

# RPL adaptation for asymmetrical links

## IETF 82 status

`draft-thubert-roll-asymlink`

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# draft Status

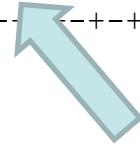
- -00 published in October.
- Expects Bi-directionality but not metrics symmetry
- Based on early discussions in the mailing list
  - PLC
  - Radios
- Triggered by the industrial applicability work
  - Cascading from PCE-computed DAG to classical RPL DAG.

# Operations

- Associates 2 RPL instances (DAGs), “up” and “down”
  - Both use bidirectional links
  - “upwards” DAG optimized for metrics up
  - “downwards” DAG optimized for metrics down
- Packets can jump from “upwards” to “downwards”
  - Default routing initially occurs along “upwards” DAG,
  - Longer match looked up on “downwards” DAG at each hop
  - If found, the packet continues on the “downwards” DAG
- More cascading is allowed
  - E.g. into a default spanning DAG

# DODAG Information Object (DIO)

0	1	2	3																
0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1																			
+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+																			
RPLInstanceID   Version Number		Rank														3			
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G   D   MOP   Prf		DTSN		Flags		Reserved													
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DODAGID																			
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Option(s) ...																			
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# D flag and MOP relationship

- Directional (D):
  - The Directional (D) flag is set to indicate that the instance is intended for directional operation, and reset otherwise.
- When ‘D’ is set,
  - A MOP of 0 indicates the upwards direction
  - All other values of MOP will be considered downwards unless explicitly specified otherwise.

Enough need / interest to progress this work

