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Limitations of Session Announcement Protocol (SAP)

draft-asaeda-mboned-sap-limitation-00

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Goals

- discuss SAPv2 current uses
- clarify SAPv2 limitations
- inherits some text/ideas from
 - draft-ietf-mboned-session-announcement-req
 - draft-ietf-fecframe-config-signaling-04
- this I-D ***does not*** specify any fix

Use_1: a component of a session discovery mechanism

- *historical use*
- announce all multicast IP sessions (e.g. described with SDP) to all prospective users
 - users then choose to join sessions of interest
- based on:
 - periodical broadcast of all entries
 - soft-state model
 - ⇒ an entry not refreshed eventually disappears

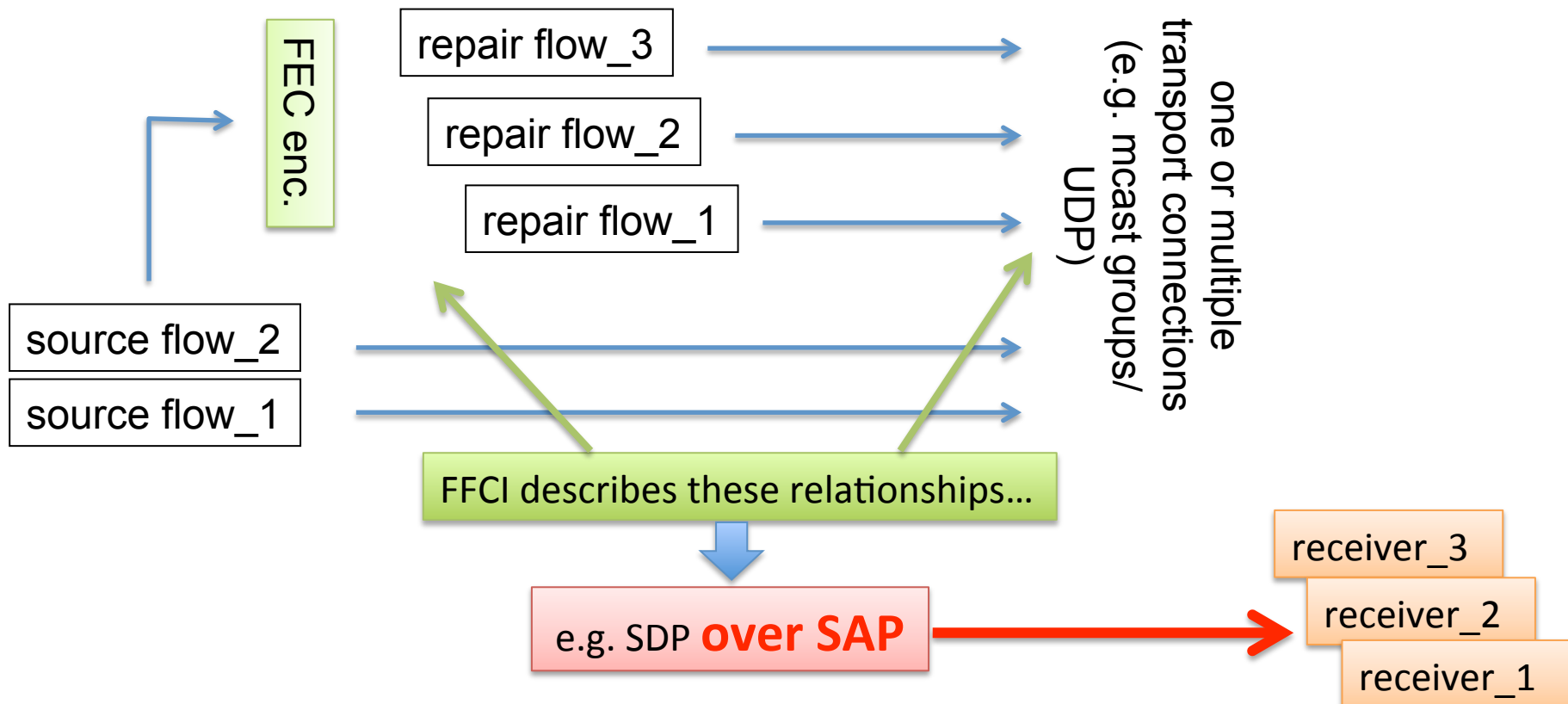
Use_2: a component of a config. information transport mechanism

- ***different*** assumptions
 - limited number of multicast sessions (e.g., only 1) that the receivers already joined
 - receivers obtained the content description through another mechanism and decided to join
 - receivers need to collect additional information pertaining to the flows carried in the session(s)
 - no in-band mechanism defined to that purpose
- SAP is a convenient solution:
 - simple, scalable (no per-receiver state), on-the-shelf

Use_2 example: FFCI (FEC Framework Config. Information)

Asati, R., "Methods to convey FEC Framework Configuration Information", draft-ietf-fecframe-config-signaling-04, Jan. 2011

- FFCI transport to multiple receivers



SAP limitations: **announcement interval vs. latency**

- **use_1:**
 - the flooding approach causes either major overheads or large latency
 - specifies an algorithm and a minimum 200s period
- **use_2:**
 - the 200s period is totally inappropriate given the small number of configuration entries. Small values preferred
 - even if interval is adjusted, there is no way to communicate interval to receiver (no header field)
 - only solution is to include interval into payload but the solution becomes content dependent!

SAP limitations: **scope management**

- ttl scoping has limits
 - hard to control
 - sender needs topology awareness
- administrative scoping improves things, however
 - hard to make complex scoping areas
 - in IPv4 SSM address range is not compatible with administrative scoping (can be solved though)

SAP limitations: **ASM dependency**

- any SAP instance may send announcements to the same SAP multicast group
 - incompatible with SSM

SAP limitations: **lack of sender and receiver control**

- sender control:
 - impossible to only allow approved senders to send announcements
 - impossible to make non-approved senders stop sending announcements
- receiver control:
 - a flooding approach makes it hard to prevent receivers within scope to receive/process announcements
 - encryption adds complexity...

Next steps

- WG item document?