

MSRP Redundant Stream Reservation Protocol Proposal

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Aug 2013

tsn-phk-redundant-stream-rsv-0813-v4



Proposal Aims



- Keep a clear separation between reservation and path selection
- Minimize the modifications to the current MSRP reservation protocol
- Rely on Short Path Bridging (801.1Qca) to select the shortest and constrained paths for the streams
- Leave the redundancy scheme and its characteristics as a listener's choice

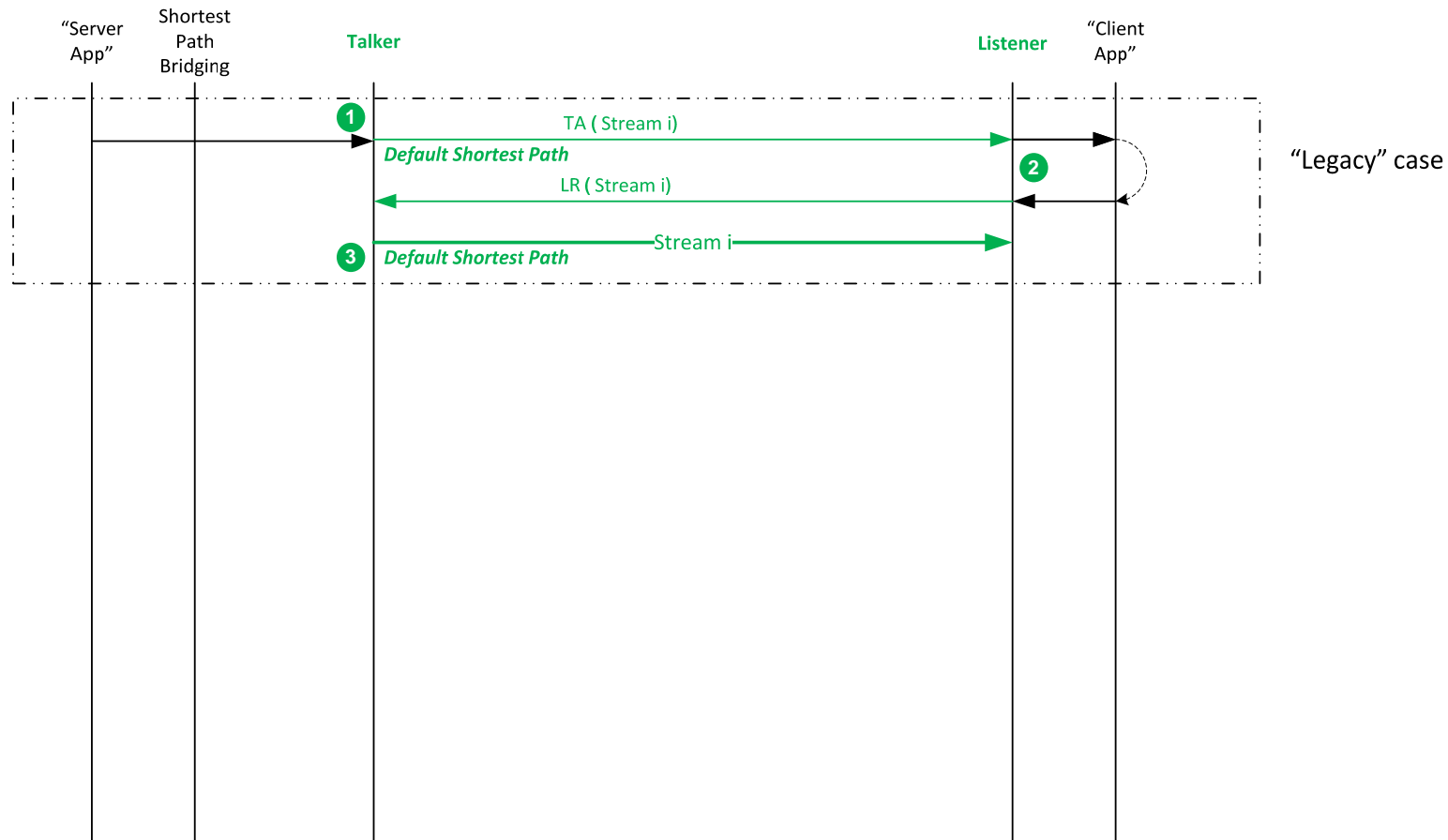
Proposed Scheme



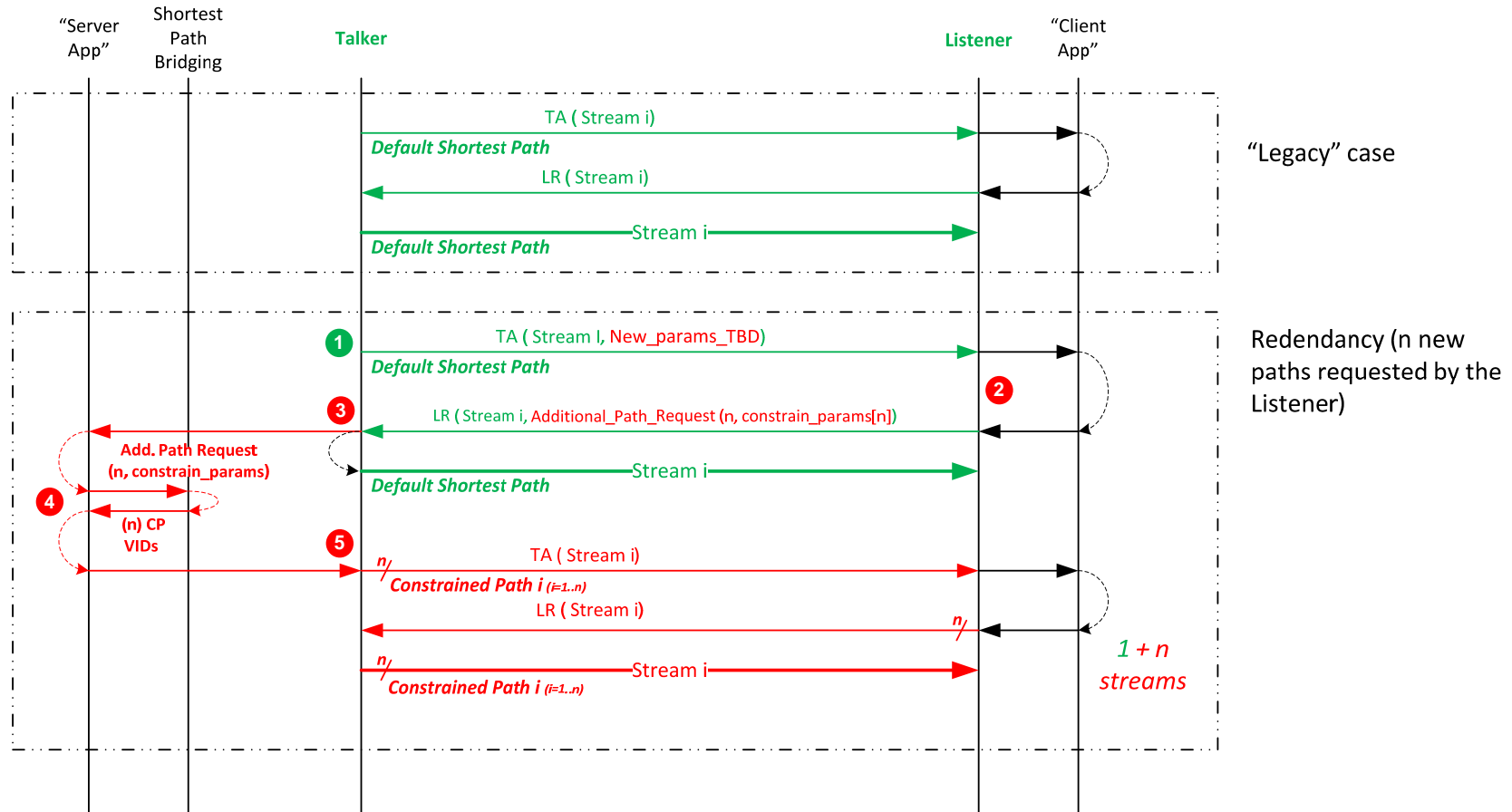
- Extend the Listener Ready message to allow a Listener to request the Talker to advertise the **same stream (same stream ID)** thru alternate paths computed by SPB
- As a result, the redundancy for a given stream could be created.
- *Disclaimer: This proposed scheme does not try to answer the redundant scheme requirements of all the TSN market segments (in particular industrial control & automotive,..)*

The next 3 slides illustrate this proposed scheme

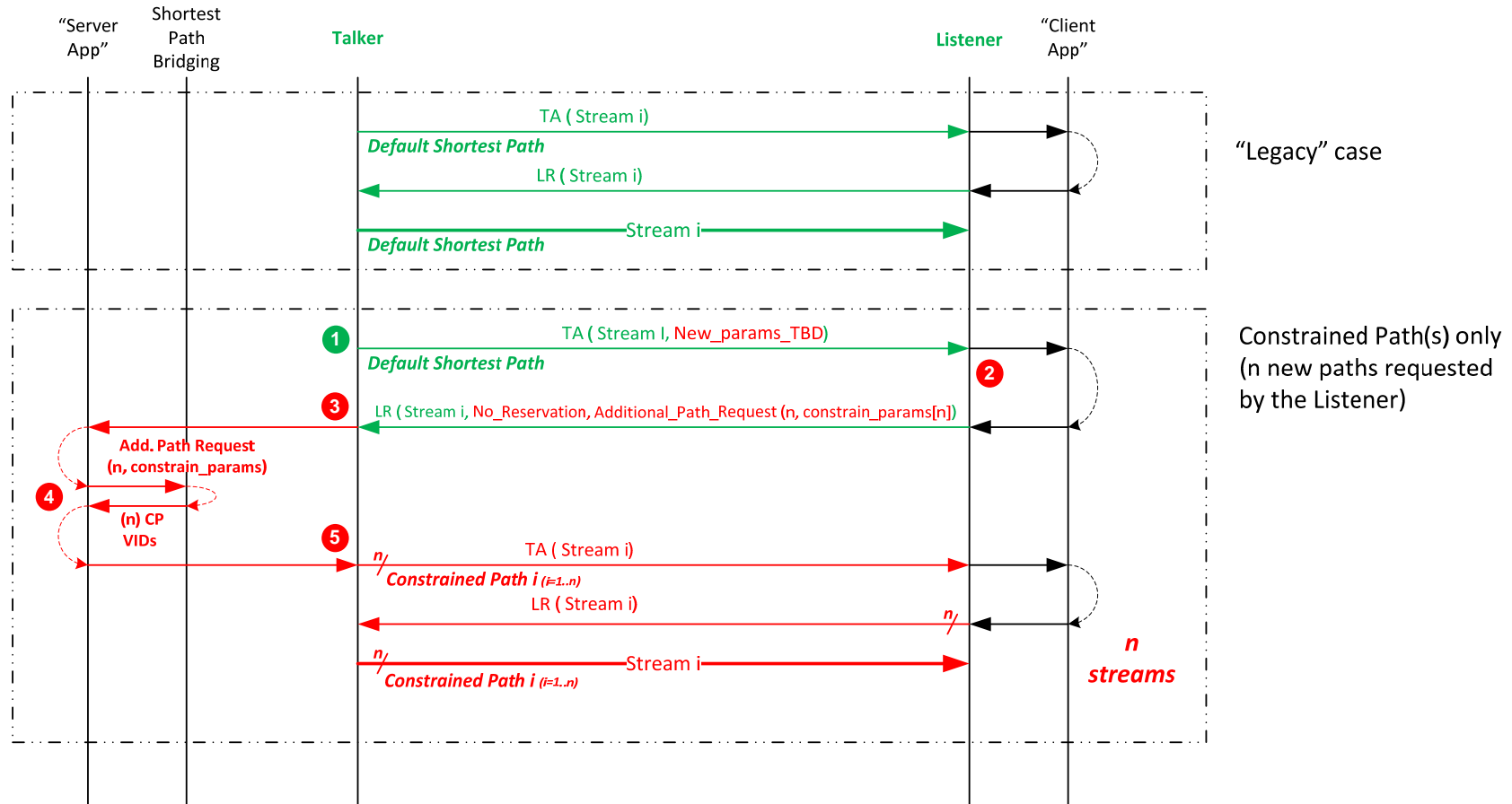
“Legacy” MSRP Stream Reservation



“1+n Redundant” Stream Reservation



“n Constrained” Stream Reservation



- TA: New parameters
 - Redundant path request failure indication (for default shortest path)
 - Others? TBD
- LR (either MSRP, IS-IS or a mixed bag of both ?):

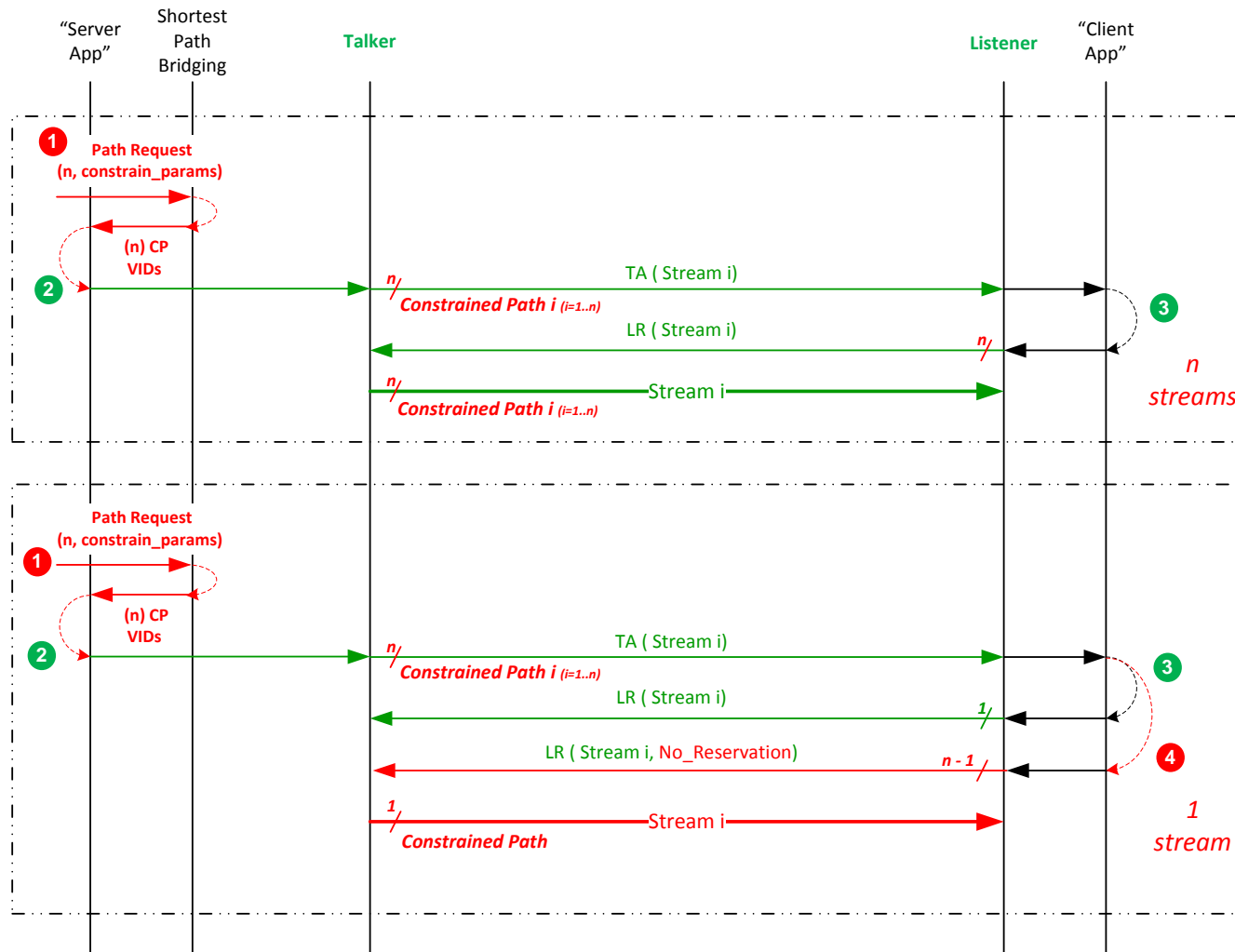
The parameter data structure should support the case where the LRs from multiple listeners for the same stream are merged together

The listener could optionally indicate its constrain parameters for the default shortest path to allow the network resources to be optimized

- Array of Listener IDs
- Per Listener ID:
 - No_Reservation flag (for default shortest path)
 - Constrain parameters for default shortest path
 - Nbr of requested additional paths
 - Per requested path: constrain parameters (TBD)
- Others? TBD

- To avoid re-executing the whole TA/LR request/TA/LR exchange after a path failure, the Listener redundancy requests per Stream_ID could be stored in a Talker DB
 - Details and other alternatives however are subject to further studies
- This Talker DB covers also the case of redundancy initiated by the Talker:
 - Instead of be dynamically populated as a result of the Listener requests, the Talker could request SPB to compute a defined number of redundant paths to each Listener before any TA is transmitted.
 - Listeners could in turn use LRs to notify the Talker of unnecessary redundancies in order to optimize the network resources

Talker's Initiated Redundancy



Pre-defined Redundancy:
(n paths pre-requested by the Talker)

No Redundancy required by the Listener:
n paths pre-requested by the Talker, n-1 paths "released" by the Listener)

Thank You



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