

International Transport of System Wide Information Management (SWIM) Data

ATNICG/5-IP/9
(Revised)

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**Federal Aviation
Administration**



Topics

- **ATSMHS Extended Services**
- **AMHS Network Infrastructure**
- **SWIM**
- **FAA SWIM Segment 1 Technical Architecture**
- **How to Proceed with AMHS**
- **Web Services over the ATN**
 - **Use Global ATN/IPS**
 - **Web Services over AMHS**
- **Recommendation for Proceeding with AMHS**



ATSMHS Extended Services

The *ATS Message Handling Service (ATSMHS)* as defined by ICAO provides two levels of service:

Basic ATS Message Service provides a nominal capability equivalent from a user perspective to those provided by AFTN.

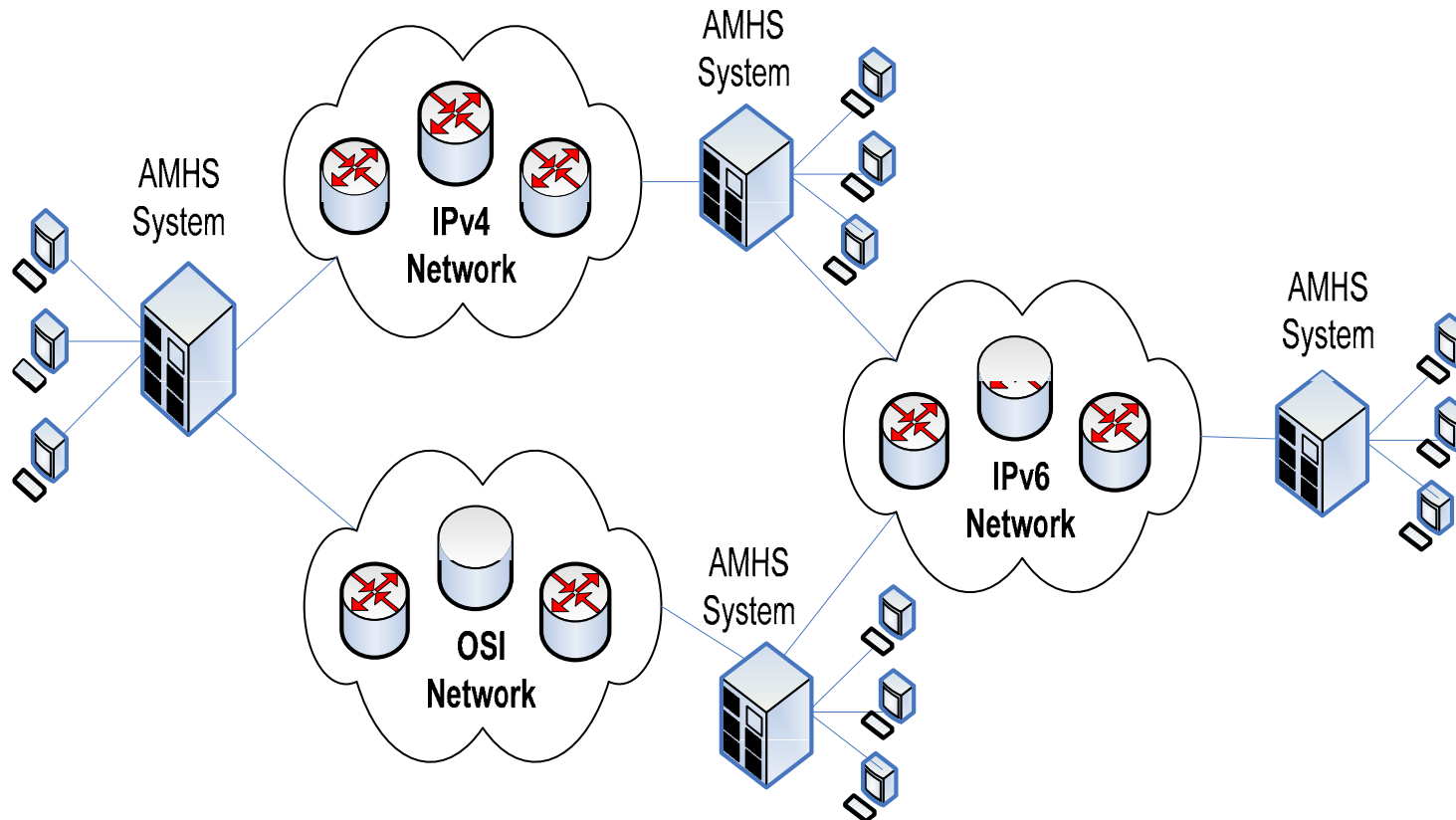
Extended ATS Message Service provides enhanced features such as supporting transfer of more complex message structures (body parts), use of the directory service, and support for security.

Implementation Status

Appears only ATS message service being used.

Are there any concrete plans for extended services?

AMHS Network Infrastructure



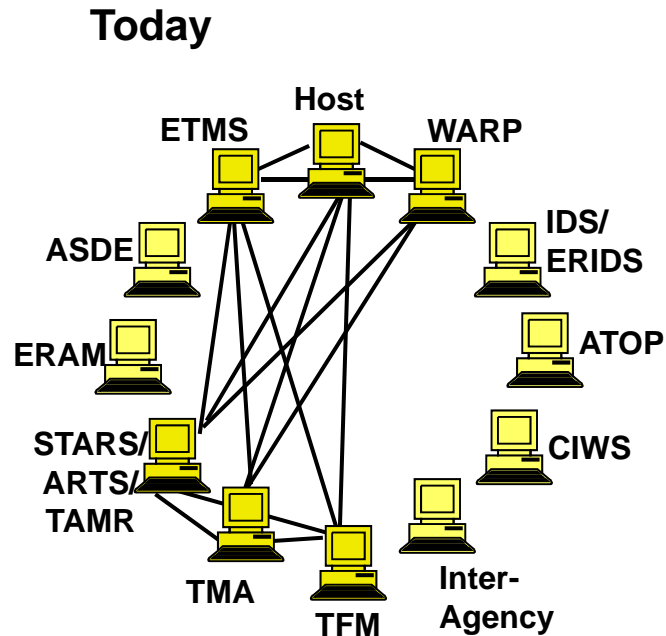
System Wide Information Management (SWIM)

SWIM will:

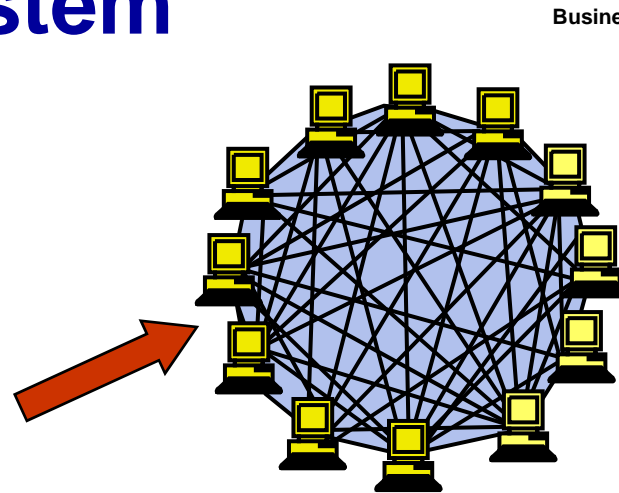
- Implement a Service-Oriented Architecture (SOA) in the NAS
- Lower information costs
- Increase speed to establish new interfaces
- Increase common situational awareness
- Increase NAS agility



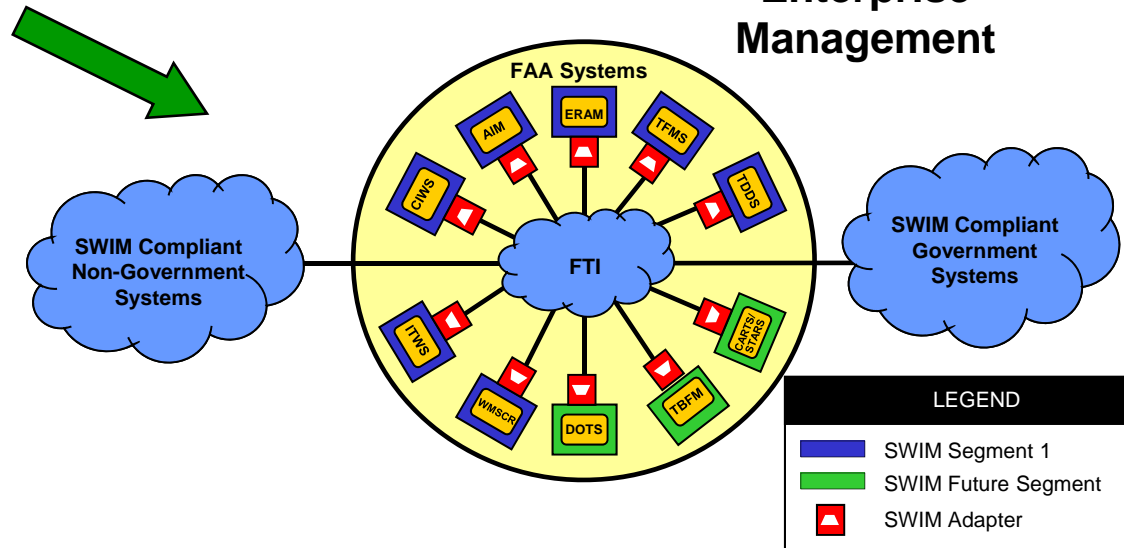
State of the System



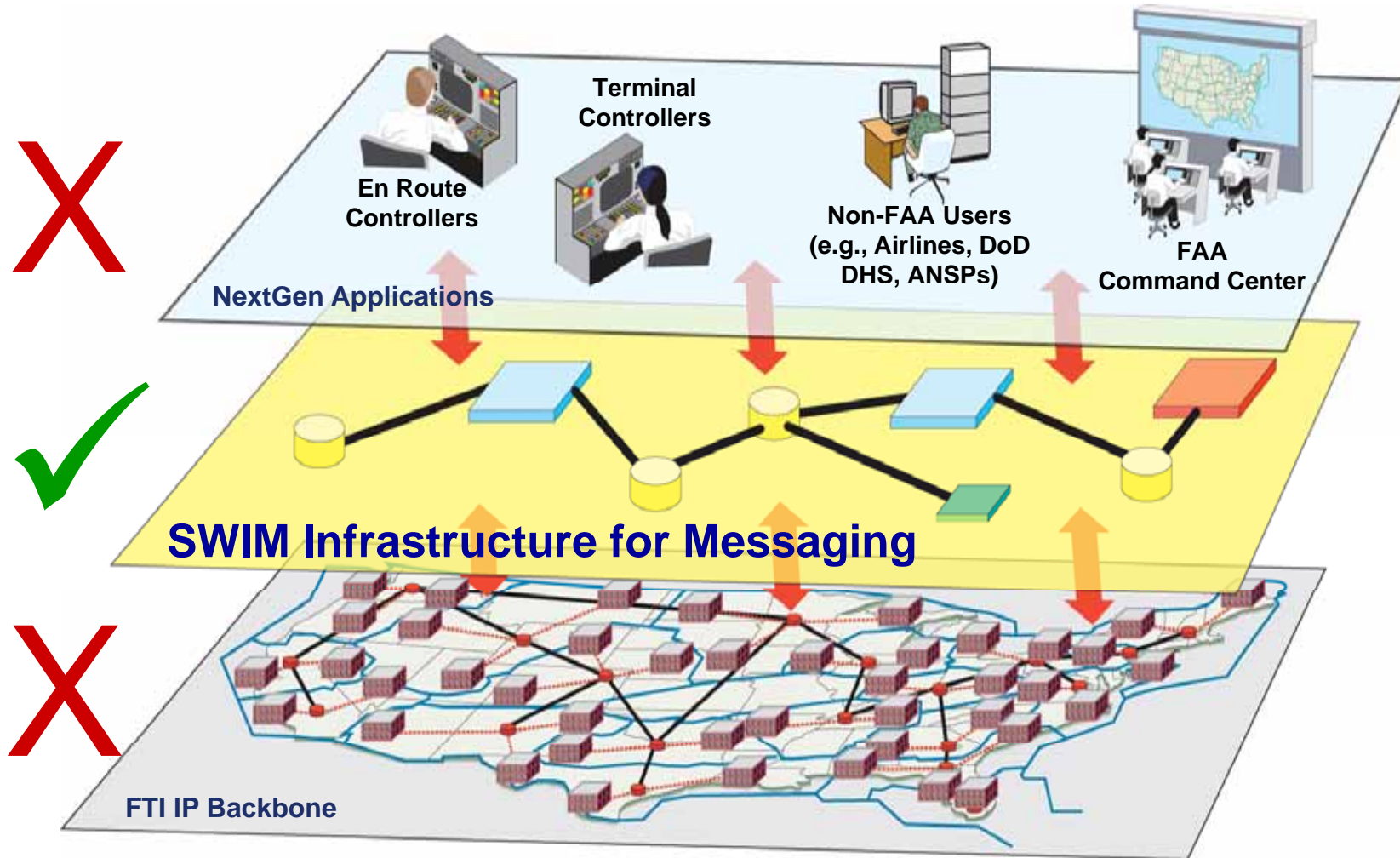
- Existing point-to-point hardwired NAS
- Unique interfaces, custom designs



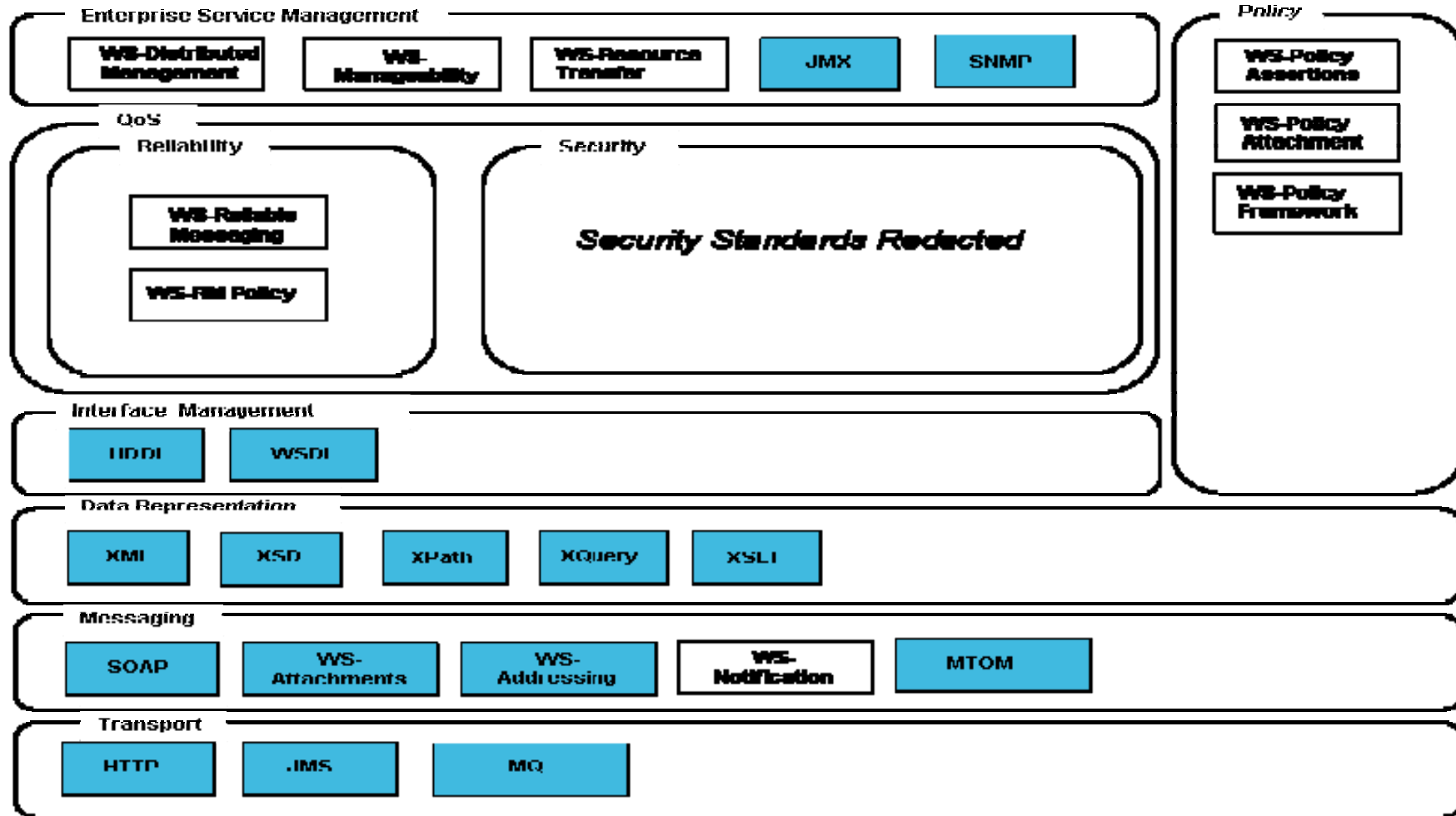
- More point-to-point unique interfaces
- Costly development, test, maintenance, CM
- New decisions linked to old data constructs
- Cumbersome data access outside the NAS



Conceptual Overview



FAA SWIM Segment 1 Technical Architecture



 SWIM Segment 1 Standards

How to Proceed with AMHS

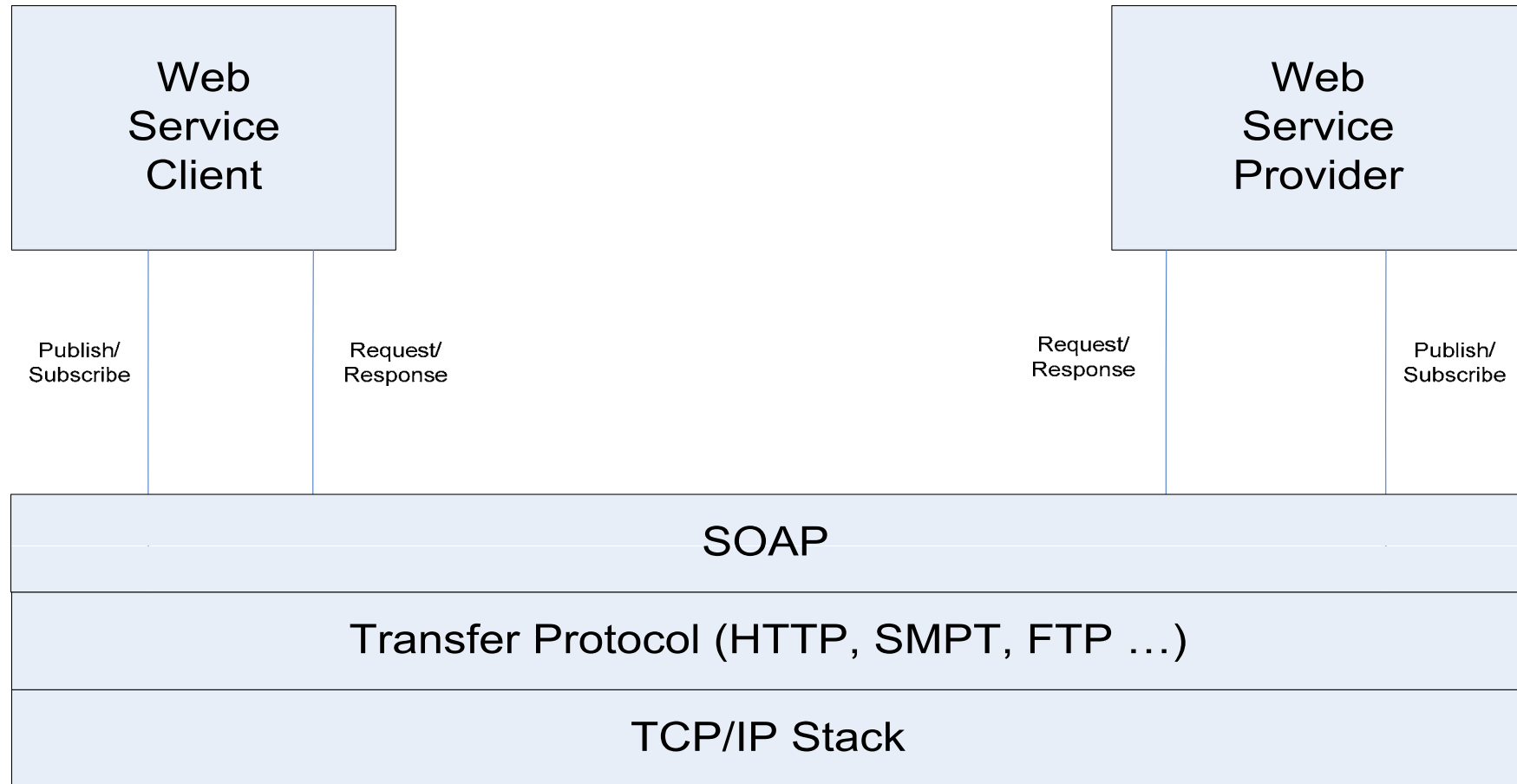
- Given that,
 - AMHS extended services have not yet been implemented
 - That SWIM is gaining momentum
- How should we proceed with AMHS?
 - As planned to eventually carry binary data (e.g. BUFR coded Met data), or
 - Adapt AMHS to carry SWIM on an international basis



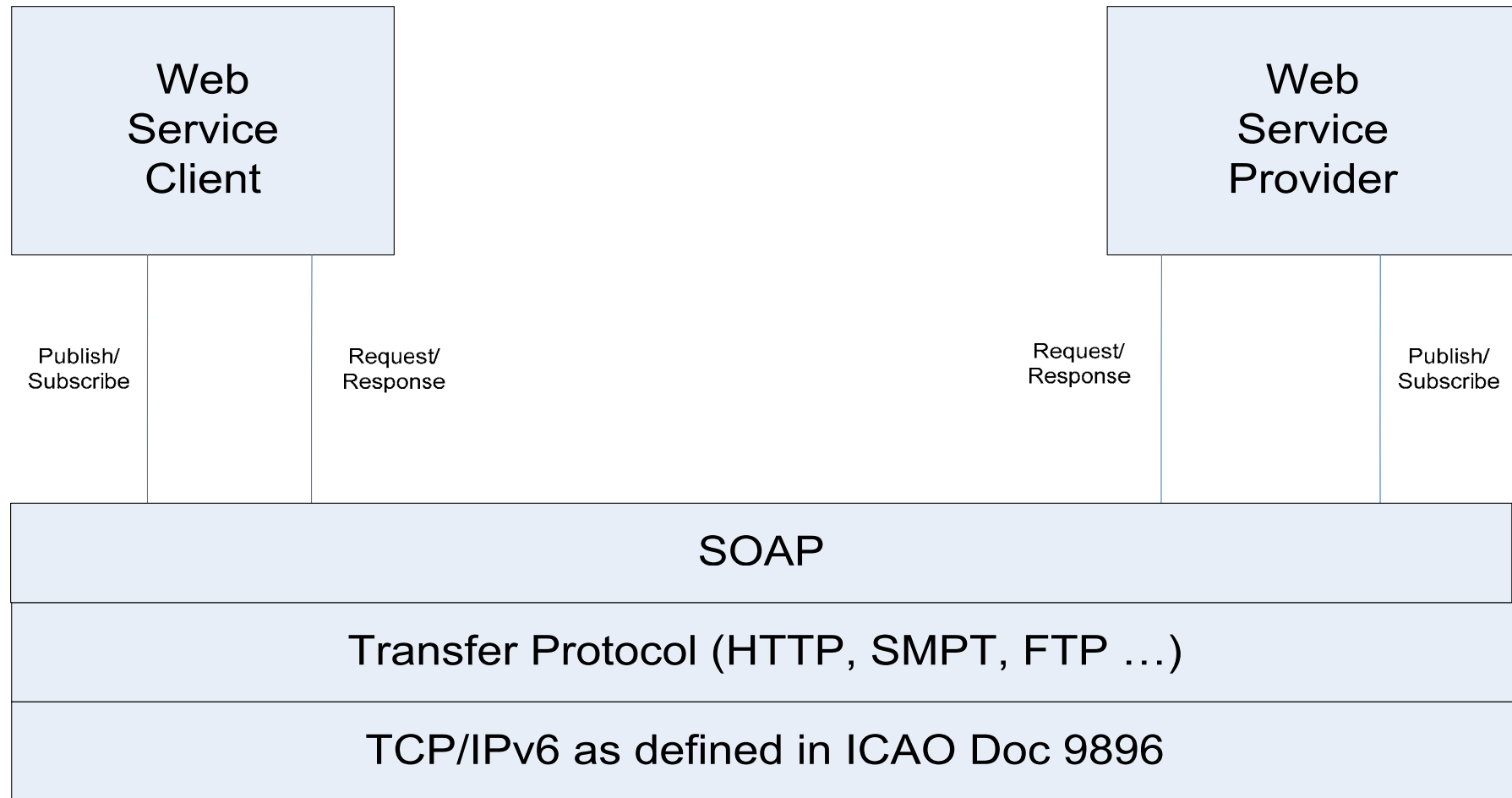
Web Services over the ATN

- Discussion item: How to carry Web Services over the ATN
 1. Use ICAO ATN/IPS Global IPv6 Network
 - Would enable use of standard bindings such (HTTP, SMTP, FTP...)
 - But is not available globally in near term
 2. Adapt AMHS to carry SWIM data
 - Would define a binding of SOAP over AMHS (X.400)
 - Similar to SOAP over SMTP

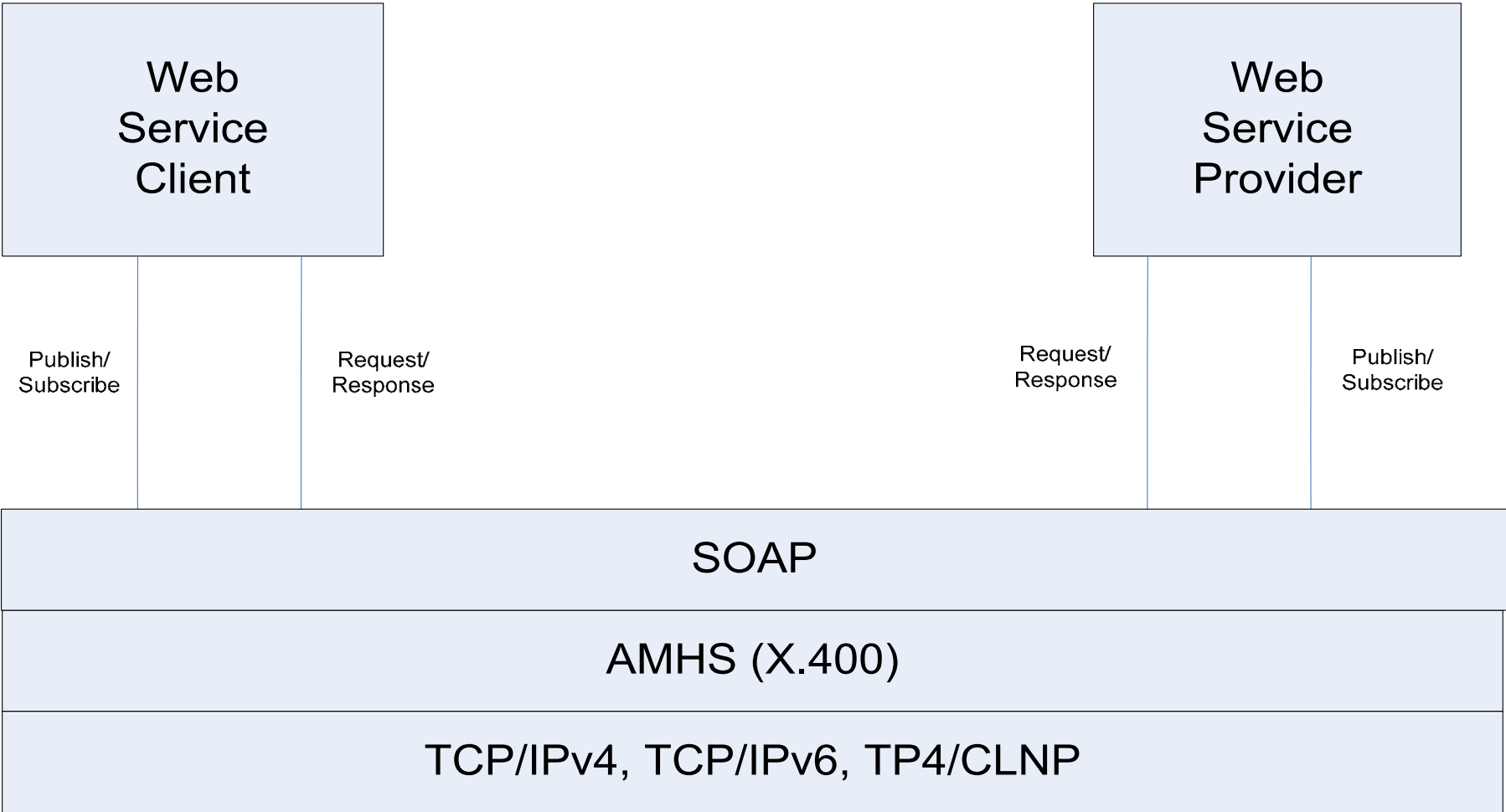
Typical Web Services Communications



Option 1 Use Global ATN/IPS



Option 2 Web Services over AMHS



Recommendation for AMHS

- How should we proceed with AMHS?
 - Begin investigation on how to adapt AMHS to carry SWIM on an international basis

