

Performance Evaluation of Termination in CL-Algorithm

Daisuke Satoh
Harutaka Ueno

NTT Advanced Technology Corporation

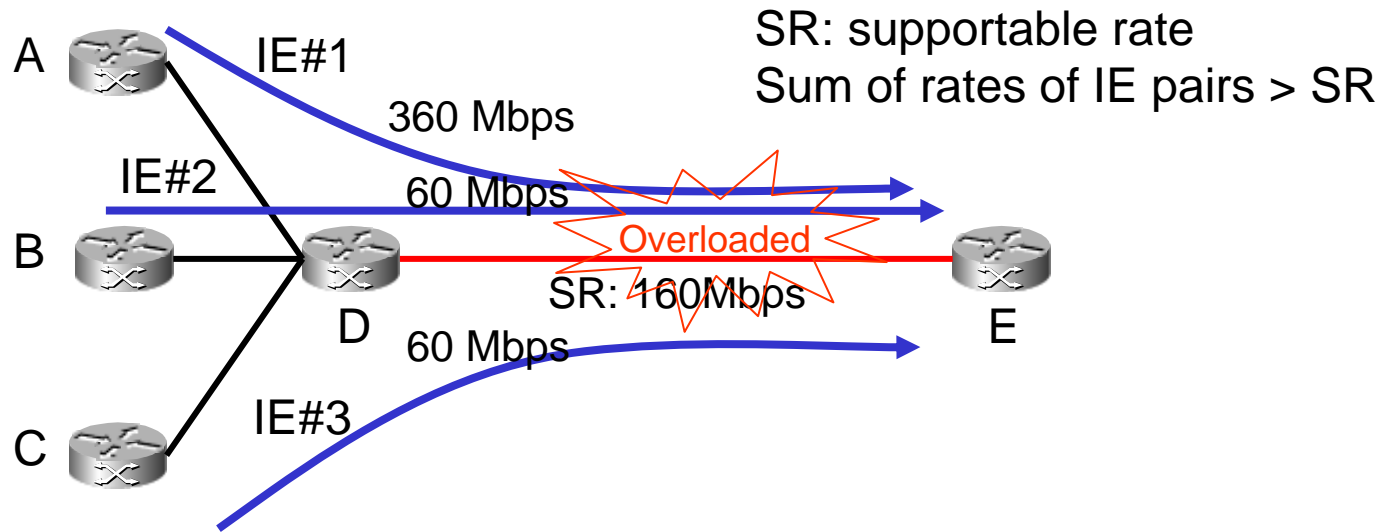
and

Michael Menth
University of Wuerzburg

Outline

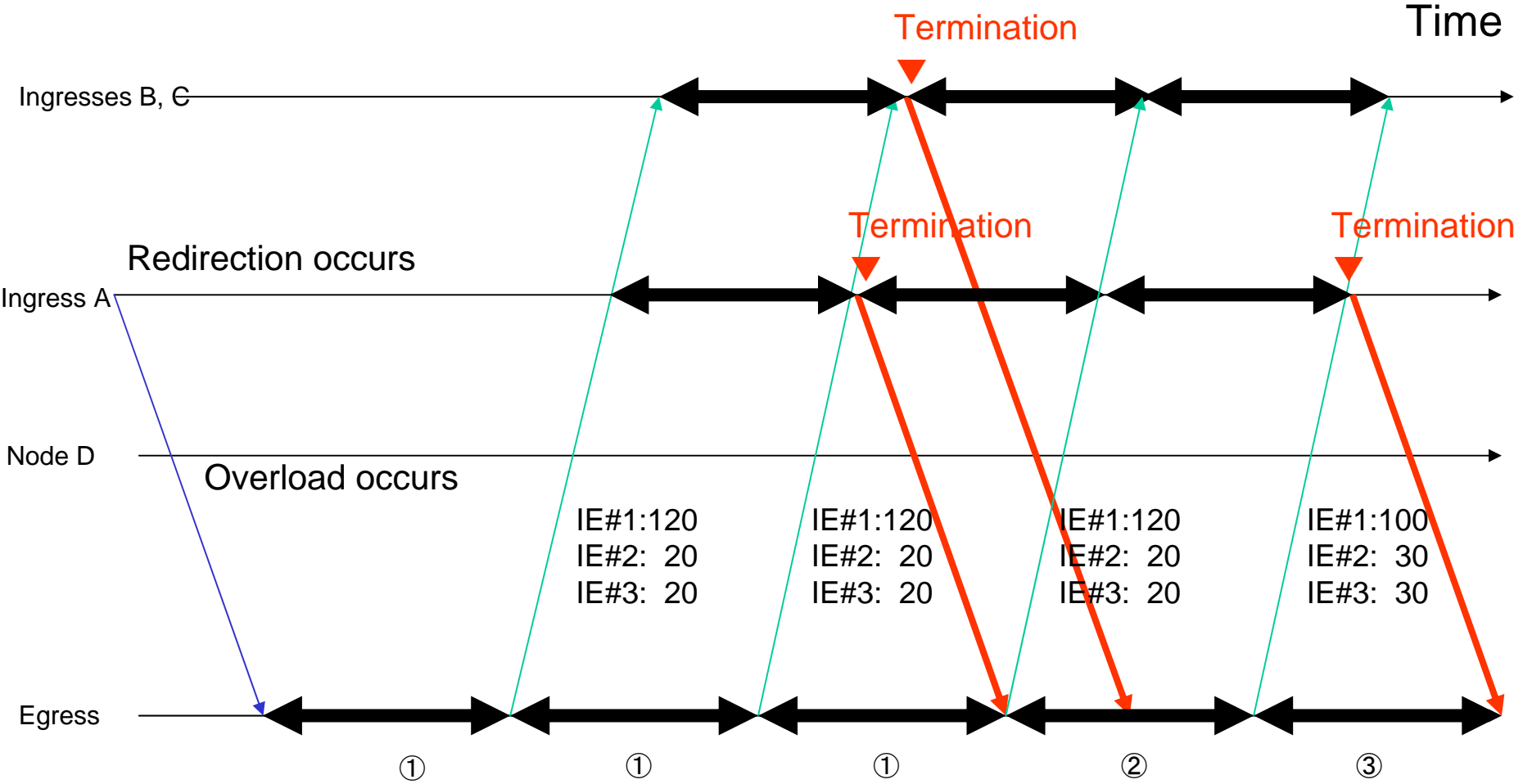
- Over-termination in CL when IE pairs have different RTTs
- Example
- Conclusion

Situation Just after Redirection

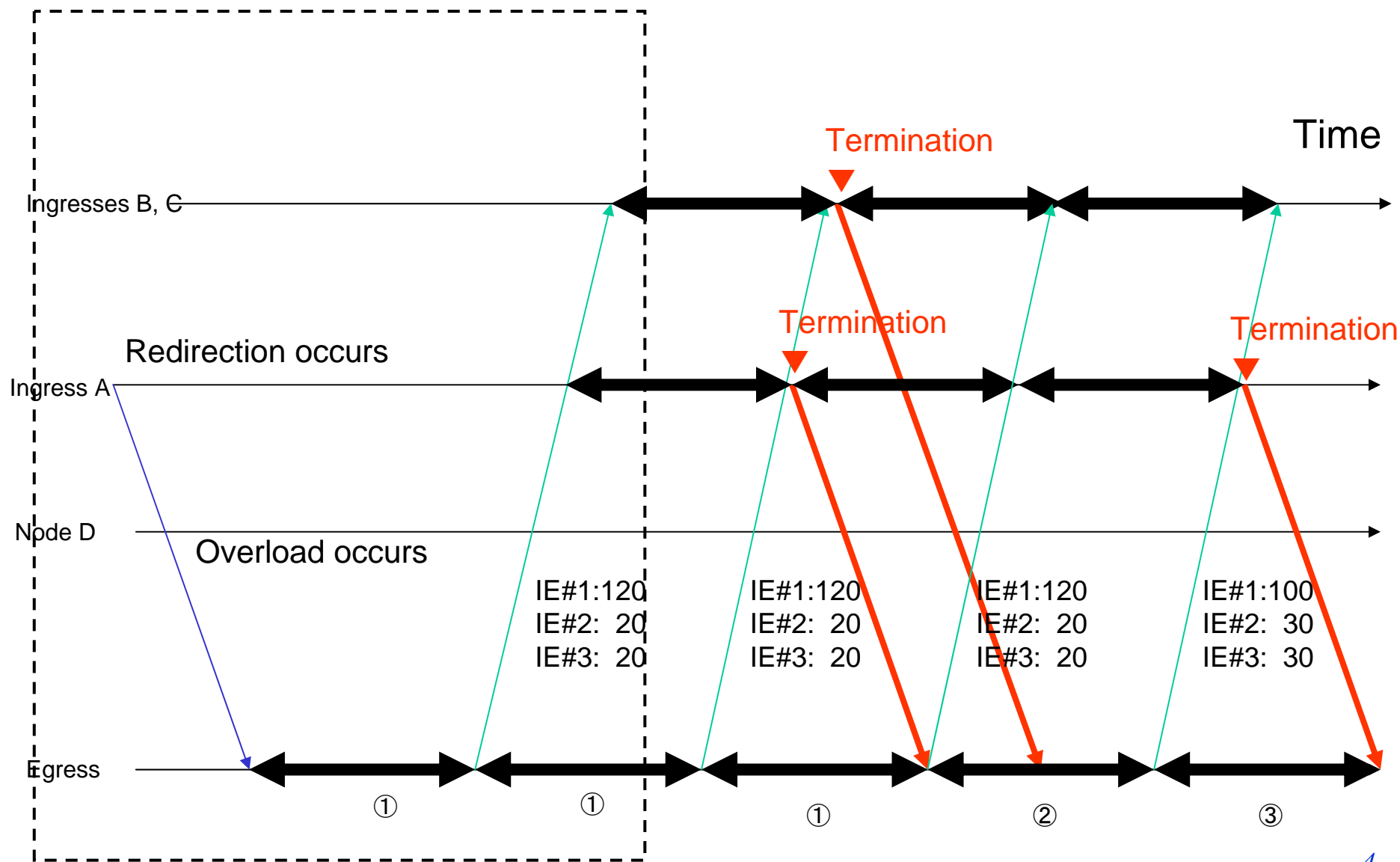


IE pair	Ingress	Egress	Rate [Mbps]	RTT [ms]
IE#1	A	E	360	100
IE#2	B	E	60	150
IE#3	C	E	60	150

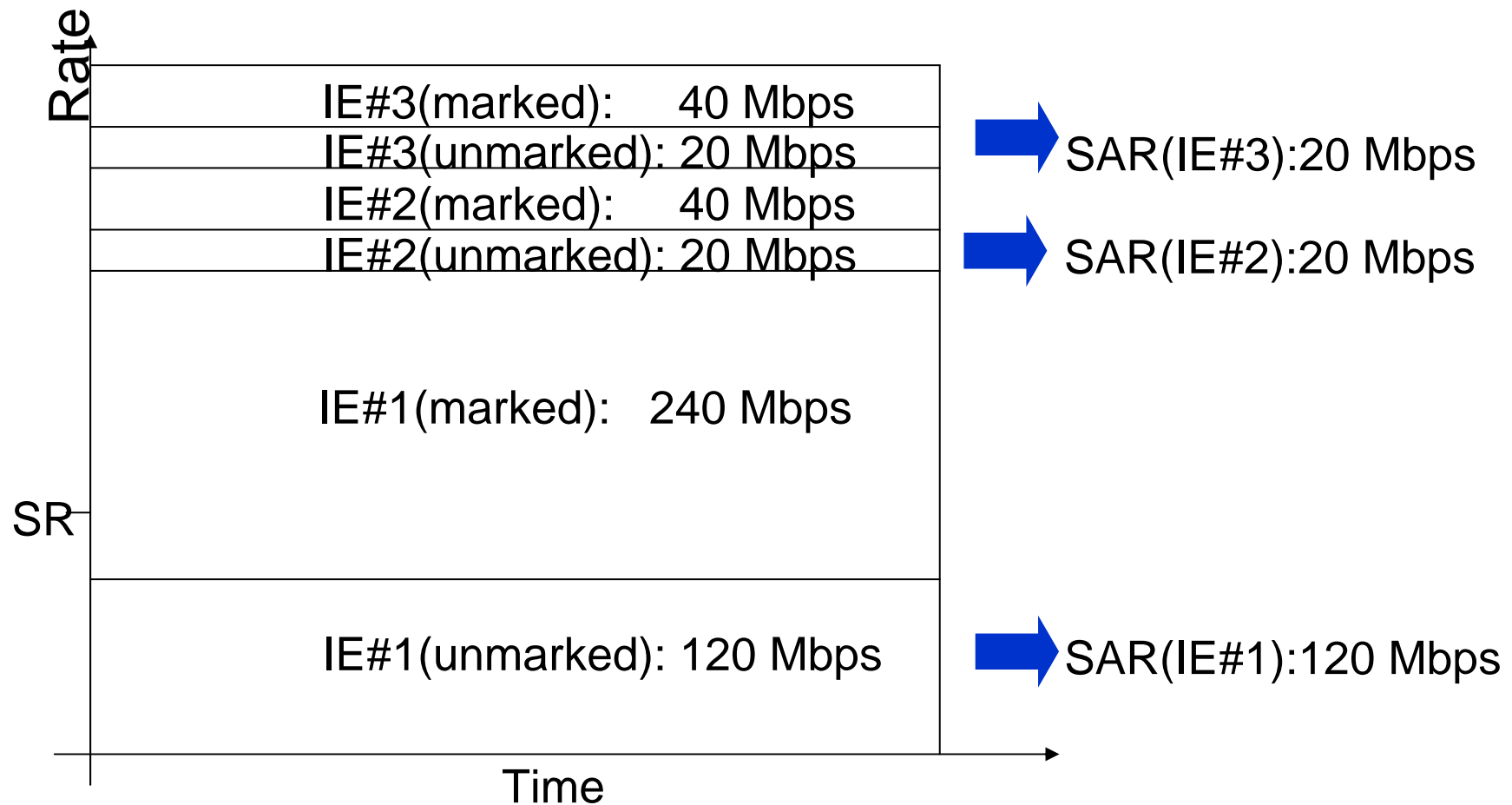
Time Diagram



Time Diagram



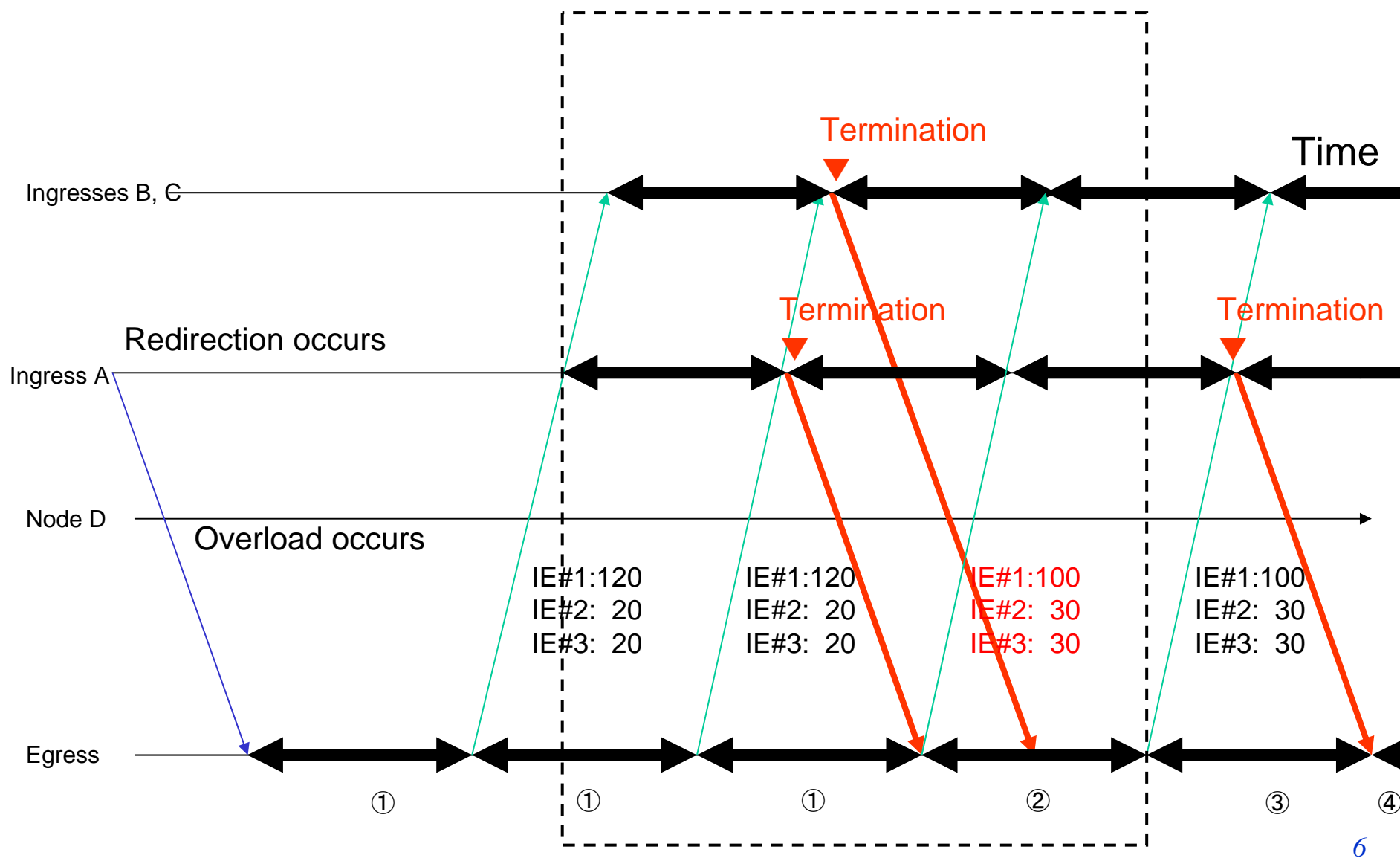
Measurement at Egress: ①



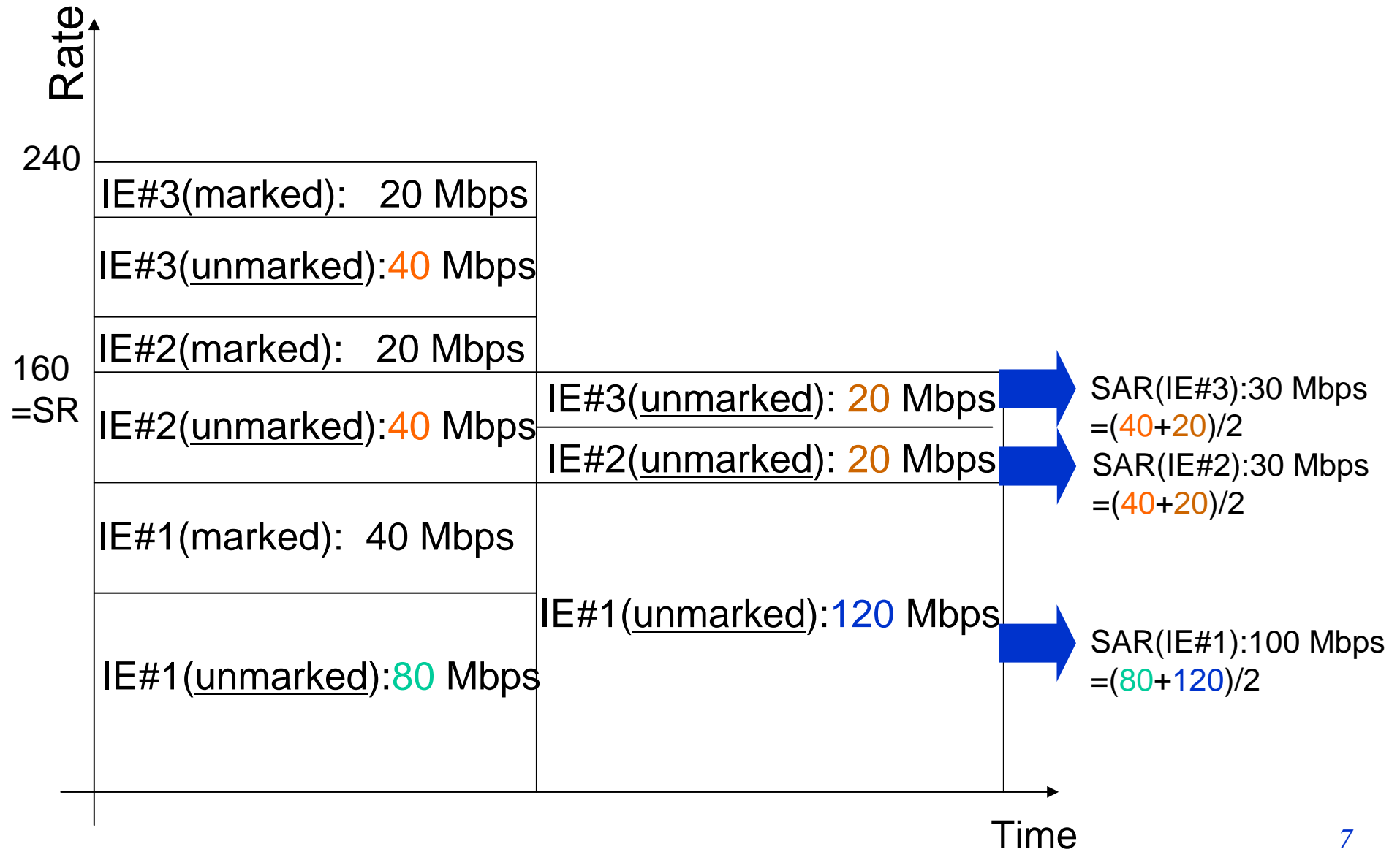
Assumption:

Unmarked rate of IE pair : Total rate of IE pair = SR : Total rate of PCN rate

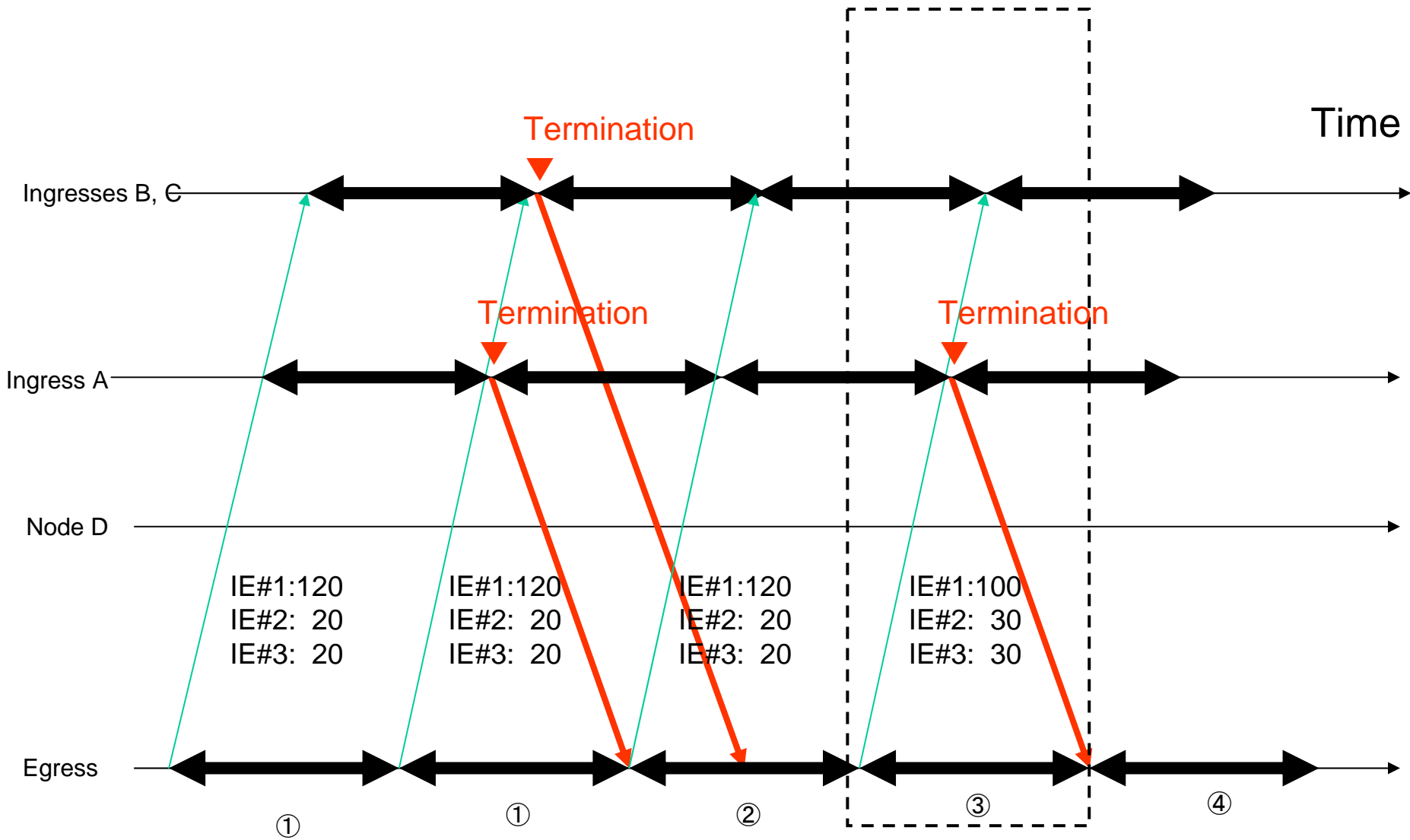
Time Diagram



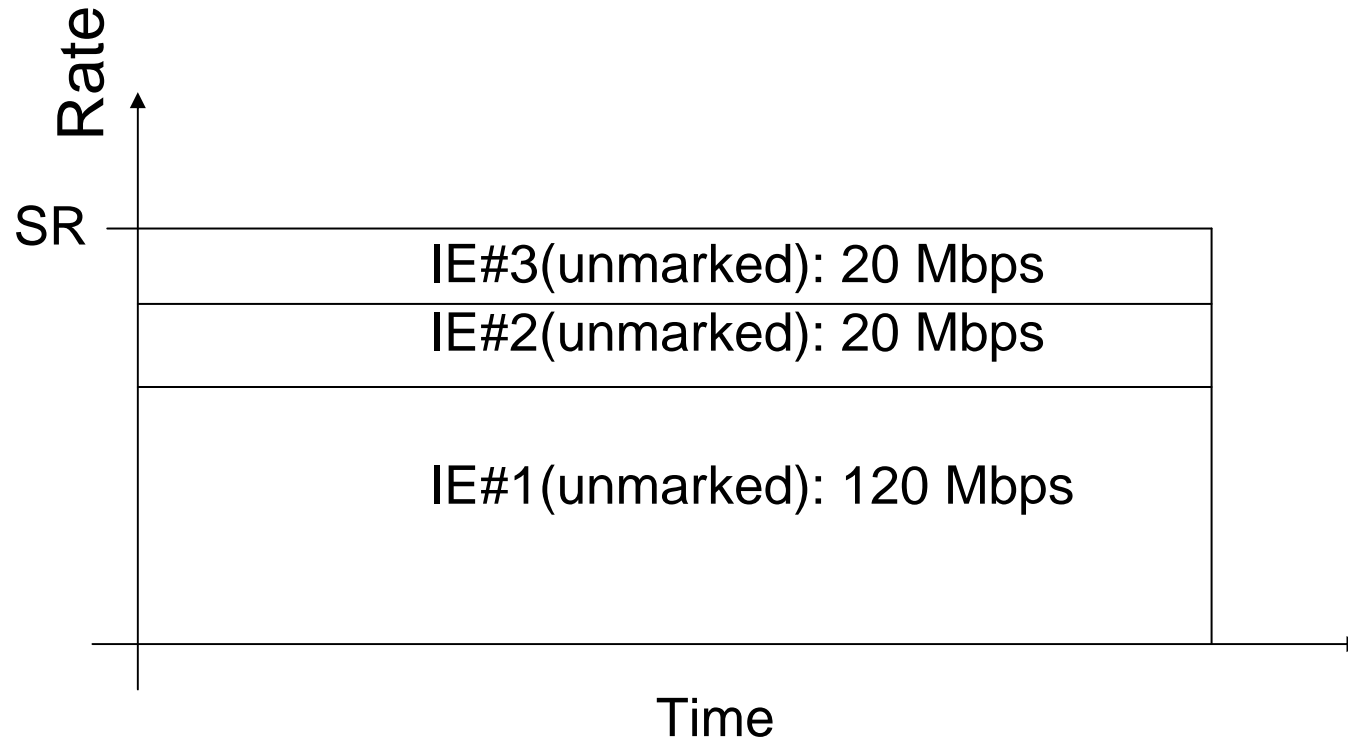
Measurement at Egress: ②



Time Diagram

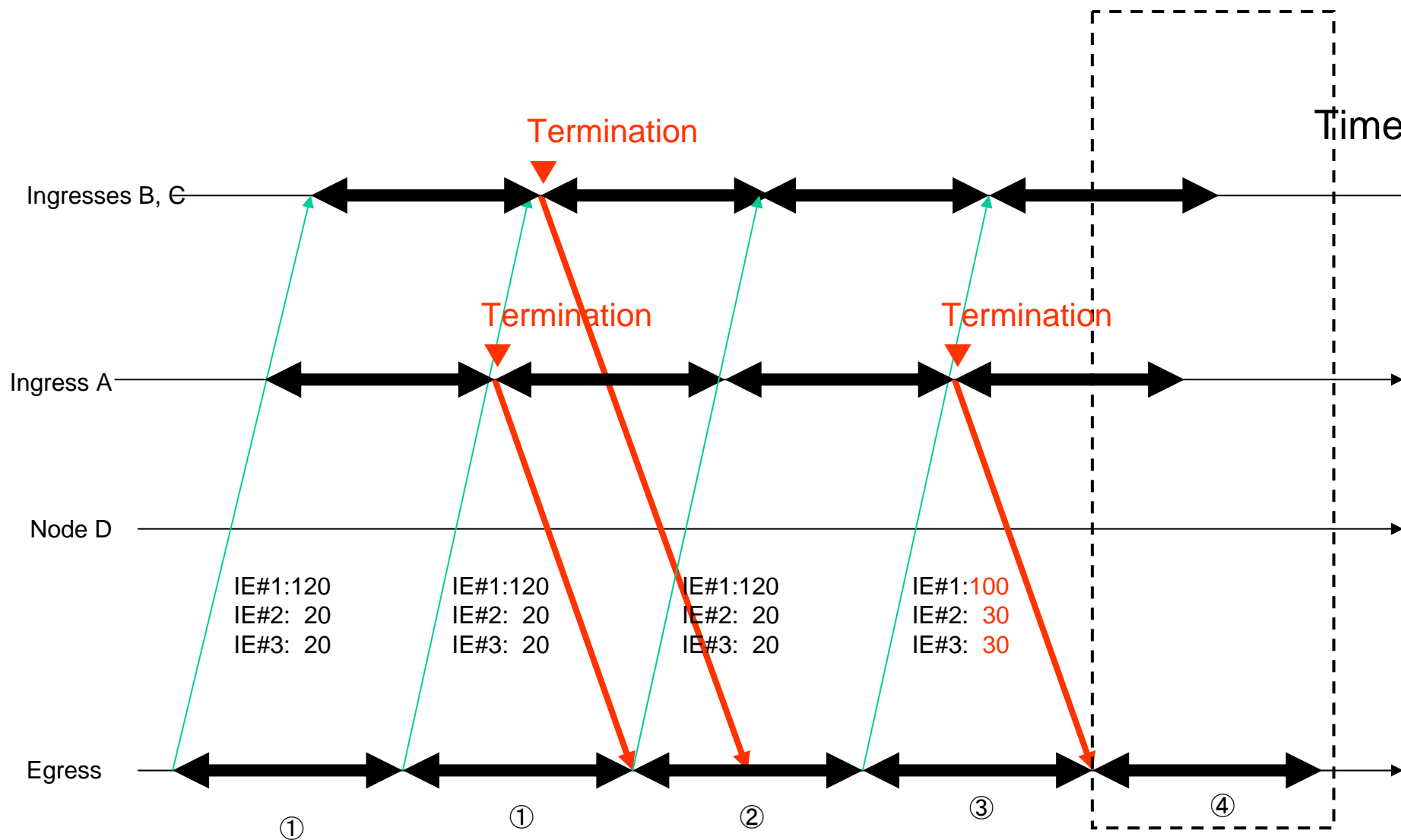


Measurement at Egress: ③

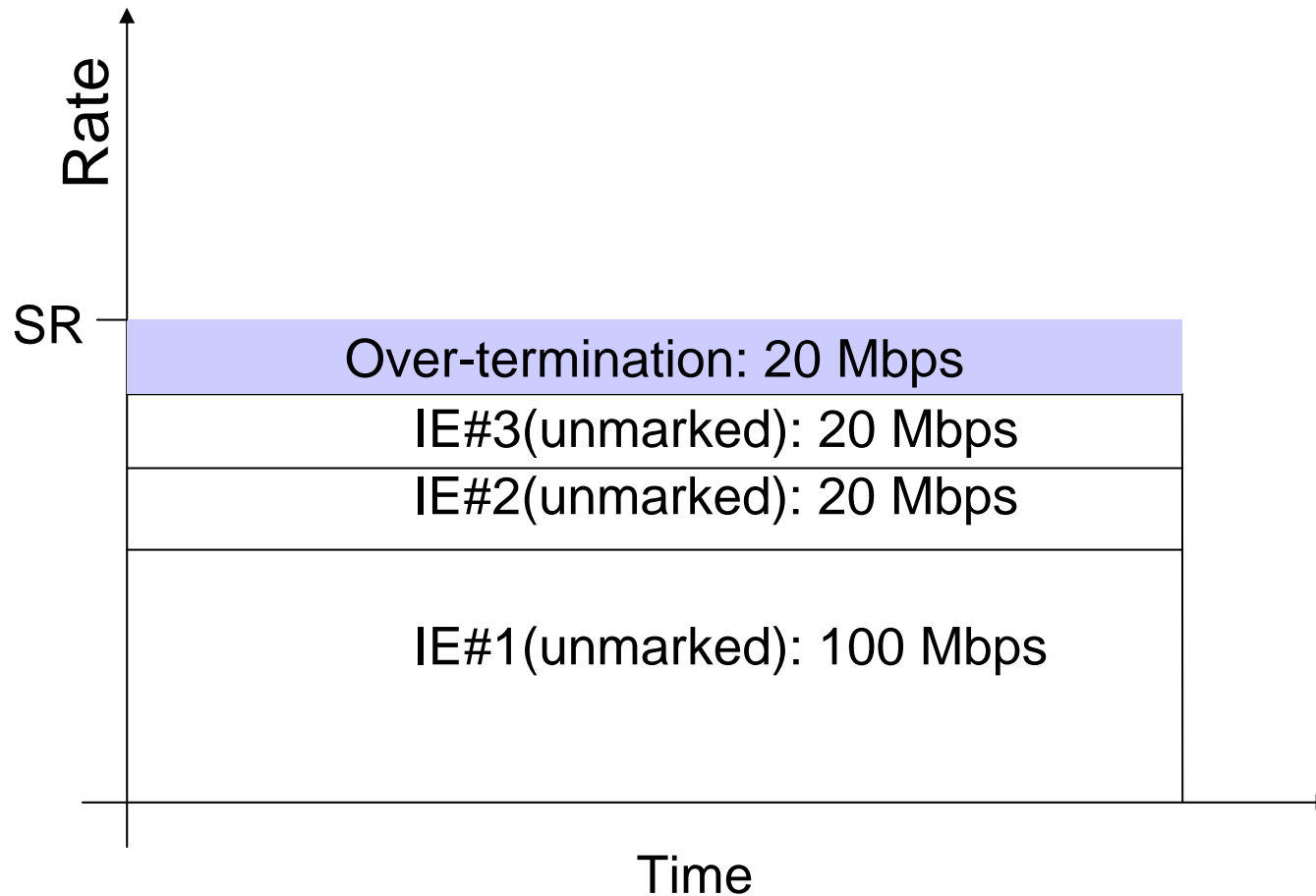


Enough termination!

Time Diagram



Measurement at Egress: ④



Over-termination occurs!

Conclusion

- Over-termination can occur in the CL algorithm when ingress-egress pairs have different RTTs.
- Countermeasure is necessary because RTTs are generally different.
 - Inter-termination time (ITT) prevents over-termination at least in second termination round.



NTT Advanced Technology Corporation

Shinjuku Mitsui Bldg. 2-1-1,
Nishi-shinjuku, Shinjuku-ku, Tokyo, 163-0431, Japan
TEL +81 3 5325 0711
FAX +81 3 5326 7831
URL: <http://www.ntt-at.co.jp/>