MPLS-TP Protection For Interconnected-ring
draft-liu-mpls-tp-interconnected-ring-protection

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Motivation

☐ Requirement from RFC5654

- Req.93 : when a network is constructed from interconnected rings, MPLS-TP MUST support recovery mechanisms that protect user data that traverses more than one ring.

☐ Purpose of this draft

- This draft describes all kinds of interconnected ring scenarios and provides a few protection solutions for the multi-ring service that traverse more than one ring.
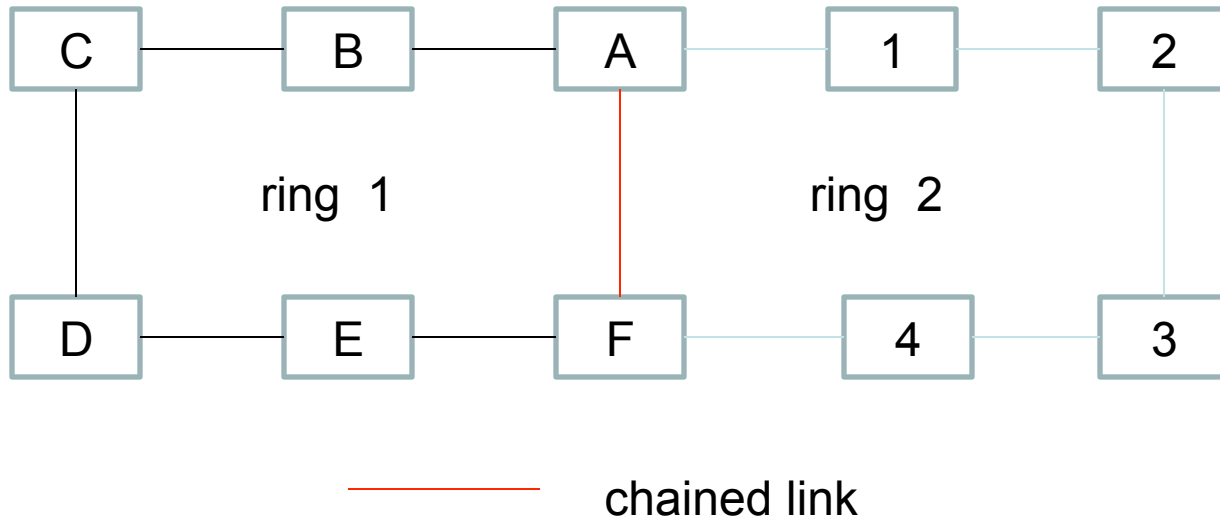
Dual-node interconnection

ring 1
ring 2

——————— interconnection link
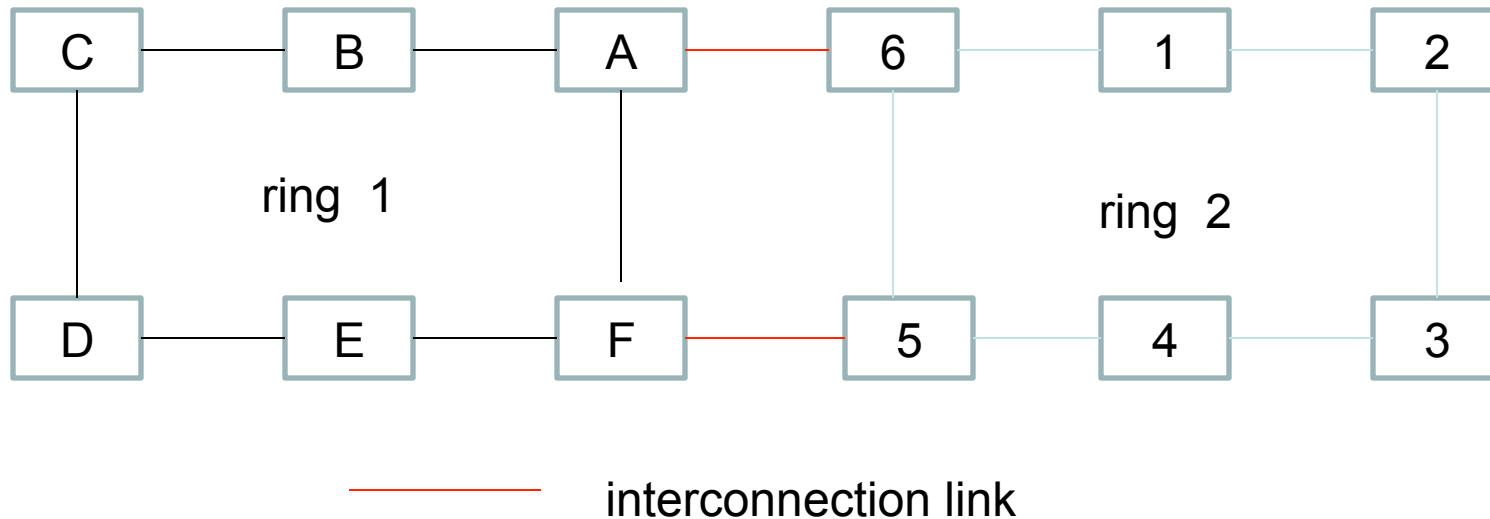
- For the interconnection scenario, it may use 1:1 linear protection to recovery the failure of interconnection link . In addition, it still may set up end to end protection path which traverse ring 1 and ring 2 to recovery the multi-ring service ;
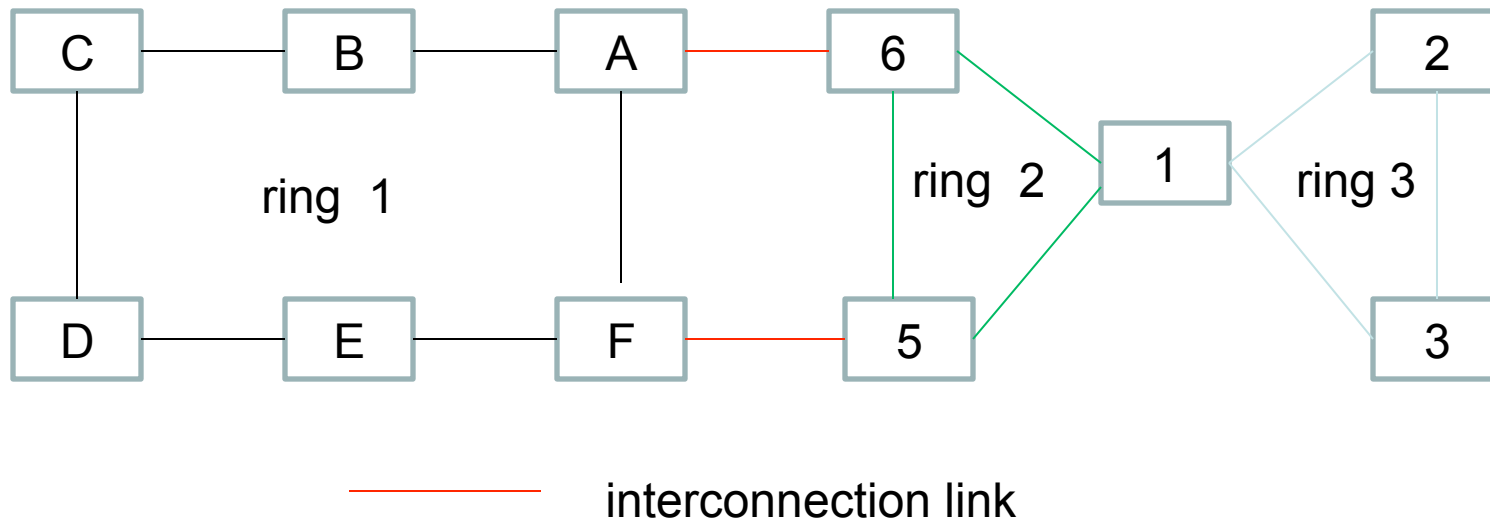
Single-node interconnection
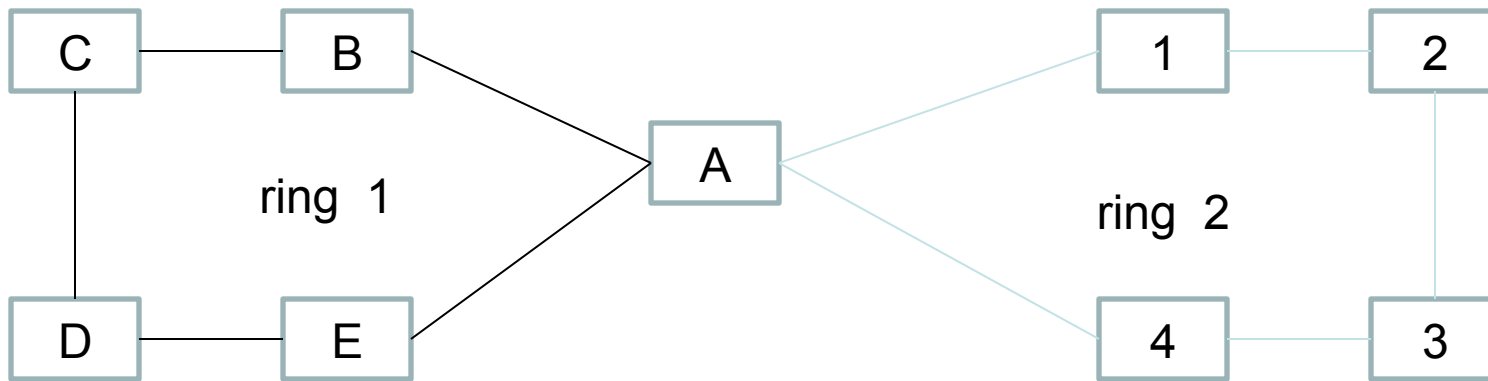
- As the interconnection node(eg. Node A) is only a single point that connect two ring , when the failure happens on the interconnection node, the multi-ring service may not be recovery, so the scenario should be avoided.
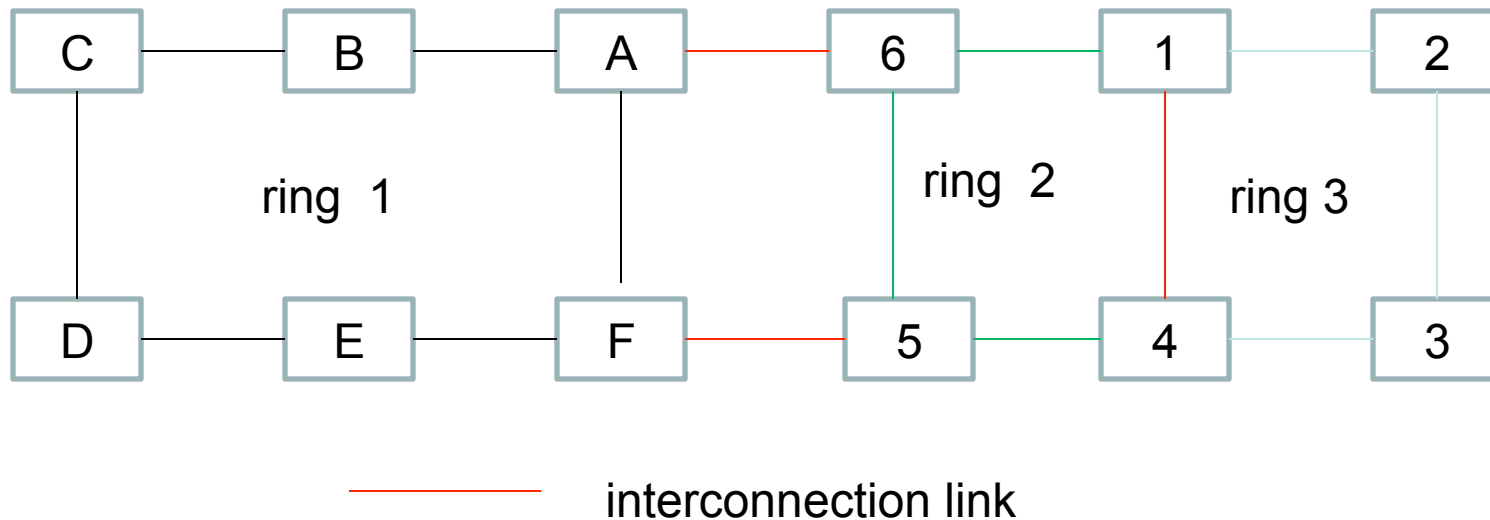
chained interconnection

- For the interconnection scenario, when interconnection node(node A or node F) or link(A-F) has the failure , it may set up end to end protection path which traverse ring 1 and ring 2 to recovery the multi-ring service.
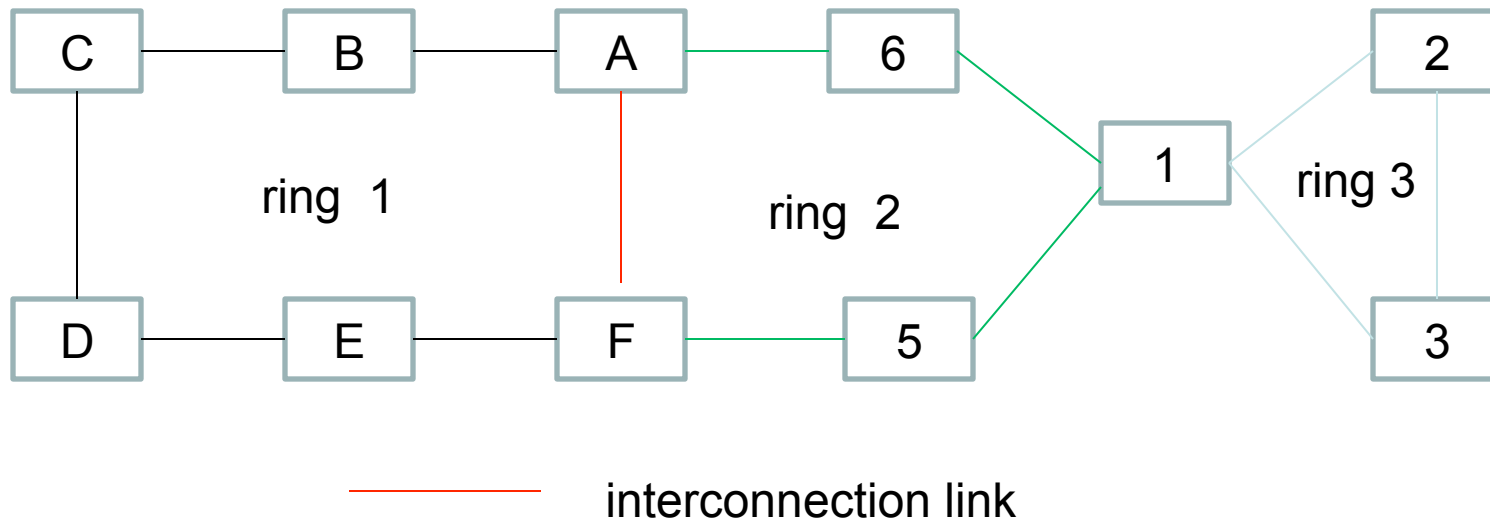
Dual-node and single-node interconnection

For the mixed interconnection, it may separately use recovery mechanism of dual-node or single-node interconnection to recovery the failure between any two directly connected-ring. In addition, it still may set up end to end protection path which traverse ring 1,ring 2 and ring 3 to recovery the multi-ring service .

Dual-node and chained interconnection

For the mixed interconnection, it may separately use recovery mechanism of dual-node or chained interconnection to recovery the failure between any two directly connected-ring. In addition, it still may set up end to end protection path which traverse ring 1,ring 2 and ring 3 to recovery the multi-ring service .

chained and single-node interconnection


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C ——— B ——— A ——— 6                    2
         ring  1       |        ring  2            1      ring 3
D ——— E ——— F ——— 5                    3
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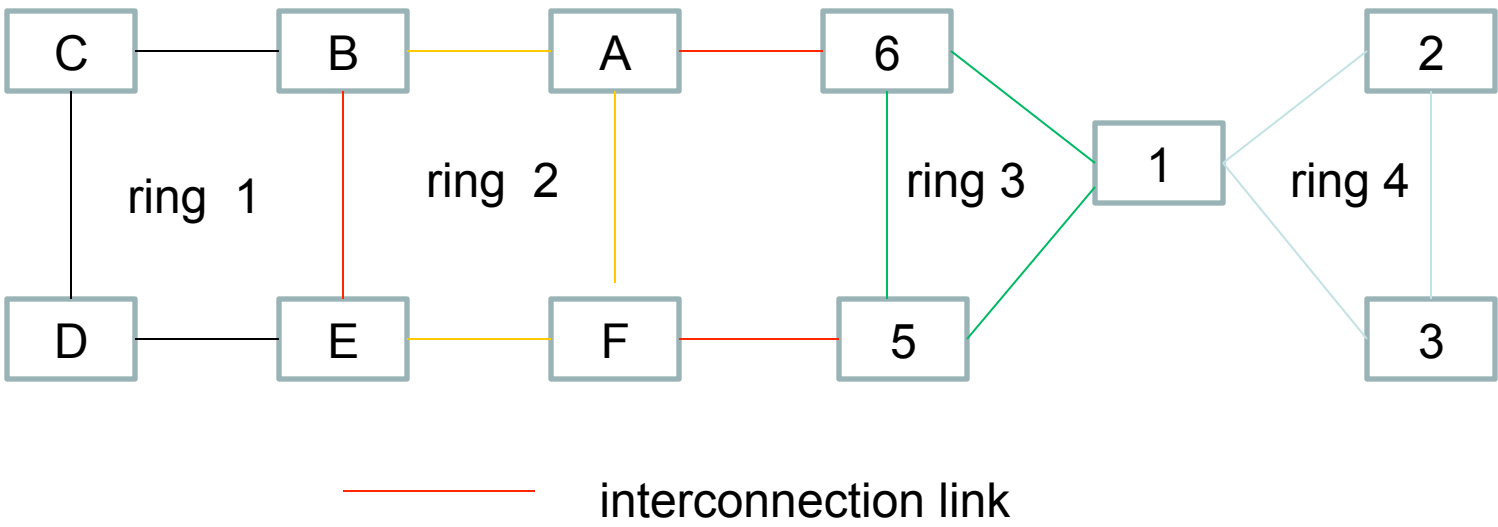
interconnection link

- For the mixed interconnection, it may separately use recovery mechanism of single-node or chained interconnection to recovery the failure between any two directly connected-ring. In addition, it still may set up end to end protection path which traverse ring 1,ring 2 and ring 3 to recovery the multi-ring service.

Chained,dual-node ,single-node interconnection

| | | | |
| C | B | A | 6 | | 2 |

ring 1   ring 2   ring 3   1   ring 4

| D | E | F | 5 | | 3 |

—————— interconnection link

- For the mixed interconnection, it may separately use recovery mechanism of dual-node or chained ,single-node interconnection to recovery the failure between any two directly connected-ring. In addition, it still may set up end to end protection path which traverse ring 1,ring 2 ,ring 3 and ring 4 to recovery the multi-ring service.

Next steps

1. complete the part of recovery mechanism in the next version;

2. update the document according to comments of the meeting and Mailing list.

thank you !