

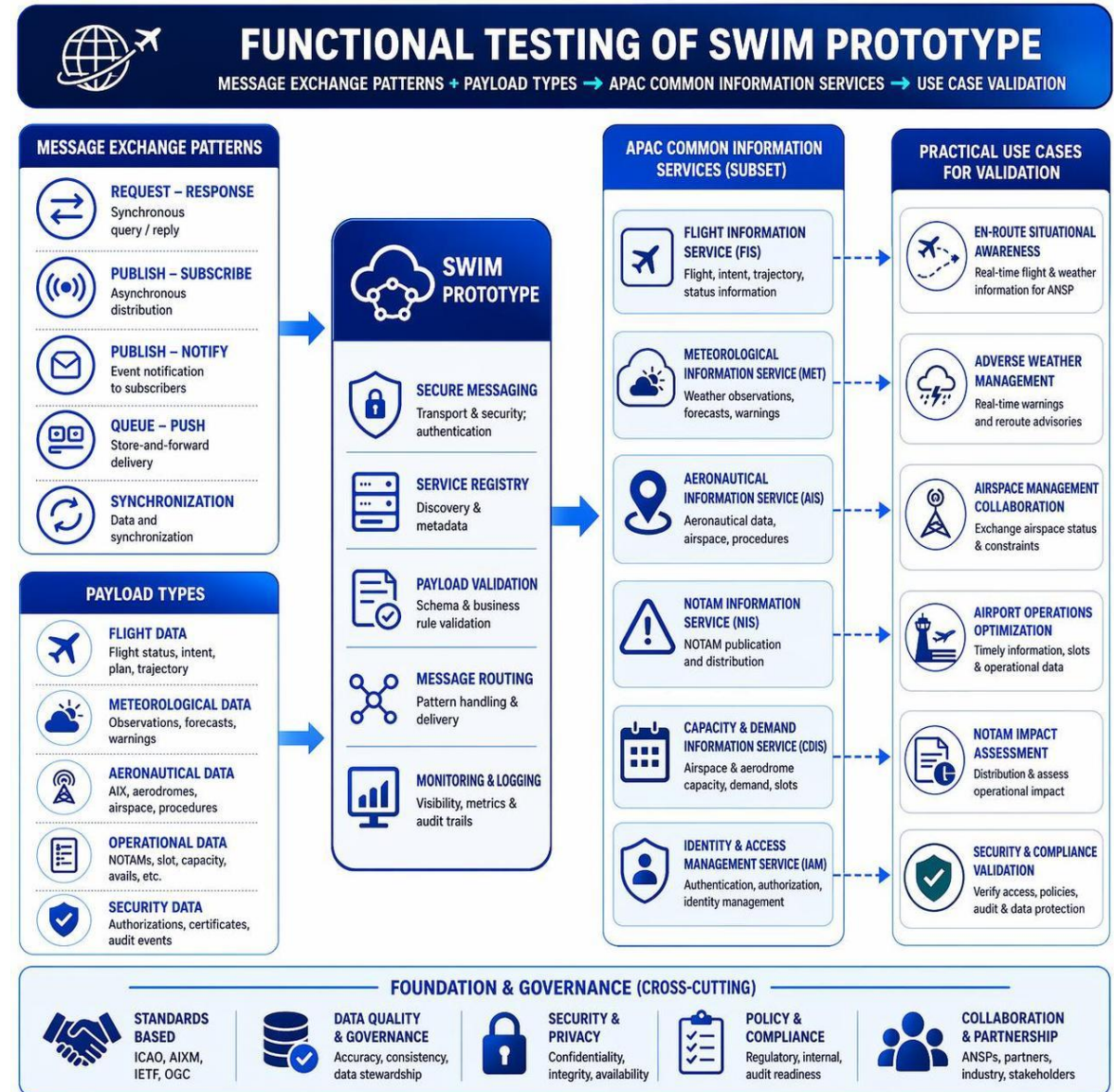
# SWIM Testing Methodology

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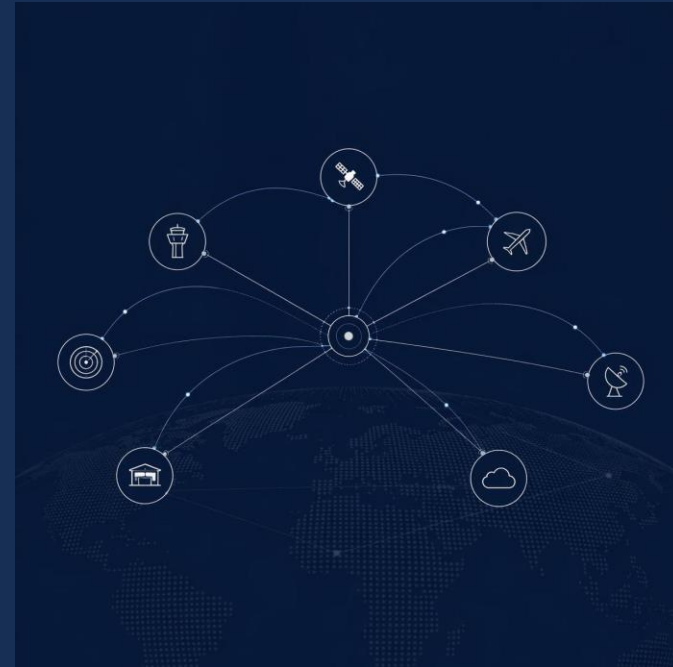
# SWIM Testing – Functional Testing

- 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



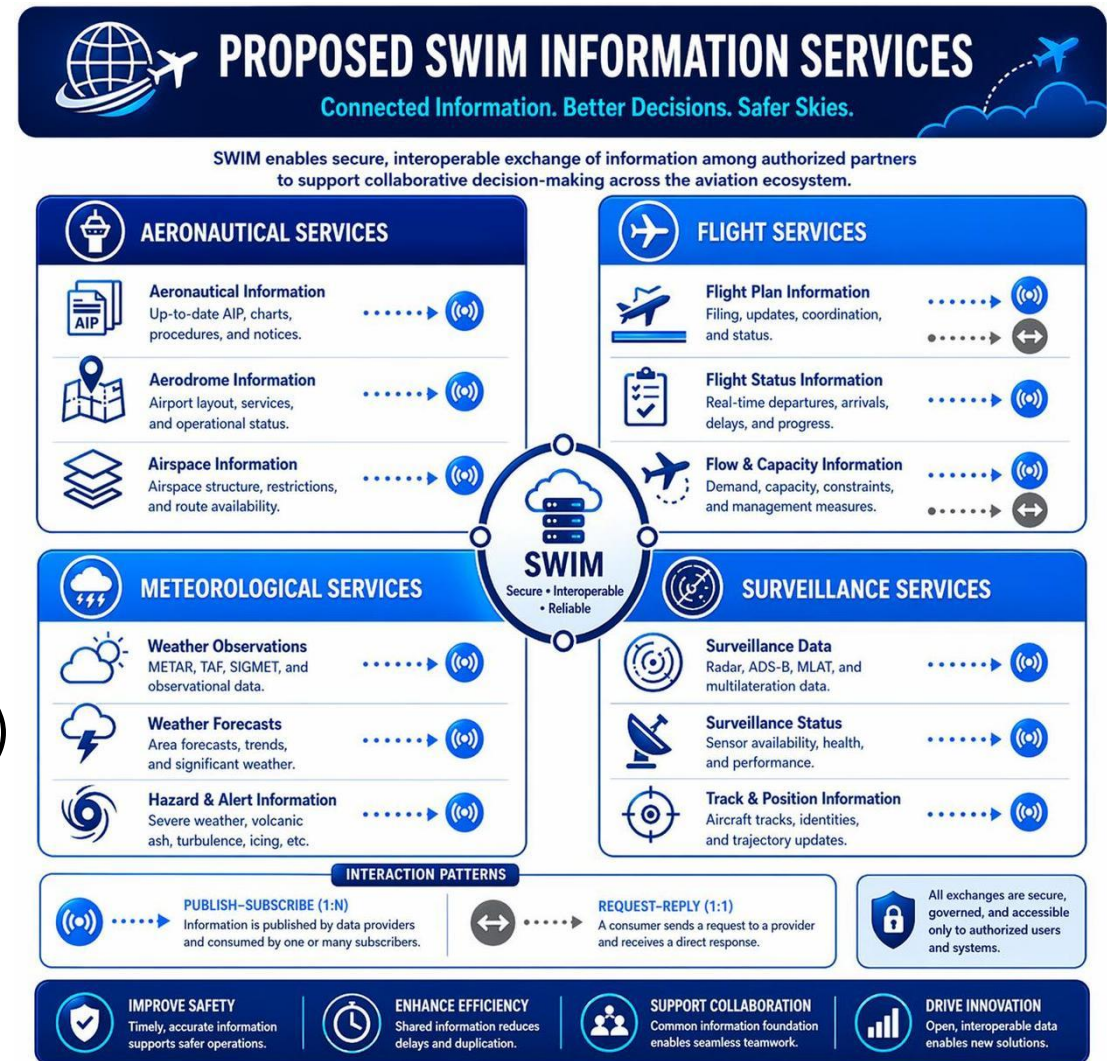
# Functional Testing

Using Common Information Services



# Proposed list of Information Services

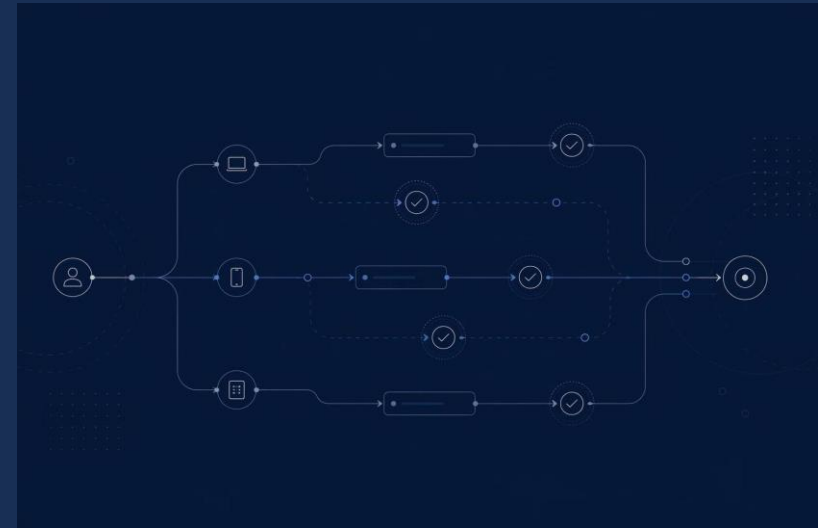
- Aeronautical Information Services
  - Digital NOTAM Distribution Service (Pub/Sub)
  - Runway Condition Report Service (Pub/Sub, Req/Rep)
- Flight Information Services
  - FF-ICE Filing Service (Req/Rep)
  - FF-ICE Notification Service (Pub/Sub, Req/Rep)
- Meteorological Information Services
  - METAR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



SWIM information services are extensible and may evolve to meet emerging operational needs.

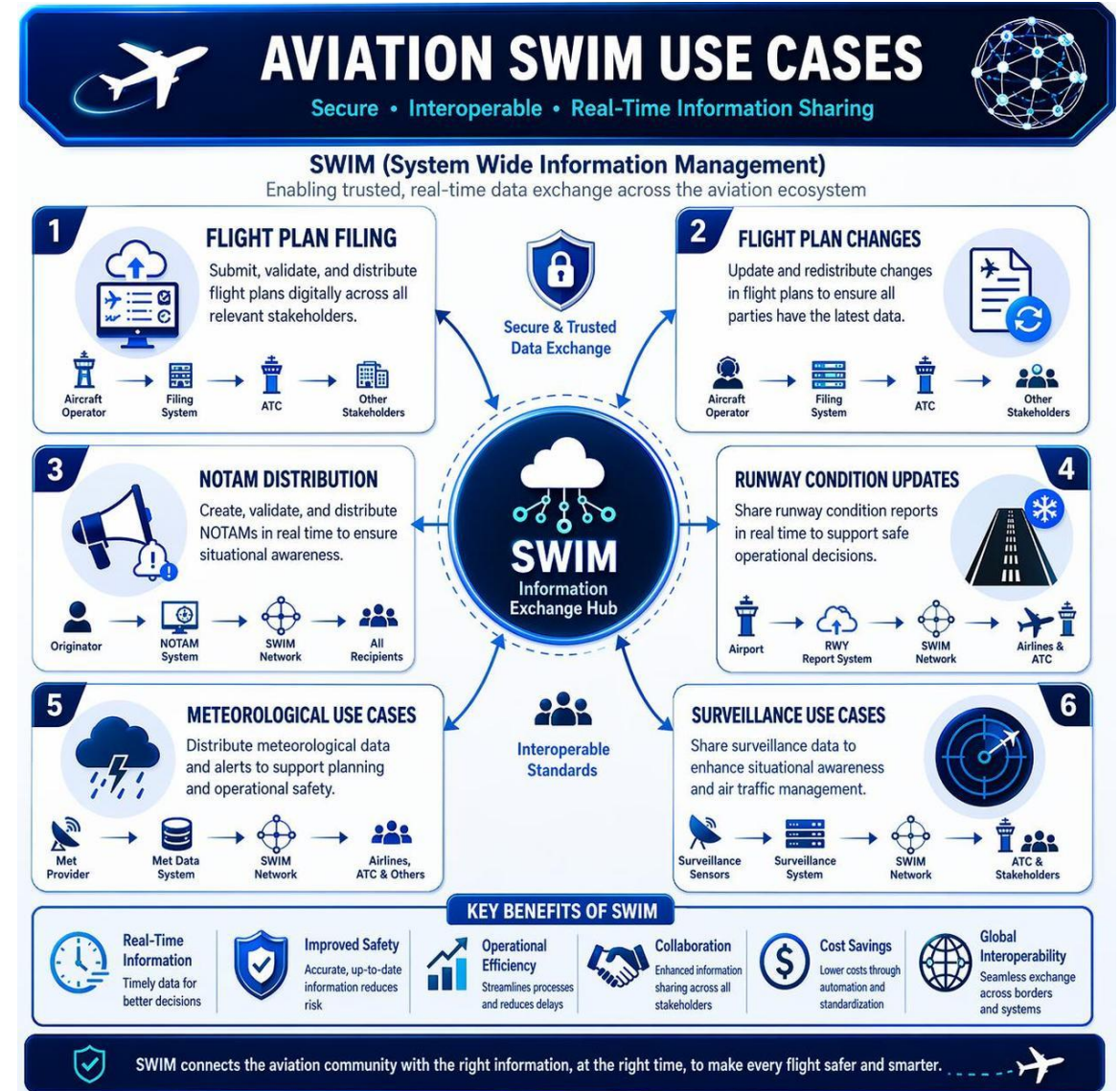
# Functional Testing

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 ?

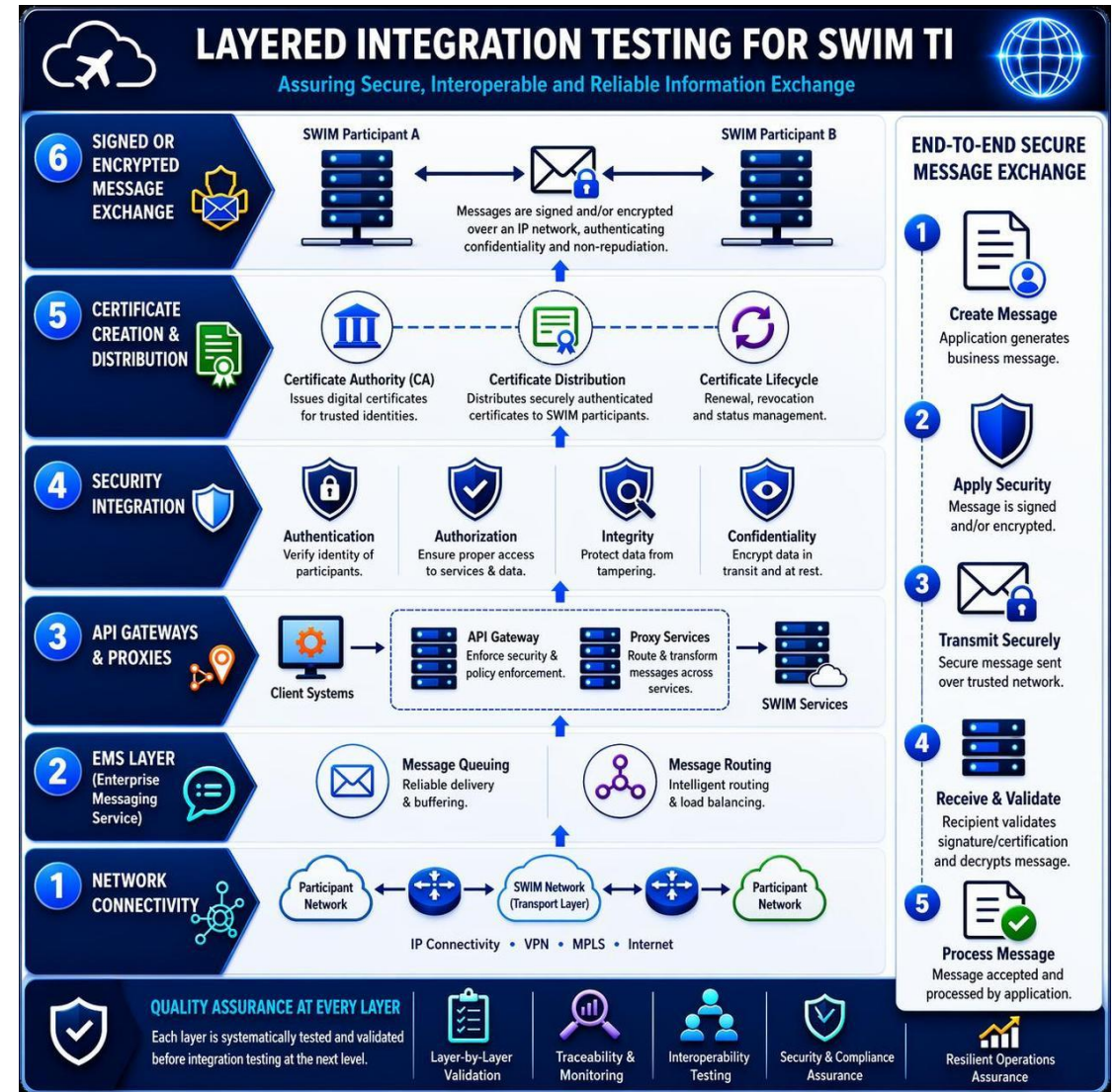


# Integration Testing



# 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

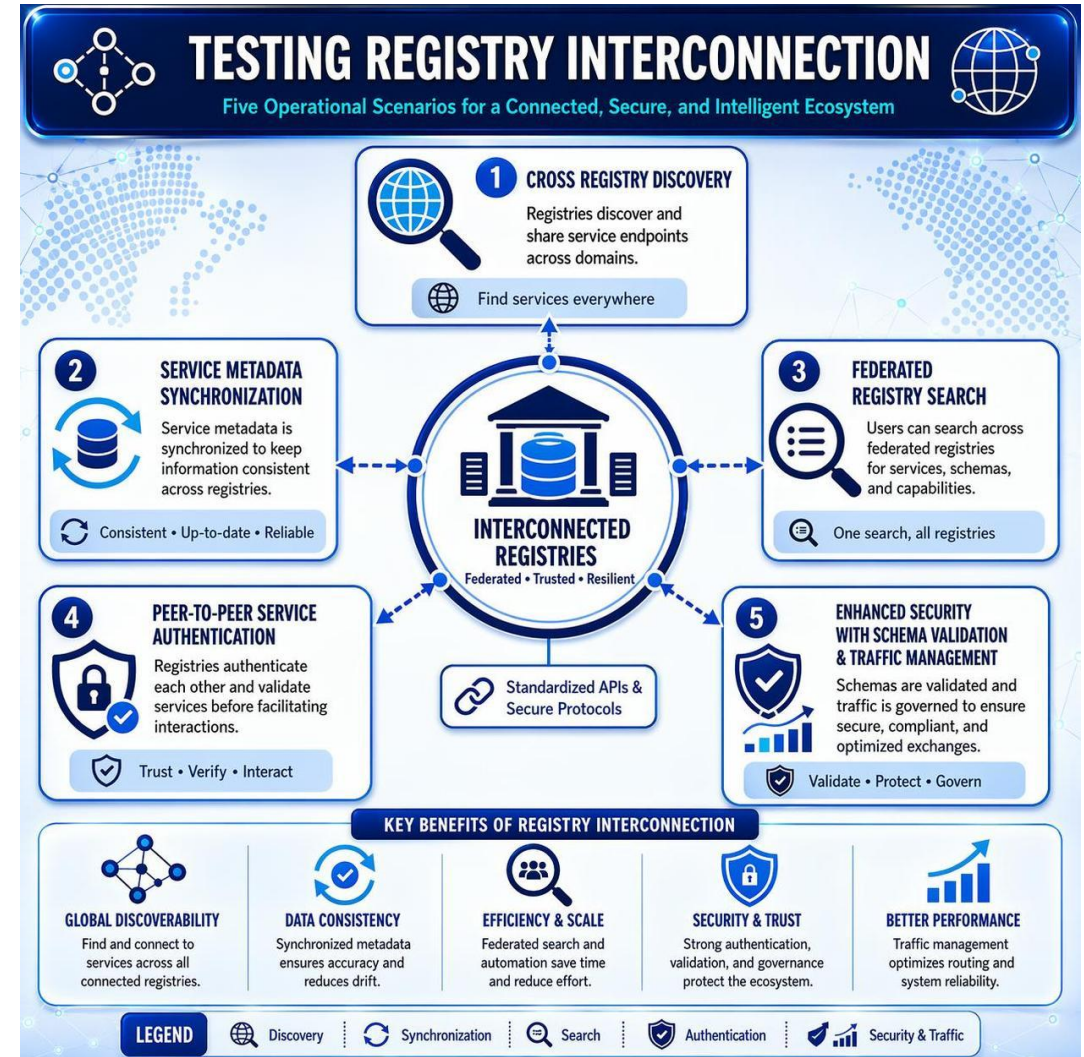


# Registry Testing



# 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**

