**AeroTP: Aeronautical Transport Protocol**

- Adaptive transport protocol
  - efficient flow setup: data overlaps control
  - multiple reliability modes
    - reliable: end-to-end segment ACKs
    - near-reliable: split ARQ using AeroGW custody transfer
    - quasi-reliable: erasure coding; sequential or multipath
    - none (connection): best effort over FECed links
    - none (datagram): stateless best effort for UDP
- TCP-friendly
  - splices with conventional TCP via AeroGW
  - uses ports, seq#, timestamp, & flags from TCP

**AeroRP: Aeronautical Routing Protocol**

- Phase 1: neighbor discovery
  - active snooping to determine node presence
    - network protocol header carries node GPS location
  - periodic hello beacons from idle nodes
  - ground station updates based on mission planning
- Phase 2: data forwarding
  - hop-by-hop forwarding towards destination
  - forwarding mode dependent on security requirements
    - open: location and trajectory data embedded in xmits
    - partial: GS broadcast state vectors
    - secure: route based on incidental contact information

**Reliability Modes**

- **Conn. Setup**:
  - Reliable: end-to-end segment ACKs
  - Near-reliable: split ARQ using AeroGW custody transfer
  - Quasi-reliable: erasure coding; sequential or multipath
  - None: best effort over FECed links
- **None**
  - Stateless best effort for UDP

**Routing Simulation Results**

- Performance at Mach 0.3 – Mach 3.5
- Overhead at Mach 0.3 – Mach 3.5
- Overhead at Mach 3.5

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