

Information Exchange and Global Interoperability

‘Memoires of an ICAO IMP Member’

Presented to: ATIEC 2019

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Aviation Information World – Forecasting the Future



January 26th, 2015

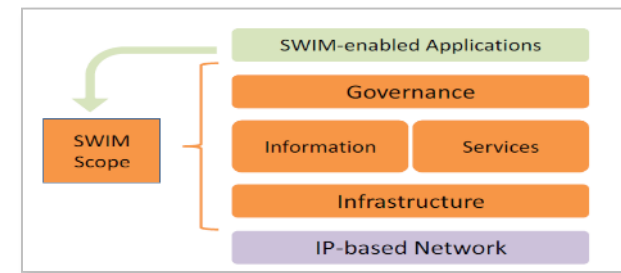


Information Management Panel

- **24 Members covering all 7 ICAO Regions**
 - 17 States
 - 7 International Organizations
- **Experts nominated by their State/Organisation**
 - Expert opinions
- **Reports to ICAO Air Navigation Commission**



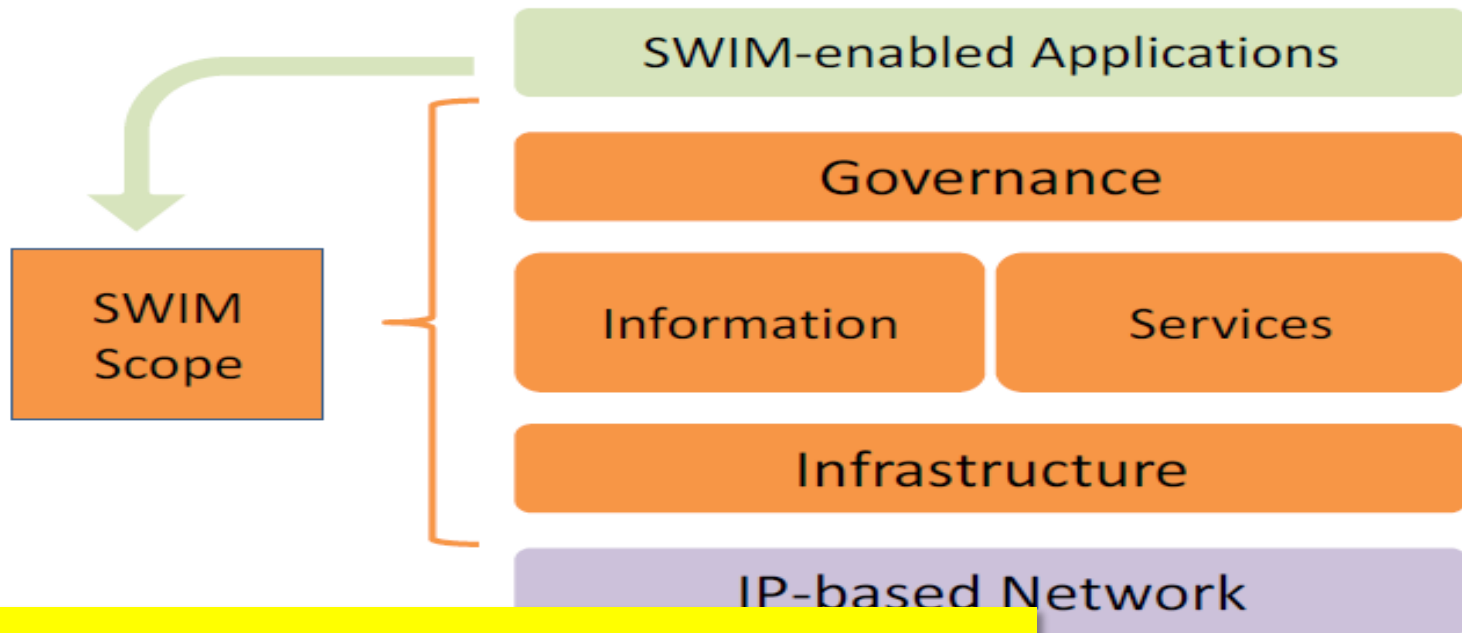
Objectives 'in short'



- **Contribute to the evolution of the ICAO SWIM Concept**
- **Lead on provisions for SWIM**
 - The 'Shalls and Shoulds'
- **Lead on the development of required (implementation) guidance for ICAO SWIM**

Obj

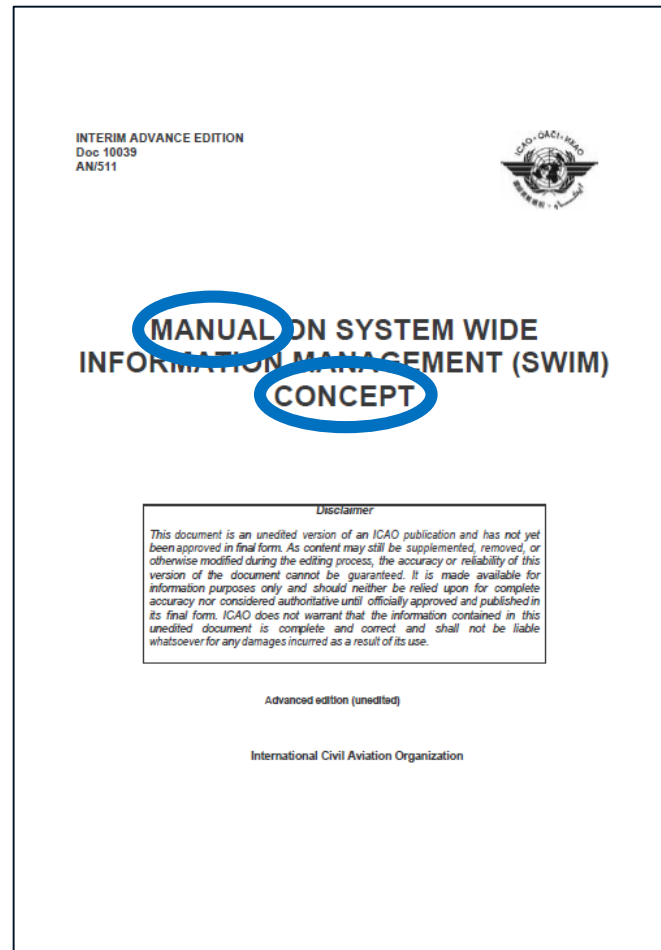
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**Modernizing the required
global information exchange to
support the
Global Air Navigation Plan
objectives**

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AO SWIM

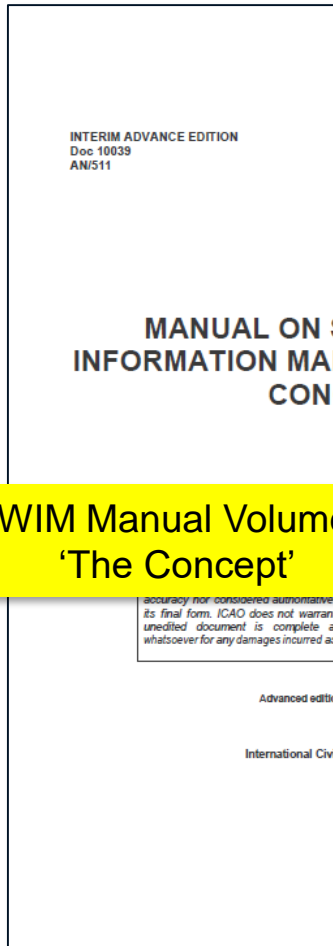
The Starting Point



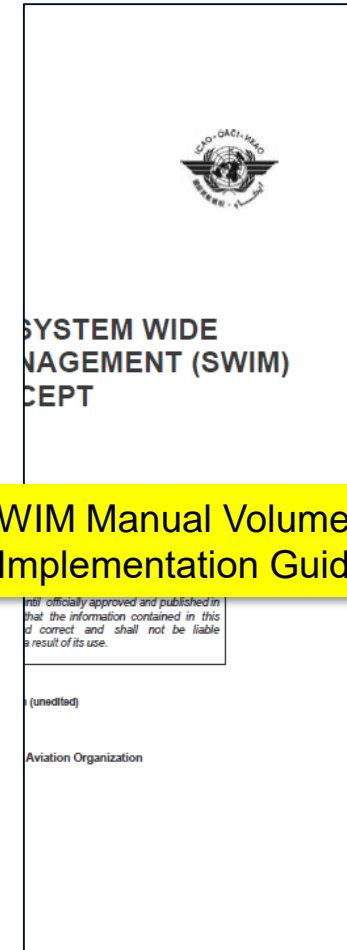
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Manual and Concept



SWIM Manual Volume I,
'The Concept'



SWIM Manual Volume II
'The Implementation Guidance'

PANS-IM Vol 1 on SWIM



- **Obligations on States for the implementation of SWIM-based Information Services**
- **Provisions (requirements) on**
 - Services
 - Payload (Information)
 - Technical Interfaces
 - Governance

Target Dates

- **IMP should conclude by May 2020**
- **ICAO 'Machinery' starts to work.....**
- **Applicability date November 2022**

The real challenges for the IMP ?



Managing the SWIM Landscape

Performance-based

Main stream technologies

Lower costs

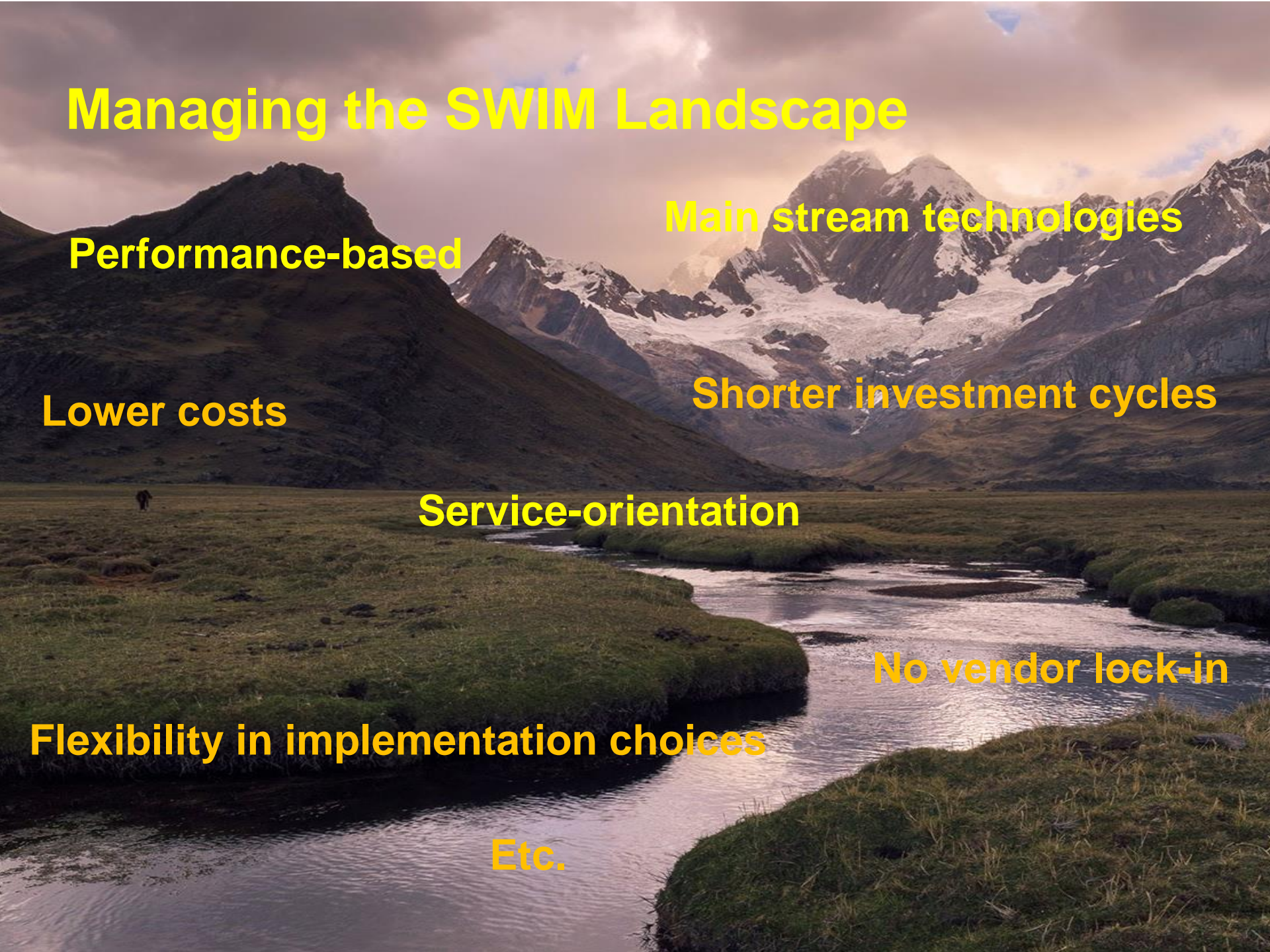
Shorter investment cycles

Service-orientation

No vendor lock-in

Flexibility in implementation choices

Etc.





On our journey so far we addressed.....

- What is the minimum set of requirements to ensure global interoperability?
- Breaking the norm for typical ICAO provisions on 'Information Exchange'?
- Shattering hope for somebody procuring a 'SWIM system' that in the past used ICAO provisions as tech.spec.?
- What is required moving away from the legacy, the intermediate 'exchange model oriented environment' to a 'service oriented environment'?
- To acknowledge that interoperability is always hard work, it doesn't come out of the box



**KEEP
CALM
AND
MANAGE
EXPECTATIONS**



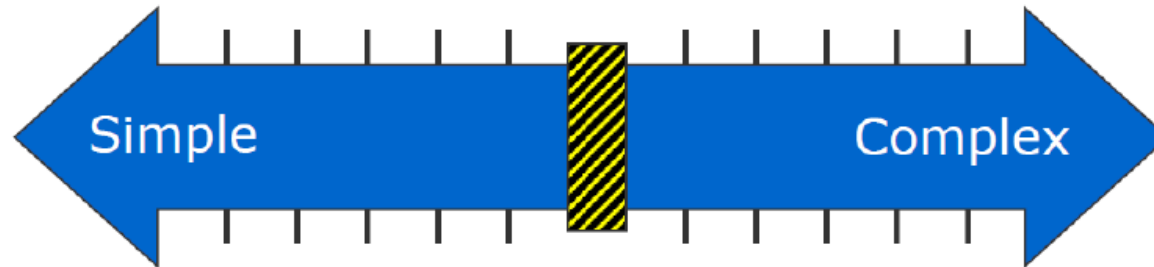
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What you will get by 2022 is.....

- The consensus on playing the 'balance challenge'



Too simple:

- Identified requirements can not be supported
- Insufficient harmonisation
- Few benefits

Too complex:

- Difficult to implement
- Substantial benefits available only to few users
- High costs

PANS-IM Vol 1 on SWIM



- Obligations on States for the implementation of SWIM-based Information Services

Requirements on

- Services
- Payload (Information)
- Technical Interfaces
- Governance

Provisions - Information

- Ensuring semantic interoperability
- Linking semantic interoperability, AIRM and exchange models

Provisions – Technical Interface

- Based/building on IP
- No proprietary solutions
- Constraining 'all' that is available as technology for technical interfaces to a number of interface options for aviation information exchange
- Using (and evolving) the existing technical standards

Provisions - Services

- How to document an information service
- Quality of the information service and its payloads
- Information service discovery

Provisions - Governance

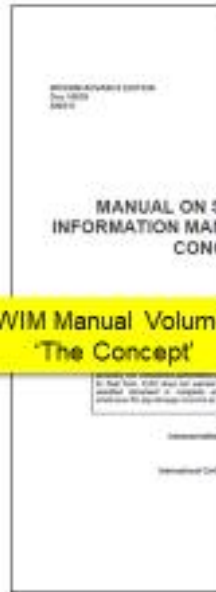
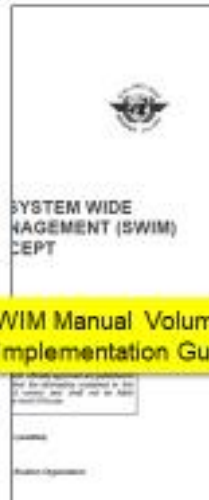
- Enabling States, and information providers and consumers, to apply the right checks and balances for information exchange in a service oriented environment



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Manual on Concept →

SWIM Manual Volume I,
'The Concept'SWIM Manual Volume II
'The Implementation Guidance'

- **Context for the provisions of the PANS:**
 - Service
 - Information
 - Technical Infrastructure
 - Governance
- **SWIM Implementation Steps**

Also recognising that.....



- Evolutionary refinement is given more importance than pursuit of initial perfection

(Core SOA principle)



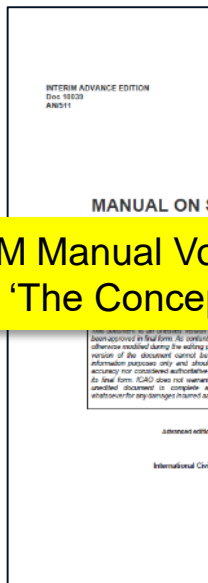
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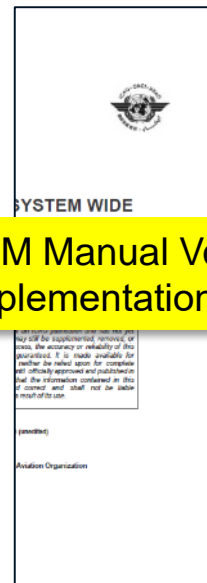


In conclusion

- **IMP is finalising by May 2020:**



SWIM Manual Volume I,
'The Concept'



SWIM Manual Volume II
'The Implementation Guidance'



- **Planned applicability by November 2022**