Eligibility Concept in SR Policies

Amal Karboubi, Himanshu Shah, Siva Sivabalan (Ciena)
Andrew Stone (Nokia)
Christian Schmutzer (Cisco)

(draft-karboubi-spring-sr-policy-eligibility)

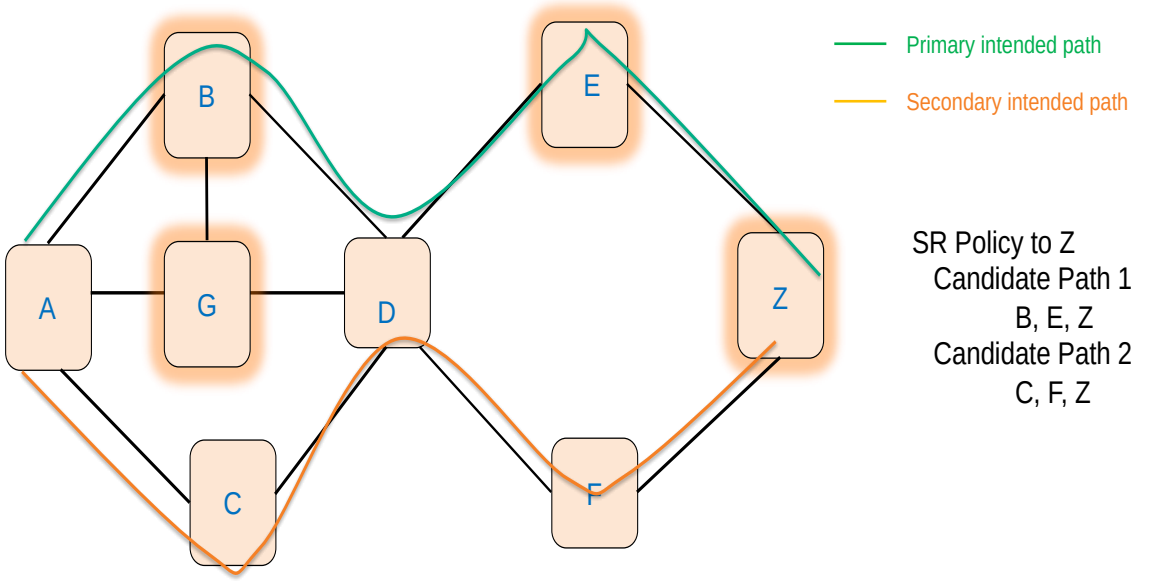
Eligibility Attribute of Candidate Path

- Draft introduces a new attribute for a CP called Eligibility
- The Eligibility flag determines if a CP is eligible to carry service traffic; true – yes, false – no.
- The check for eligibility is done during selection of active CPs in addition to rules specified in RFC 9256 such as high preference with validated, operational (as per OAM) sid-list, etc.
- While the eligibility check is done by the head-end, setting of the attribute can be done by various actors such as head-end, PCE, operator, etc

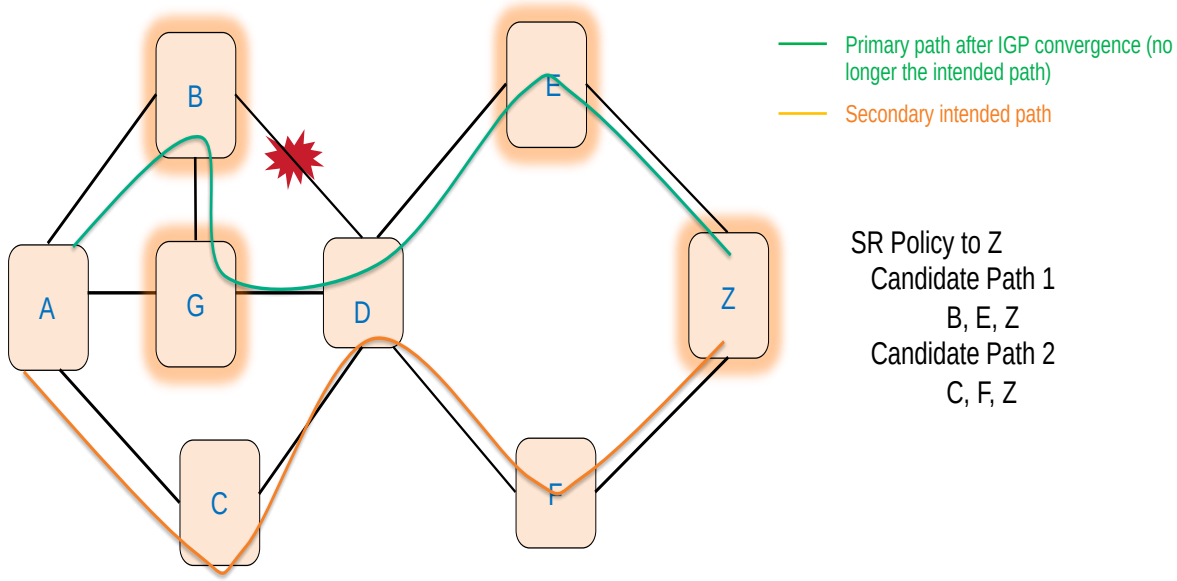
Why Eligibility attribute

- Eligibility represents the preservation of intent
- At the initial creation, the path and its resultant SID are computed to satisfy the original intent (could be using fully specified SID or optimized)
- But intent deviation can occur for various reasons
  - the network topology can change due to failures, link attribute changes (affinity, te-cost etc) which upon sid-list expansion transit through link/nodes that may not meet original intent
  - network characteristics can change like delay etc. that applies to uncompressed sid-list as well
- The sid-list could still be operational and active but intent is not preserved

Example: Link failure



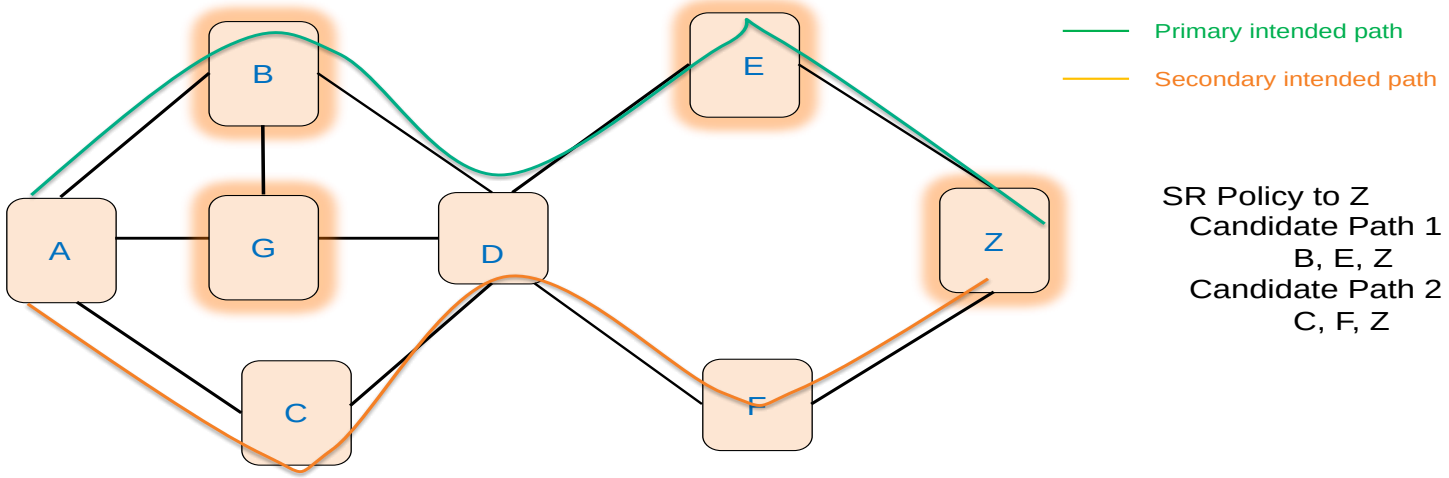
- All link metrics are 10
- All links have sufficient bandwidth for the service except the link G-D



- All link metrics are 10
- All links have sufficient bandwidth for the service except the link G-D

- Here when link between B & D fails, alternate path through node G allows CP1 to remain active.
  - But the intent (like b/w reservation) is not preserved on new path
- Eligibility attribute is set to false as soon as headend detects the failure (e.g. S-BFD failures) and fails over to CP2
- Subsequently, PCE to verifies the intent on newly expanded path and/or wait till B-D link is restored before setting the eligibility to true.
  - This will cause reversion to primary CP1

Example: Delay Sensitive



- All link metrics are 10
- All links have sufficient bandwidth for the service except the link G-D

- Here end-to-end delay is monitored through STAMP
- As and when delay exceeds the expected intent, eligibility attribute of the CP1 is set to false and switch over to CP2 occurs
- Continued delay measurement on CP1 may yield satisfactory intent causing eligibility attribute to be set to true.
  - This is an example of headend setting and resetting of eligibility attribute.
- Reversion can be immediate, with hold-off timer or no reversion based on the user configuration
  - This is an implementation choice

Summary

- There are various other use cases for attribute flag as intent verification
- The attribute is generic and not tied to a specific use case
- Propose to accept this draft as a working group document

- Questions?