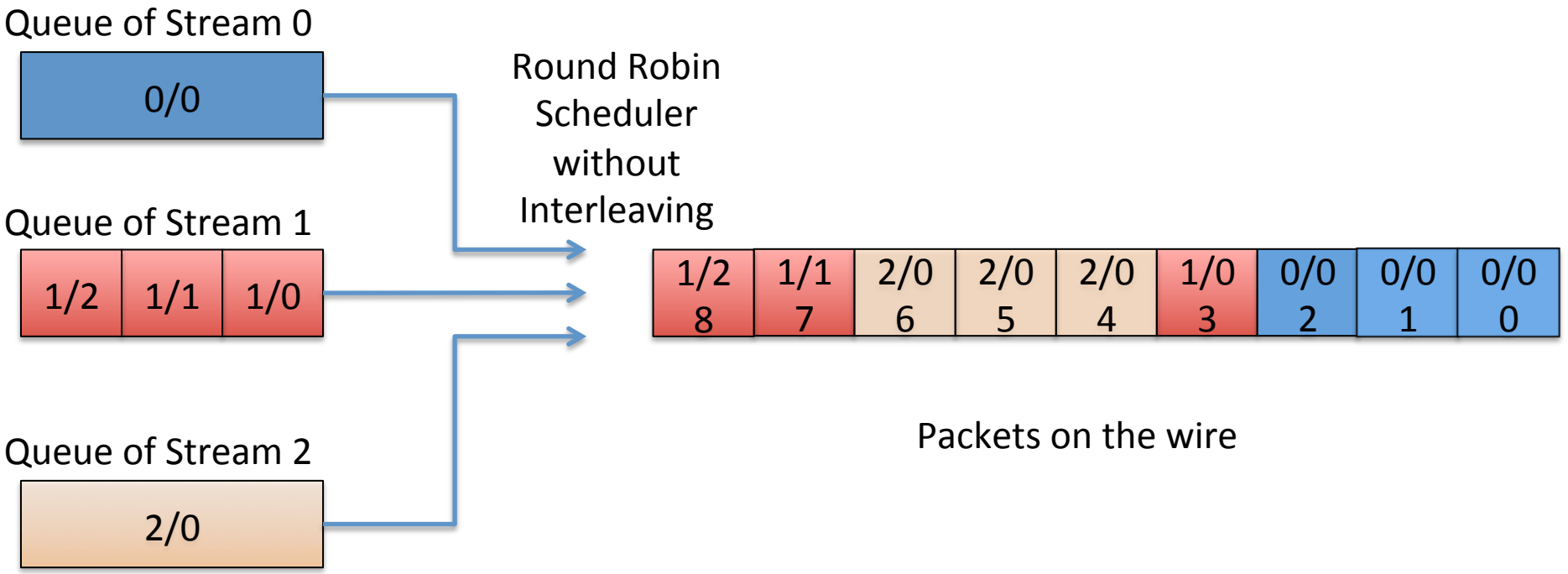
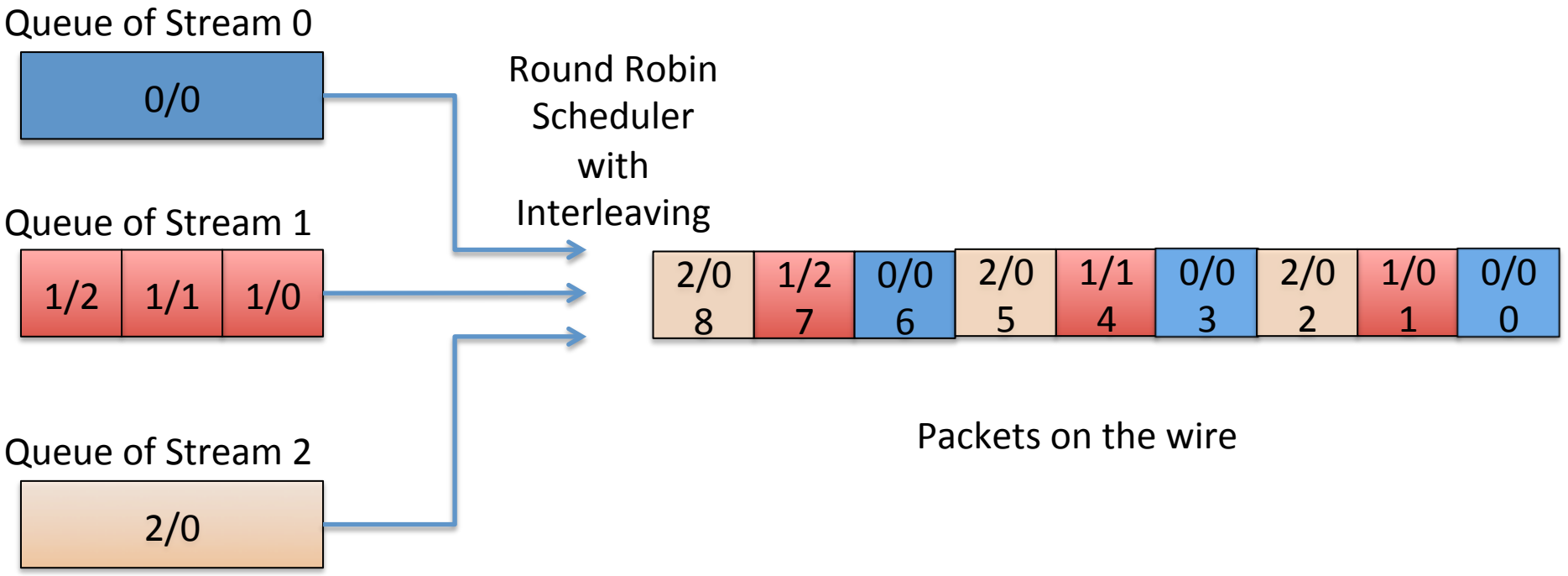
Message Interleaving for SCTP

Randall Stewart (randall@lakerest.net)
Michael Tüxen (tuexen@fh-muenster.de)

Sender Side Head of Line Blocking



With Interleaving Support



draft-stewart-tsvwg-sctp-ndata

- SCTP currently focuses on small user messages.
- SCTP minimizes receiver side head of line blocking, but the sender can't interleave messages from different streams.
- This extension allows interleaving traffic from multiple streams at the sender by using an explicit additional sequence number for reassembly. A new DATA chunk (NDATA) is used.
- Support of the extension is negotiated during association setup.
- Stream schedulers are crucial here, so draft-tuexen-tsvwg-sctp-scheduling has been merged.
- Used by RTCWeb for data channels.

Why not do it in the upper layer?

- If all messages are reliable, the application can do fragmentation and reassembly and use a PPID for signaling message boundaries. Just a duplication of code within each application.
- Supporting partial reliability gets really hard since the internal protocol state and procedures for PR-SCTP are not exposed to the application. It also gets inefficient for the network (sending of useless packets).

Status

- Socket API considerations need some work.
- Currently being implemented.
- Comments are very welcome.
- Ready for WG adoption?