

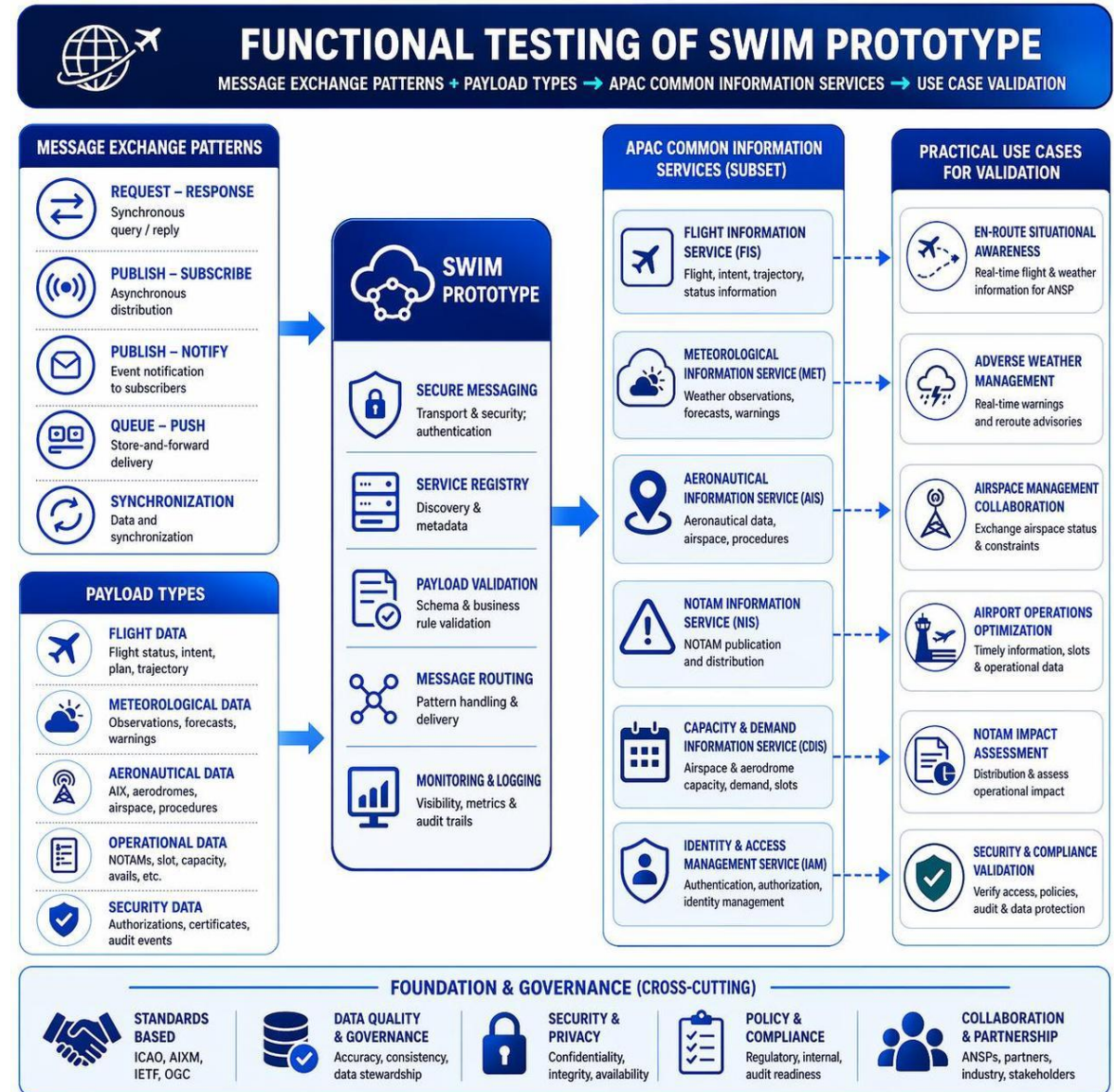
SWIM Testing Methodology

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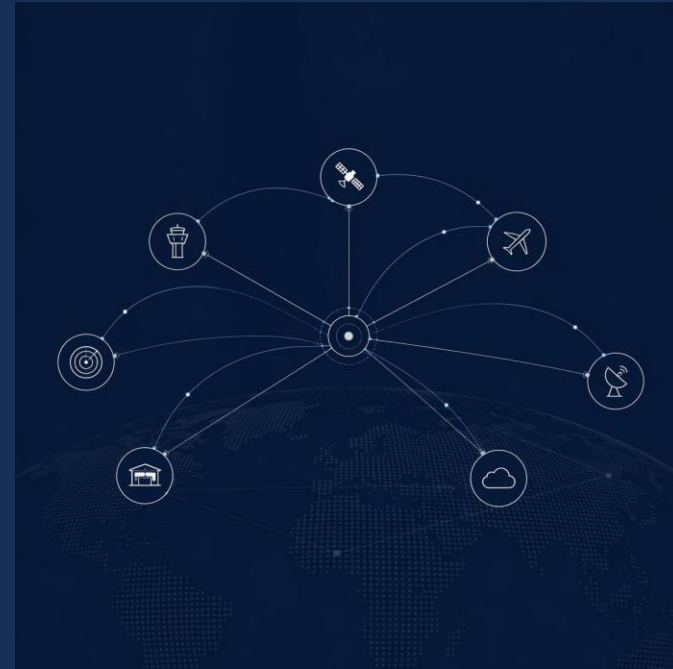
SWIM Testing – Functional Testing

- Functional testing of the prototype SWIM
 - Needs to cover all the different types of MEPs
 - Needs to cover all the different payloads
- SWIM TF already developed a list of APAC common information services.
 - Proposal – Identify subset of information services from the above list to implement
 - Use the implemented information services to perform functional tests
 - Practical use cases to demonstrate functionality



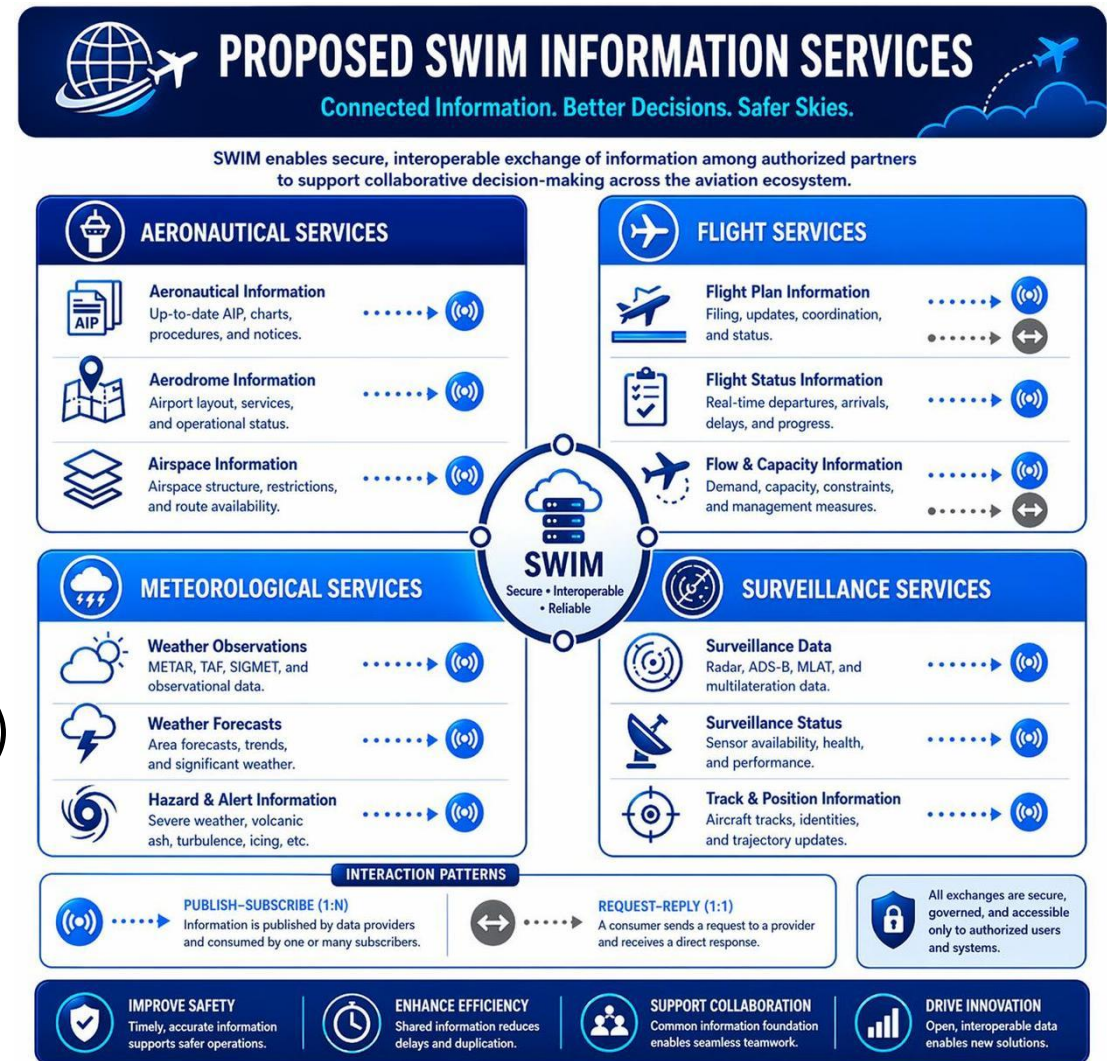
Functional Testing

Using Common Information Services



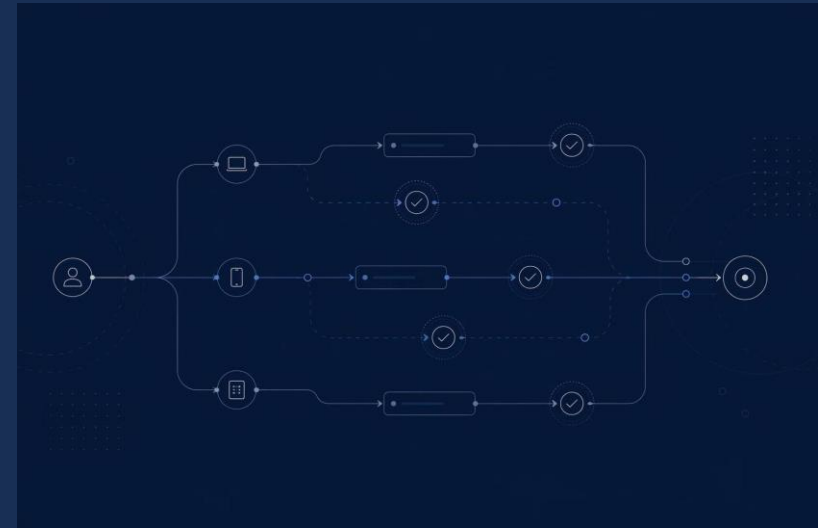
Proposed list of Information Services

- Aeronautical Information Services
 - Digital NOTAM Distribution Service (Pub/Sub)
 - Runway Condition Report Service (Pub/Sub, Req/Rep)
- Flight Information Services
 - FF-ICE Filing Service (Req/Rep)
 - FF-ICE Notification Service (Pub/Sub, Req/Rep)
- Meteorological Information Services
 - METAR / SPECI Service (Pub/Sub, Req/Rep)
 - SIGMET Service (Pub/Sub, Req/Rep)
- Surveillance Information Services
 - Surveillance data **only** sharing service (Pub/Sub)



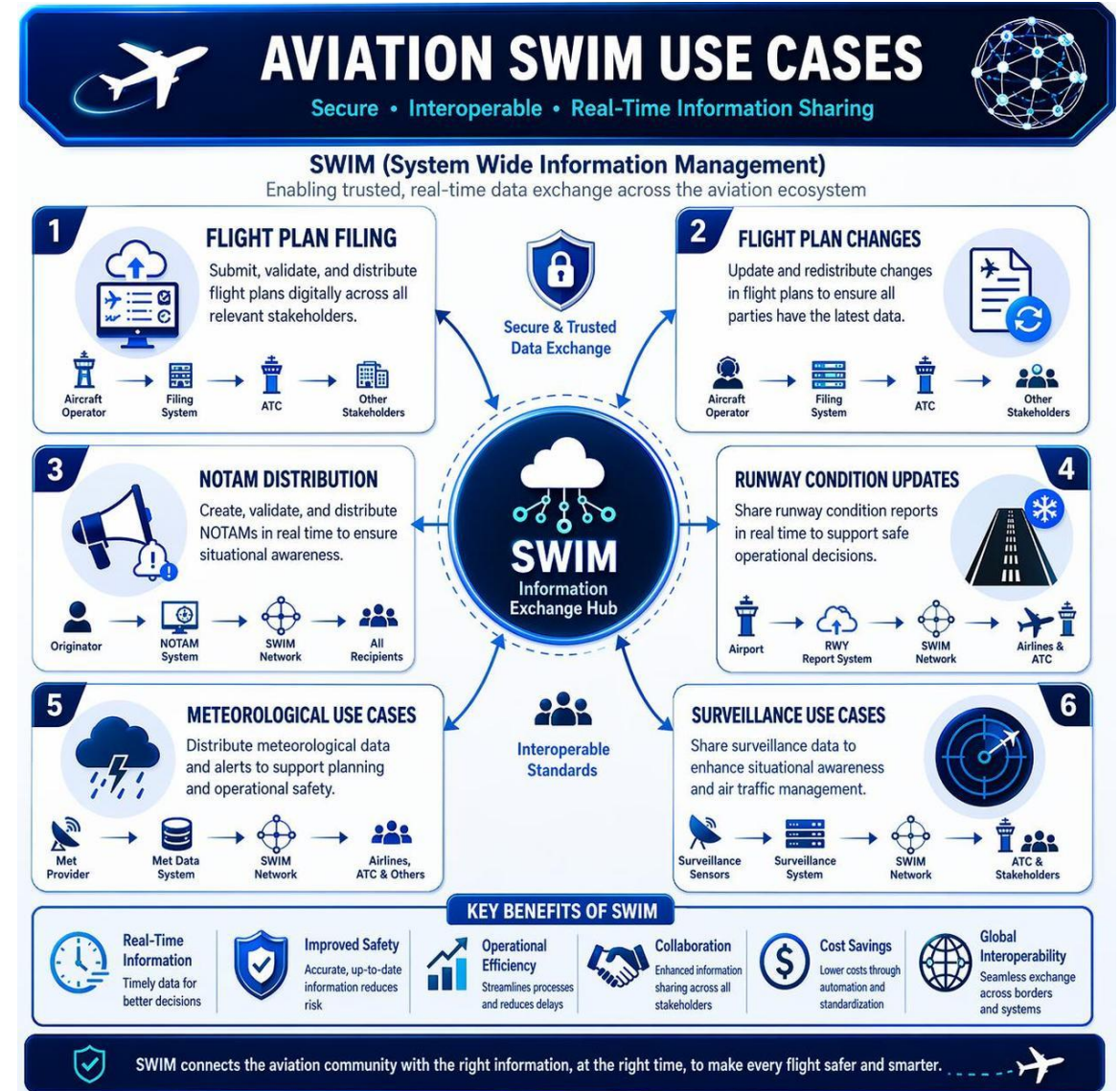
Functional Testing

Use Case Scenarios



Use Cases

- Flight Plan Filing
- Change of Flight Plans
- Distribution of NOTAMS
- Notification of change in Runway Conditions.
- Meteorological Use Case?
- Surveillance Use Case ?

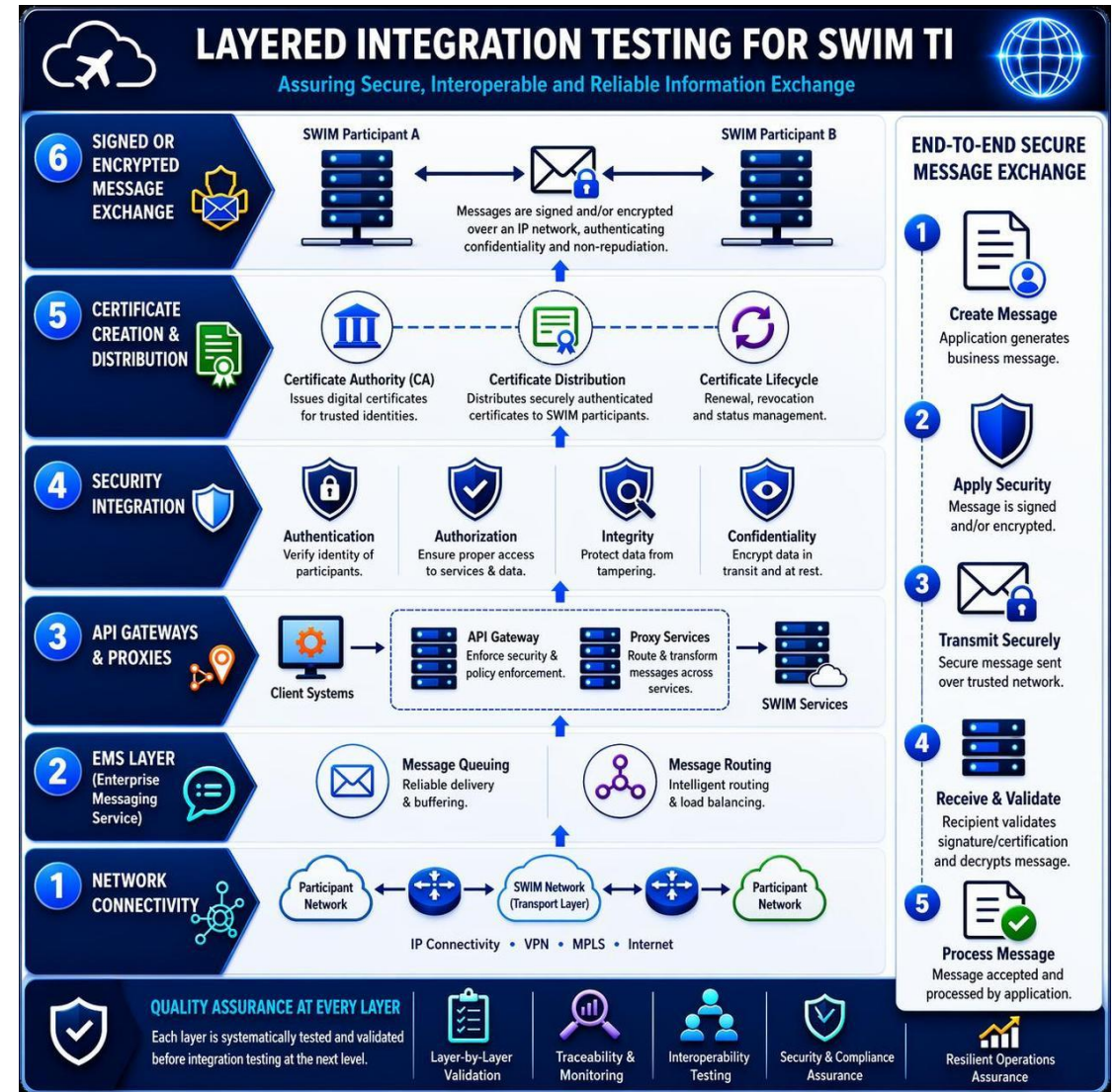


Integration Testing



Integration Testing

- Necessary to ensure that the different components of the SWIM TI function properly as an integrated whole
- Testing in layers
 - Network layer connectivity tests
 - EMS Layer testing
 - EEMS to GEMS
 - GEMS to GEMS
 - EEMS to GEMS to EEMS
 - API Gateways / Proxies Testing
 - Security Integration Testing

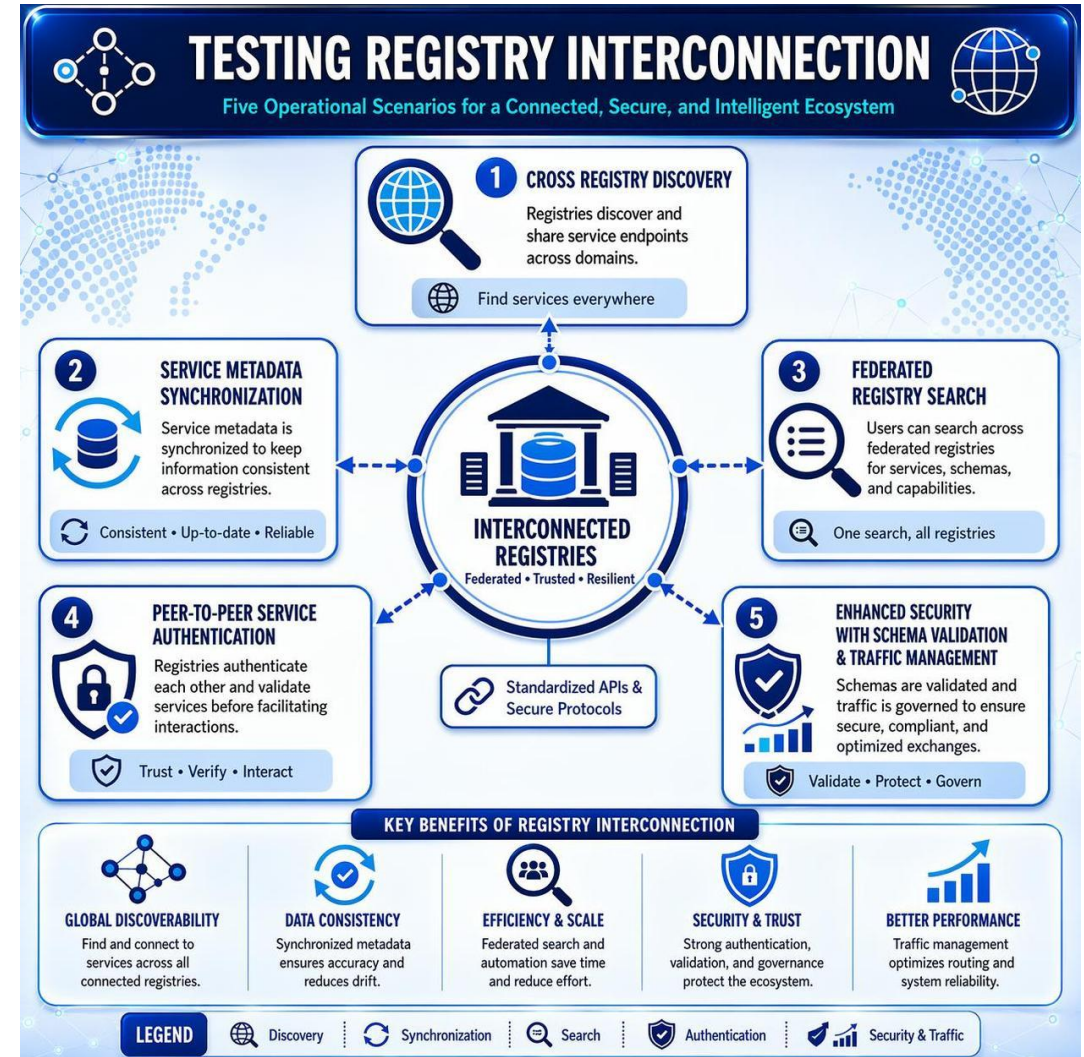


Registry Testing



Testing Registry Interconnection

- 5 operational scenarios
 - Cross Registry Discovery
 - Service Metadata Synchronization
 - Federated Registry Search
 - P2P Service Authentication
 - Enhanced P2P Service Security, Schema Validation and Traffic Management



Performance Testing



Performance Testing Strategies

- **Identify baseline performance requirements from use cases**
 - Concurrent activity with Functional Testing
 - KPIs for latency, capacity, message integrity etc.
- **Develop testing methodologies based on performance requirements**
- **Develop test plan**

