IMP – Information Architecture (WG-I)

Update

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Architecture Activities

AIRM

Controlled Vocabulary

AIXM CCB

SARPs Inventory

Technical Infrastructure

SARPs

Guidance

AIRM

WG Services

WG Governance

SARPs Inventory

SARPS inventory

(an early IMP activity)

- **Findings**
  - Many different verbs used for +- same thing
  - Suggestions for 'ICAO – Guide to drafting of SARPs & PANS
  - First idea of all existing '*information service*' related provisions
  - Ontology -> Semantic technology

AIRM

ATM Information Reference Model

- **AIRM is not**
  - × A database
  - × An application
  - × An exchange model

- **AIRM is**
  - + Reference material (say building blocks) for all these
  - + Based on ICAO SARPs

- **Progressive build-up**
  - – Alpha – Nov 2016, Beta – Nov 2017, V1 – Nov 2018

Controlled Vocabulary

(Dictionary)

Service	A mechanism to enable access to one or more capabilities using a prescribed interface.
Information Service	A type of service that provides an ATM business information sharing capability.
Service Overview	The information about a service enabling service discovery and initial evaluation.
SWIM Service Registry	A directory containing entries with the information necessary to discover and access services.
Loose-coupling	Definition: A characteristic of software systems, in which dependencies among a system's constituting parts have been minimized.
Reference Model	Definition: An abstract framework for understanding significant relationships among the entities of some environment.

AIXM CCB

AIXM CCB reporting

- **XMs are getting more and more popular**
- **Price of fame ☺**
- **Some reported issues**
  - AIXM specific - Vendor related interoperability
  - XM generic – Overlap / Duplication
  - Need for more business rules

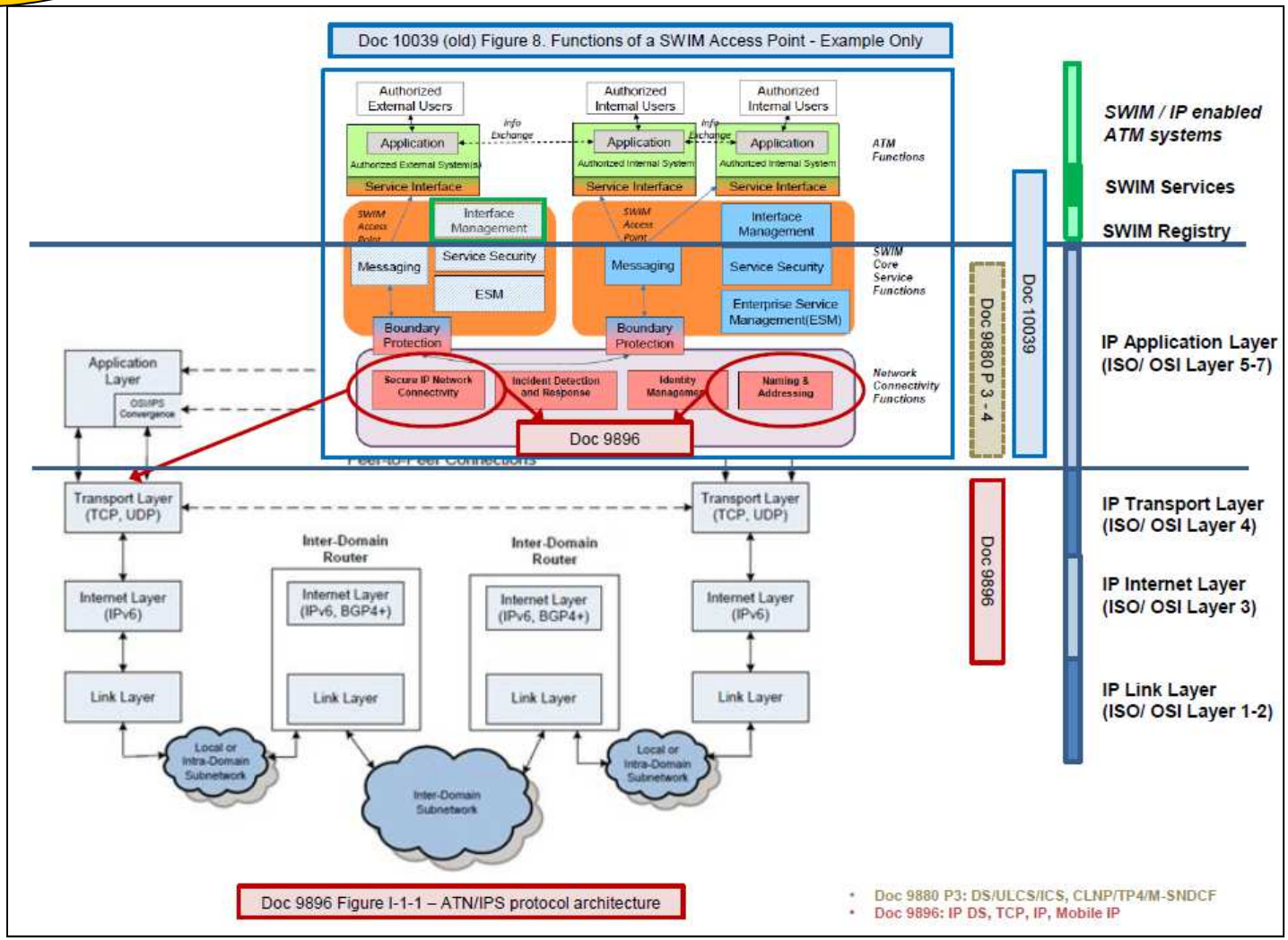
Formalising XM – ICAO relationship

FIXM via ATMRPP, iWXXM via METP & WMO, AIXM via IMP

Your first port of call : XM CCB

Technical Infrastructure

TI – Problem statement



SARPs

SWIM SARPs

Very early days !!!

Definitions = Controlled Vocabulary = Terminology

Governance

- How to publish Information Services Usage & Principles
- An ICAO registry ? General registry provisions ?

Information

- SWIM information AIRM referenceable
- If/When information is exchanged via SWIM services, the information shall be exchanged via global interoperable models ?
- Global interoperable models shall/should adhere to following characteristics … ?

Services

- SWIM exchanges shall be done via information services / SOA
- Information Services Description template
- Minimum list of ICAO prescribed services ?
- Service Quality characteristics incl validation

Technical Infrastructure

- Performance based COTS / Open standards … approach
- Techno profiles at max as guidance or a XM-style industry driven approach ?

Guidance

SWIM Manual

Manual on SWIM (Doc 10039)


SYSTEM WIDE INFORMATION MANAGEMENT (SWIM) CONCEPT

Being split into different Volumes

Volume I = SWIM Concept (G-G & A-G)

Volume II = SWIM Implementation Guidance

Benefits

<u>The IMP promise</u> : Information exchange design providing interoperable, consistent and reliable data leading to a positive effect on safety and cost effectiveness

<u>How</u>

- More consistent **<u>formalised expression</u>** of IM related ICAO concepts, SARPs and Guidance
- Provide **<u>unified/harmonised content</u>** to unambiguously refer to & re-use
- Enabling system architects and developers to **<u>build system/service solutions in a more cost-effective fashion</u>**
- Seamless ATM information **<u>interoperability, quality & reliability. Trust !</u>**
- Allow for **<u>further evolution of exchange models</u>** in a more consistent and non-ambiguous way

Conclusions

- **SWIM Information Architecture is now happening**
- **Initial SWIM SARPS, Updated Manual & AIRM considered ambitious yet realistic**
- **All support welcomed !**

ICAO plans for SWIM standards by 2018

Air Traffic Management .net

Posted on September 13, 2016

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ATC Global 2016 The International Civil Aviation Organisation (ICAO) is working to develop global standards for system wide information management (SWIM) governance standards and architectural performance by 2018, said ICAO secretary general Dr Liu Fang in a keynote opening address to the conference at ATC Global.

→ **2019/20**

http://www.icao.int/airnavigation/IMP/Pages/default.aspx

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