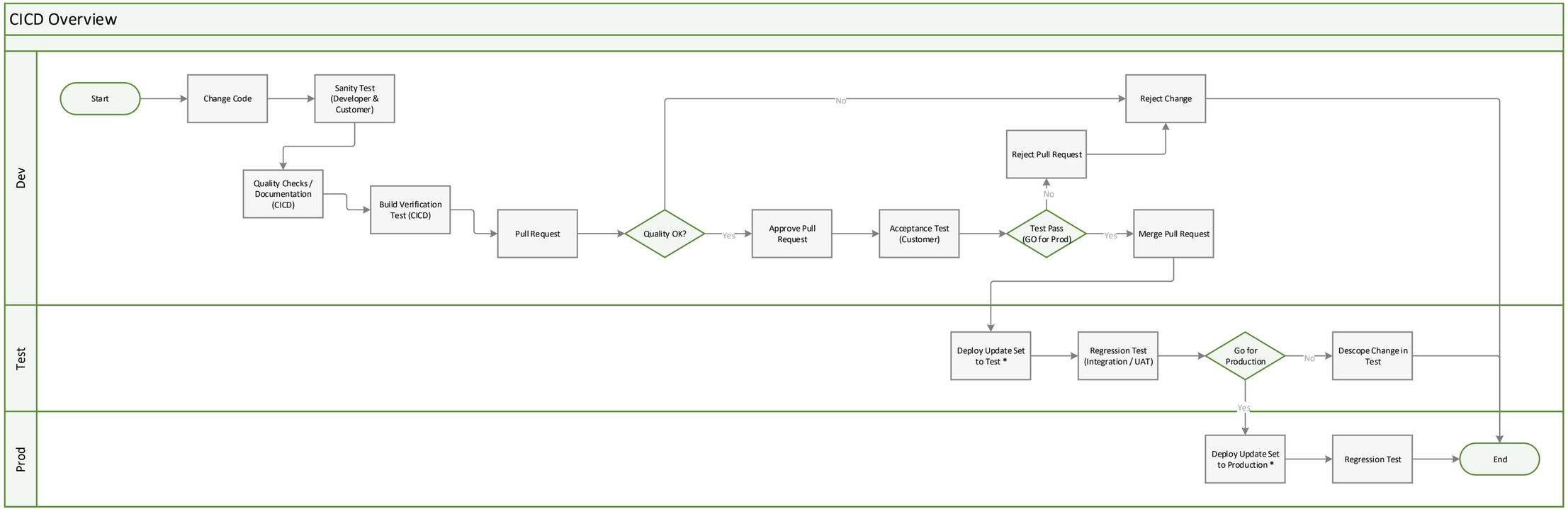
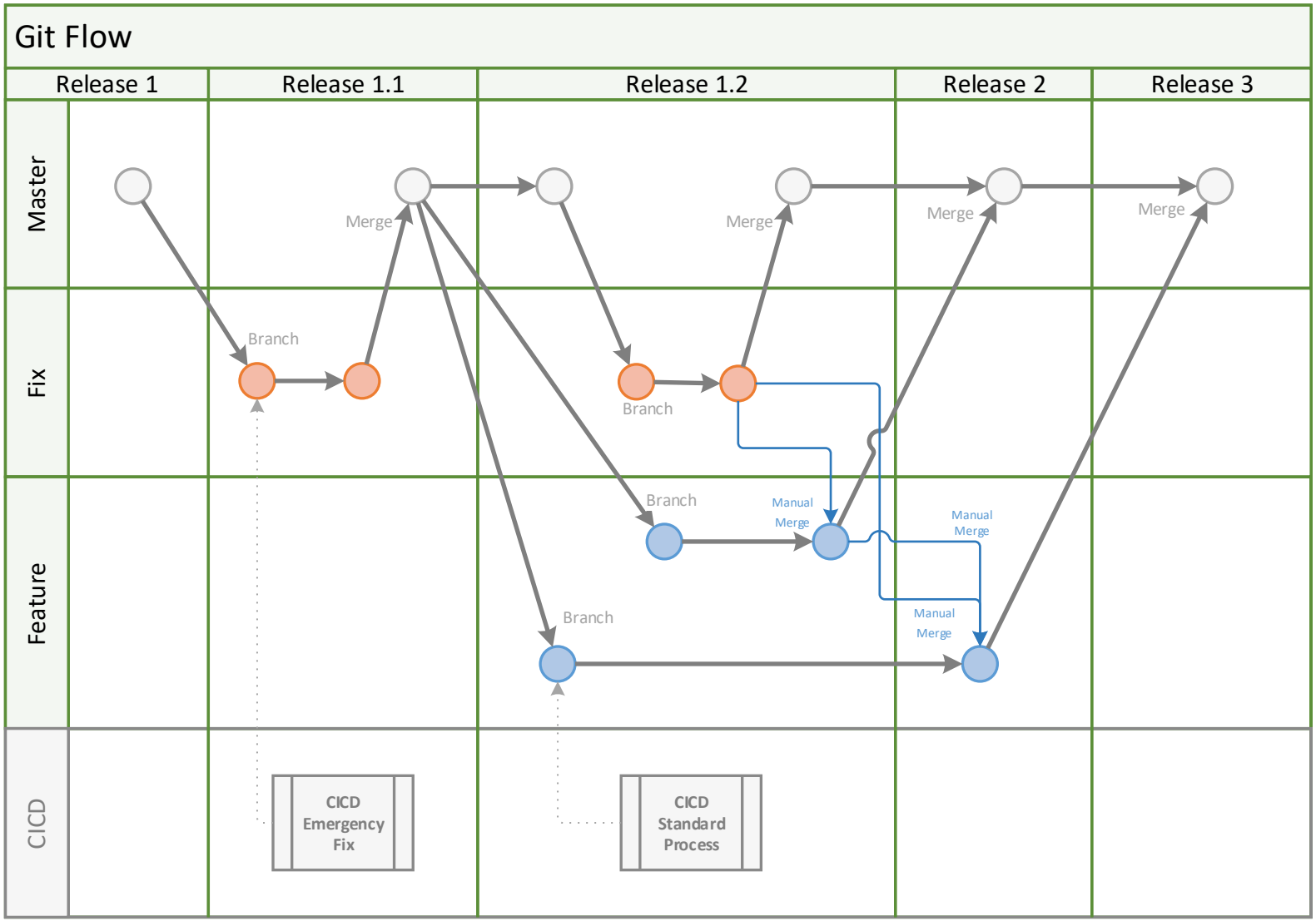
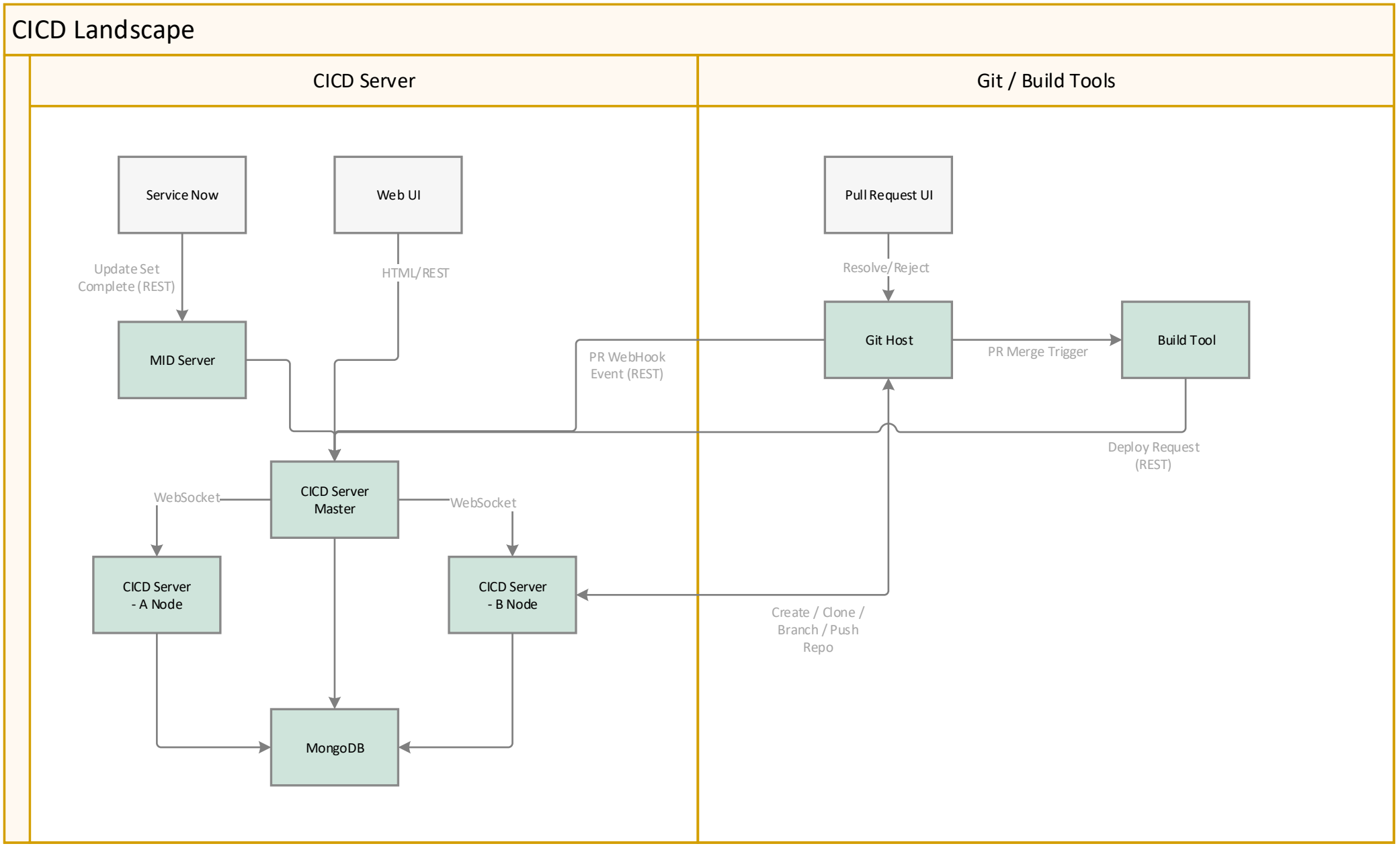
CICD Overview



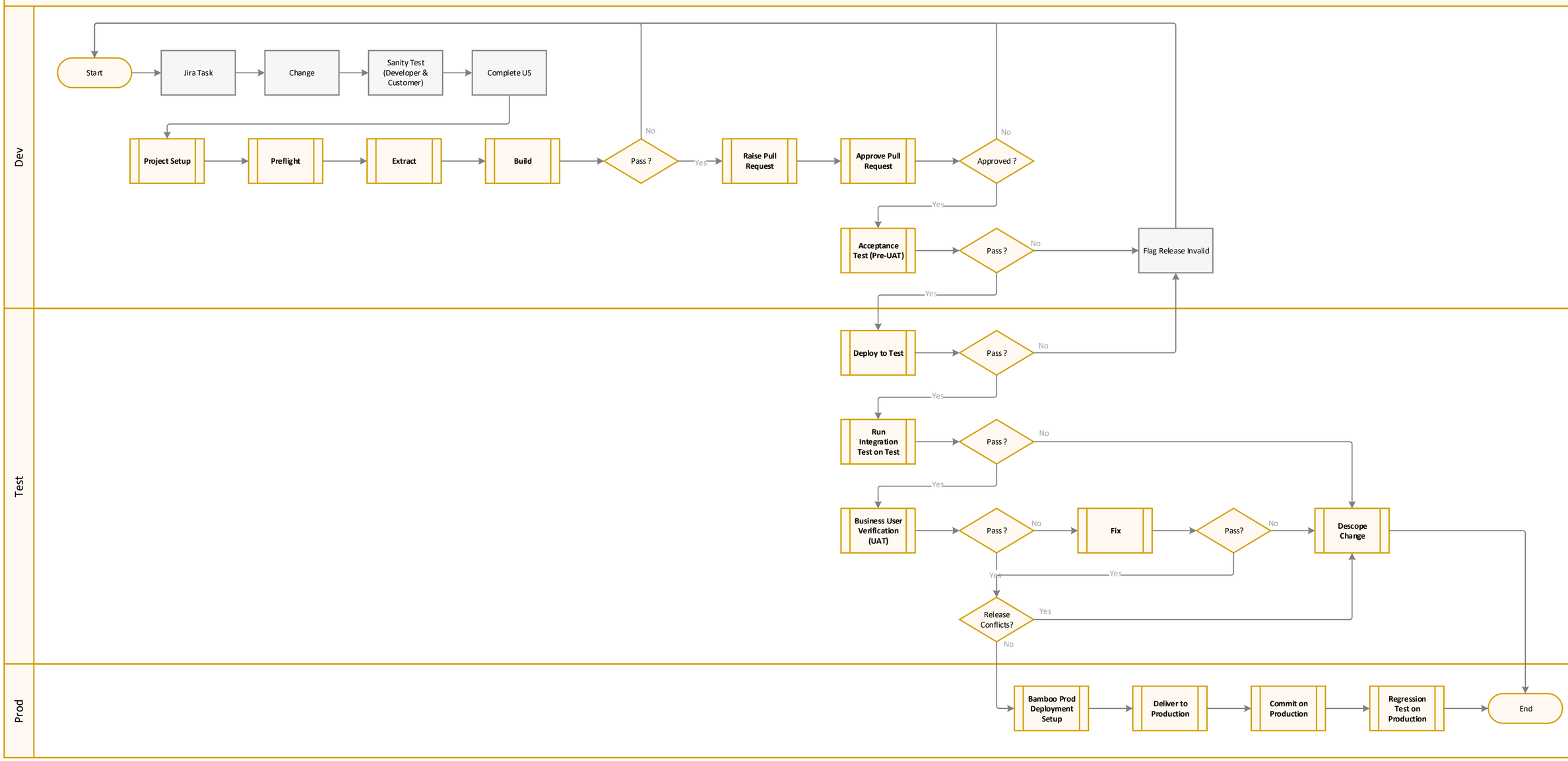
* Deployment Types:

- **Standard Deployment**: Update sets added to Git between last deployment commit id and current commit id are merged into one update set during deployment.
- **Fix Deployment**: Only current update set is deployed. Pending changes are not applied.


Git Flow
Release 1
Release 1.1
Release 1.2
Release 2
Release 3
Master
Fix
Feature
CICD
Merge
Merge
Merge
Merge
Branch
Branch
Branch
Branch
Manual Merge
Manual Merge
Manual Merge
CICD Emergency Fix
CICD Standard Process

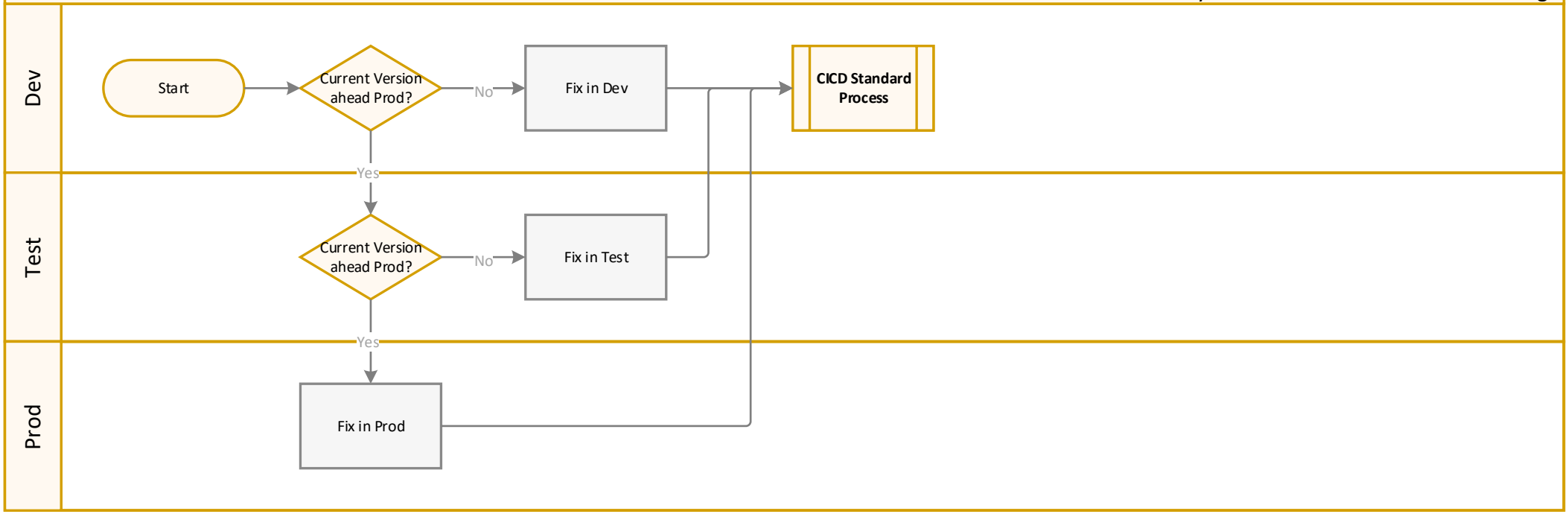

CICD Landscape
CICD Server
Git / Build Tools
Service Now
Web UI
Pull Request UI
Update Set Complete (REST)
HTML/REST
Resolve/Reject
MID Server
Git Host
Build Tool
PR WebHook Event (REST)
PR Merge Trigger
Deploy Request (REST)
WebSocket
CICD Server Master
WebSocket
CICD Server - A Node
CICD Server - B Node
Create / Clone / Branch / Push Repo
MongoDB

CICD Standard Process

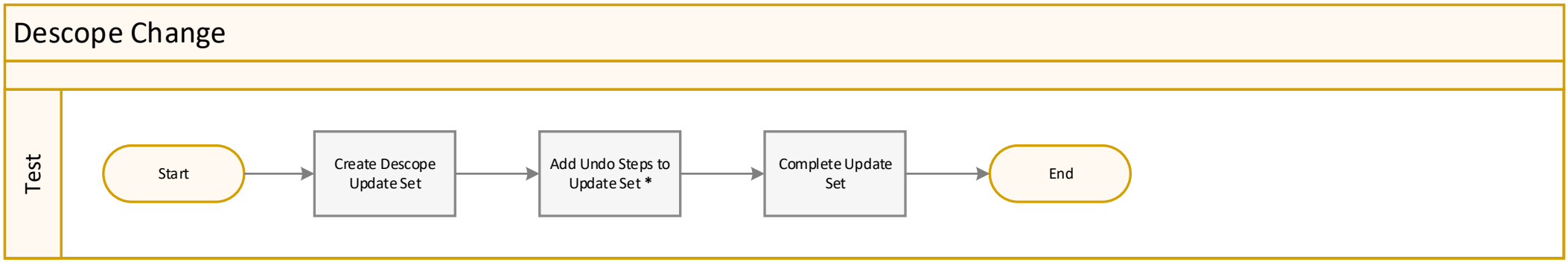


CICD Emergency Fix Process

Identify the correct Environment for Change



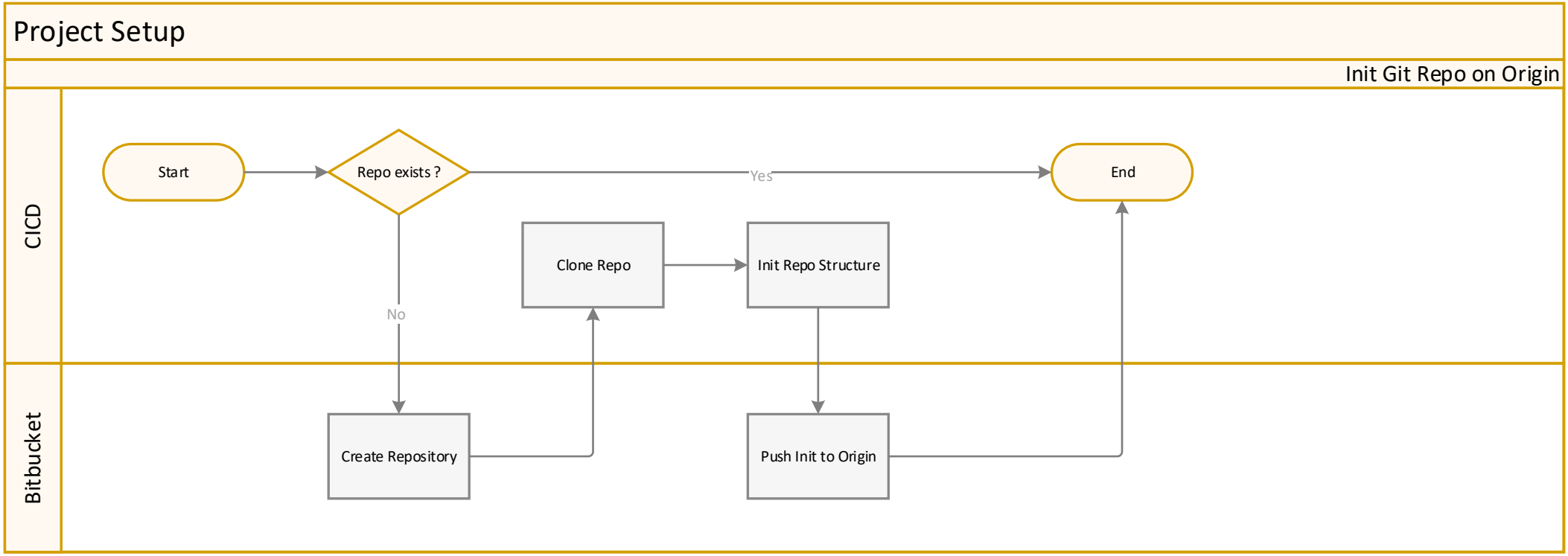
Descope Change



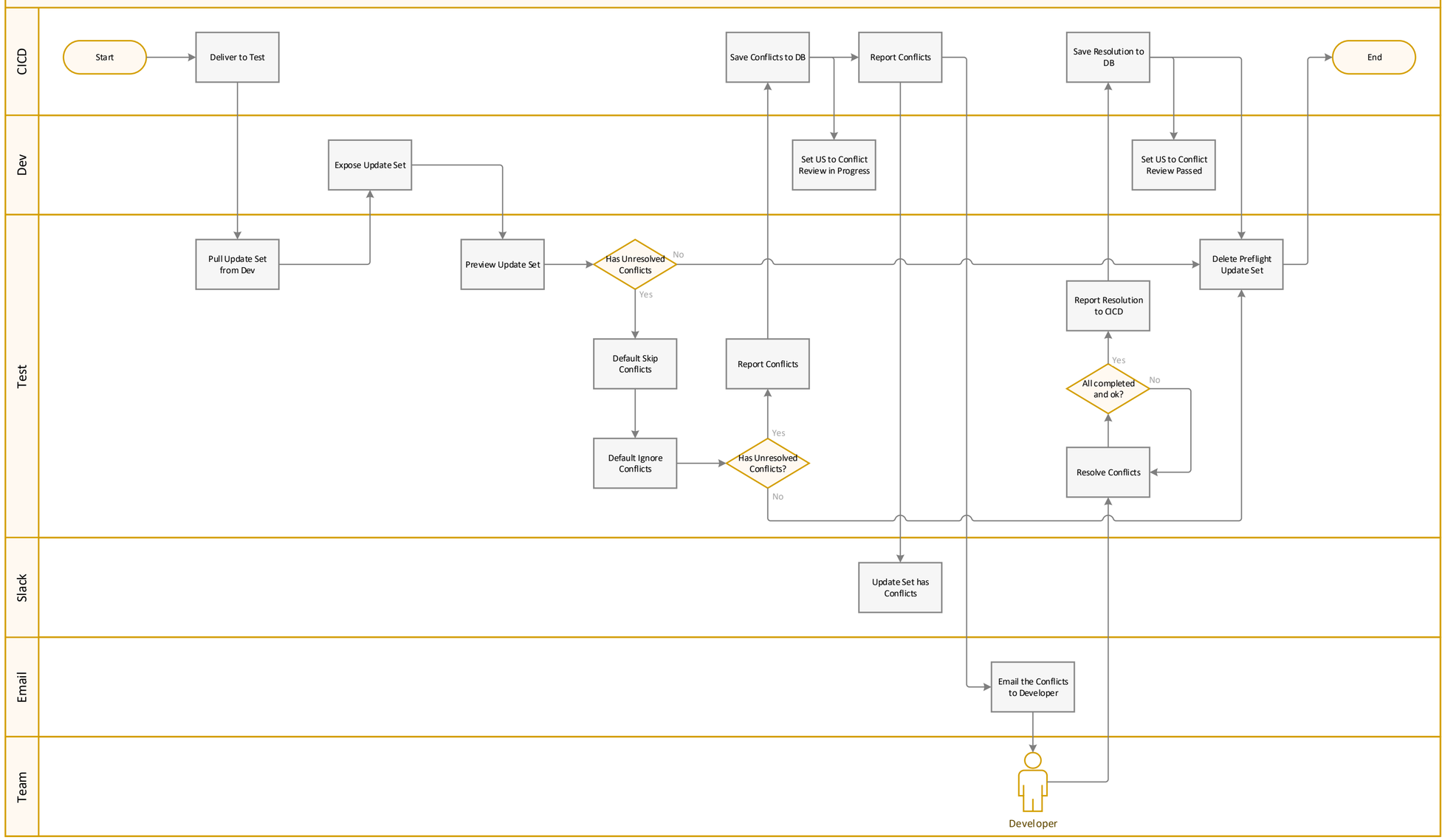
* Descope Changes:
- Changes which are not visible to the customer and do not have any impact on existing processes, etc. do NOT have to be descoped..
- If possible, introduce feature toggle to technically disable the change.

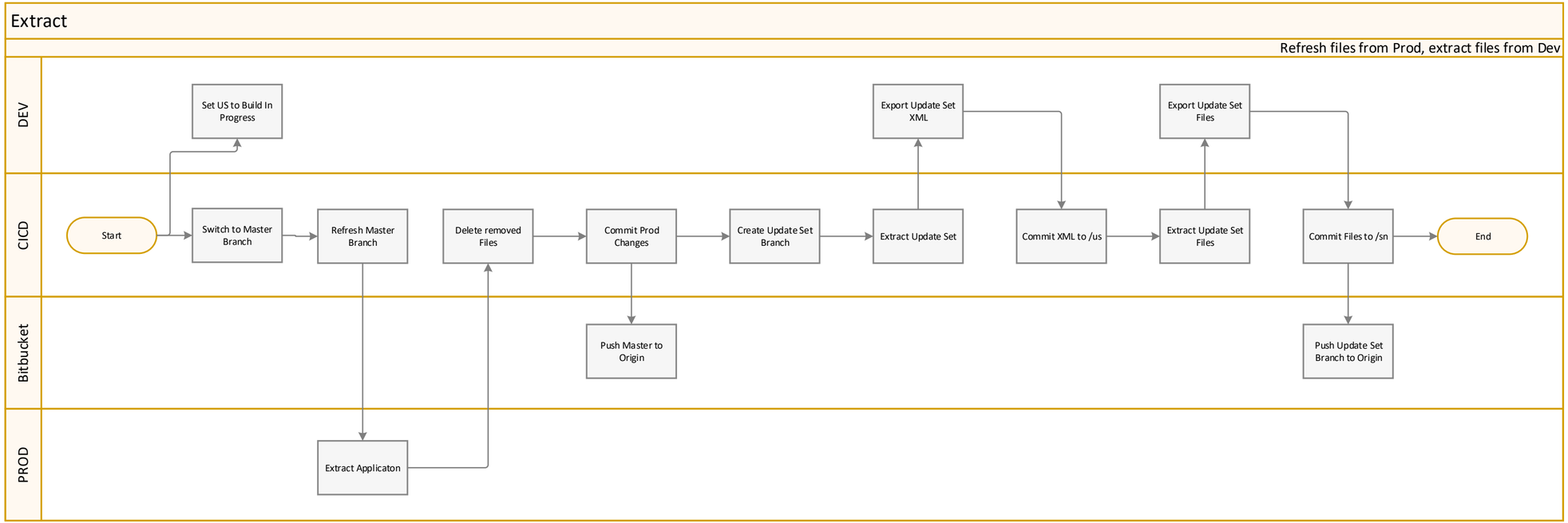
Project Setup

Init Git Repo on Origin



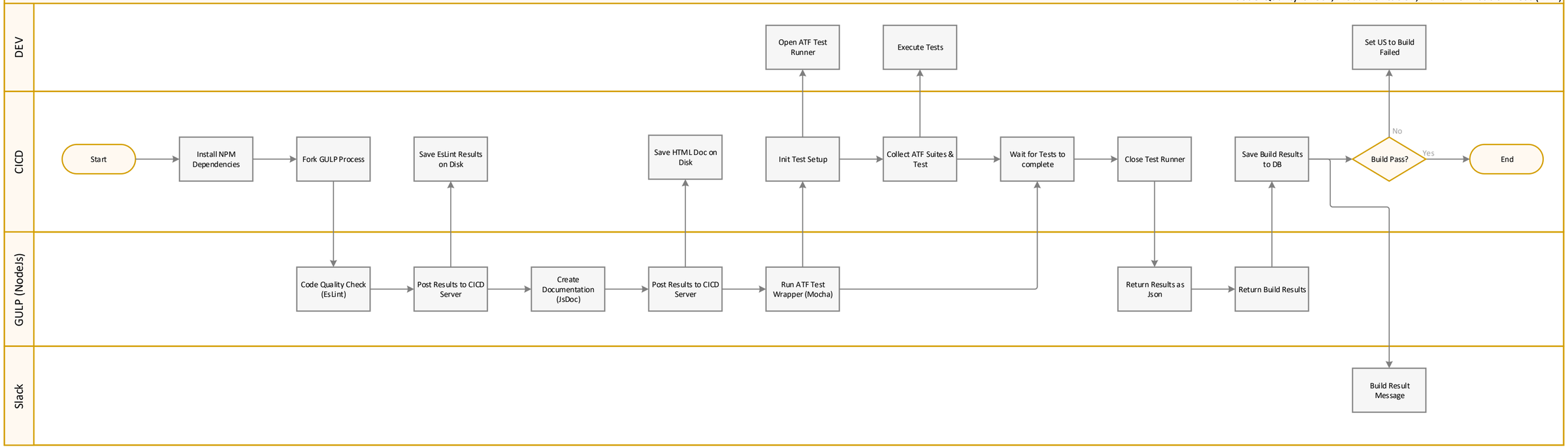
Preflight

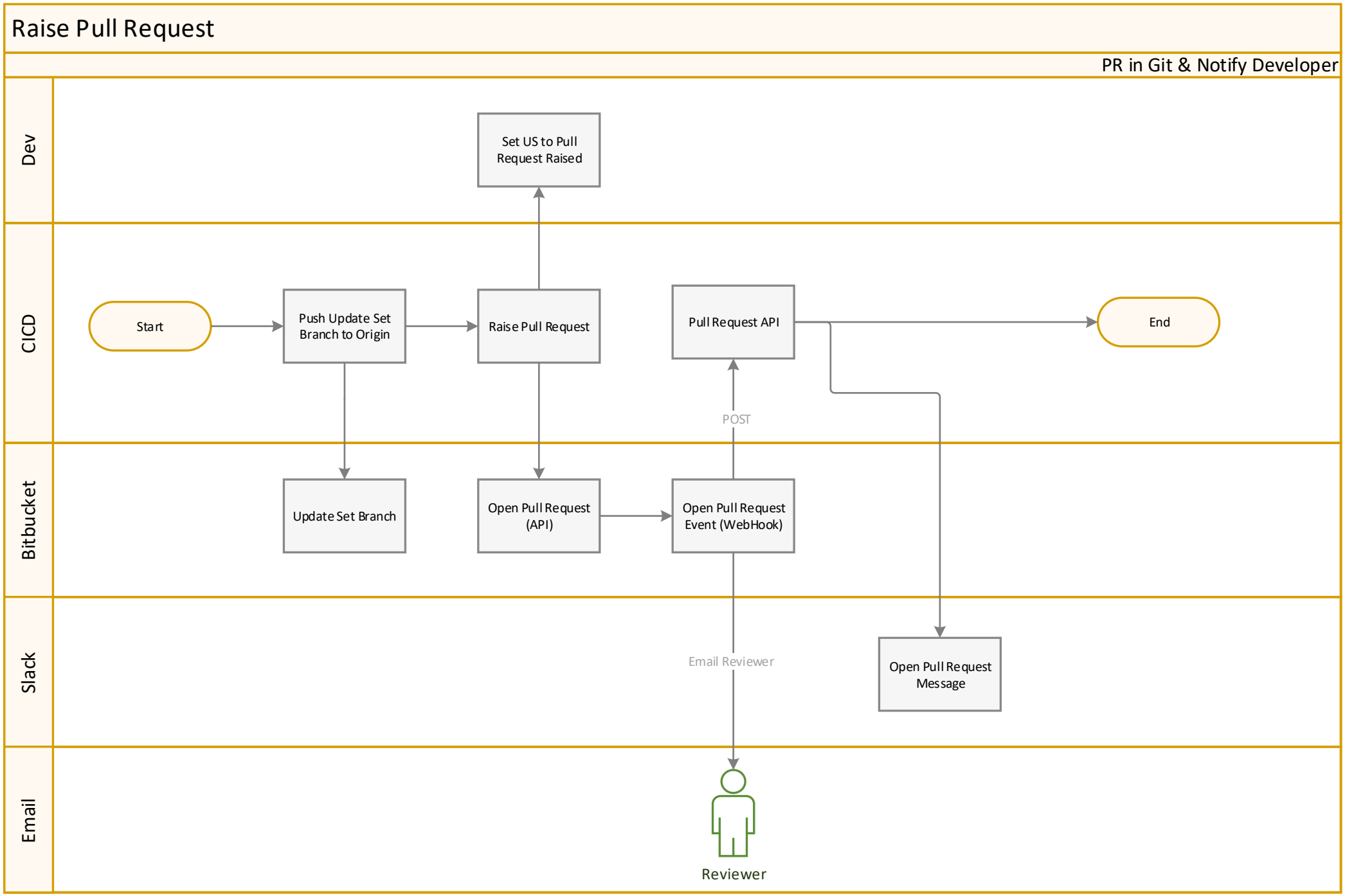

CICD
Dev
Test
Slack
Email
Team
Start
Deliver to Test
Save Conflicts to DB
Report Conflicts
Save Resolution to DB
End
Expose Update Set
Set US to Conflict Review in Progress
Set US to Conflict Review Passed
Pull Update Set from Dev
Preview Update Set
Has Unresolved Conflicts
No
Yes
Delete Preflight Update Set
Default Skip Conflicts
Report Conflicts
Report Resolution to CICD
Yes
All completed and ok?
No
Default Ignore Conflicts
Has Unresolved Conflicts?
Yes
No
Resolve Conflicts
Update Set has Conflicts
Email the Conflicts to Developer
Developer


Extract
Refresh files from Prod, extract files from Dev
DEV
CICD
Bitbucket
PROD
Set US to Build In Progress
Export Update Set XML
Export Update Set Files
Start
Switch to Master Branch
Refresh Master Branch
Delete removed Files
Commit Prod Changes
Create Update Set Branch
Extract Update Set
Commit XML to /us
Extract Update Set Files
Commit Files to /sn
End
Push Master to Origin
Push Update Set Branch to Origin
Extract Applicaton

Build

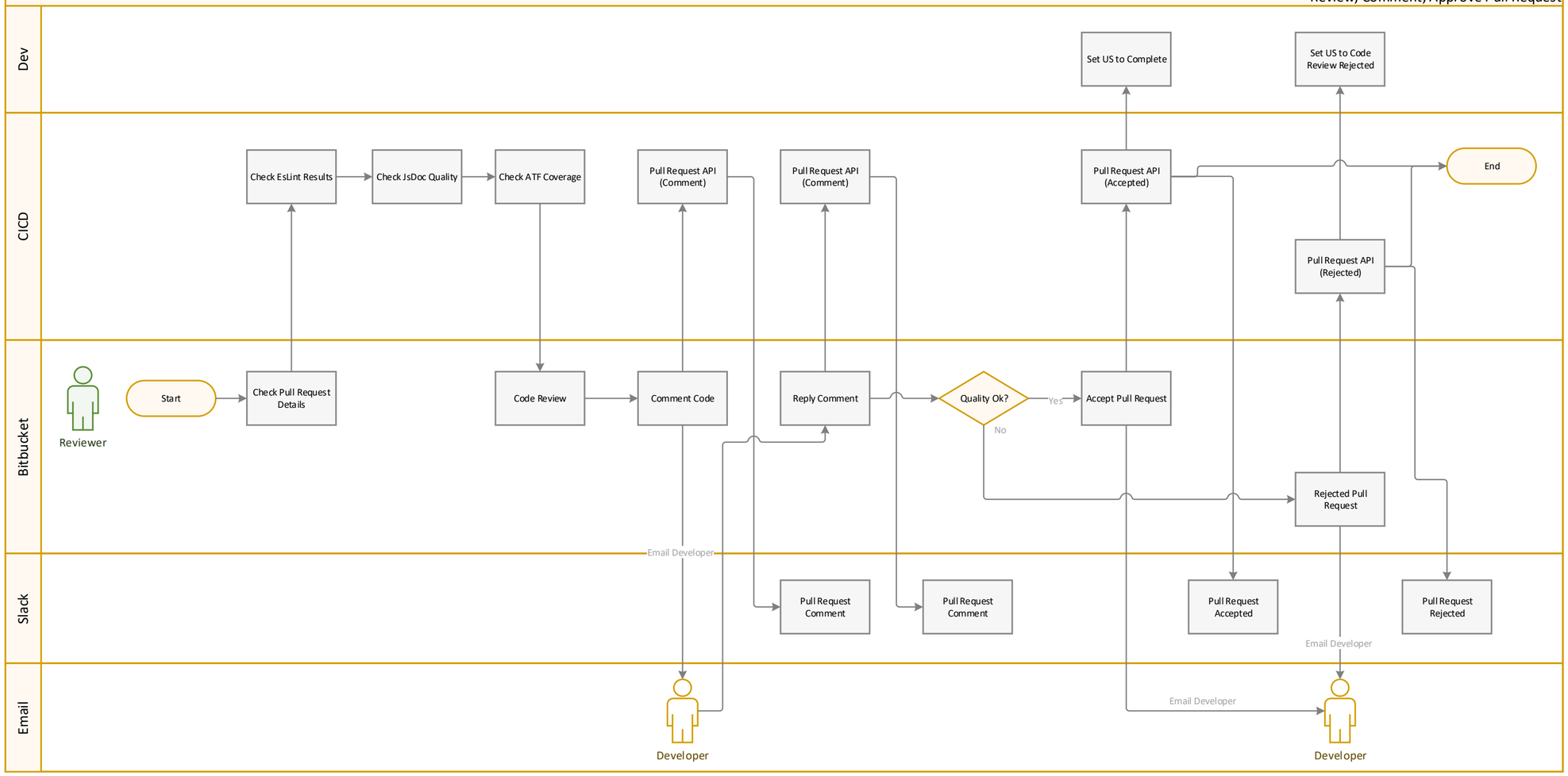
Code Quality Check, Documentation, Build Verification Test (ATF)

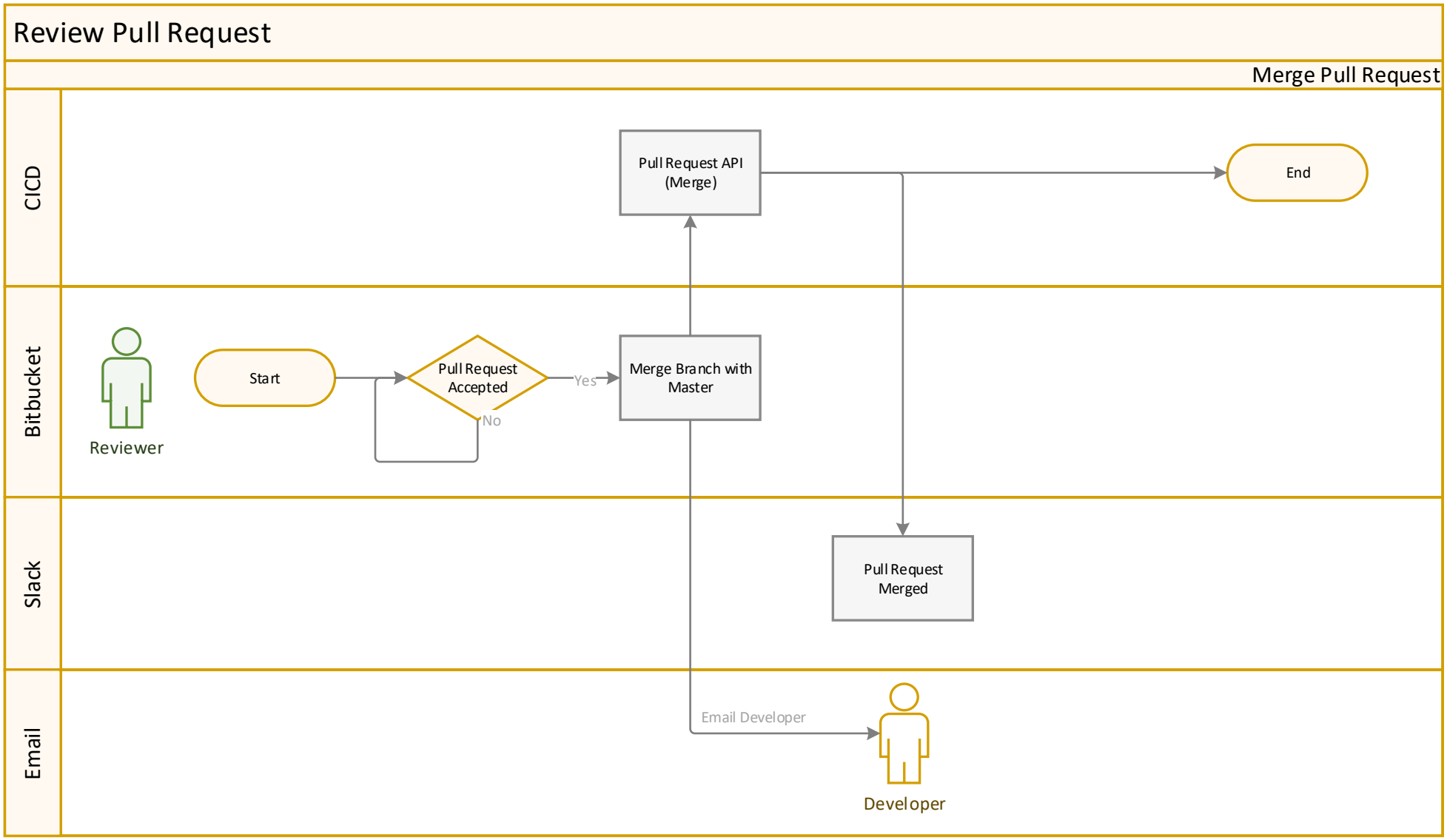


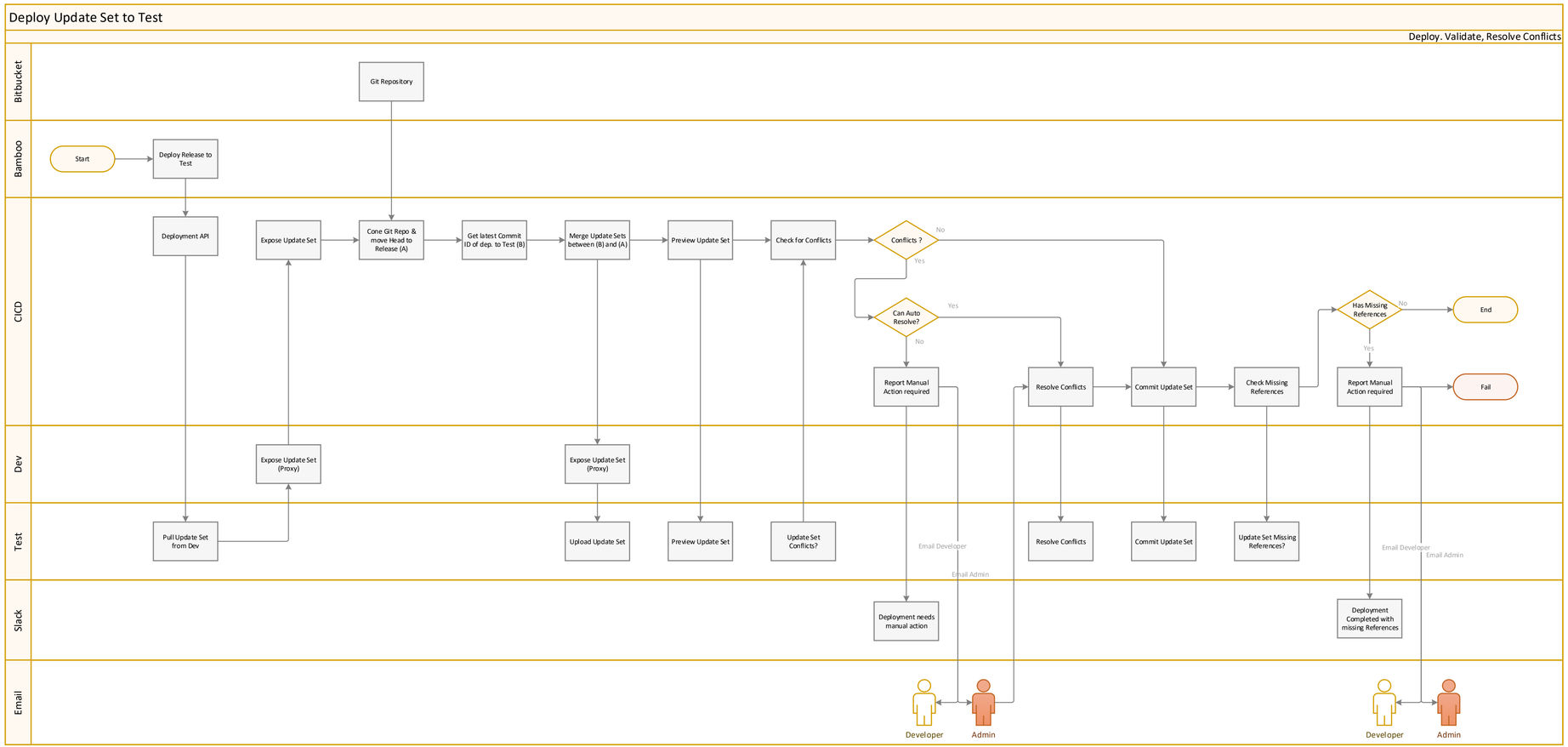

Raise Pull Request
PR in Git & Notify Developer
Dev
CICD
Bitbucket
Slack
Email
Set US to Pull Request Raised
Start
Push Update Set Branch to Origin
Raise Pull Request
Pull Request API
End
POST
Update Set Branch
Open Pull Request (API)
Open Pull Request Event (WebHook)
Email Reviewer
Open Pull Request Message
Reviewer

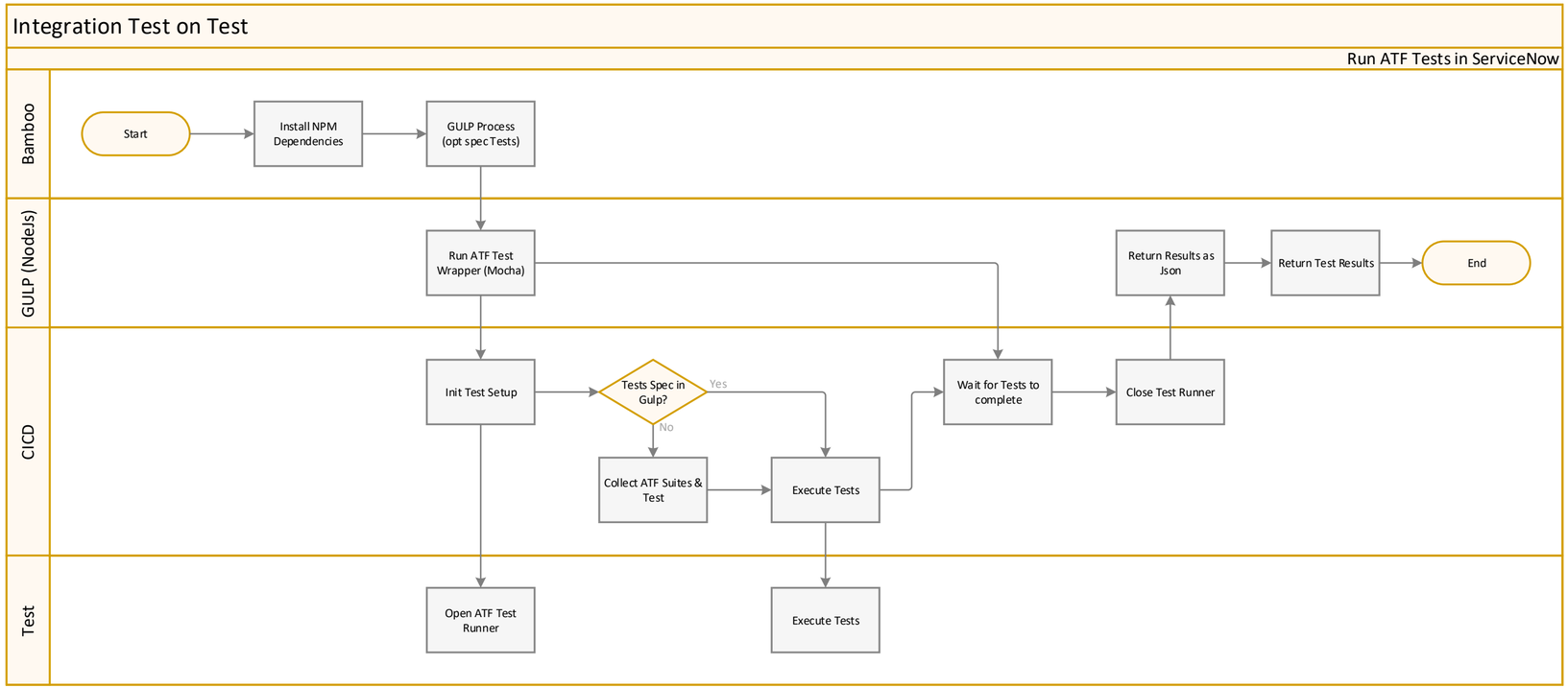
Approve Pull Request

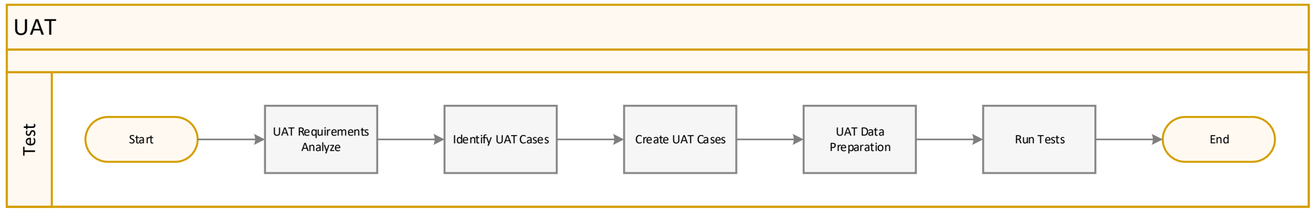
Review, Comment, Approve Pull Request



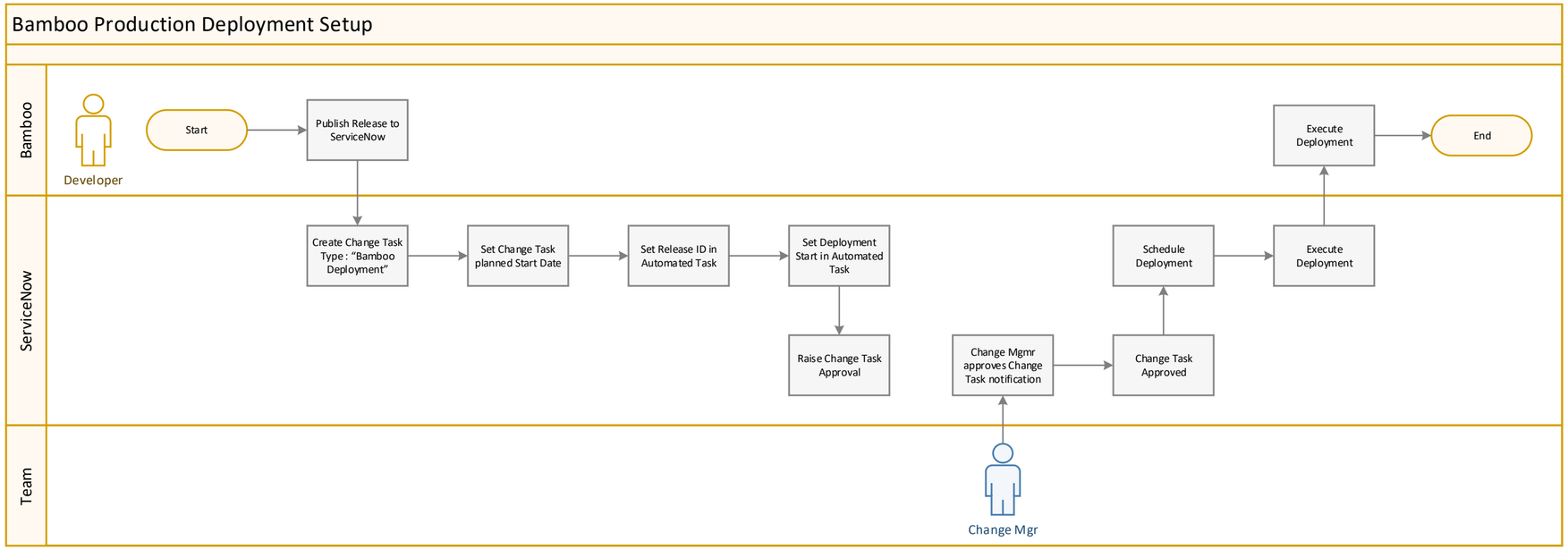

Review Pull Request
Merge Pull Request
CICD
Bitbucket
Slack
Email
Pull Request API (Merge)
End
Start
Pull Request Accepted
Yes
No
Merge Branch with Master
Reviewer
Pull Request Merged
Email Developer
Developer


Deploy Update Set to Test
Deploy. Validate, Resolve Conflicts
Bitbucket
Bamboo
CICD
Dev
Test
Slack
Email
Git Repository
Start
Deploy Release to Test
Deployment API
Expose Update Set
Cone Git Repo & move Head to Release (A)
Get latest Commit ID of dep. to Test (B)
Merge Update Sets between (B) and (A)
Preview Update Set
Check for Conflicts
Conflicts ?
No
Yes
Can Auto Resolve?
Yes
No
Report Manual Action required
Resolve Conflicts
Commit Update Set
Check Missing References
Has Missing References
No
End
Yes
Report Manual Action required
Fail
Expose Update Set (Proxy)
Expose Update Set (Proxy)
Pull Update Set from Dev
Upload Update Set
Preview Update Set
Update Set Conflicts?
Resolve Conflicts
Commit Update Set
Update Set Missing References?
Email Developer
Email Admin
Email Developer
Email Admin
Deployment needs manual action
Deployment Completed with missing References
Developer
Admin
Developer
Admin


Integration Test on Test
Run ATF Tests in ServiceNow
Bamboo
GULP (NodeJs)
CICD
Test
Start
Install NPM Dependencies
GULP Process (opt spec Tests)
Run ATF Test Wrapper (Mocha)
Return Results as Json
Return Test Results
End
Init Test Setup
Tests Spec in Gulp?
Yes
No
Wait for Tests to complete
Close Test Runner
Collect ATF Suites & Test
Execute Tests
Open ATF Test Runner
Execute Tests

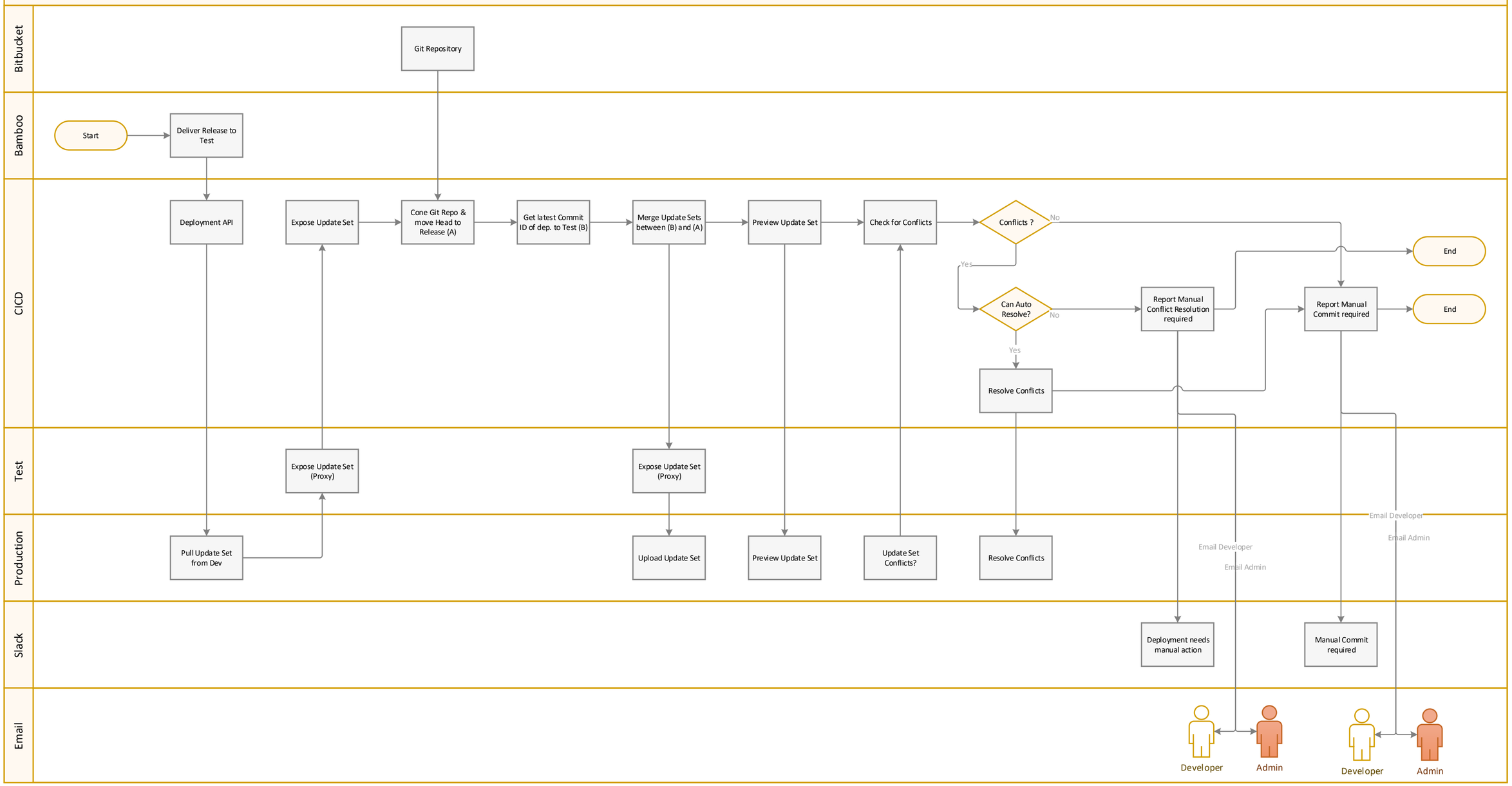

UAT
Test
Start
UAT Requirements Analyze
Identify UAT Cases
Create UAT Cases
UAT Data Preparation
Run Tests
End

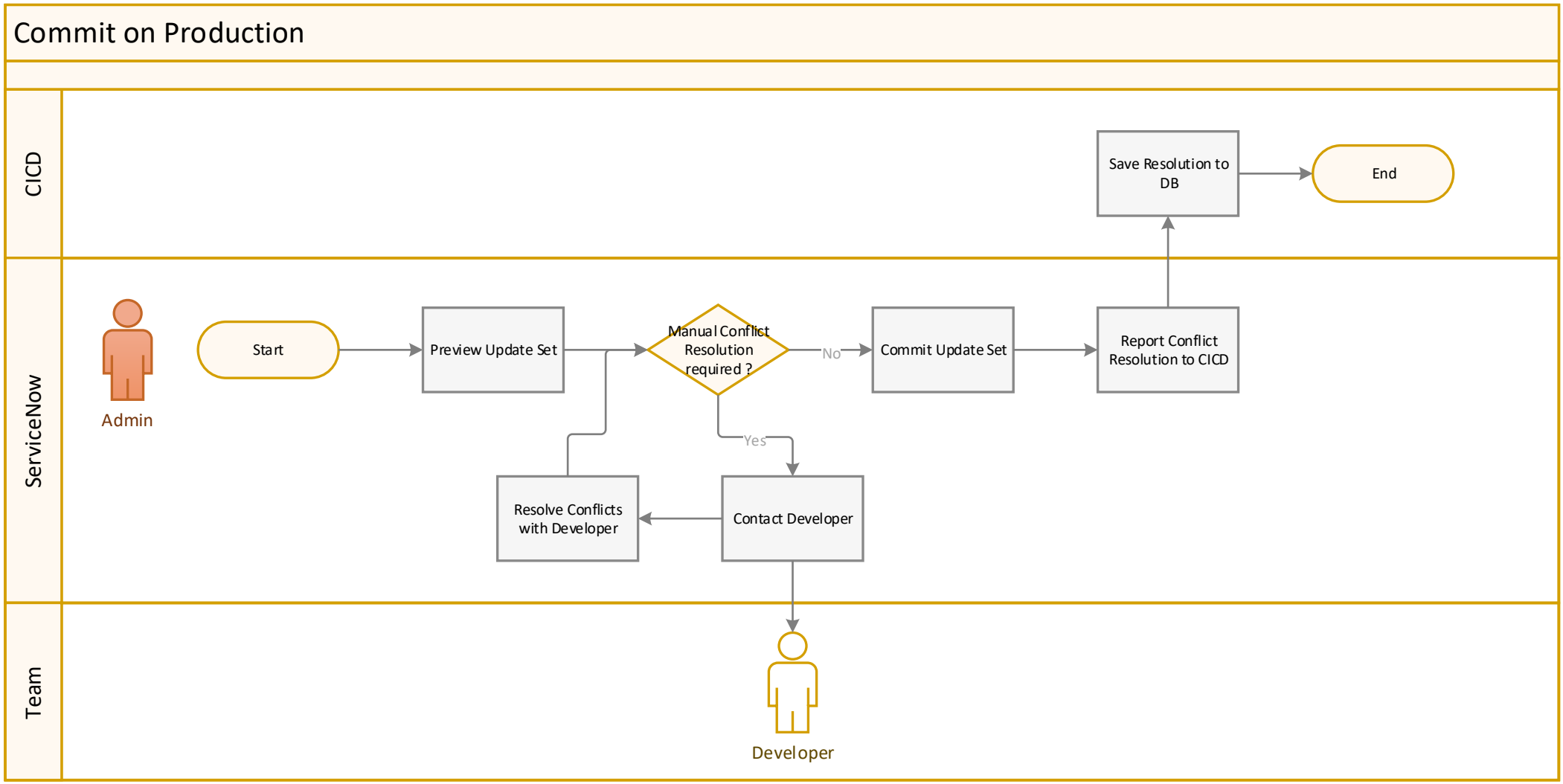
Bamboo Production Deployment Setup

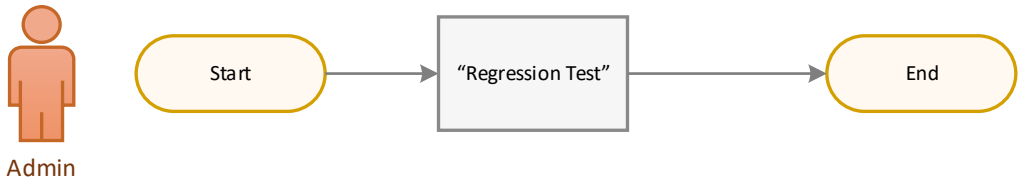


https://wiki.swissre.com/display/KB/Bamboo+Change+Management+Integration+with+SNOW

Deliver Update Set to Production




Commit on Production
CICD
ServiceNow
Team
Admin
Start
Preview Update Set
Manual Conflict Resolution required ?
No
Yes
Commit Update Set
Report Conflict Resolution to CICD
Save Resolution to DB
End
Resolve Conflicts with Developer
Contact Developer
Developer

Regression Test on Production

ServiceNow