Ringlet selection and pruning rules

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Objectives

- Provide a list of rules that can govern ringlet selection and SDB pruning procedures, when interacting with SAS

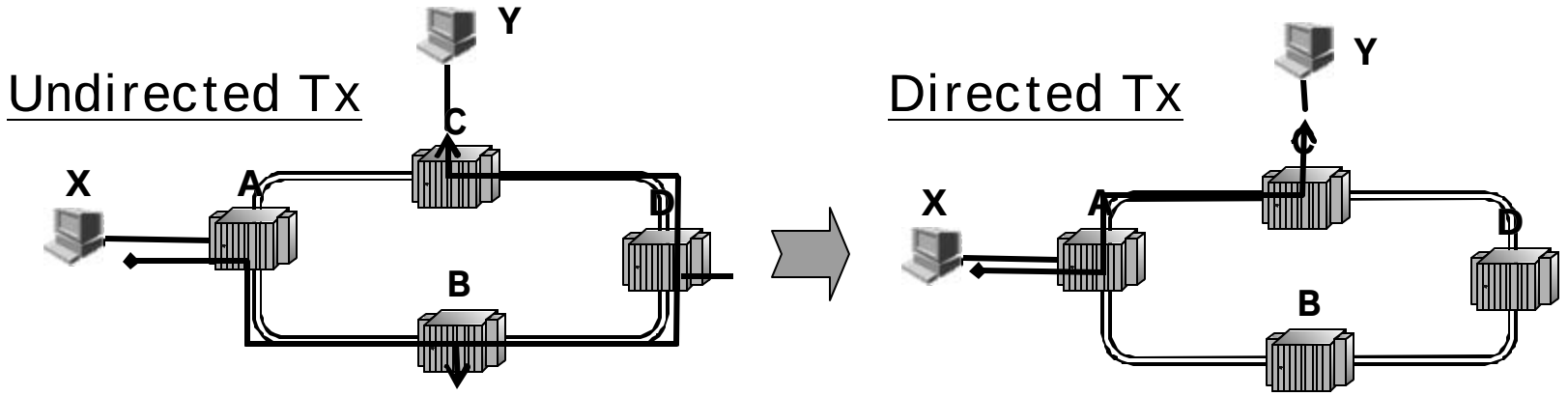
Packet flow anomalies introduced by SAS

- For a given ringlet selection algorithm (e.g., smallest hop count to destination), an undirected transmission followed by a directed transmission may result in frame re-ordering

Note: It is assumed that the cleave point determination is derived by the ringlet selection algorithm for bi-directional flooding.

Reorder scenario

- When moving from an undirected (via uni-directional flood) to directed Tx, the ringlet selected by the undirected Tx may differs from the directed Tx



- Reordering of frames may occur (at station C)

Undirected to/from directed Tx

- Frame reorder may be introduced by SAS if the ringlet selected by the undirected Tx differs from the directed Tx
- Frame reorder is not introduced by SAS if
  a) The ringlet selected by the undirected Tx is the same as the ringlet selected for the directed Tx, or
  b) The ringlet selected by the undirected Tx differs from the directed Tx, and directed Tx frames are not transmitted onto the ring until the undirected Tx frames are drained from the ring

Note: The reorder scenarios is also applicable to directed to undirected Tx (especially in the event of an entry timeout).

Network topology change handling

- SAS will flush SDB when a MA_CONTROL request primitive is generated indicating network topology change

Compliance rules

Mode	Undirected to/from directed Tx	Ring condition	SAS operation	Flush ring traffic
Strict	(a) or (b)	• Station reachable – Tx ringlet unchanged – Tx ringlet changed	• No Action	Yes via context containment (c)
		• Station unreachable	• Flush SDB	
Relaxed		• Station reachable –Tx ringlet unchanged –Tx ringlet changed	• No Action	No
		• Station unreachable	• Flush SDB	
Permissive	No special action	• Station reachable –Tx ringlet unchanged –Tx ringlet changed	• No Action	
		• Station unreachable	• Flush SDB	

(a) The ringlet selected by the undirected Tx is the same as the ringlet selected for the directed Tx.

(b) The ringlet selected by the undirected Tx differs from the directed Tx, and directed Tx frames are not transmitted onto the ring until the undirected Tx frames are drained from the ring.

(c) Wrapping systems don't need to perform context containment upon ring failure. Wrapping systems does require context containment on opposite ringlet upon healing of the ring. Steering systems would perform context containment upon ring failure and heal.