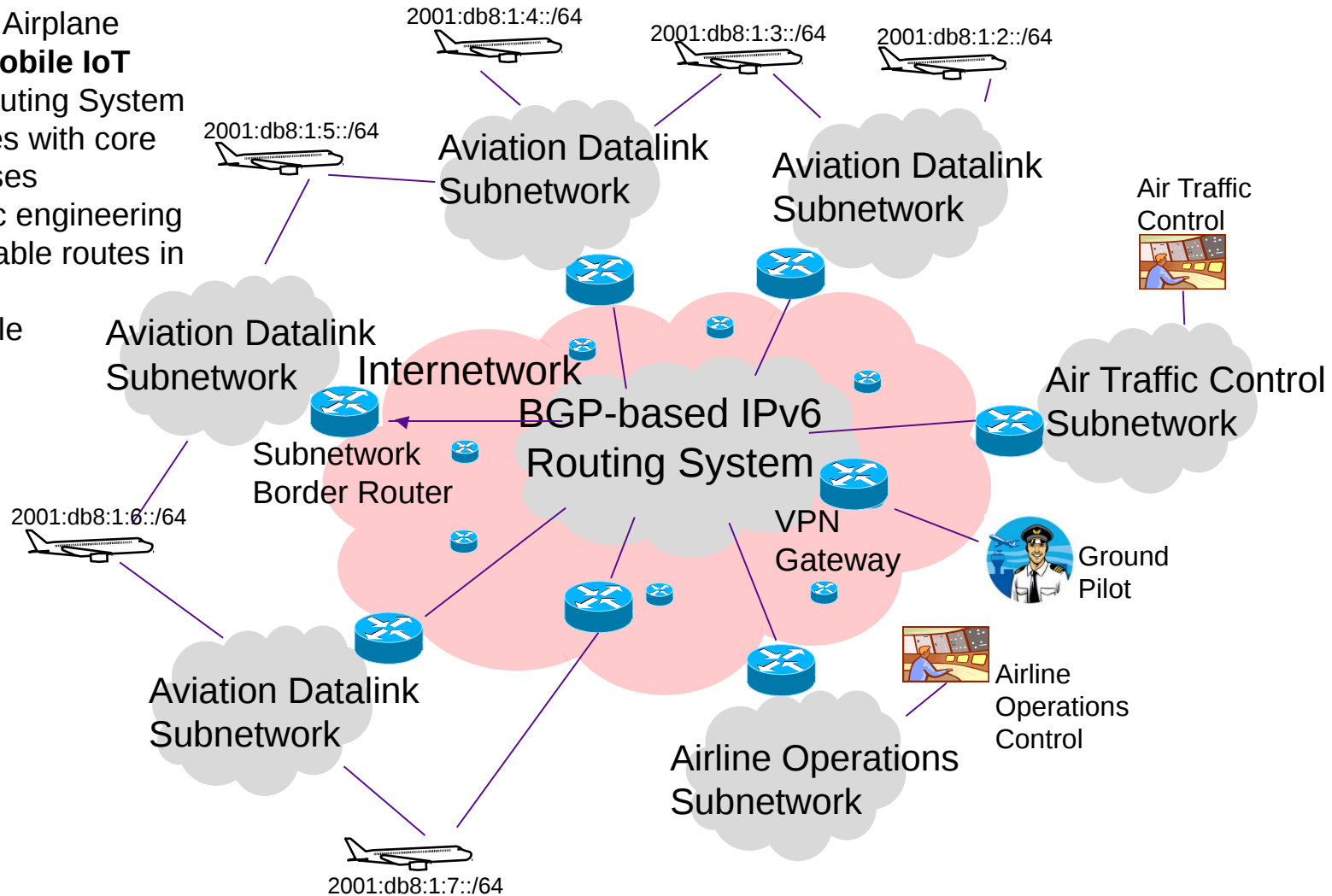# A Simple BGP-based Mobile Routing System for the Aeronautical Telecommunications Network (draft-templin-atn-bgp-06.txt)

- IPv6 Prefix per Airplane
- Airplane is a **mobile IoT**
- BGP-based Routing System
- Hub-and-spokes with core AS and stub Ases
- Mobbility; traffic engineering in the stubs; stable routes in the core
- Multilink-capable

2001:db8:1:4::/64

2001:db8:1:3::/64

2001:db8:1:2::/64

2001:db8:1:5::/64

Aviation Datalink Subnetwork

Aviation Datalink Subnetwork

Air Traffic Control

Aviation Datalink Subnetwork

Internetwork

BGP-based IPv6 Routing System

Air Traffic Control Subnetwork

Subnetwork Border Router

2001:db8:1:6::/64

VPN Gateway

Ground Pilot

Aviation Datalink Subnetwork

Airline Operations Control

Airline Operations Subnetwork

2001:db8:1:7::/64

AERO IPv6 Mobile Networking Services

- Airplane is a Mobile IPv6 Network
- Could have millions of addressable IoT entities on-board
- Connects via multiple available data links (SATCOM, LDACS, AeroMACS, 4G/5G, etc.)
- Traffic engineering for inbound and outbound data link selection (e.g., CPDLC over VHF, Voice/Video over SATCOM, etc.)
- Can use multiple links simultaneously; replicate traffic across multiple links for fault tolerance
- MOST IMPORTANTLY:
  - Airplane can always be tracked by IPv6 prefix
  - communications sessions survive mobility and data link handovers
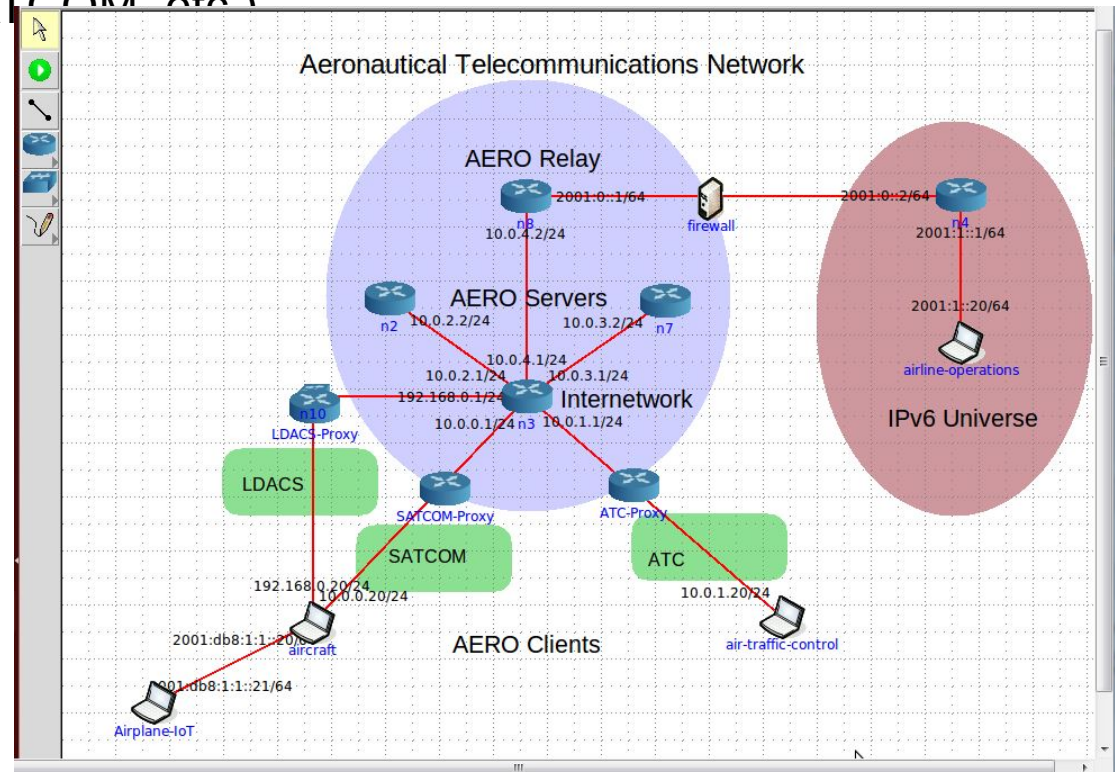
New Since Last Version

- AERO Proxy
  - Data link subnetwork border router
  - Acts the same as for an enterprise network web proxy
  - Inside the subnetwork, the Client (airplane) interacts with the Proxy in the same way it would interact with the Server
  - Outside the subnetwork, the Server interacts with the Proxy in the same way it would interact with the Client
  - IPv6 Neighbor Discovery control messages are proxied in the manner suggested in RFC4861