

ICAO APAC SWIM TF Hanoi Working Session

SWIM Sandbox





Agenda

- **SWIM**
- **SWIM Sandbox**
- **SWIM Tool**
- **Client Accounts**
- **Topic Model**
- **Message Header**

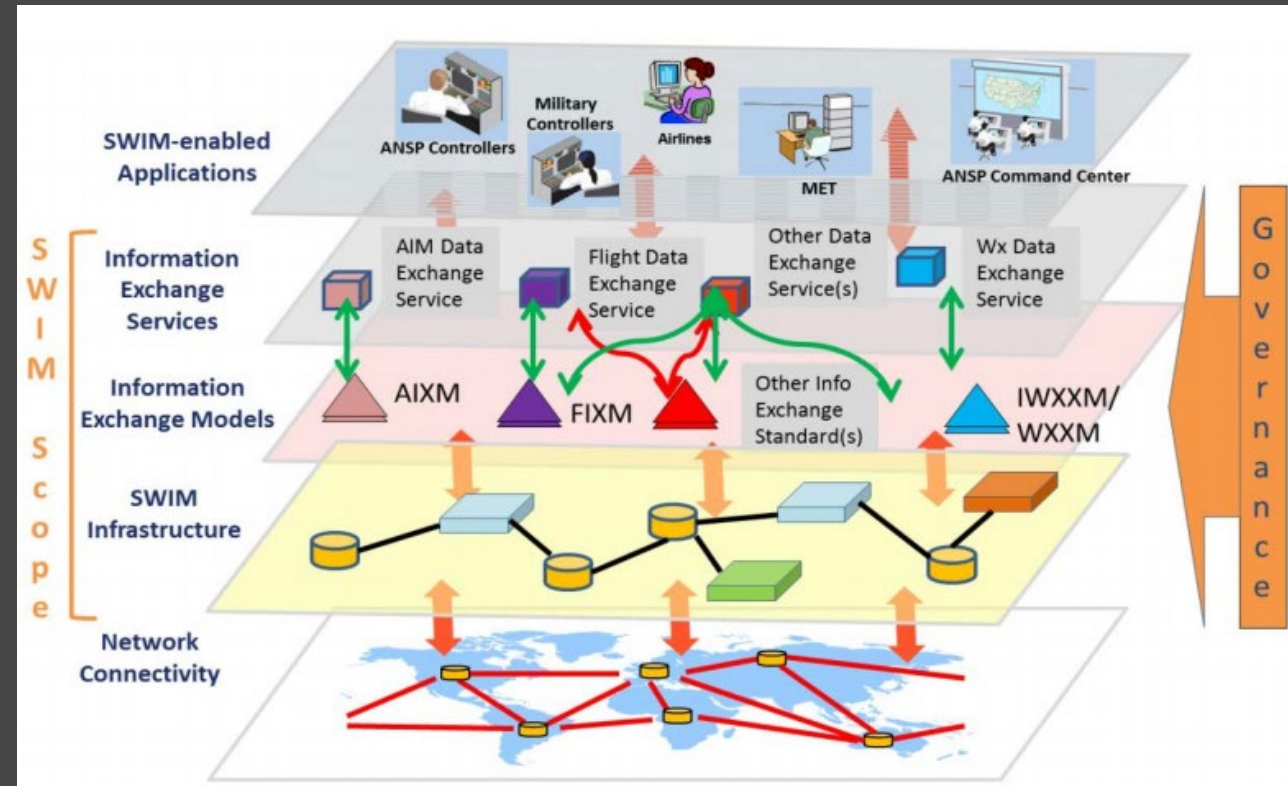
SWIM

- ***What is SWIM?***

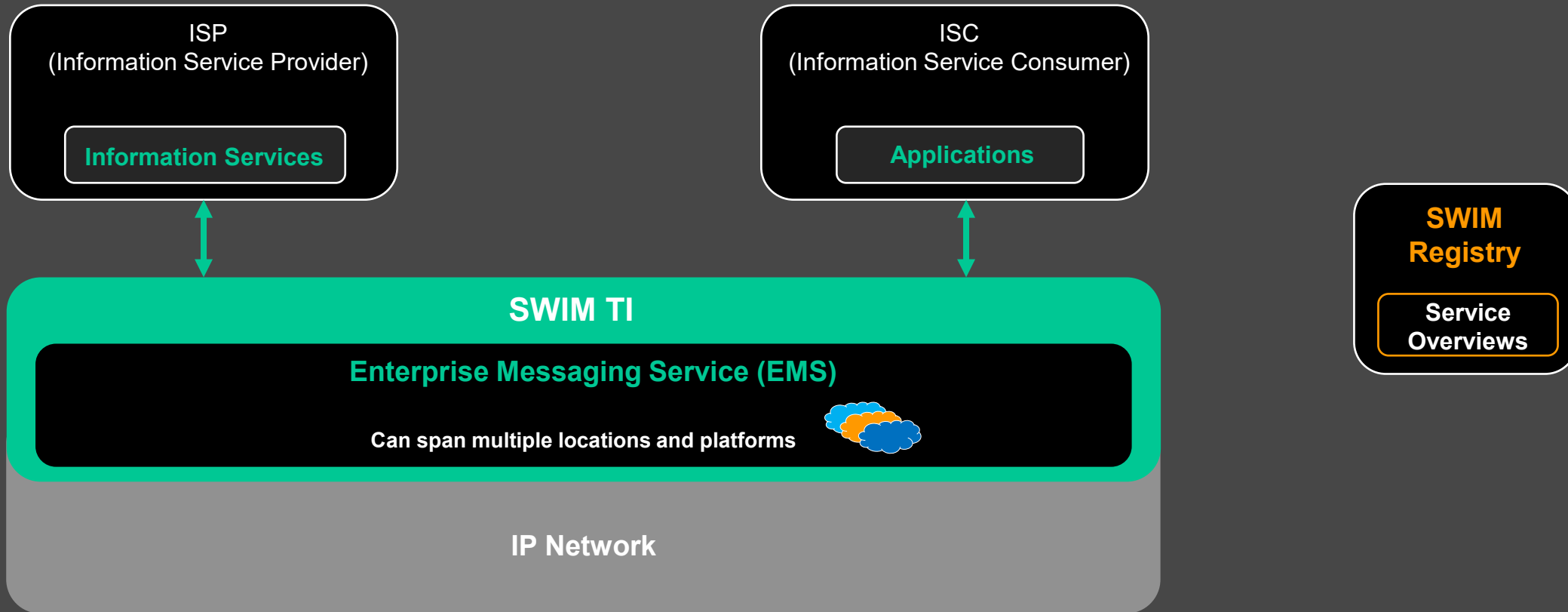
- Enabler to modernise ATM using SOA and modern information exchange
- Information Services, ISCs, ISPs, Information, SWIM TI, SWIM Registry
- Governance, Security, Management

- **Where a SWIM EMS fits**

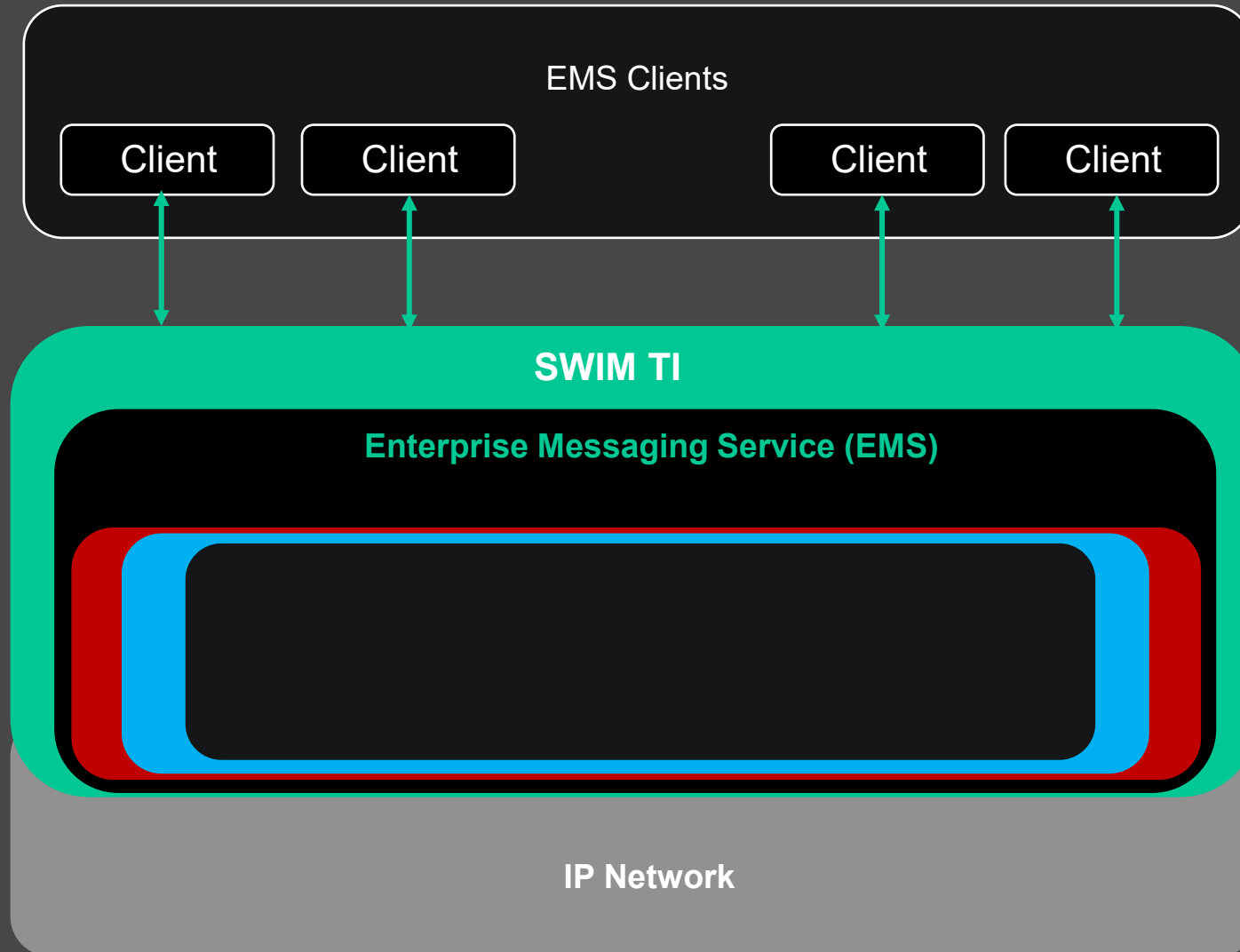
- The SWIM TI
 - SWIM EMS with Security, Management and Runtime governance (micro-segmentation)
 - Integration features or connectors in SWIM EMS platforms or separate products
 - Enterprise-wide PKI products



SWIM Components



SWIM TI - Clients

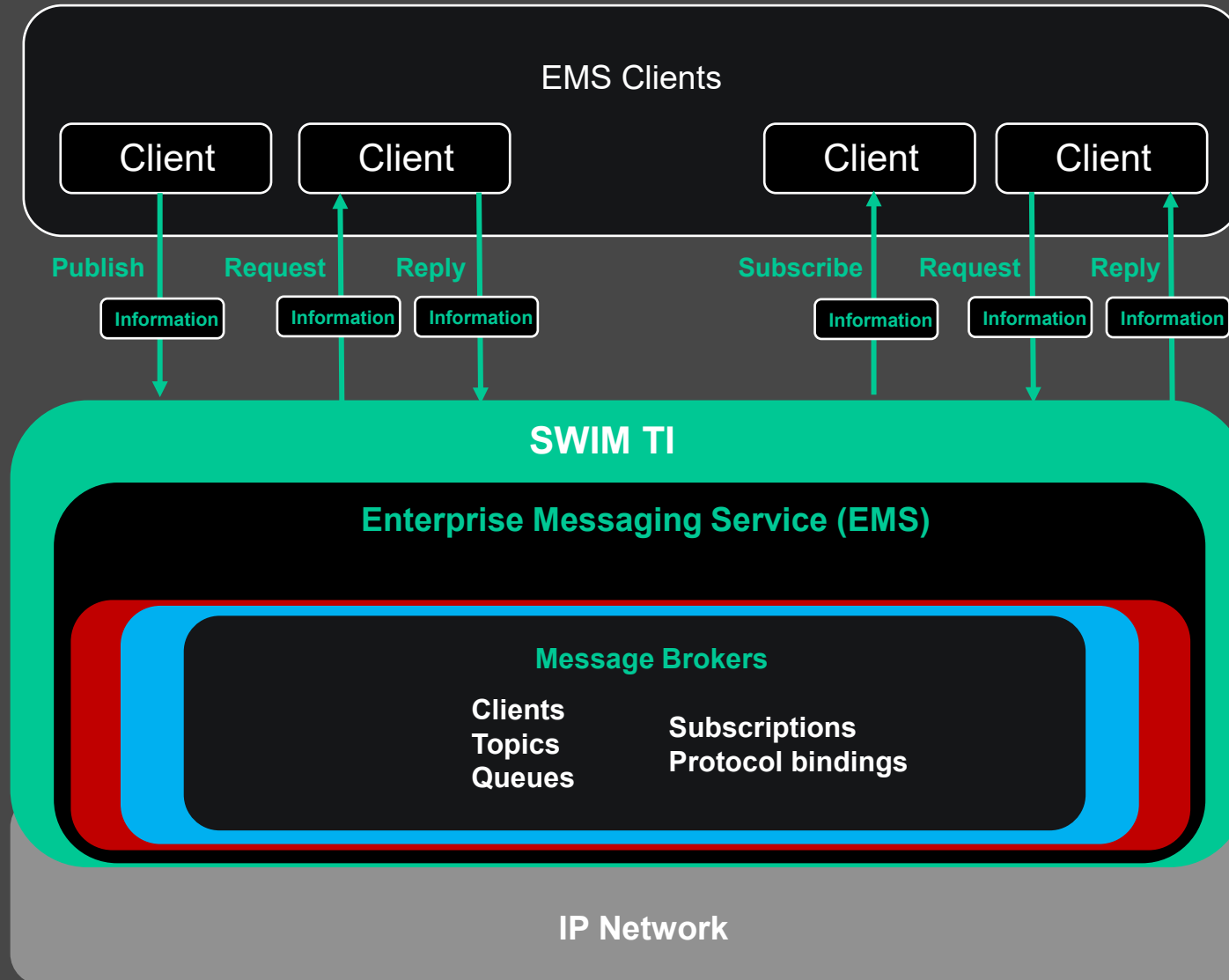


Legend

Governance (Run Time)
Security



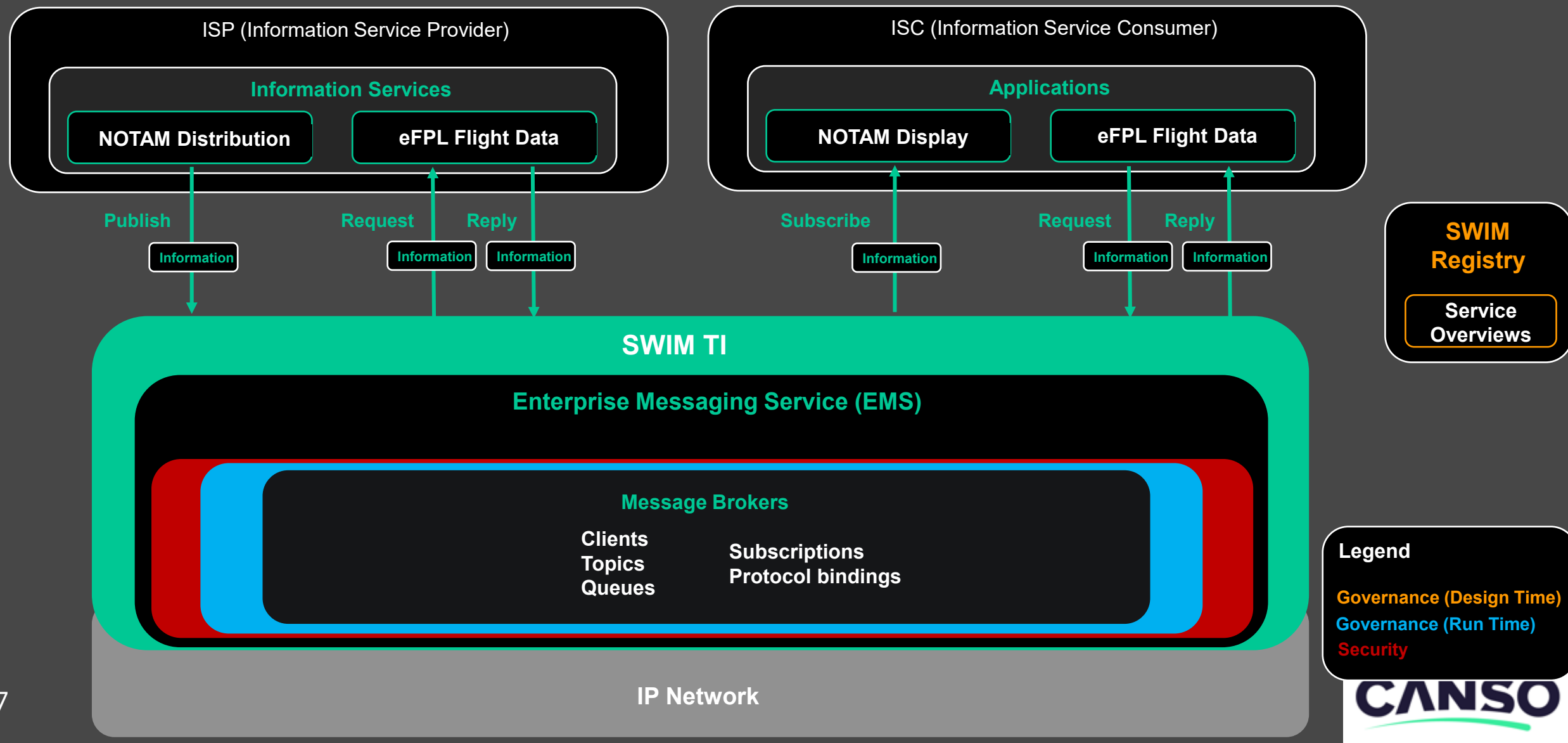
SWIM TI –Message Exchange Patterns (MEPs)



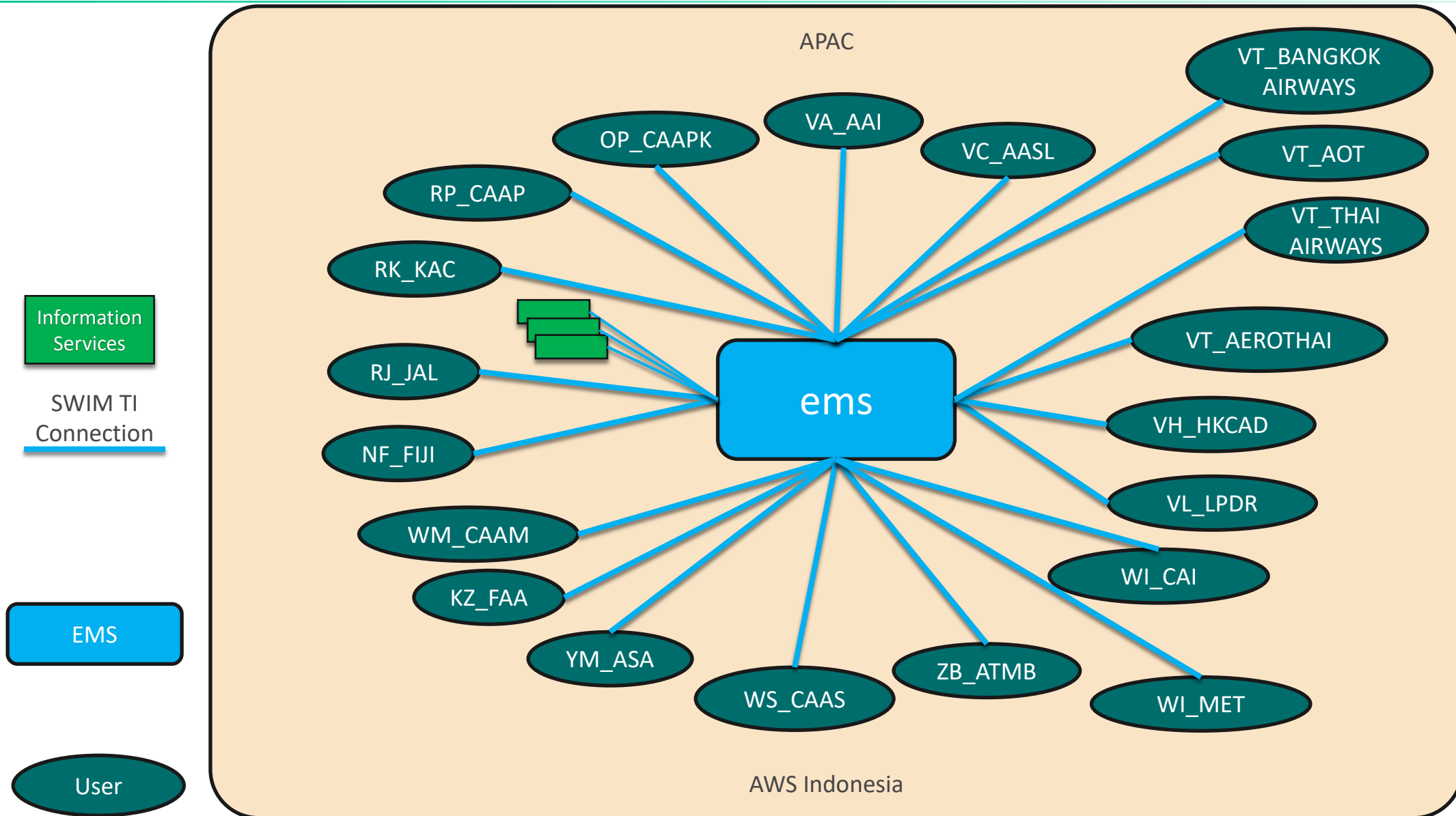
Legend

Governance (Run Time)
Security

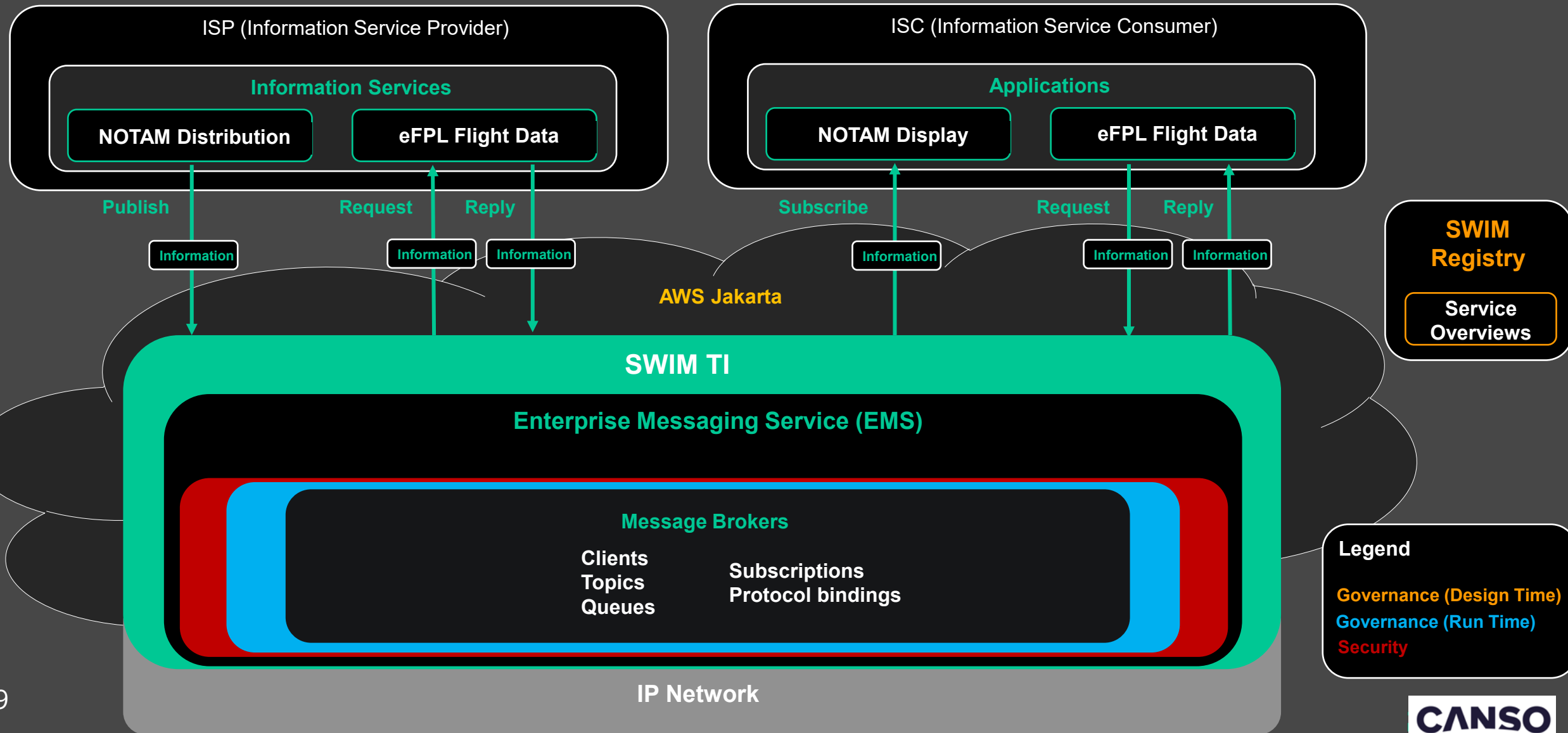
SWIM Components - Details



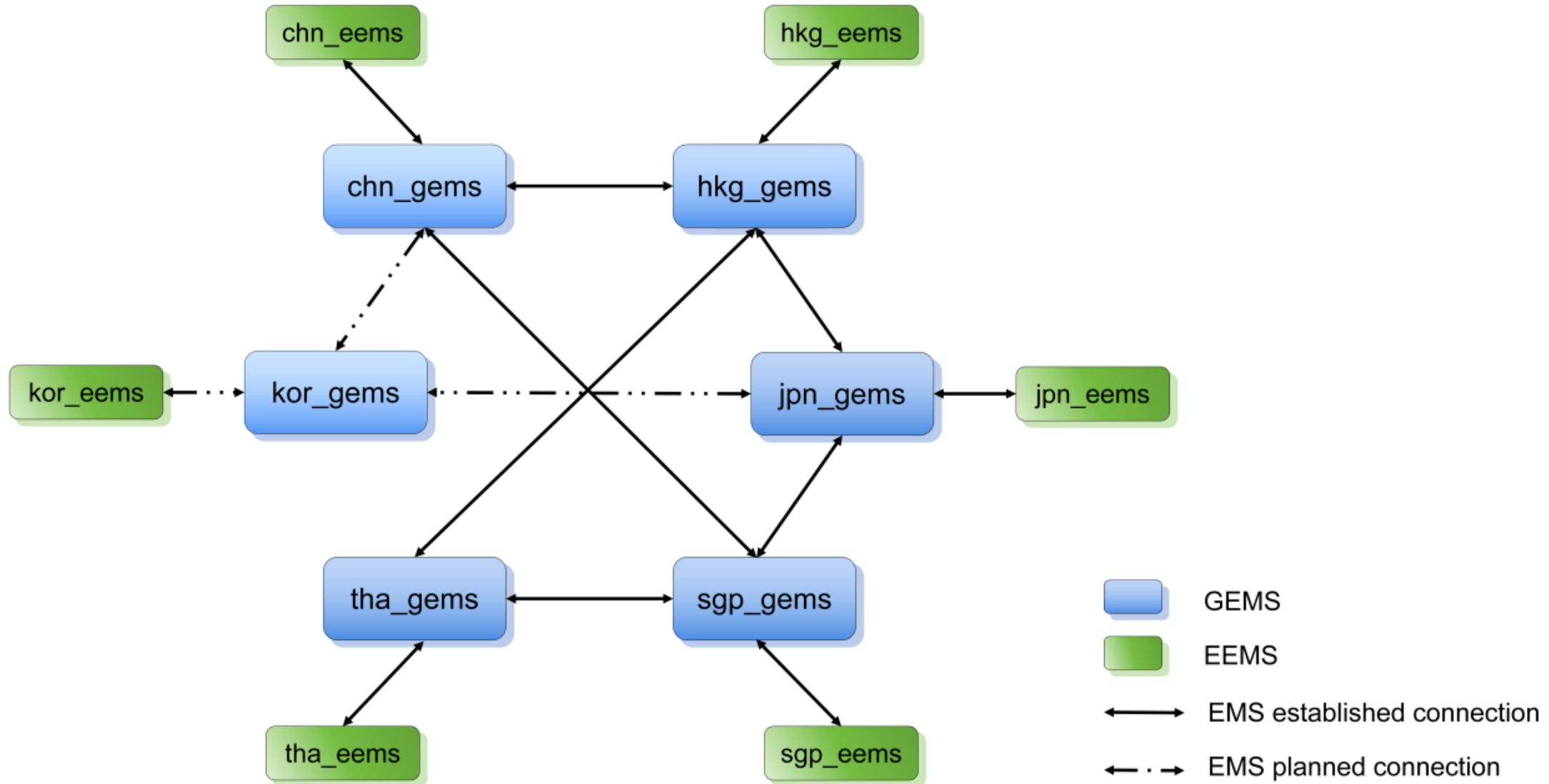
Jakarta SWIM Sandbox (Nov 2024)



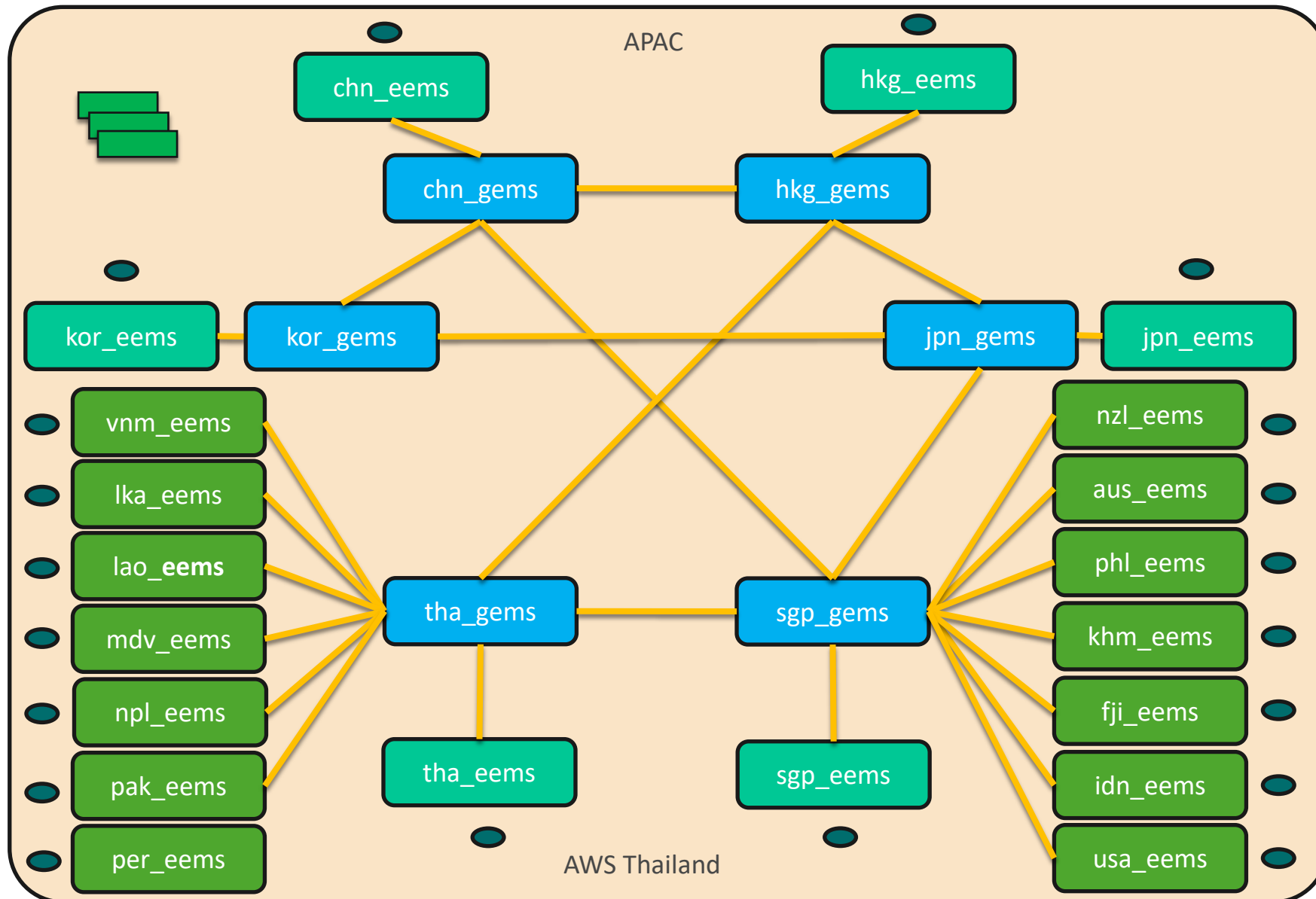
Jakarta SWIM Sandbox



SIPG Architecture



Hanoi SWIM Sandbox (Aug 2026)



SWIM TIs

- **Edge and Gateway EMSes**
 - Hosted in AWS Thailand
- **Edge EMS Configuration**
 - 1 Client Account
 - 4 Queues (FFICE, NOTAM)
 - 4 Bridge Services (FFICE, NOTAM)
- **Protocols**
 - AMQPS 1.0 (TLS)
- **Monitoring/Management**
 - SWIM Tool Browser, Broker Manager

SWIM Tool

- **SWIM Send/Receive web page**

- Requires Internet access
- Select Edge EMS
- Select Information Service (2 for now)
- Enter Source Id
- Enter User Id
- Enter APAC Header Fields
- Select Recipients (if applicable)
- Enter Payload text
- Hit Button to send

SWIM Send/Receive

session connected

EMS:

Information Service:

Source Id:

Source User Id:

Category:

Category Version:

Message Type:

Departure Airport:

Arrival Airport:

Airline:

Aircraft ID:

EOBT:

Phase:

Recipients:

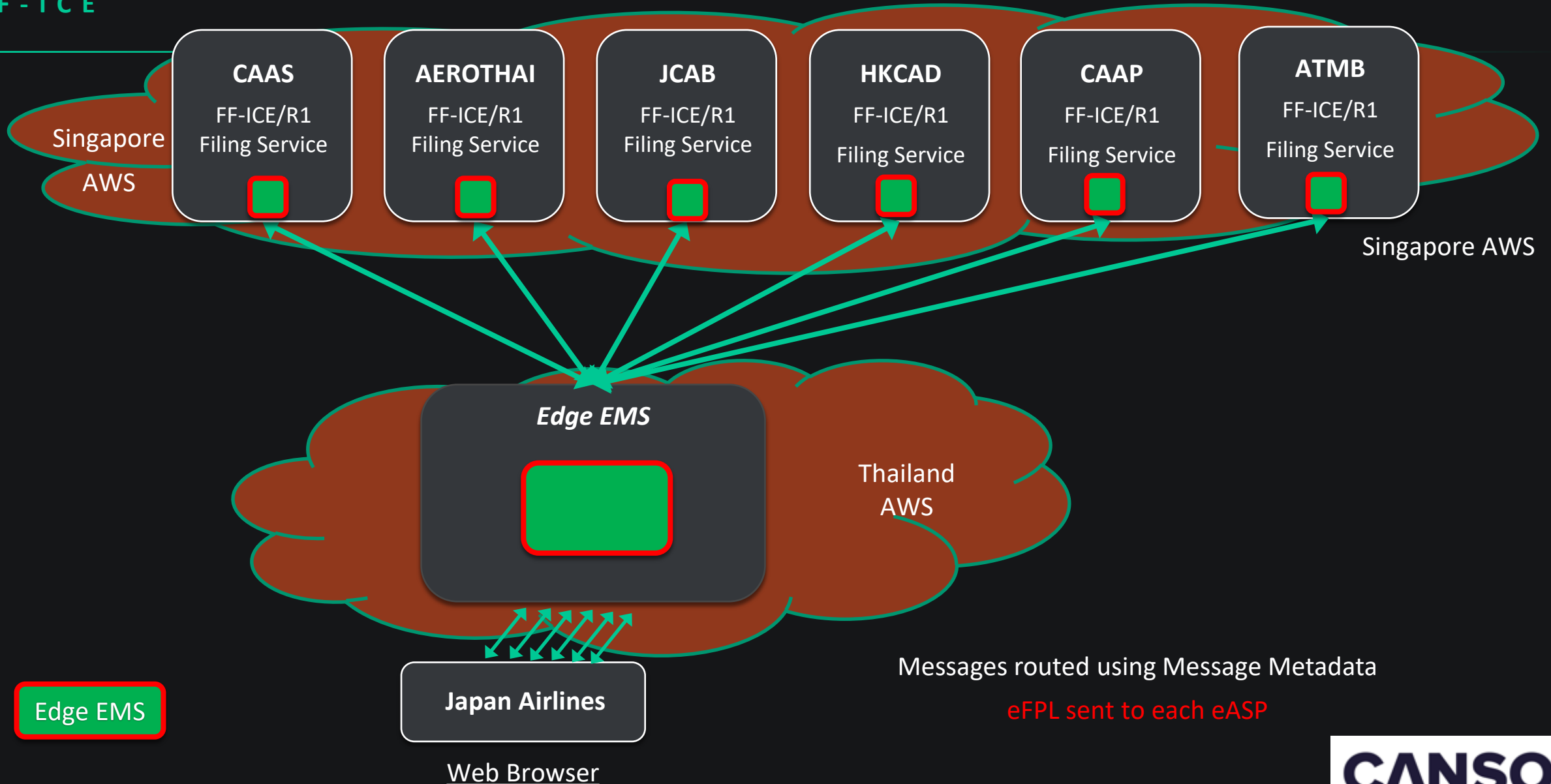
Payload:

File eFPL

Status

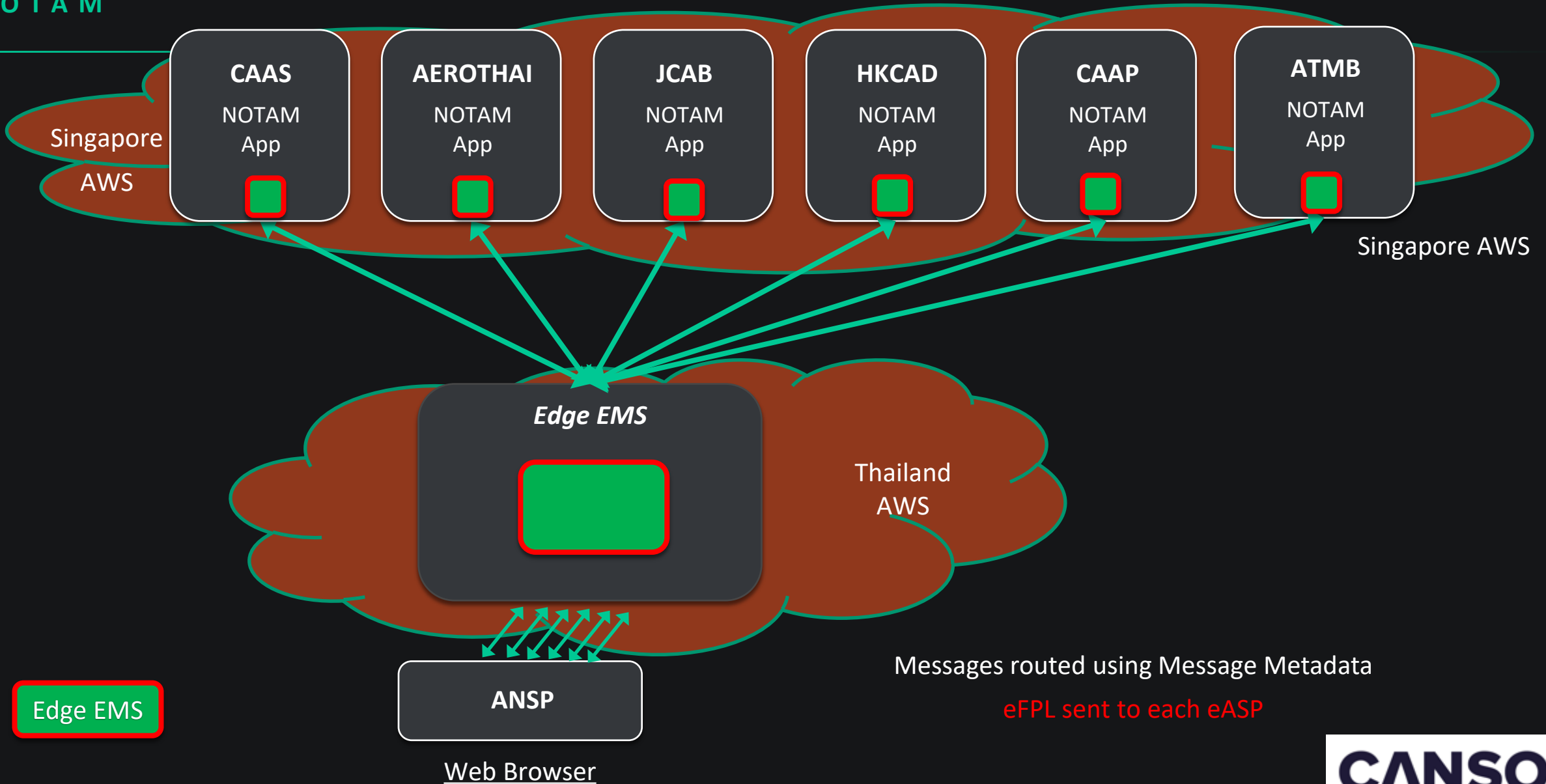
FF-ICE/R1 Filing Service Demo using the SWIM Sandbox

FF-ICE



NOTAM Publish Service Demo using the SWIM Sandbox

NOTAM



Edge EMS

ANSP

Web Browser

Messages routed using Message Metadata

eFPL sent to each eASP



Client Accounts

- **Client Usernames are the same as in the APAC Demo**
 - WS_CAAS, VT_AEROTHAI, etc.
- **Client Passwords**
 - “jakarta”

Edge EMS Client Queues

- **Queues**

- FFICE Outbound

- **APAC.Edge.(country code).Gateway.(country code).Domain.FFICE.TEST**

- FFICE Inbound

- **APAC.Edge.(country code).(user).Domain.FFICE.TEST**

- NOTAMs Outbound

- **APAC.Edge.(country code).Gateway.(country code).Domain.NOTAM.TEST**

- NOTAMs Inbound

- **APAC.Edge.(country code).(user).Domain.NOTAM.TEST**

Topic Models

- **What are they?**
 - The address (bar code) on a package used for delivery
- **Why use them?**
 - Critical to modern information exchange and runtime governance
 - Routing, filtering, replication, isolation
 - Decouple consumers and providers
 - Support legacy information exchange if designed appropriately
 - Extensible
 - Best kept relatively short (<250 characters)
 - Base topic models are the root and individual message types extend it

Base Topic Model

Purpose	Examples
Topic Name	Jakarta
Topic Version	1
Source Type	ANSP, AU
Source Id	WS_CAAS
Source User Id	0, (Client Username)
Category	AER, FLT, 0
Request Type	NOTAM
Message Type	D-NOTAM
Event	N (New), C (Cancel)
Recipient Type	0, ANSP, AU
Recipient Id	0, WS_CAAS
Recipient User Id	0, (Client Username)

Topic Format

Forward slash delimiters

Sample Topics

`Jakarta/1/ANSP/WS_CAAS/0/AER/NOTAM/D-NOTAM/N/0/0/0/...`

Topic Subscription Format

Wildcards: *, >

Sample Topic Subscriptions

`Jakarta/1/>`

`Jakarta/1/ANSP/*/*/AER/NOTAM/>`

All Messages for Jakarta v1
NOTAMs from all ANSPs

NOTAM Topic – Extend the Base Topic Model

Purpose	Examples
FIR	WSJC
ICAO Location	1
Q Code	ANSP, AU
...	...

Sample Topics

`Jakarta/1/ANSP/NZ_AIRWAYS/0/AER/NOTAM/D-NOTAM/N/0/0/0/VTBB/VTSS/N/QPIXX`

Sample Topic Subscriptions

`Jakarta/1/ANSP/NZ_AIRWAYS/*/AER/NOTAM/*/*/*/*/NZZC/>`

All NOTAMs for FIR NZZC

Message Header – Optional Use, All Strings

- **What are they?**
 - The properties (manifest) on a package used for handling

Primary Properties

Name	Description
APAC_SOURCE	VT_AEROTHAI
APAC_RECIPIENT_LIST	“WS_CAAS,WI_CAI”
APAC_CATEGORY	AIXM, FIXM
APAC_CATEGORY_VERSION	FIXM_4_1
APAC_MESSAGE_TYPE	FILING_STATUS
APAC_TIMESTAMP	Time stamp

Message Type Specific Properties

Name	Description
DEP_AIRPORT	Departure Airport
ARR_AIRPORT	Arrival Airport
AIRLINE	Airline
ACID	Aircraft Id
GUF1	GUF1
EOBT	...
FFICE_PHASE	...
...	...
...	...

SWIM Tools

- **SWIM Tool Browser - Display queues and messages**
 - Windows or Linux, Java 17+ (java -version)
 - [Oracle Java SE Development Kit](#)
 - [OpenJDK 17](#)
 - [AWS Corretto 17](#)