Contract Testing – An efficient way for integration testing

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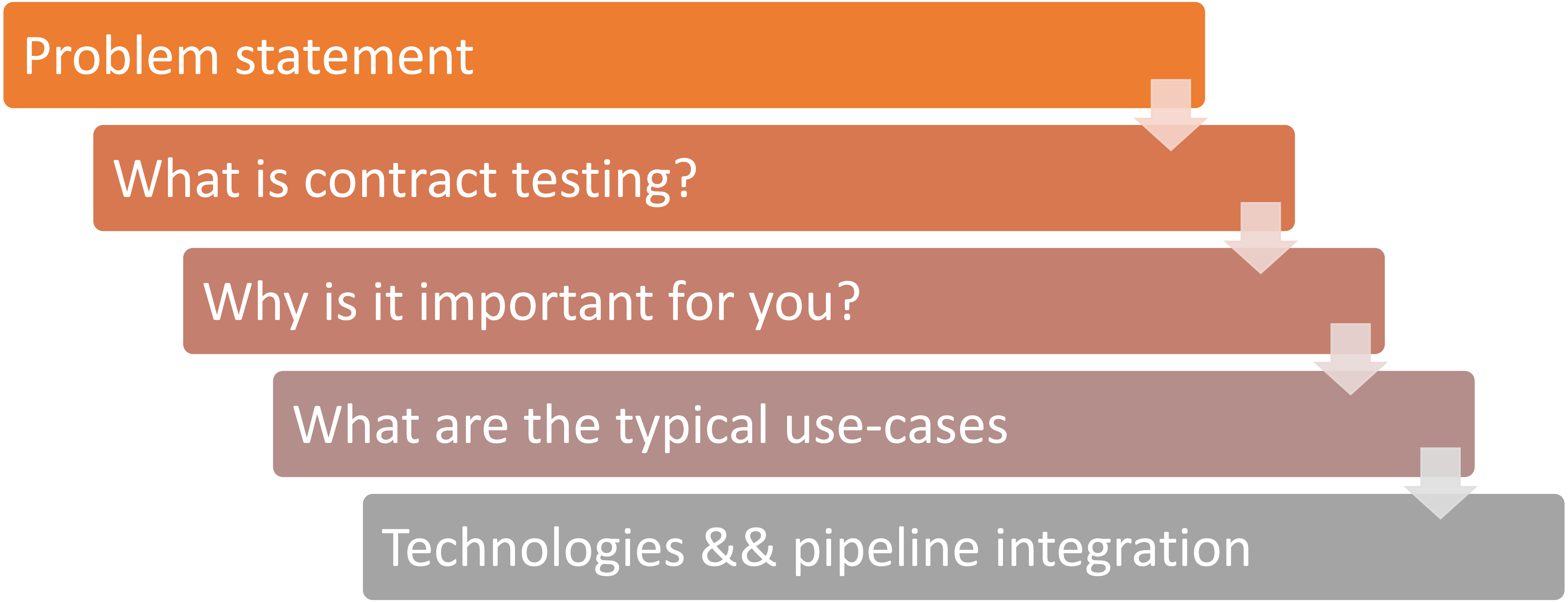
Purpose of the talk



Problem statement

What is contract testing?

Why is it important for you?

What are the typical use-cases

Technologies && pipeline integration

Problem statement

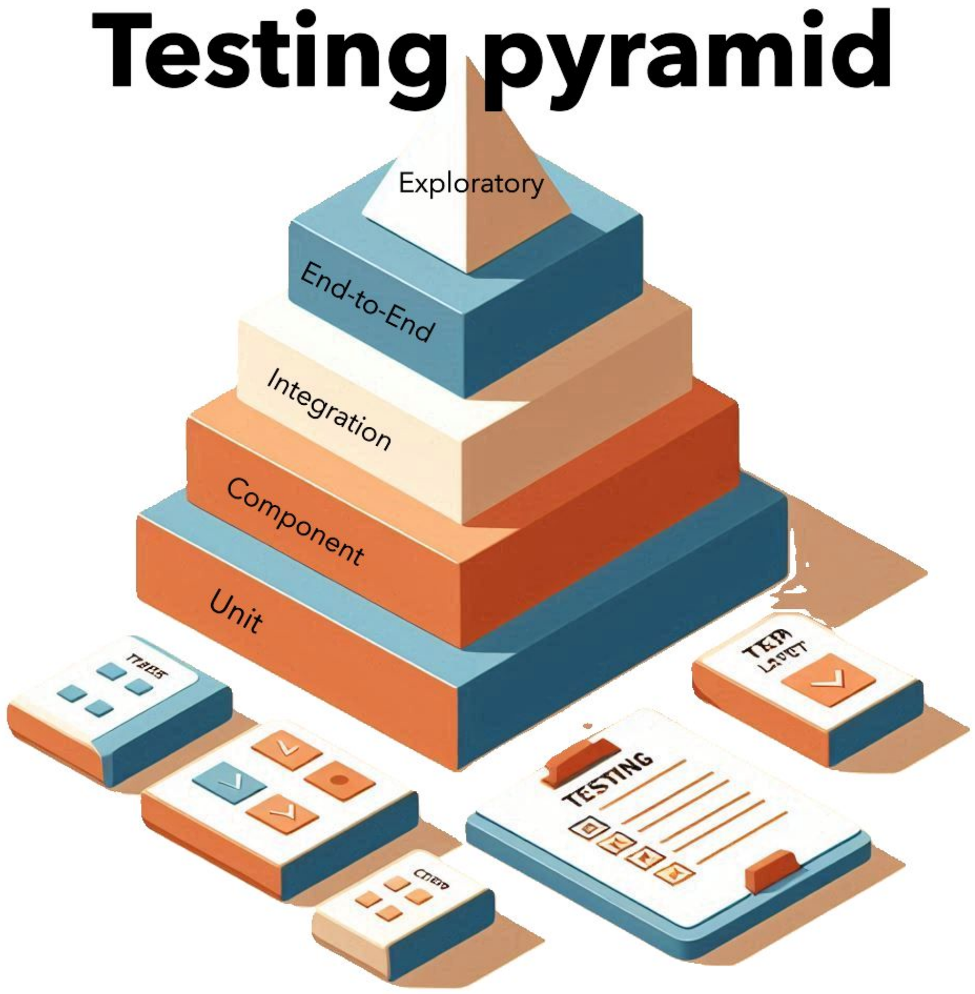
- Automated integration testing would improve most of the projects

- But it's rarely implemented. Why?
  - Complex
  - Fragile
  - Not trivial to implement

- Is there a way to do it easier: **Yes, there is!**

Key details - contract testing

- Purpose: Ensures inter-system compatibility
- Testing level: Integration
- Types
  - Consumer driven
  - Producer Driven



What is contract testing?

Technique for ensuring component or system compatibility

Key concepts:

Consumer: system/component that consumes data from the provider

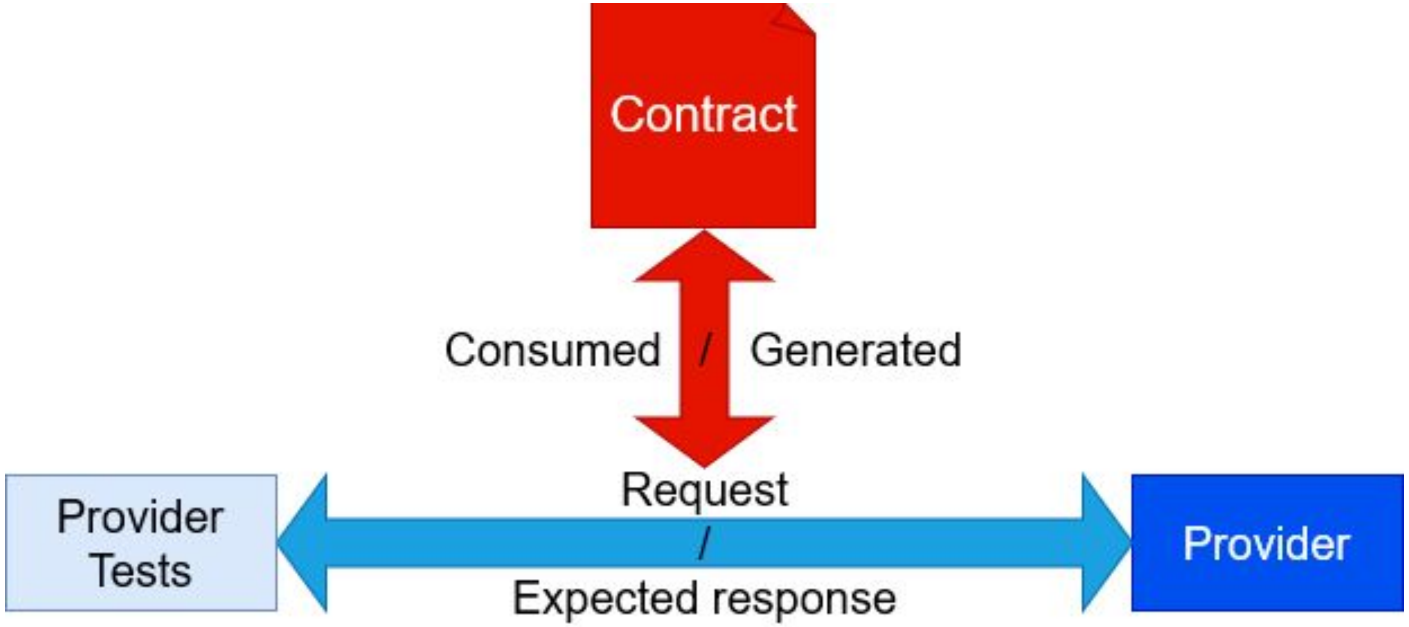
Contract: defined agreement that specifies the expected behavior

Provider: system/component that provides the data

Provider-Driven contract testing

Contract is defined by service provider

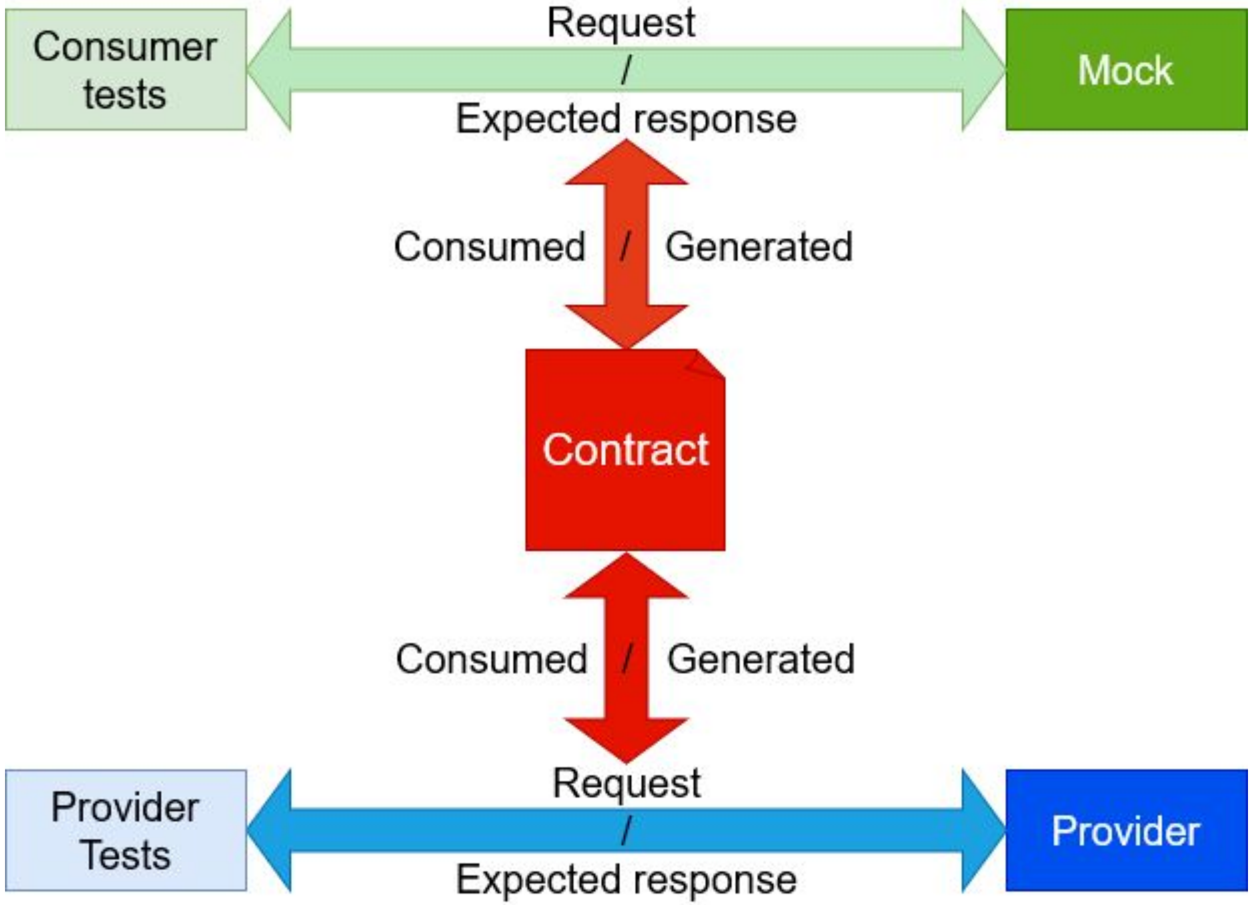
Contract and tests sent to consumer



Consumer-Driven contract testing

Contract is defined at consumer

Contract and tests sent to producer



Consumer tests

Request / Expected response

Mock

Consumed / Generated

Contract

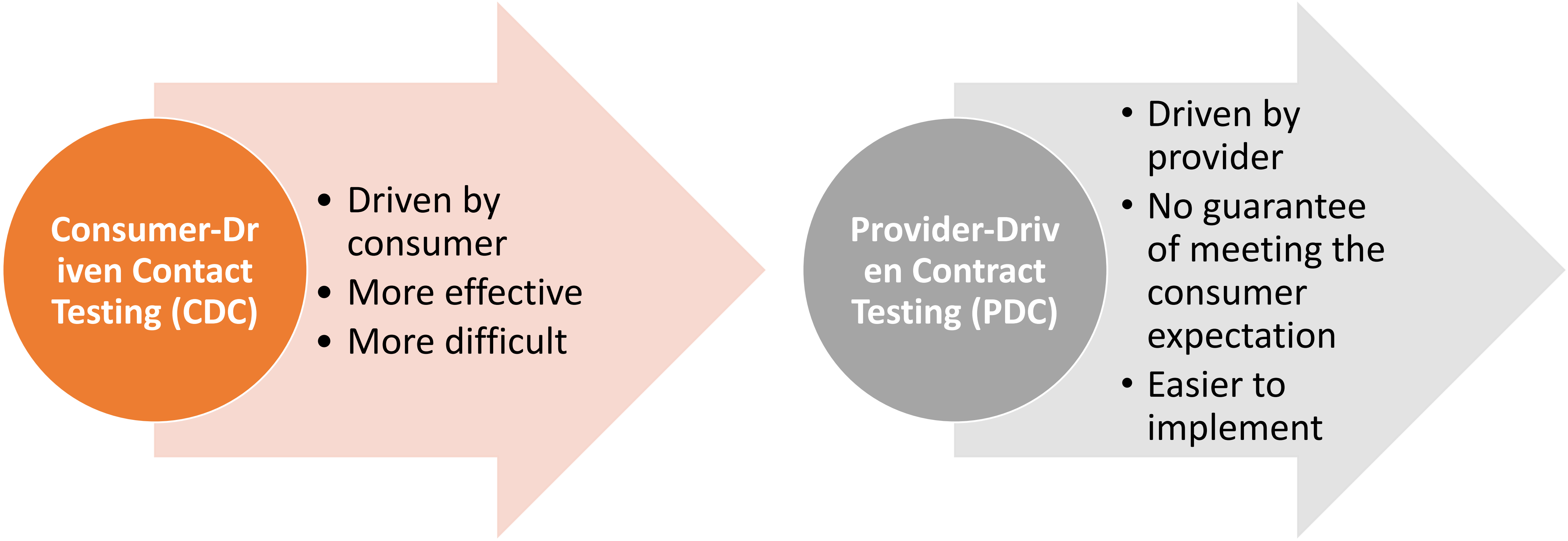
Consumed / Generated

Provider Tests

Request / Expected response

Provider

Comparison of contract testing types



Consumer-Driven Contact Testing (CDC)

- Driven by consumer
- More effective
- More difficult

Provider-Driven Contract Testing (PDC)

- Driven by provider
- No guarantee of meeting the consumer expectation
- Easier to implement

Key benefits of contract testing

1. Local execution

No generic test account, deployed system is needed

2. Improved stability and velocity

No environment / infrastructure related problems, no remote communication

3. More maintainable end-product

Easy debug, fast feedback regarding changes.

Typical contract testing use cases

- Microservice integration
- Collaboration for coupled systems
- To overcome infrastructure/ environmental challenges

Technologies for contract testing

- Pact
- Spring Cloud Contract
- Wiremock

Pipeline integration

Easy pipeline

No system deployment, generic test account required

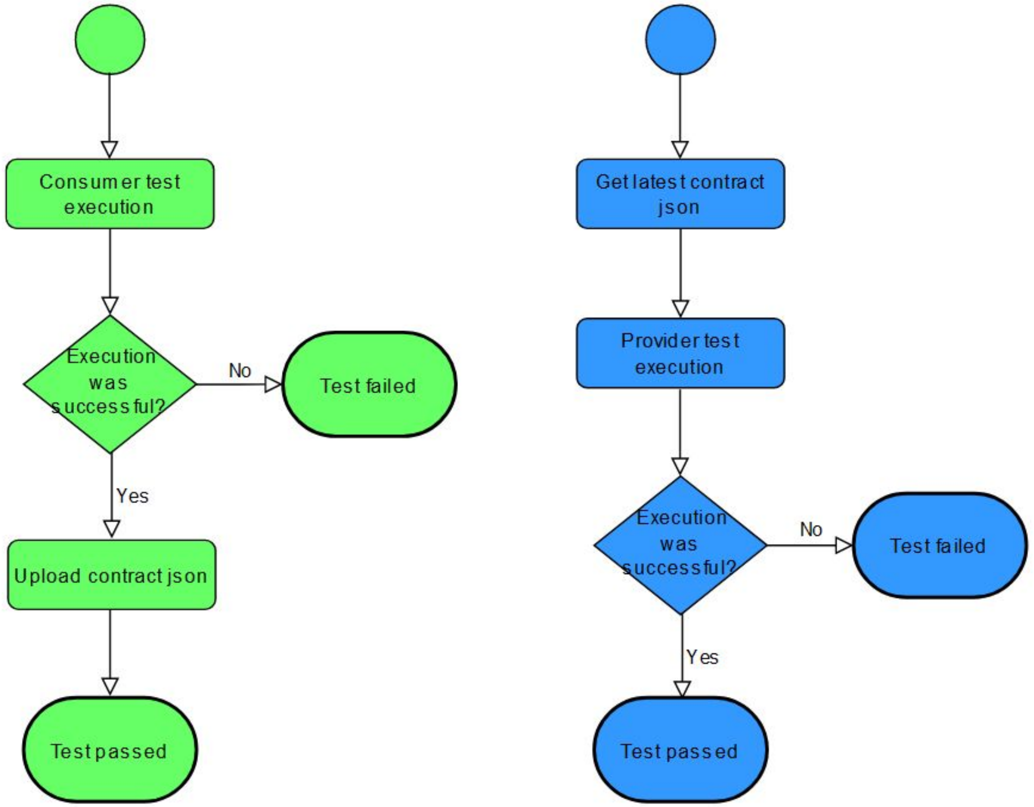
Stable execution

Local execution

Steps can be generalized

Similar steps

CI/CD integration within days



Summary

CONTRACT TESTING - ENSURES INTER-SYSTEM COMPATIBILITY

KEY BENEFITS - MS INTEGRATION, COLLABORATION

TECHNOLOGY && PIPELINE -MULTIPLE TOOL, PIPELINE INTEGRATION WITHIN DAYS