Controlling Secure Network Enrollment in RPL Networks

draft-ietf-roll-enrollment-priority-06

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The Story So Far

- Behaviour assumed in RFC9032
- Document Adopted March 2020
- Merged with draft-hushe-roll-dodag-metric after virtual interim meeting January 2021.
- Version -04 posted with merged document
- Reviews and Discussion Summer 2021
- Observation that changes to record interacts poorly with trickle, Summer 2021
- Proposal to not change rank in priority field, allow only DODAG root to set it only.
- But, this fails to satisfy desire to balance where nodes join in the tree.
  - new lollipop counter proposed as solution?
Still open Issues

• Trickle timer means that DIOs are not sent if there is no topology change.
  - So would changes to min priority be considered a change?
  - The DODAG size field could change quite often, particularly during network formation, how should it be dealt with?

• If updated min priority does not reset Trickle Timer, then this option needs to go into some new flooded control.
  - What are the desired properties of this new control, and what other things should go into it?

• New lollipop counter proposed to deal with changes
  - Alternatively, split up extension into two new extensions?
Discussion!

draft-ietf-roll-enrollment-priority-04

Auxiliary Slides Follow
Example enrollment priority

DAG Root

Enhanced Beacons

DIOs

base diagram from PThubert
With impaired node (24)

DAG Root

Enhanced Beacons

DIOs

Does not support this option

implied 0x40