

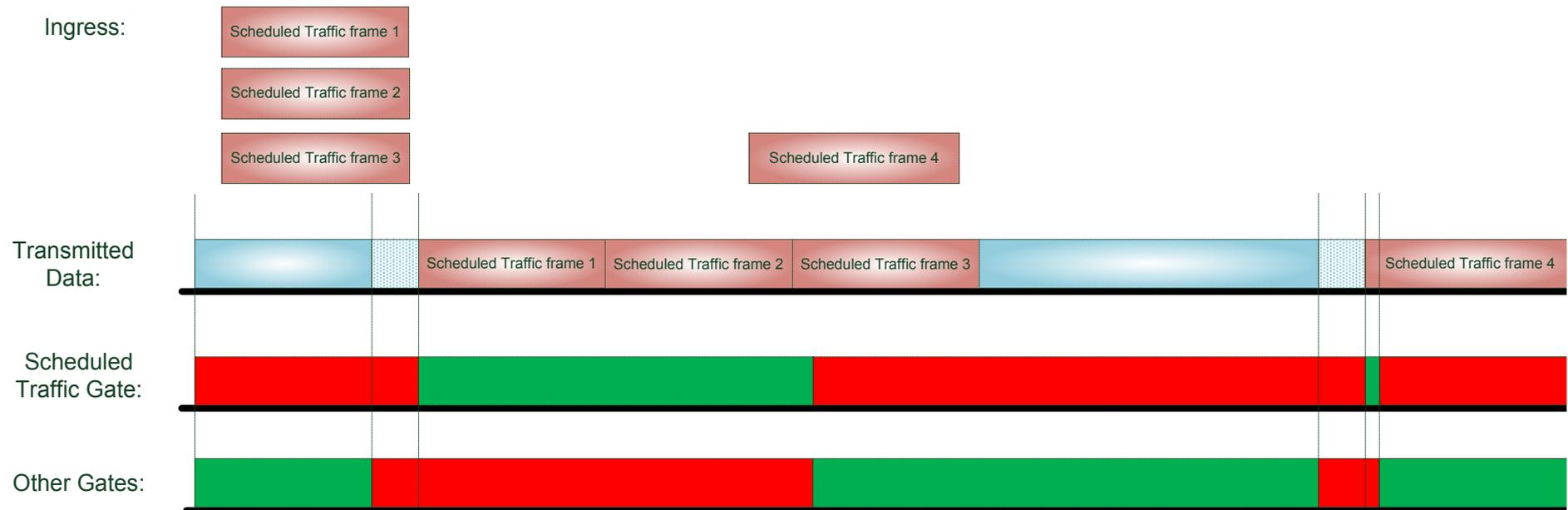
Time Aware Shaper - Flush Queue Event

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Many Operation Modes

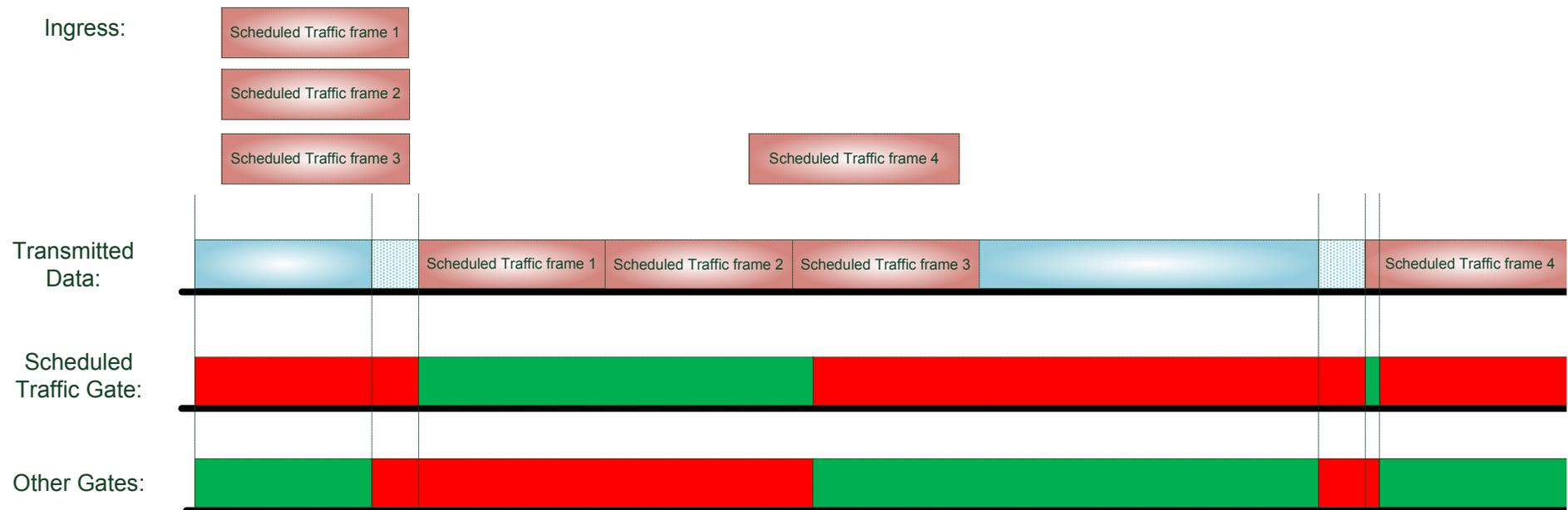
- The TAS specification is not defining how the TAS is used
- This allows applications with different requirements to use the mechanism in different ways
- But this makes this makes failure diagnosis in bridges and fault recovery quite complicated
- A bridge does not know if a certain state, e.g. a non empty Scheduled Traffic queue after a gate close event of the Scheduled Traffic gate, is intended

Example (1)



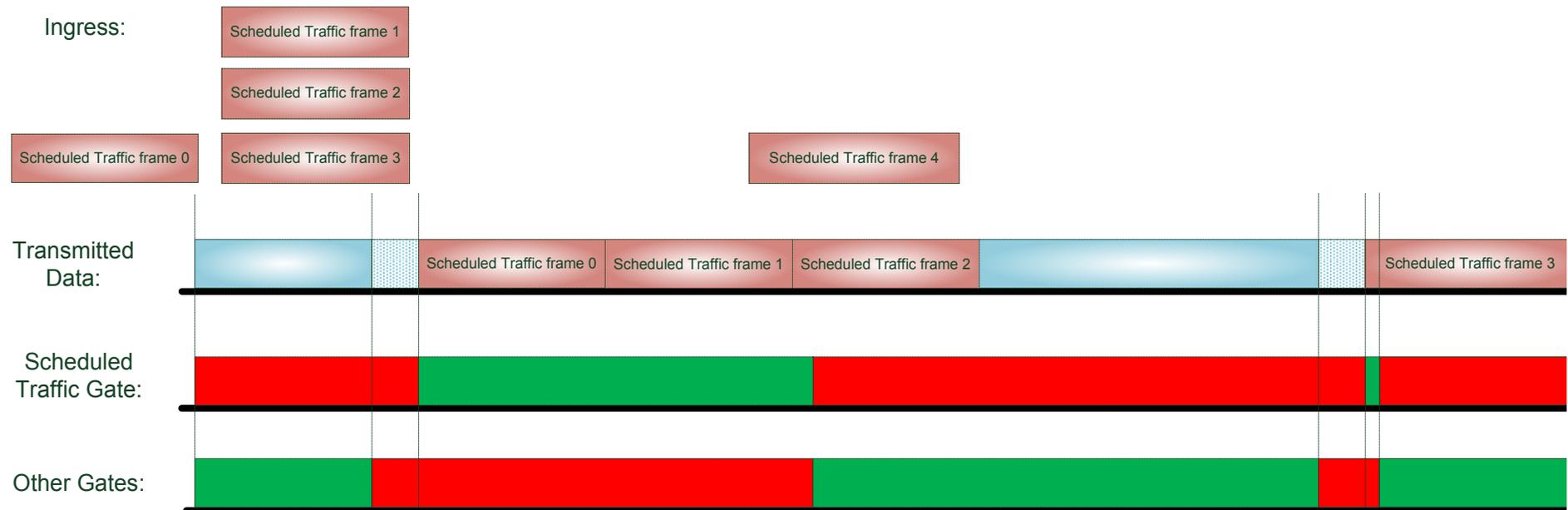
- This example is obviously not engineered for lowest latency, but the topology of the network or the application (e.g. second window has a higher transmission period) might require this schedule.
- In this case the high priority queue is not empty after the first transmission window
- How to distinguish this from a permanent queue delay?

Example (2)



- In this example the queue should be empty after the second window
- But the bridge does not have this knowledge

Error Case



- In this error case a frame 0 is in the queue (fault)
- After such an error the network would not recover
- The failure diagnosis might be quite complicated

We need some recovery and failure diagnosis capabilities

Queue Flush Event

- We have currently two type of events
 - Gate events
 - Repeat event

- With a new type of event we can make bridges aware of the time when the Scheduled Traffic queue should be empty

- A Flush Queue event empties the queue if there is anything in the queue and increases a error counter if there was something in the queue

Advantages

- This new event would help to recover from a failure and simplify the failure diagnosis
- If there was only a single failure the bridge would recover from this failure after the Flush Queue event
- If there is a mistake in the schedule (i.e. the failure occurs constantly) the error counter would help to identify the bridge in the network whose schedule does not fit to the ingress traffic pattern

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- If there is a mistake in the schedule (i.e. the error counter is constantly increasing) the error counter would help to identify the bridge in the network whose schedule does not fit to the ingress traffic pattern
- Should we add such a feature to the current draft?

Thank You