Anycast Prefix Segments in MPLS-based SPRING

draft-psarkar-spring-mpls-anycast-segments-01

Pushpasis Sarkar psarkar@juniper.net
Hannes Gredler hannes@gredler.at
Clarence Filsfils cfilsfils@cisco.com
Stefano Previdi sprevidi@cisco.com
Bruno Decraene bruno.decraene@orange.com
Martin Horneffer Martin.Horneffer@telekom.de

Summary

- Additional Contributors
- Proposed Solution – Update
  - Terminologies
  - Procedures

Additional Contributors

Clarence Filsfils cfilsfils@cisco.com

Stefano Previdi sprevidi@cisco.com

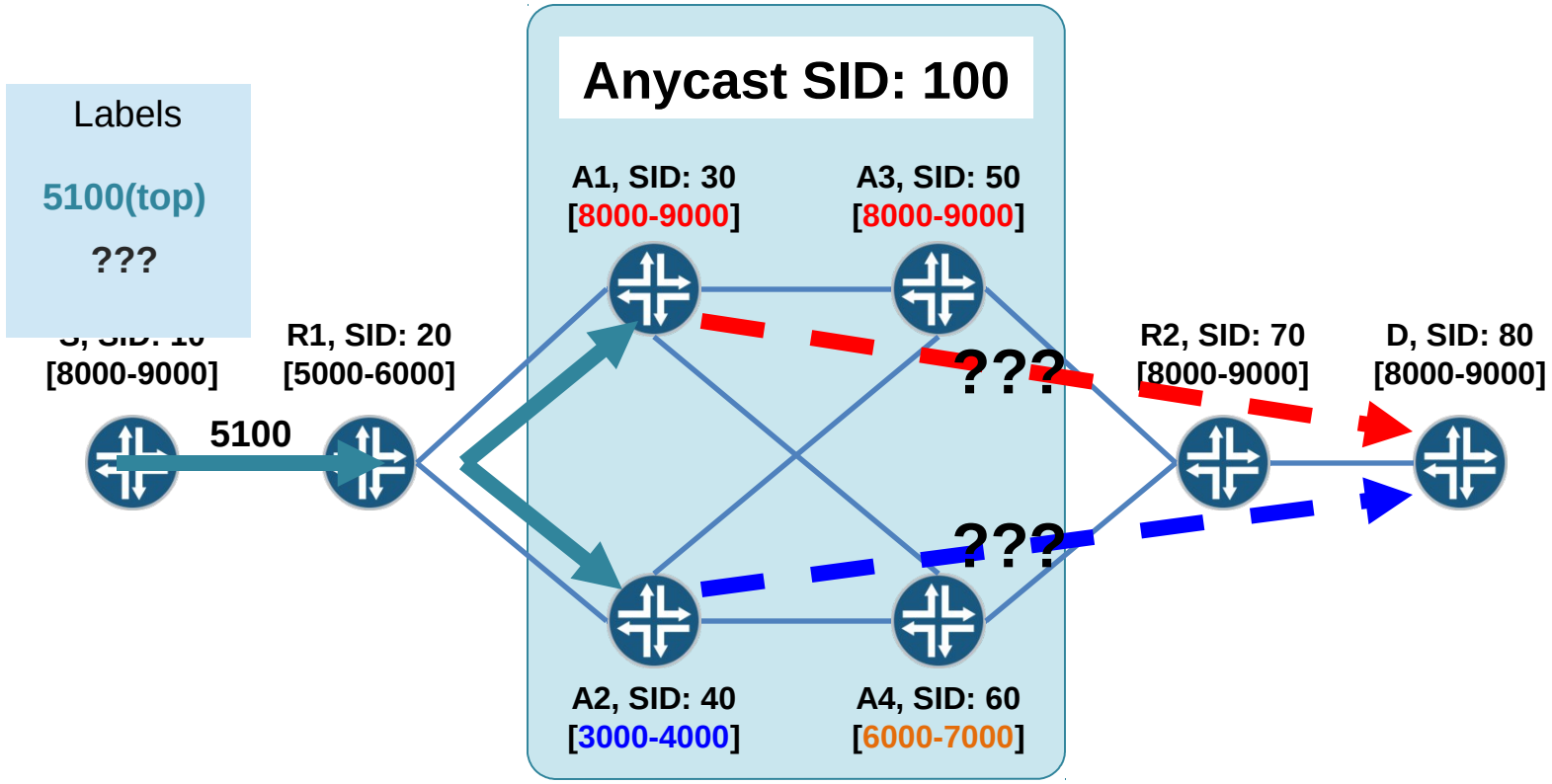
Bruno Decraene bruno.decraene@orange.com

Martin Horneffer Martin.Horneffer@telekom.de

More Definitions

- Common Anycast SRGB (CA-SRGB)
  - Identifies the **SRGB implemented by majority of the network devices** participating in one or more anycast group(s).
  - All devices in network MUST allow operator to set it
    - When set,
      - The **operator should set the same value on all devices**.
      - The device **need not allocate the same range for the local SRGB**. The CA-SRGB may or may not be same as the local SRGB.
    - If not set explicitly, the CA-SRGB should be assumed to be same as the local SRGB.

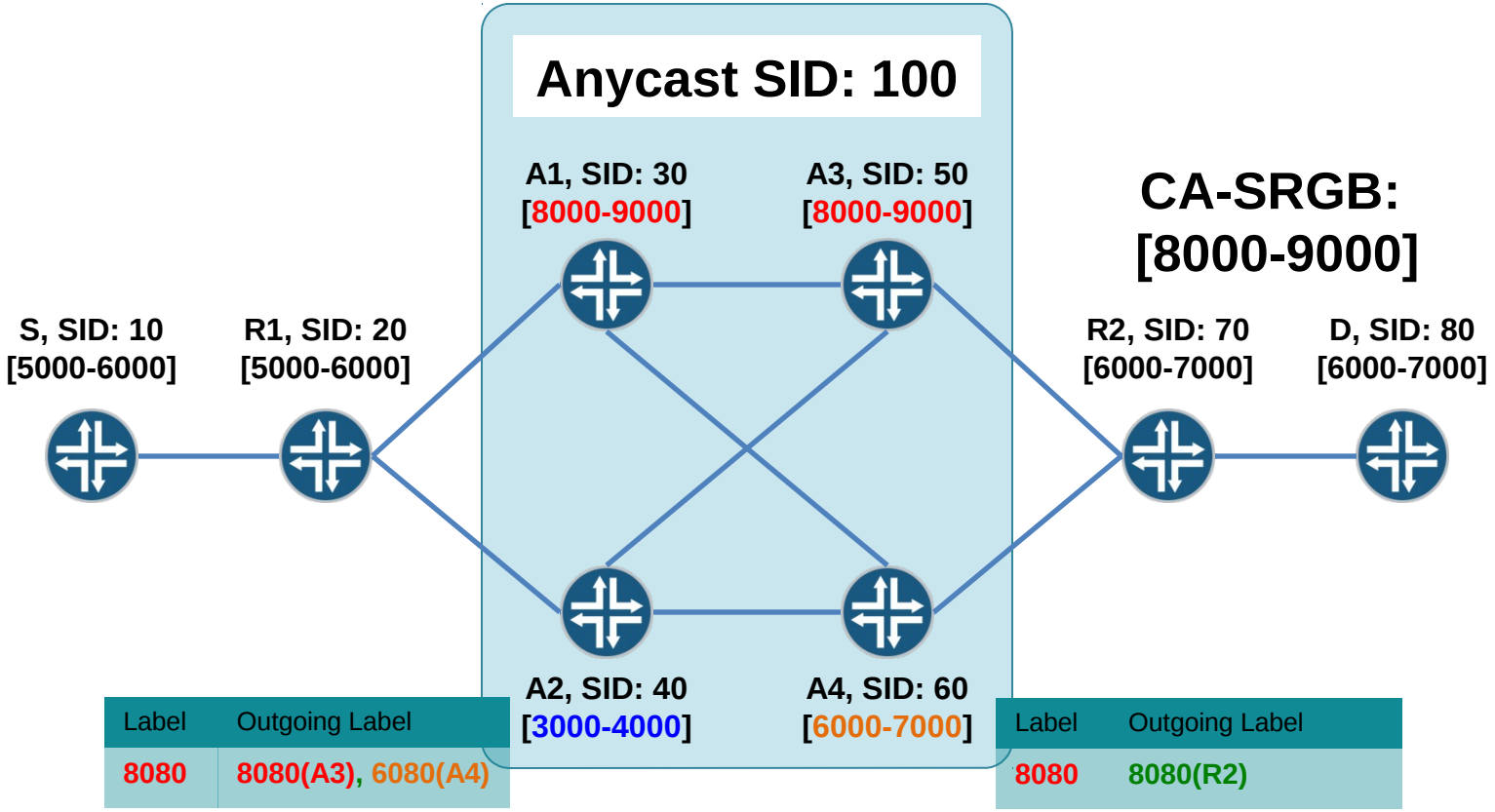
Problem Statement



How to compute the label that represents the next segment?

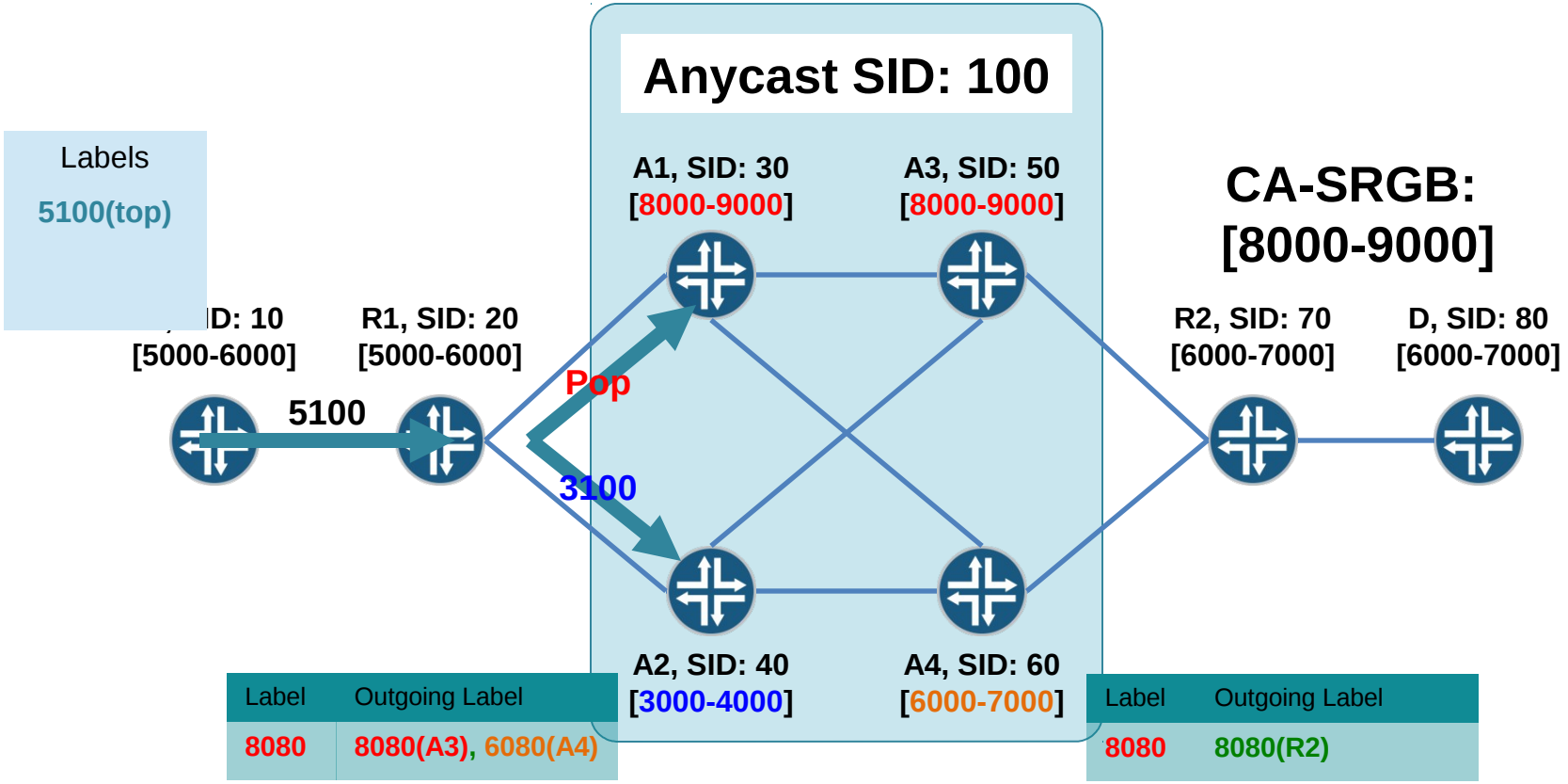
Proposed Solution

- Step 1: Devices originating any anycast prefix segments ***that does not have same local SRGB as the CA-SRGB***
  - Create a Virtual L-FIB lookup table
    - Map all remotely learnt node/anycast prefix segment index to corresponding downstream label and next-hop.



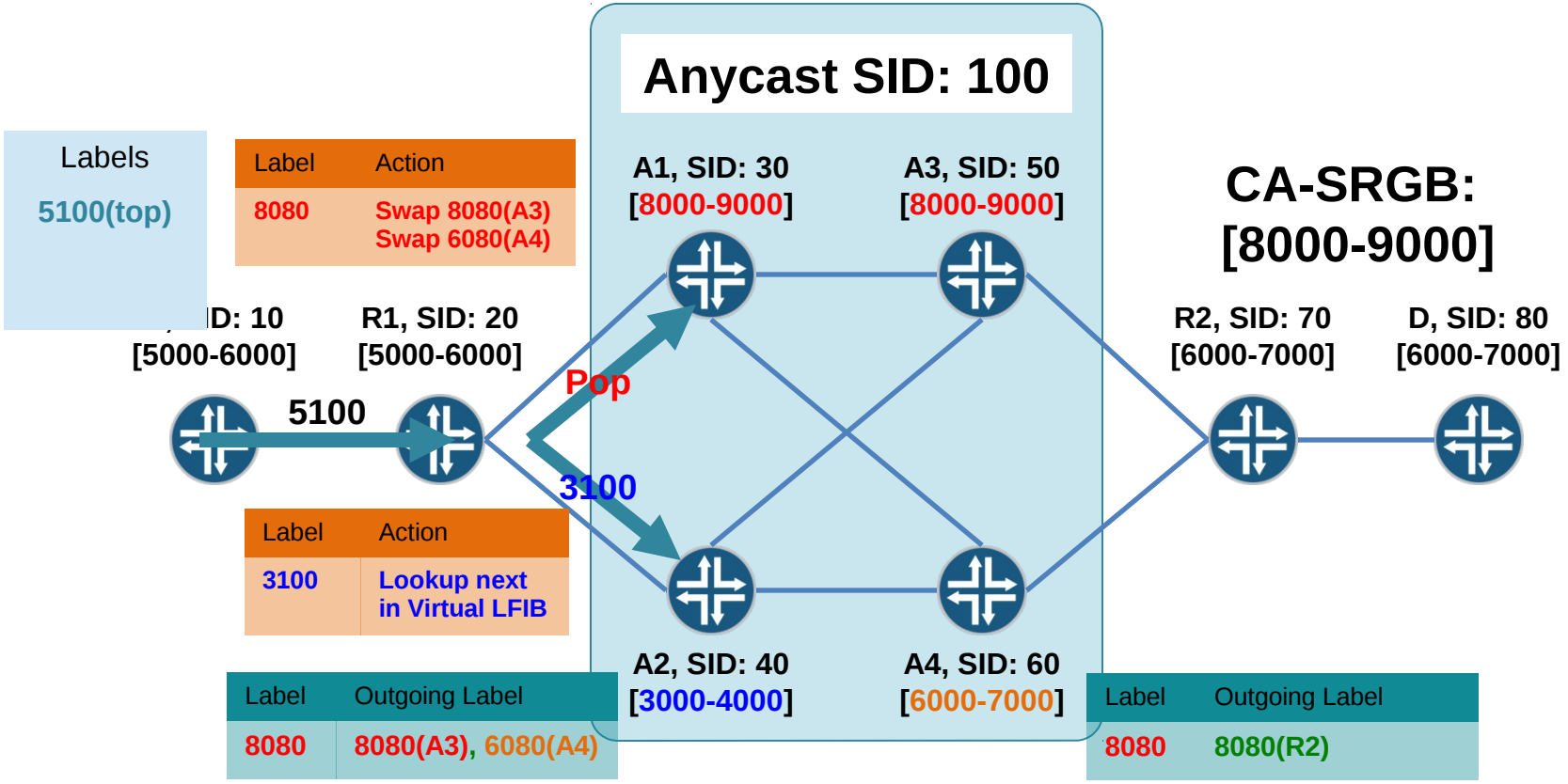
Proposed Solution

- Step 2: Devices originating any anycast prefix segments ***that does not have same local SRGB as the CA-SRGB***
  - **Originate IGP advertisement** for anycast prefix SID with (**No-PHP =1 and Exp-Null = 0**).
  - Ensures the packet arrives with anycast prefix segment label allocated for it. **Penultimate-hop does not POP** the label, but replaces it.



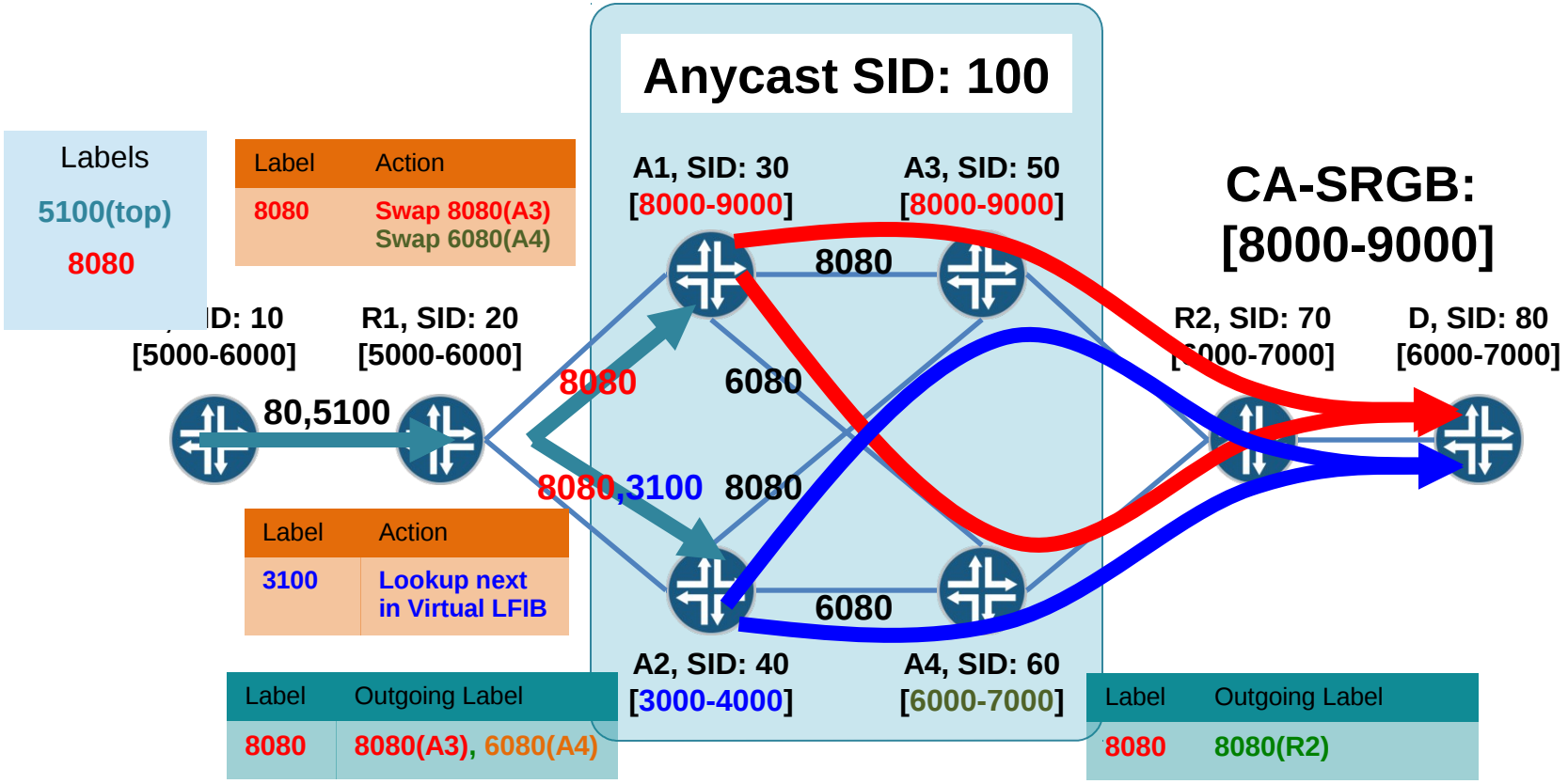
Proposed Solution

- Step 3: Devices originating any anycast prefix segments ***that does not have same local SRGB as the CA-SRGB***
  - **For the anycast segment label in the global LFIB table**.
    - Install a **Lookup into the Virtual LFIB** created in Step 1.



Proposed Solution

- Step 4: Ingress device using Anycast prefix segments
  - For the **prefix segment next that follows a anycast prefix segment**.
    - **Use the *prefix segment index as offset into CA-SRGB range*** to compute the label to be used.



Next Steps

- Comments/Questions/Suggestions ?
- WG Adoption.

THANK YOU