	<a href="#">draft-ietf-roll-enrollment-priority</a>

## Done milestones

Date	Milestone	Associated documents
Done	Initial submission of a root initiated routing state in RPL to the IESG	<a href="#">draft-ietf-roll-dao-projection</a>
Done	Initial submission to the IESG of mechanism to turn on <a href="#">RFC8138</a> compression feature within a RPL network	<a href="#">draft-ietf-roll-turnon-rfc8138</a>
Done	Initial submission of Common Ancestor Objective Functions and Parent Set DAG Metric Container Extension to the IESG	<a href="#">draft-ietf-roll-nsa-extension</a>
Done	Initial Submission of a proposal with uses cases for RPI, RH3 and IPv6-in-IPv6 encapsulation to the IESG	<a href="#">draft-ietf-roll-useofrplinfo</a>
Done	Initial submission of a reactive P2P route discovery mechanism based on AODV-RPL protocol to the IESG	<a href="#">draft-ietf-roll-aodv-rpl</a>
Done	Initial submission of routing for RPL Leaves draft to the IESG	<a href="#">draft-ietf-roll-unaware-leaves</a>
Done	Initial submission of a solution to the problems due to the use of No-Path DAO Messages to the IESG	<a href="#">draft-ietf-roll-efficient-npdao</a>

# Open Issues in Github - <https://github.com/roll-wg/>

## MOPEX: 2 Tickets

- #11: [Alvaro Review - Major and Minor Issues](#)
- #12: [Old values in new Tables - how to address them](#)

## RNFD: 4 Tickets

- #1: [Routing Directorate Review](#)
- #2: [Security Directorate Review - small nits](#)
- #3: [Anand Review](#)
- #4: [Carlels Review](#)

## Nsa-extension: 1 Ticket

- #28: ["SHOULD be set to MAX\\_PATH\\_COST...MUST NOT select"](#)

# REGULAR Meetings

Regular Interim Meetings: every two months

- Next Interim Meeting: February 2024, Doodle:  
<https://doodle.com/meeting/participate/id/bk66jrra> - please fill it by **2nd February**

Session at IETF 119 meeting in Brisbane?

Interim at April: Date TBD, depending the date of February Meeting

# ERRATA: RFC 9008: Verified

## Status: Verified (2)

### RFC 9008, "Using RPI Option Type, Routing Header for Source Routes, and IPv6-in-IPv6 Encapsulation in the RPL Data Plane", April 2021

Source of RFC: roll (rtg)

Errata ID: 7543

Status: Verified

Type: Technical

Publication Format(s) : TEXT, PDF, HTML

Reported By: Mathis Marion

Date Reported: 2023-06-14

Verifier Name: John Scudder

Date Verified: 2024-01-12

Section 6 says:

As the Rank information in the RPI artifact is changed at each hop, it will typically be zero when it arrives at the DODAG root.

It should say:

As the Rank information in the RPI artifact is changed at each hop, it will typically be non-zero when it arrives at the DODAG root.

# ERRATA: RFC 6719

Errata ID: 7773

Status: Reported

Type: Editorial

Publication Format(s) : TEXT

Reported By: Dominique Barthel

Date Reported: 2024-01-22

Section 2.2 says:

If the cost of the path through the preferred parent and the worst parent is too large, a node MAY keep a smaller parent set than PARENT\_SET\_SIZE.

It should say:

"If the difference in cost of the paths through the preferred parent and the worst parent is too large, a node MAY keep a smaller parent set than PARENT\_SET\_SIZE." or better yet

"A node MAY keep a parent set smaller than PARENT\_SET\_SIZE, so that the difference in cost of the paths through the preferred parent and the worst parent is not too large."

Notes:

This sentence is meant to explain that there is no benefit in keeping in the parent set neighbors that have too high a path cost compared to that of the preferred parent.

The original text omits the notion of difference in cost. It also contains a circular reference: indeed, the worst parent is the neighbor within the parent set that has the highest cost.

## Status: Reported (2)

**RFC 6719, "The Minimum Rank with Hysteresis Objective Function", September 2012**

Source of RFC: roll (rtg)

Errata ID: 7772

**Status: Reported**

**Type: Editorial**

**Publication Format(s) : TEXT**

Reported By: Dominique Barthel

Date Reported: 2024-01-22

Section 3.3 says:

to covert

◀

It should say:

to convert

◀

Notes:

describing the conversion of path cost into a rank value.

# Root initiated routing state in RPL

draft-ietf-roll-dao-projection

# Root initiated routing state in RPL -draft-ietf-roll-dao-projection

- Submitted to the IESG
- Rtg Review done by Susan and addressed by Pascal in version 34
- Shepherd document updated
- Comments/Thoughts?

# RNFD: Fast border router crash detection in RPL

# RNFD - Fast border router crash detection in RPL - having nodes collaboratively monitoring the status of the root.

- We got so far 4 reviews:
  - Review from S.V.R. Anand
  - Review from Carles Gomez
  - Security Directorate Review
  - Routing Directorate Review

All these reviews are being addressed.

# RNFD - Fast border router crash detection in RPL - having nodes collaboratively monitoring the status of the root.

Anand Review (Many thanks Anand!!), summary points of the review:

- **Unnoticed LBR Failures:** Questions related to LBR failures in large-scale RPL deployments, mentions example of different LBR failure detection
- **Energy Consumption and Impact:** suggestion to include experimental results showing RNFD's performance in different network scenarios, particularly concerning energy consumption and its effect on network longevity.
- **Detecting and Verifying DODAG Root Problems:** Suggests considering "overhearing" as a technique for reducing message exchanges and faster LBR failure detection.
- **Minimizing False Positives/Negatives:** Recommends providing a reference algorithm for sentinel nodes to decide between states like "SUSPECTED DOWN" and "LOCALLY DOWN".
- **Disseminating Observations and Reaching Agreement:** Questions how the RNFD\_CONSENSUS\_THRESHOLD value is set and whether it needs to be adapted over time.

# RNFD - Fast border router crash detection in RPL - having nodes collaboratively monitoring the status of the root.

Carles Review (Many thanks Carles!!), summary points of the review:

- **Clarifying** acronyms and terminology in the abstract and throughout the document, rephrasing certain sections for clarity.
- **Explaining** specific concepts like "critical path," and addressing potential confusion about node roles and operations.
- It is suggested **explaining the rationale** behind specific percentages and thresholds used, enhancing readability by adjusting punctuation, and considering the addition of examples for better understanding of the functionality described in the document.
- **Typographical errors** are noted for correction.

# RNFD - Fast border router crash detection in RPL - having nodes collaboratively monitoring the status of the root.

## Work in Progress:

- Requested Security Directorate Review (Result: Ready, minor nits).
- Requested Routing Directorate Review (Result: Not ready, minor issues):
  - **Early Explanation:** Suggests explaining some concepts earlier in the document for better understanding.
  - Recommends providing **reasons** for certain points to **enhance clarity**. e.g. The rationale behind nodes not modifying their negativeCFRC values when changing roles to acceptor.
  - **Node Participation:** Queries whether all nodes need to run RNFD for effectiveness and implications if not all nodes participate.
  - **NegativeCFRC and PositiveCFRC:** Suggests rephrasing the descriptions of these for accuracy.
  - **Bit Lengths and Saturation:** Questions the rationale behind choosing prime numbers for bit lengths, the significance of bit saturation, and the process of selecting bits.
  - **CFRC Length and Role Changes:** Inquires about the rules regarding CFRC length knowledge and behavior during role changes to acceptor.
  - **DODAG Root Responsibilities:** Seeks clarification on the DODAG root's role in choosing CFRC bit lengths, initial settings, and process for increasing bit numbers.
  - **Order of Sections:** Suggests reordering sections for logical flow and clearer understanding.

# RNFD - Fast border router crash detection in RPL - having nodes collaboratively monitoring the status of the root.

- Next Steps after addressing the reviews:
  - chairs to issue WGLC
  - shepherd to publish write-up
  - Additional Comments/Suggestions?

# MOPEX: Mode of Operation extension

draft-ietf-roll-mopex

# MOPEX

## Mode of Operation extension

- Work in Progress:
  - Open Issues: <https://github.com/roll-wg/mopex/issues>
    - Rahul is addressing comments from Alvaro, to be continued
    - From last Interim meeting, new issue: # 12
- Draft running out of steam
  - who is willing to progress the document?
- Next Steps, when new version is ready:
  - chairs to ask for WG Internal Review: at least 2 reviews
  - chairs to ask for Routing and Security Directorate Reviews
  - chairs to issue WGLC
  - shepherd to publish write-up
  - Additional Comments/Suggestions?

# Controlling Secure Network Enrollment in RPL networks

# Enrollment-priority - Controlling Secure Network Enrollment in RPL Networks

- All the issues closed, last issue 17, addressed on Nov 2023
- Ready for publication?
- Next Steps:
  - Assign two internal reviewers: Do we have volunteers?
  - Chairs to ask for Routing and Sec Dir reviews: Done
  - Chairs to call WGLC
  - Shepherd to publish write-up
  - Comments/Suggestions?

# Common Ancestor Objective Function and Parent Set DAG Metric Container Extension

# NSA-extension

## Common Ancestor Objective Function and Parent Set DAG Metric Container Extension

- -12 was published right before IETF118 ROLL session
- 6 comments (2 IANA, 4 Alvaro) were addressed in last version.
- Discussion on Ticket #28: <https://github.com/roll-wg/draft-ietf-roll-nsa-extension/issues/28>
  - "If a candidate neighbor does not fulfill the CA requirement then the path through that neighbor MUST be set to MAX\_PATH\_COST."
  - MAX\_PATH\_COST is a notion introduced in RFC6719 (Minimum Rank with Hysteresis Objective Function)
- Aris to check RFC6719 and remove duplicate mandate if any.
- Dominique checked RFC6719. Interestingly, no real normative language about not selecting a candidate with MAX\_PATH\_COST, only hints in informal language.

# NSA-extension

## Common Ancestor Objective Function and Parent Set DAG Metric Container Extension

- Aris to look at rewriting this draft to remove dependency on RFC6719 or to any specific metric
- No progress since IETF118
- News?

# Open Floor

- Additional Comments or Questions?