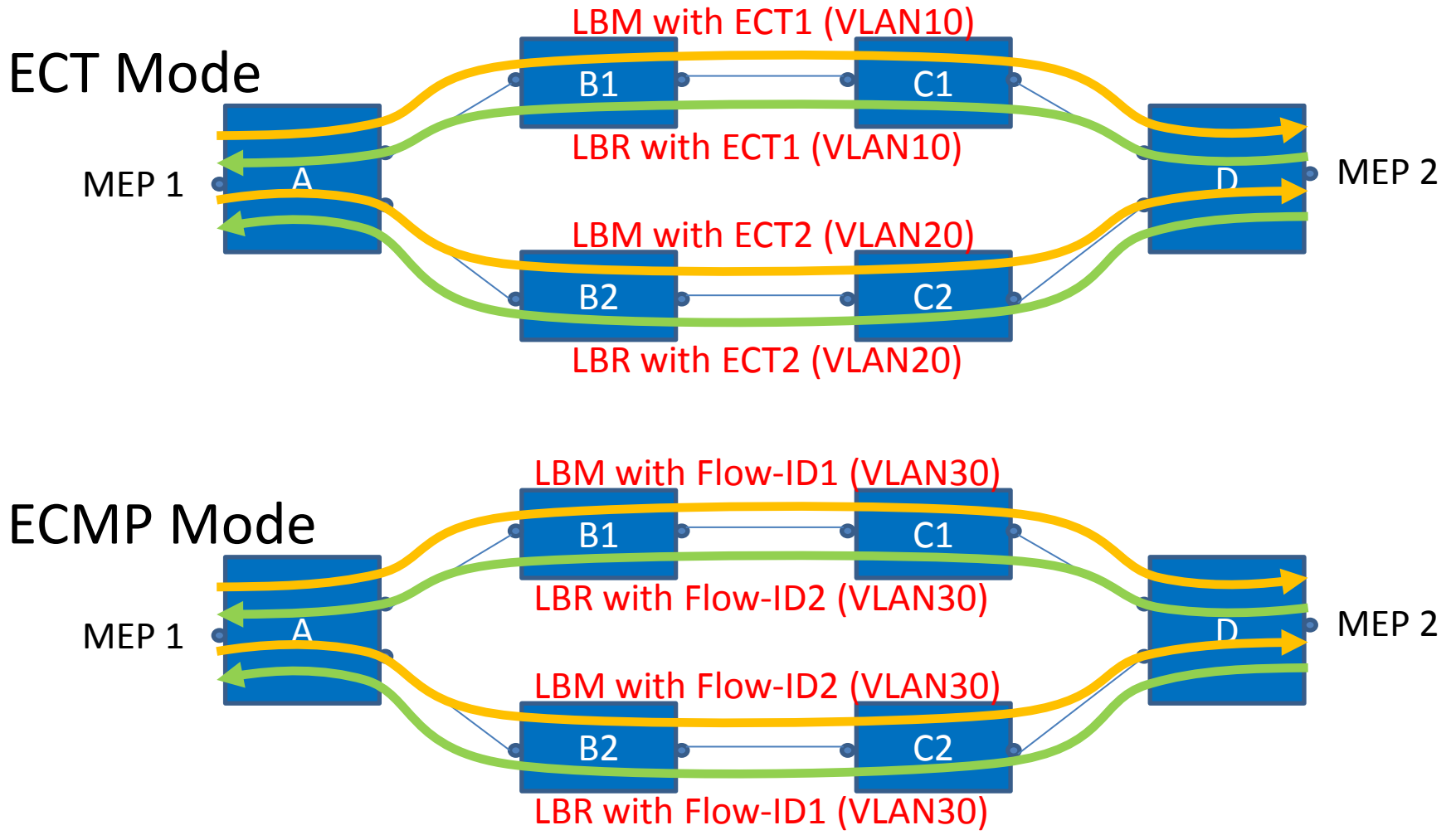
Loopback detection for ECMP

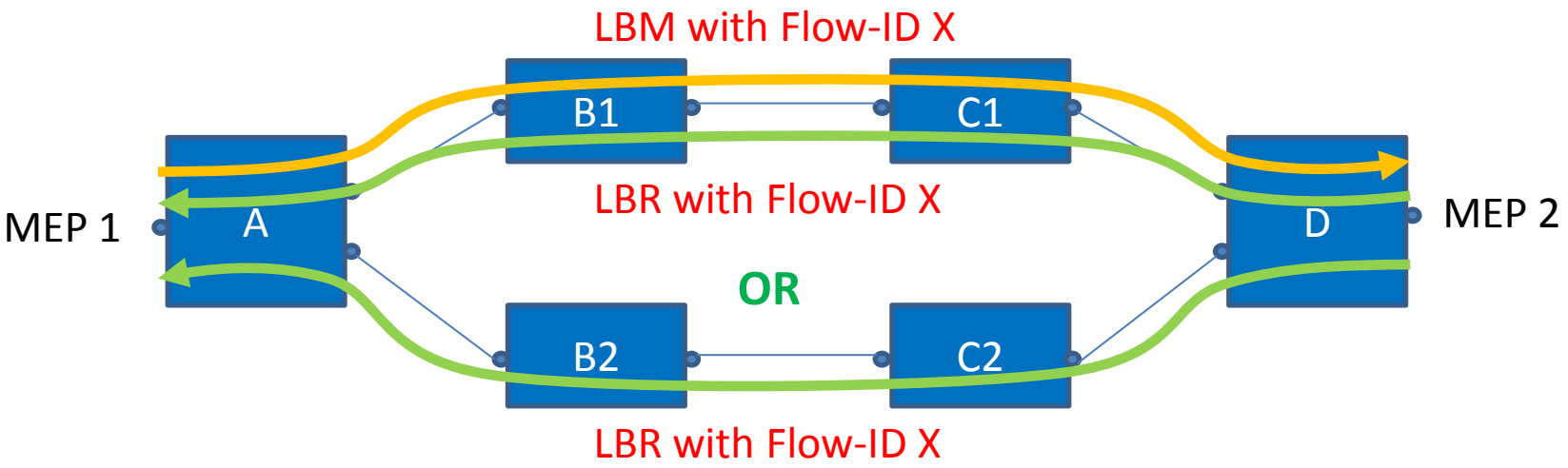
Min Xiao(xiao.min2@zte.com.cn)
Yuehua Wei(wei.yuehua@zte.com.cn)

Loopback with ECT and ECMP

Examples:

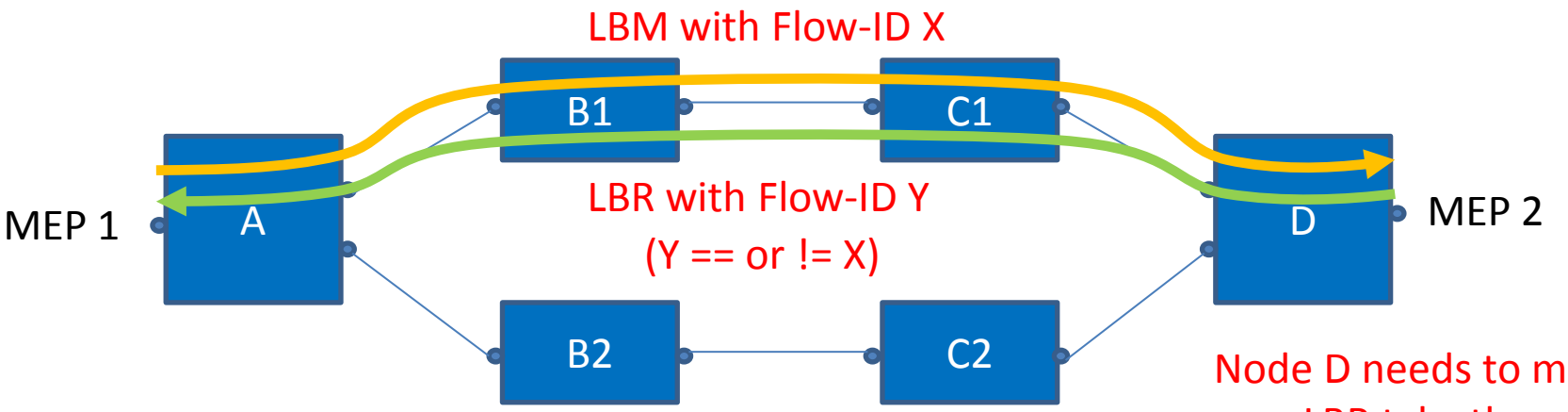


Option 1 for Loopback with ECMP



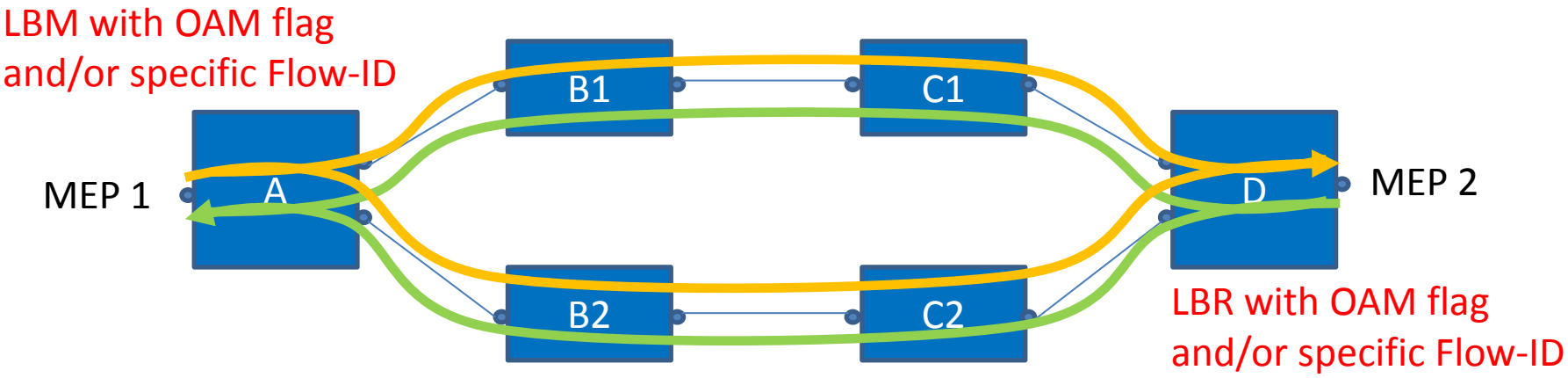
- Flow-based fault detection
- Destination MEP replies a LBR using the same Flow-ID as the LBM.
- Advantage: Process in node D is simple
- Shortage: LBM and LBR may take incongruent bidirectional path

Option 2 for Loopback with ECMP



- Flow-based fault detection
- Destination MEP replies a LBR using a (maybe) different Flow-ID from the LBM in order to keep the LBM and LBR co-routed.
- Advantage: LBM and LBR takes congruent bidirectional path
- Shortage: Process in node D is a bit more complicated than option 1

Option 3 for Loopback with ECMP



- Network-based fault detection
- Source MEP sends one LBM, MIPs replicate the LBM to all ECPs, destination MEP replies as many as the square of the number of the LBMs.
- Advantage: LBM and LBR traverses all ECMPs at one time detection
- Shortage: All nodes need to support forwarding LBM/LBR to all possible output ports in the ECMP list

Discussions

- Do we need both flow-based loopback detection and network-based loopback detection?
- For flow-based loopback detection, which one (option 1 or option 2) is better?
- Any more options for loopback detection for ECMP?

Thank you!