

# drafti-ietf-roll- minrank-hysteresis-of

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# Status

- July 2011:WG last call completed
- September 2011:AD comments
- March 2012: 3 new versions, IETF last call

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# -04 to -07

- Clarifies node requirements
- Clarifies Rank computation
- Clarifies ETX handling
- Some discussion of tradeoff considerations

# Node Requirements

- “Nodes **MUST** support at least one of these metrics: node energy, hop count, latency, link quality level, and ETX. Nodes **SHOULD** support the ETX metric. MRHOF does not support non-additive metrics.”

# Rank Calculation

- “A node sets its Rank to the maximum of three values:
  1. The Rank calculated for the path through the preferred parent
  2. The Rank of the member of the parent set with the highest advertised Rank plus one
  3. The largest calculated Rank among paths through the parent set, minus MaxRankIncrease”

# ETX Handling

- “If ETX is the selected metric, a node SHOULD NOT advertise it in a metric container. Instead, a node MUST advertise an approximation of its ETX in its advertised Rank value, following the rules described in Section 3.3. If a node receives a DIO with a metric container holding an ETX metric, MRHOF MUST ignore the ETX metric value in its Rank calculations.”

# draft-gnawali-roll-rpl- recommendations-03

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# Overview

# Update in -03

## 10. Consider State Overhead When Running Storing Mode

A naive implementation of storing mode will have large state overhead, especially in large networks. However, it may be possible for storing mode to use RAM more efficiently by state aggregation, compression, and other techniques. The extent to which these techniques reduce the memory overhead, although promising based on experiences with other protocols, has not been evaluated for RPL state overhead. TinyOS open source implementation on TelosB, which has 10KB of RAM, is known to limit the routing table size to 30. An implementation on Contiki on MSP430F5438-based platform with has 16K of RAM is reported (in a private email to the authors) to support 100 entries.