Implementation Methodology

PREPARATION

UiPath Ecosystem

UiPath Studio

- Desktop application that enables users to automate with highly intuitive tools, not code
- Includes the following:
  - process recorders
  - drag & drop widgets
  - best practices templates

DEPLOY

UiPath Orchestrator

- Enterprise architecture server platform. Supports the following:
  - release management
  - centralized logging
  - reporting, auditing, monitoring tools
  - remote control
  - centralized scheduling
  - queue/robot management

EXECUTE

BIG SCALE

MONITOR

UiPath Robot

- Windows service that Executes automation instructions

Attended and Unattended Robots

ATTENDED ROBOT

- Assists human operators
- Triggered manually and running locally
- Fit for manual, repetitive, rule-based activities, requires human intervention
- Communication with the Server is bi-directional (restricted) as below:
  - Robot to Server: Execution logs, automated process upload
  - Server to Robot: Automated process version deployment ONLY

Features:

- Process management (automatic process update/rollback)
- Agent assisted mode
- Centralized logging, reporting and auditing tools

FO

UNATTENDED ROBOT

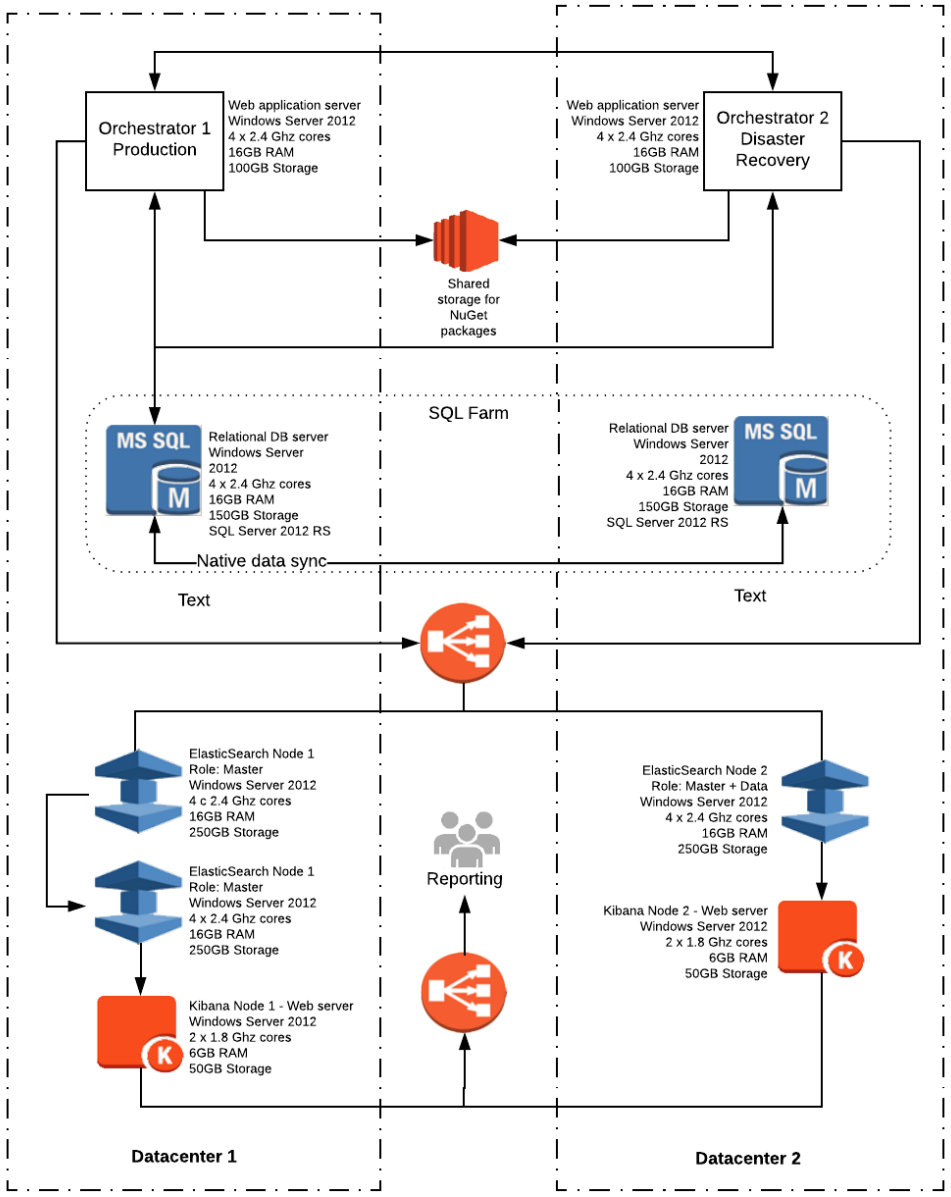
- Doesn't require human intervention
- Triggered and running remotely
- Fit for manual, repetitive, rule-based back office activities NOT requiring human intervention
- Communication with the Server is bi-directional (unrestricted) as below:
  - Robot to Server: Execution logs, automated process upload, robot status
  - Server to Robot: Automated process version deployment, schedule, start, reset

Features:

- Process management (automatic process update/rollback)
- Asset management
- Centralized logging, reporting and auditing and monitoring

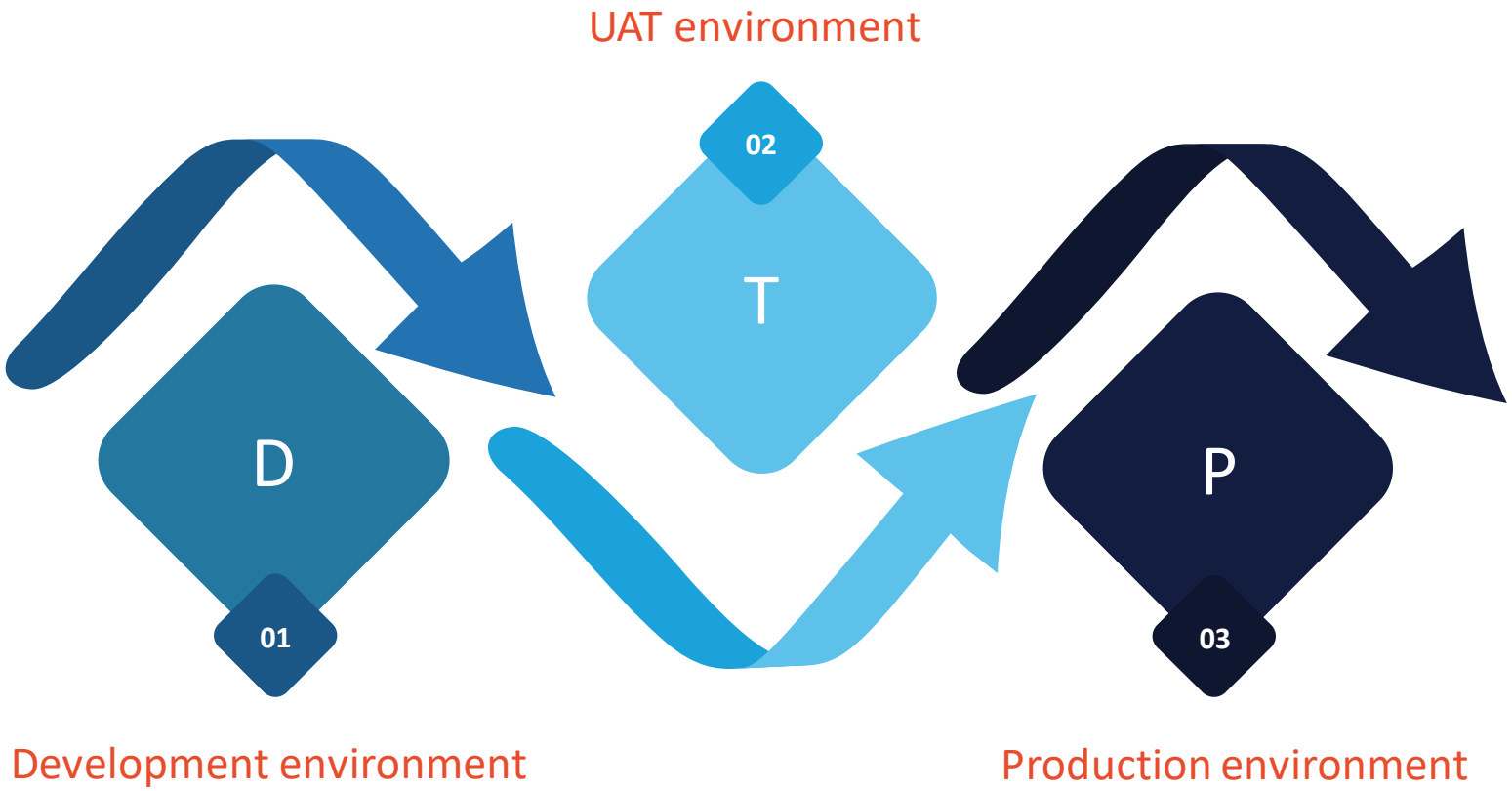
BO

Server Architecture



- **Two data centers**
- **Active-active architecture**
- **A NLB and 2 Orchestrator nodes ensure high availability**
  - Round-robin network balancing algorithm
  - Multiple nodes supported if required
- **Full redundancy reinforced by:**
  - Shared storage of the NuGet packages
  - The SQL Server AlwaysOn Availability
  - Group feature
  - A load balancer between the 2 Kibana web servers
- **Reporting**:
  - ElasticSearch
  - Kibana

Environment configuration order



*The Infrastructure Components document includes details about the Dev, Test and Production environment and how to ensure that all steps are covered and the information is consolidated in the same place. This document is available in the course documentation.

Best Practices in Machine Configuration

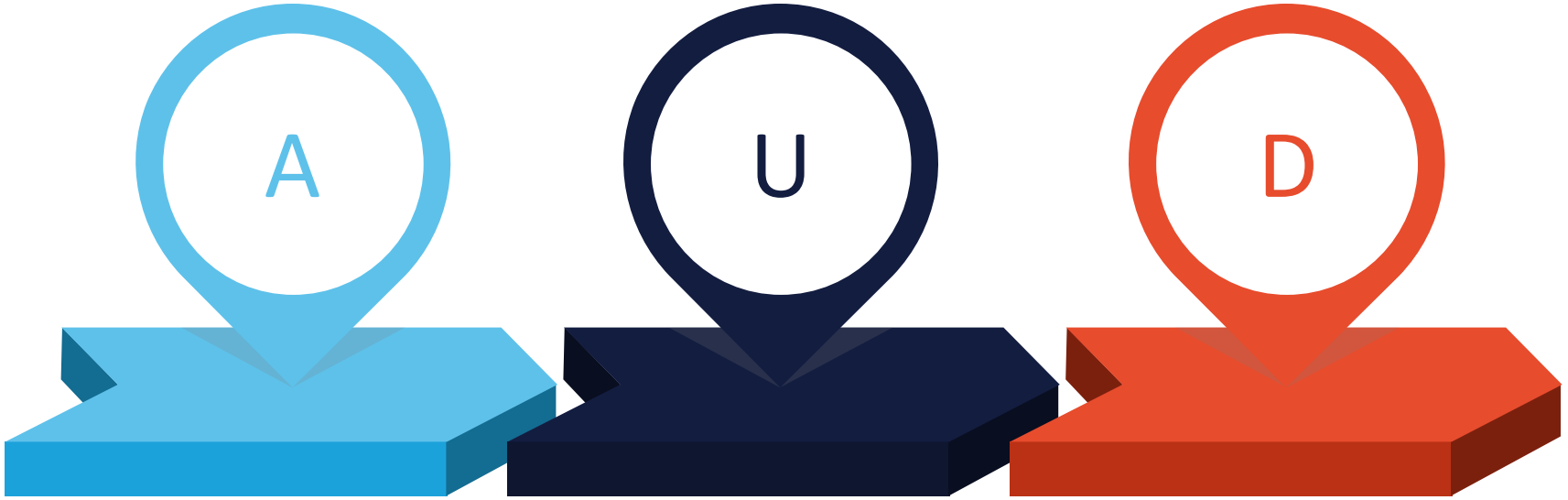
Robot Machines

- Combine Attended and Unattended robots
- Design a scalable solution

Development Machines

- Assign machines with enough processing power

License Features



Attended

Attended robots

Unattended

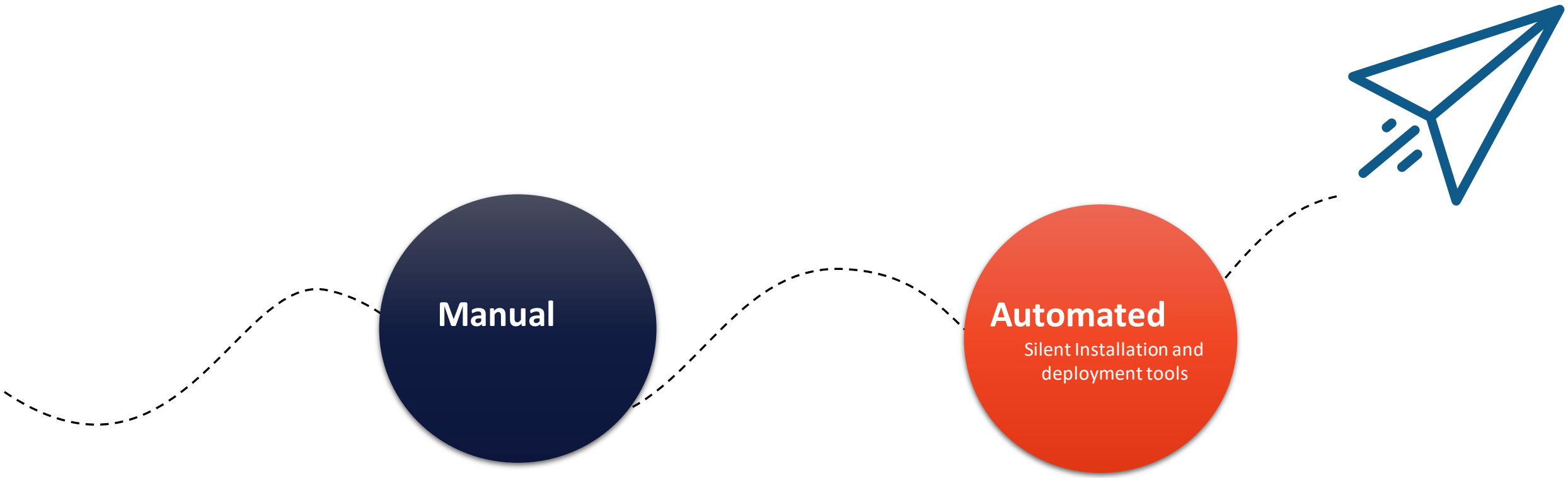
Unattended robots

Development

Studio

A local Unattended robot

Deployment and License Activation Methods

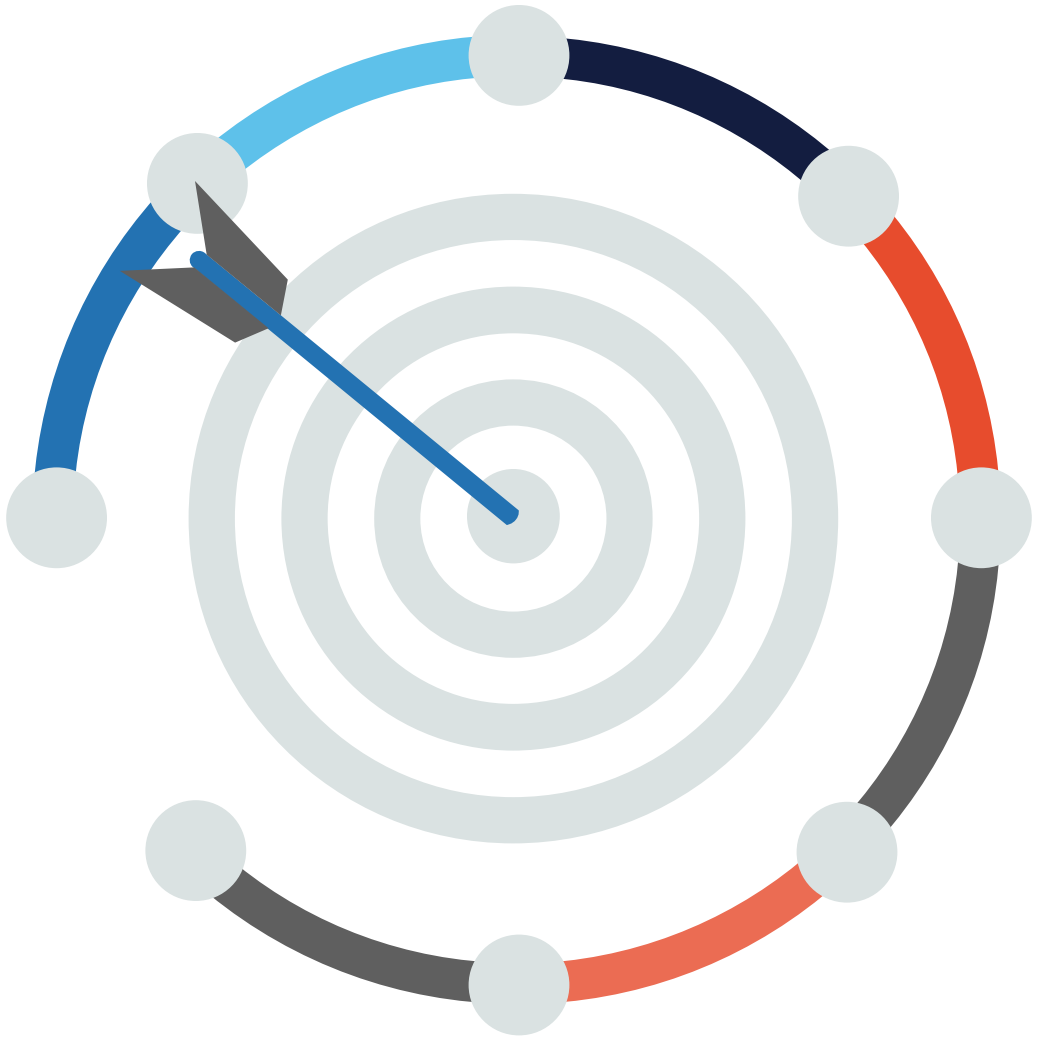


Implementation Methodology

SECURITY

Authentication

Authentication of robots



In Windows session

- The credentials used for authenticating the windows session and starting the workflow will be stored into Orchestrator
- The robot does not require administrator privileges to run
- Various options for robot accounts: one generic account, multiple technical accounts or user accounts
- Analyze the benefits of each approach for the automated applications.

In applications

- The work done by the robot requires using credentials.
- The credentials can be stored locally, in the Windows Credential store or in the Orchestrator Database, encrypted.
- Each robot can use its own set of credentials. Since the robot operates as a human operator would, it can use SSO the same way.
- Besides the two described methods for storing credentials, a third party solution for credential storing can be used.

Authentication

Authentication of users

With username and password

- Each Orchestrator user can log in with username and password
- The associated roles can be fully customized based on granular permissions

Active Directory integration

- The login to Orchestrator can also be done using Active Directory integration. This can be achieved by associating AD users to groups and assigning Orchestrator roles to particular groups
- The members of the groups would be able to automatically log into Orchestrator

Development collaboration tools

1

SVN

Native integration

2

TFS

Native integration

3

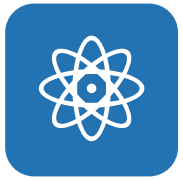
GitHub

Manual project synchronization required

Environment Setup

Robot grouping	Mentions
By process	○ Administration ease ○ Low flexibility ○ Low robot utilization
By used applications	○ Administration difficulty ○ High robot utilization
Mixed approach	○ Optimal choice

RPA Development Approach



Developer collaboration

Choose the developer collaboration method within the RPA team.

Multiple technologies are supported, including TFS and SVN, which are natively integrated with UiPath Studio.

Naming strategy

Adhere to the naming strategy standards suggested by the developers. The entire team should follow this convention to facilitate code understanding, review and maintenance.

Environment setup

Decide on the split between the different robotic environments. The advantages offered by the different methods need to be weighted per each project.

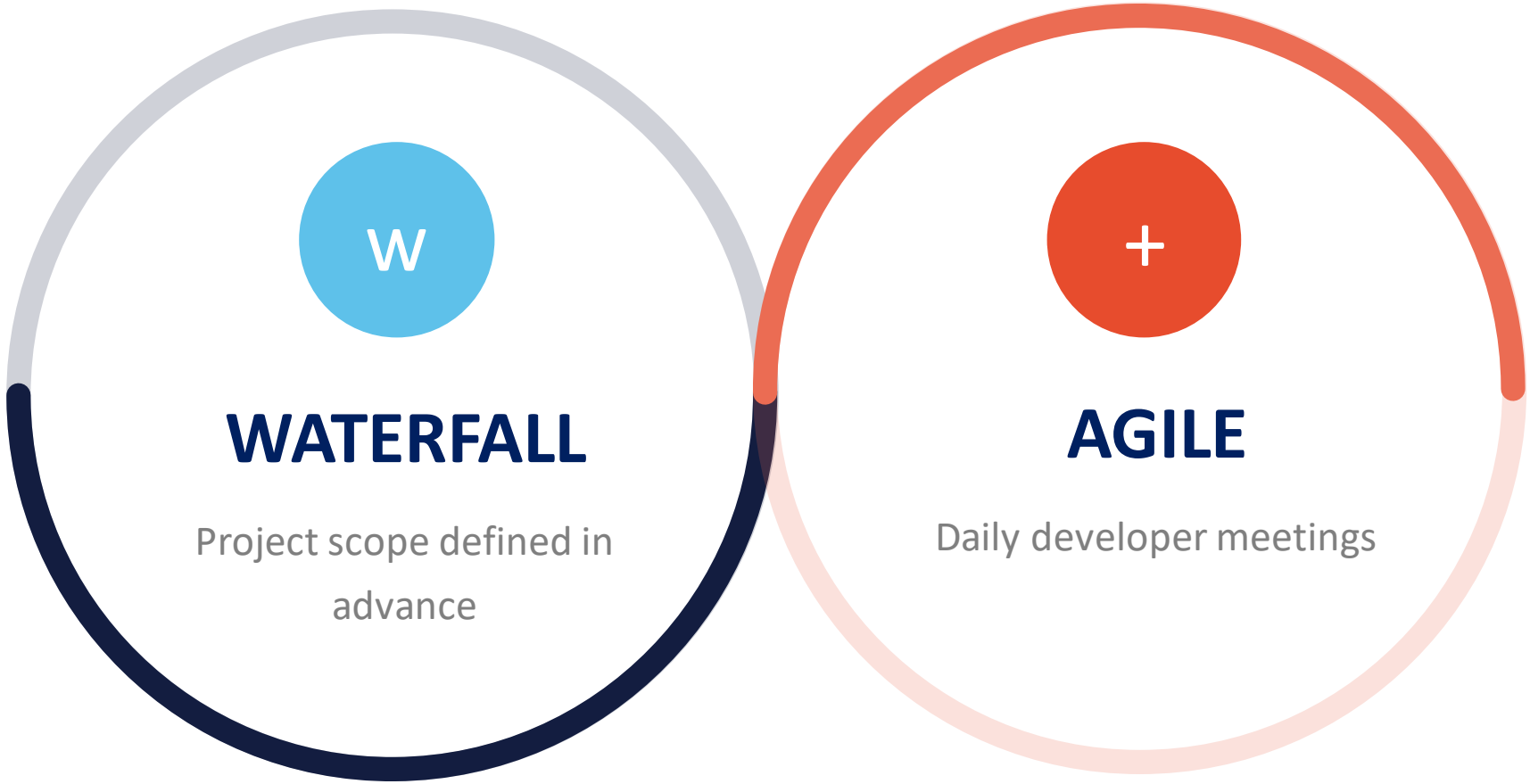
Reusable components

Agree on a strategy for reusing and distributing the developed components. Save time and effort by defining the reusability of components cross-department or cross-company

Reusable Components Approach

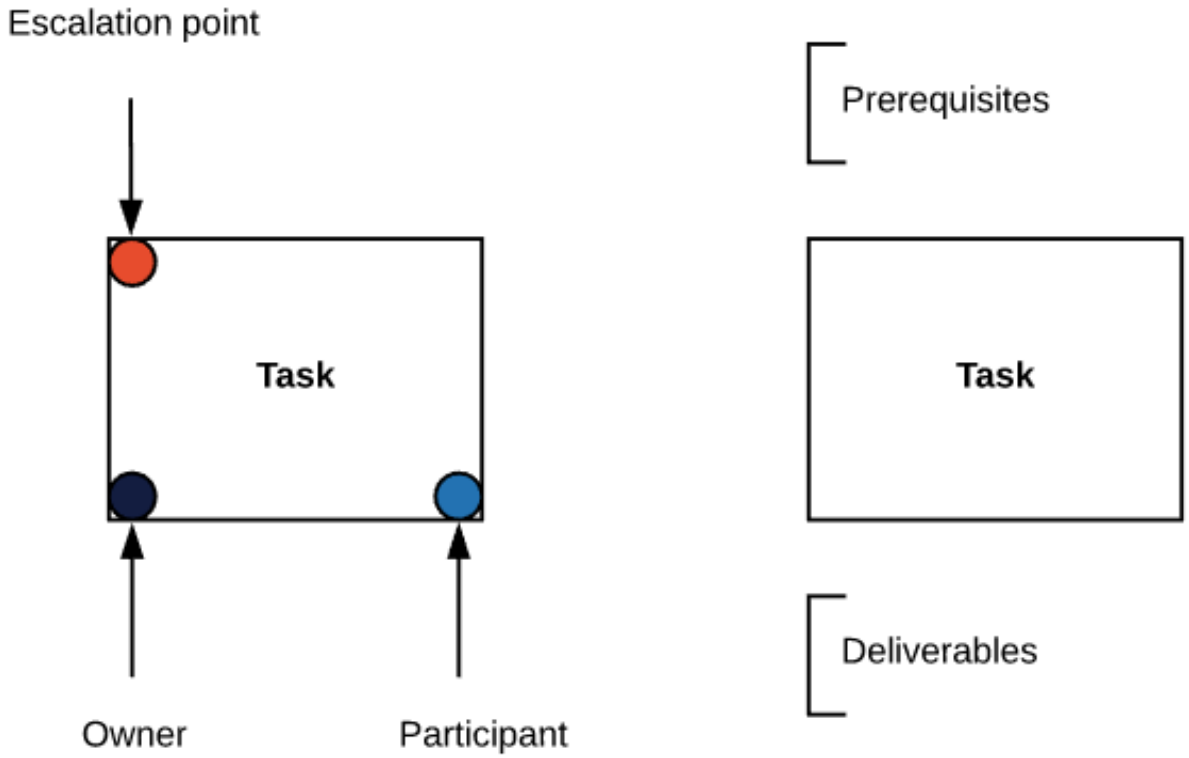
Local File Storage	Shared File Storage	Shared Components Package	Custom Packaging Method
Store the reusable components in the Source Control System. Sync files in shared location. Add the network path to the Library in Studio.(RECOMMENDED)	Use a file share location to store the reusable components and invoke them remotely.	Create one package containing shared components and distribute it using the Orchestrator embedded provisioning mechanism.	Use a third party solution to create packages that also provision the reusable components.
PROS: ✓ Easiest to implement ✓ Most secure **CONS:** ▪ In case a reusable needs to be changed, manual re-publishing and re-deploying are required	**PROS**: ✓ Easy to implement ✓ Calling by reference **CONS:** ▪ In case of network failure, the robots are not able to run ▪ The robots can run more slowly due to network latency (or even trigger exceptions) ▪ Security risk (access to shared folder)	**PROS:** ✓ Calling by reference ✓ Version control **CONS:** ▪ Harder to implement ▪ Project path needs configuration	**PROS:** ✓ An alternative to the Shared Components approach **CONS:** ▪ The most complex approach and the hardest to implement and maintain ▪ Dependent on third party components

RPA Project Management Methodology



RPA Project Management Roles

Project chart

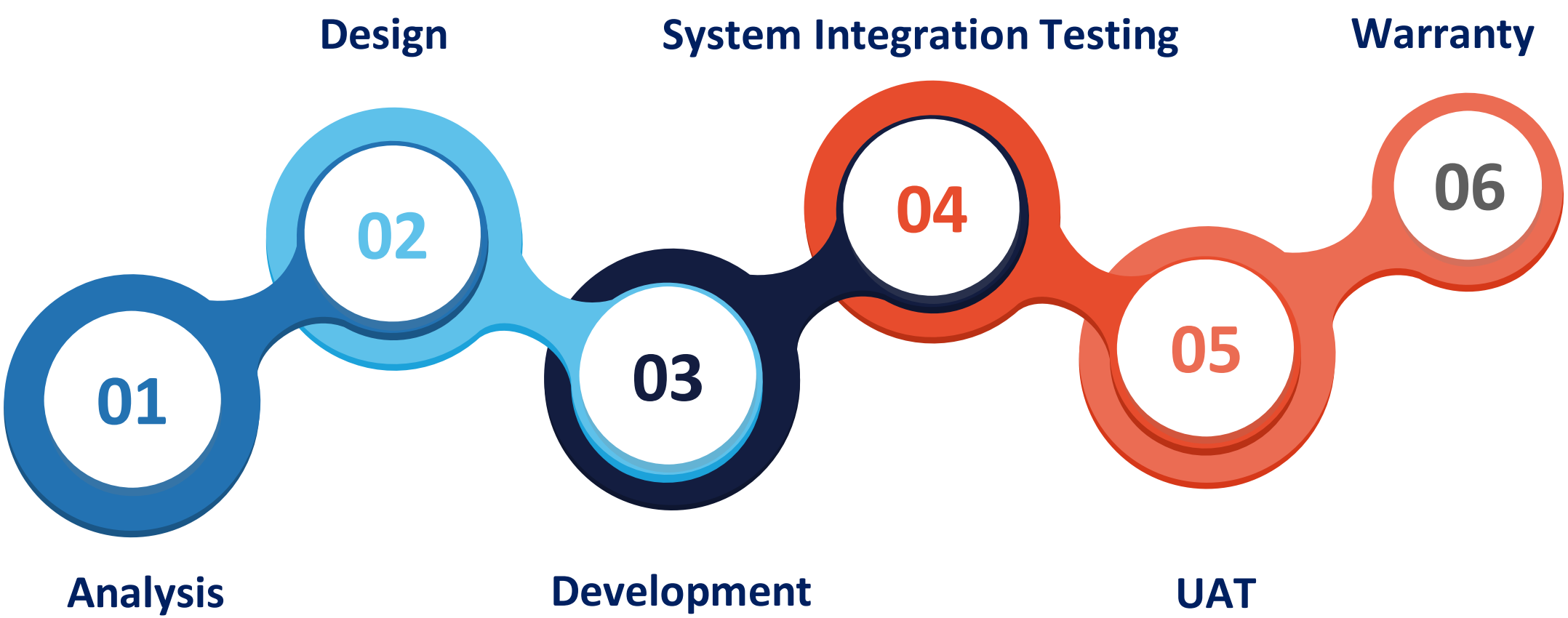


Team members:

- Technical Solution Architect
- RPA Developer
- Business Analyst
- Process Owner / Operations
- Project Manager

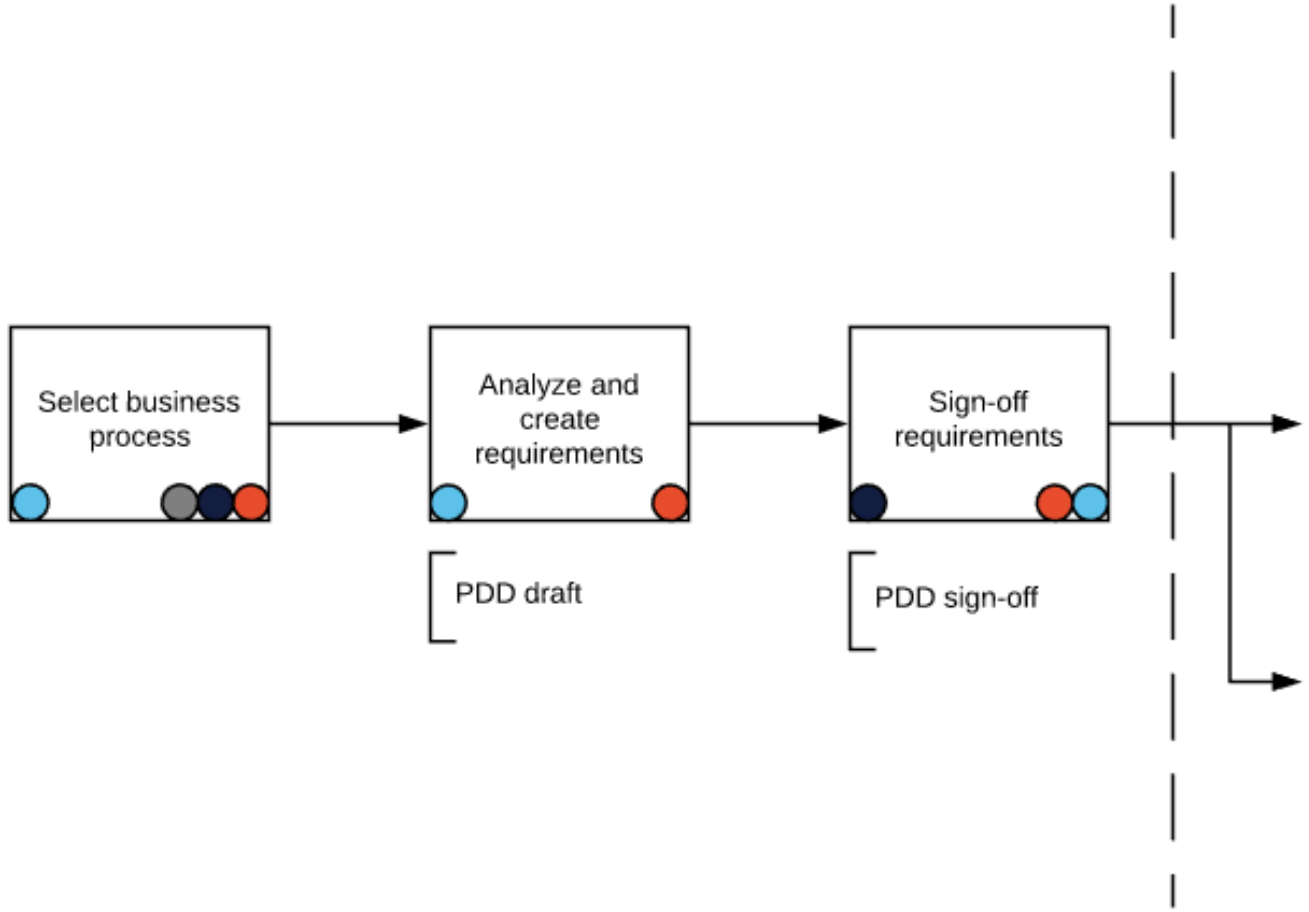
RPA Project Management Methodology

Authentication of users



RPA Project Management Methodology

Analysis



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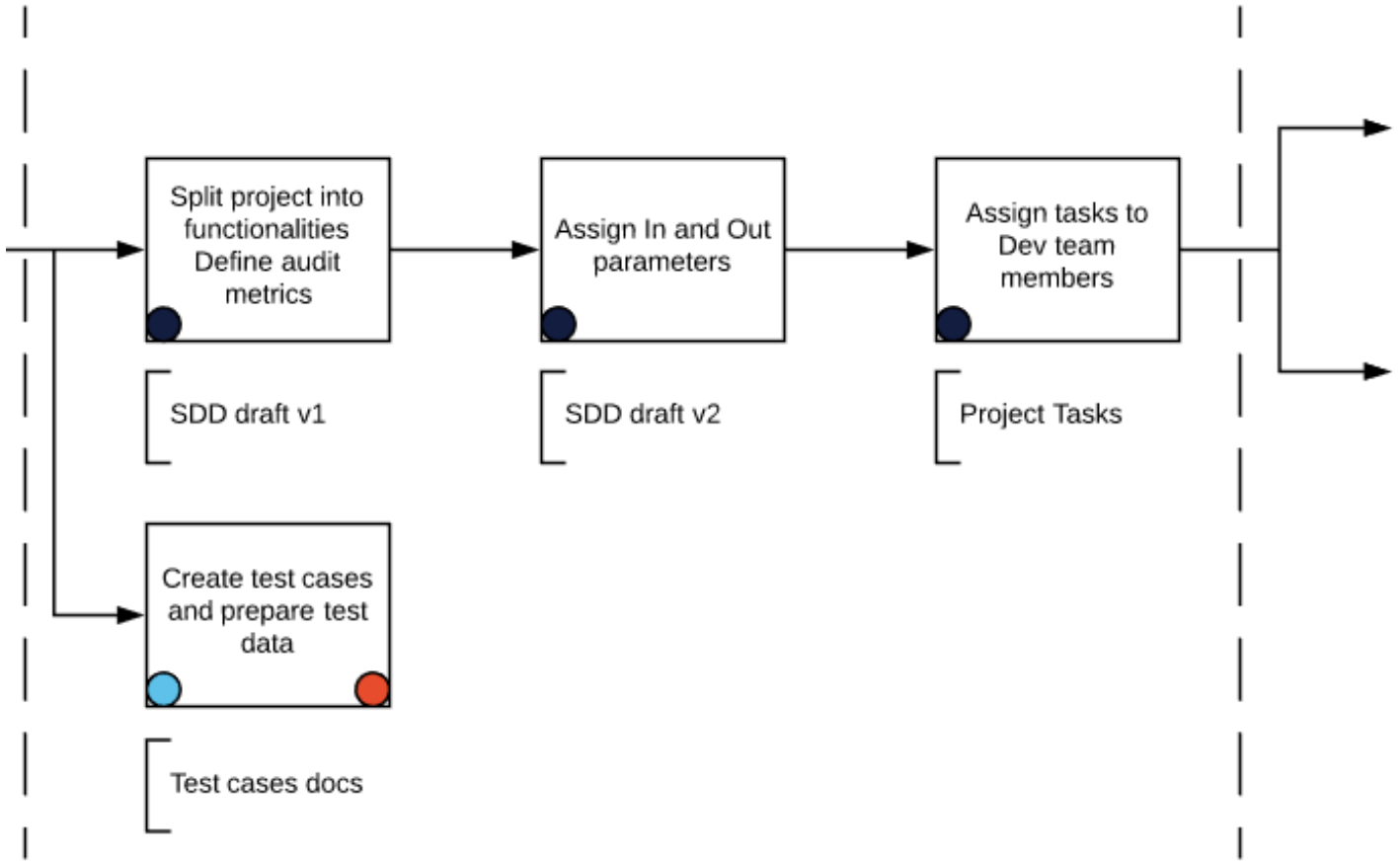
RPA Project Management Methodology

Design



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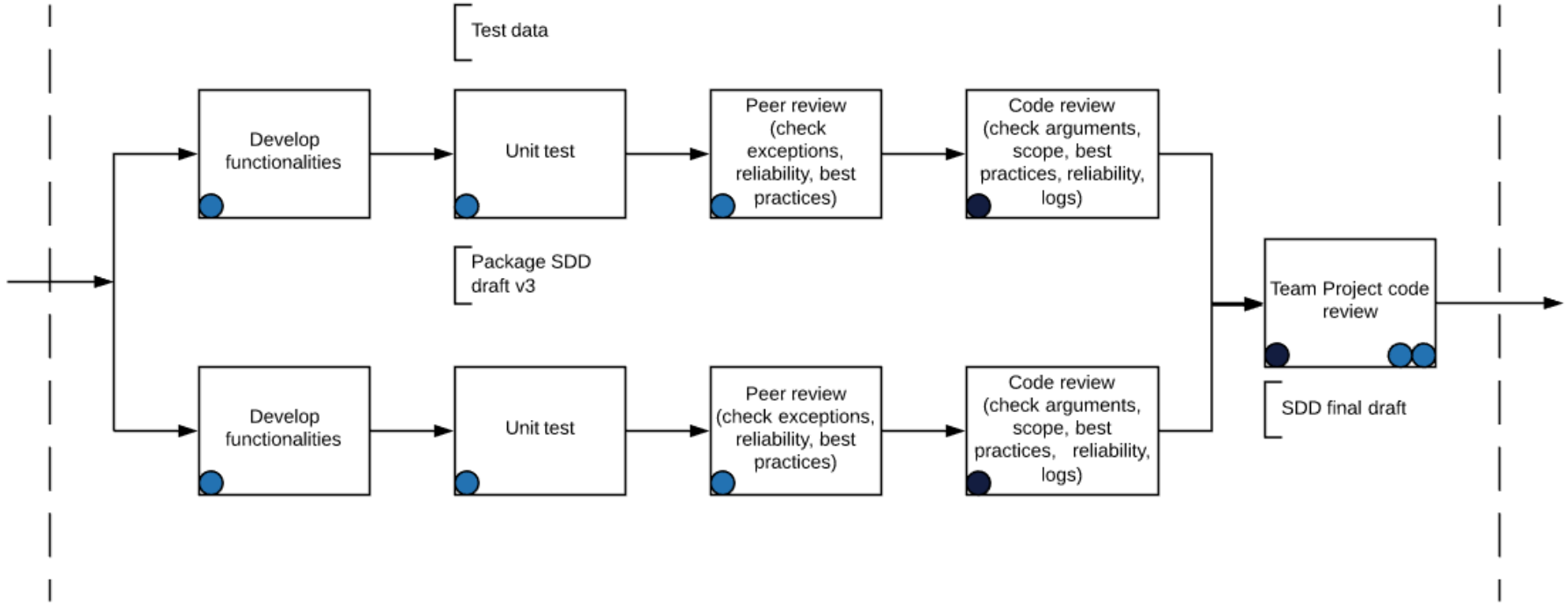
RPA Project Management Methodology

Development



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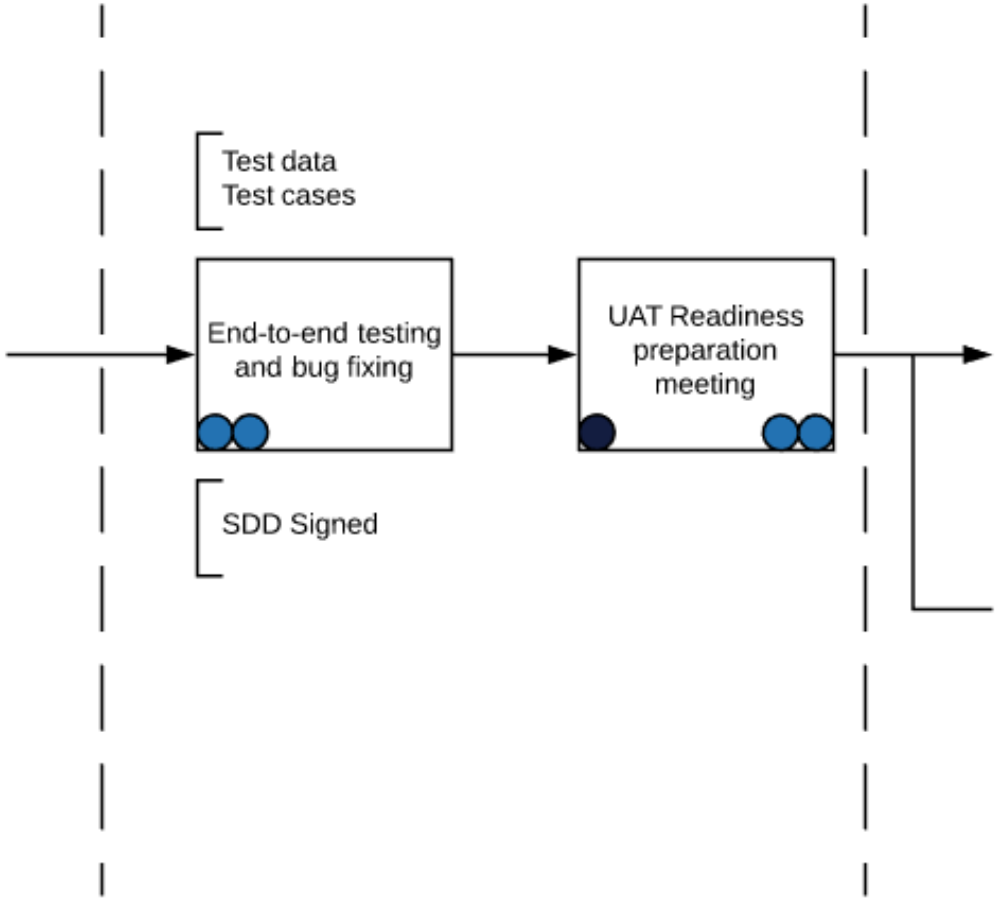
RPA Project Management Methodology

System Integration Testing



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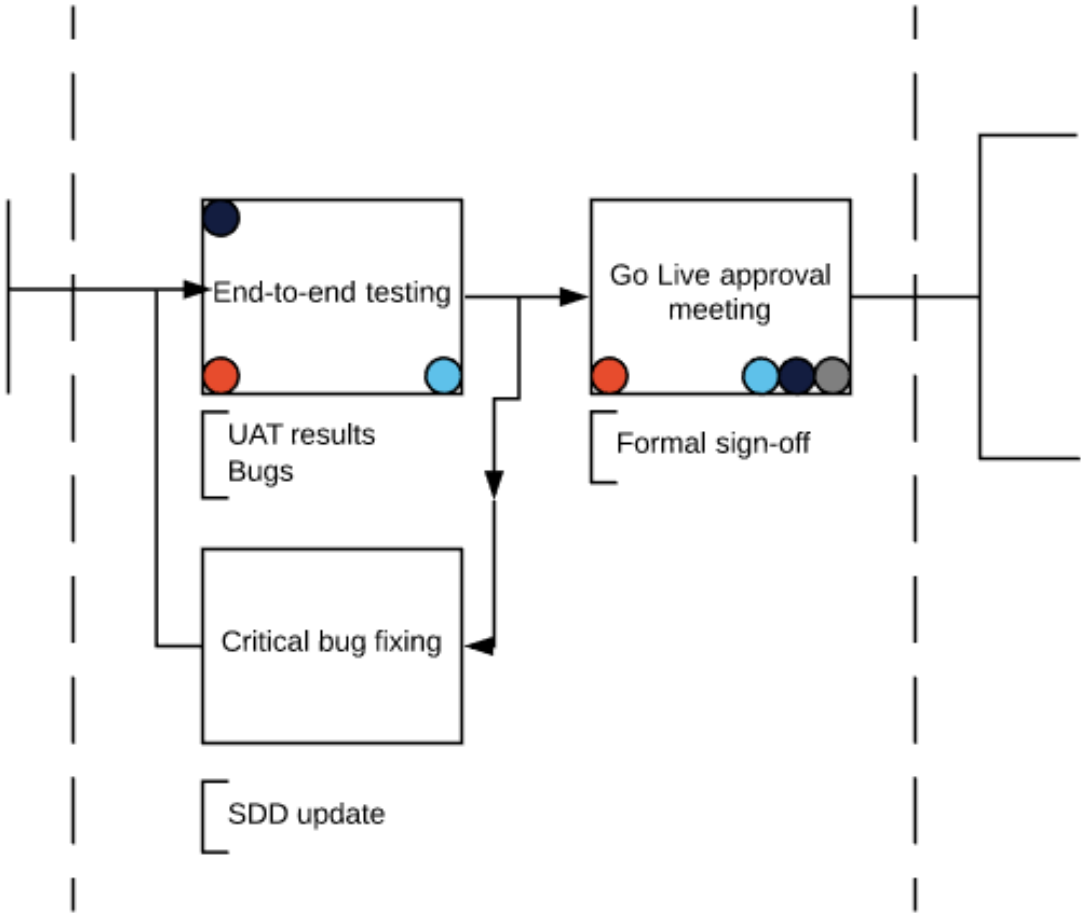
- Project Manager

RPA Project Management Methodology

User Acceptance Testing



Team members:

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- RPA Developer
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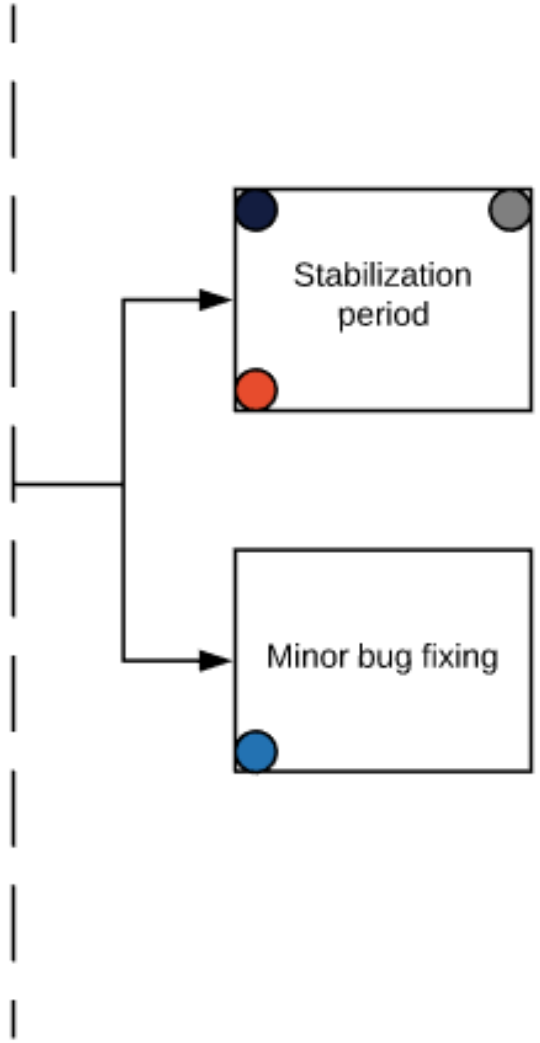
- Project Manager

RPA Project Management Methodology

Warranty



Team members:

- Technical Solution Architect
- RPA Developer
- Business Analyst
- Process Owner / Operations
- Project Manager

Thank You!