

Release management and testing

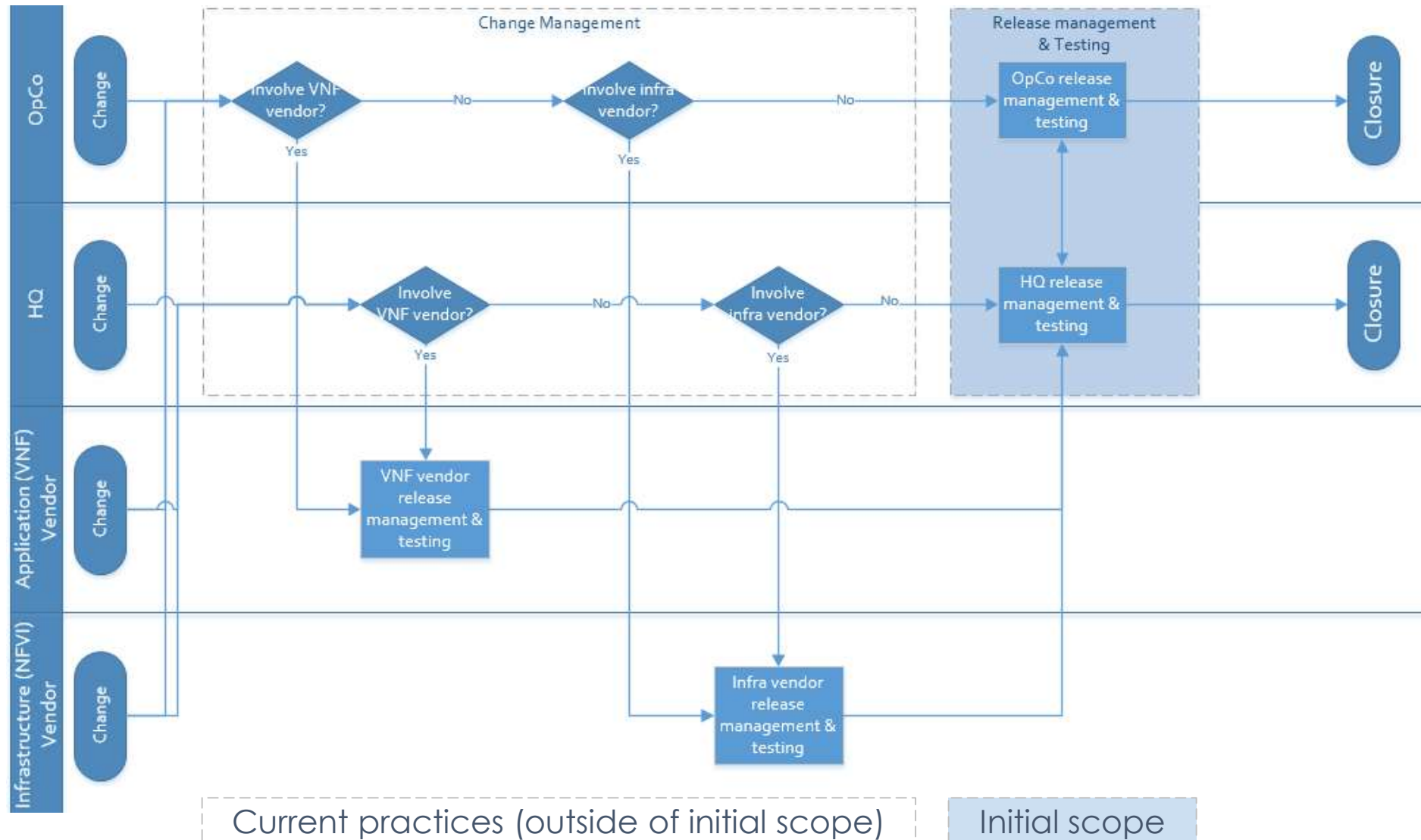
FOR VIRTUALIZATION INFRASTRUCTURE AND VIRTUALIZED APPLICATIONS

Disclaimer

- ▶ Target organization – distributed service provider or large enterprise with many operational companies (OpCos)
- ▶ Designed to be applicable in all in/outsourcing models:
 - ▶ everything is done by ourselves,
 - ▶ everything is done by outsourcer(s)
 - ▶ we and outsourcer(s) work as a team
- ▶ Provided material is a concept – have some inconsistencies (might be used as a starting point, but some changes and polishing required to implement in real life)

Executive summary

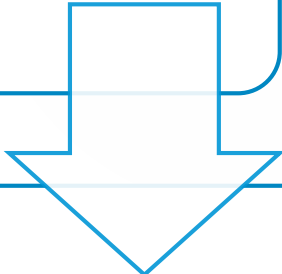
Larger picture



Objectives

Do we mean the same thing when discussing release management?

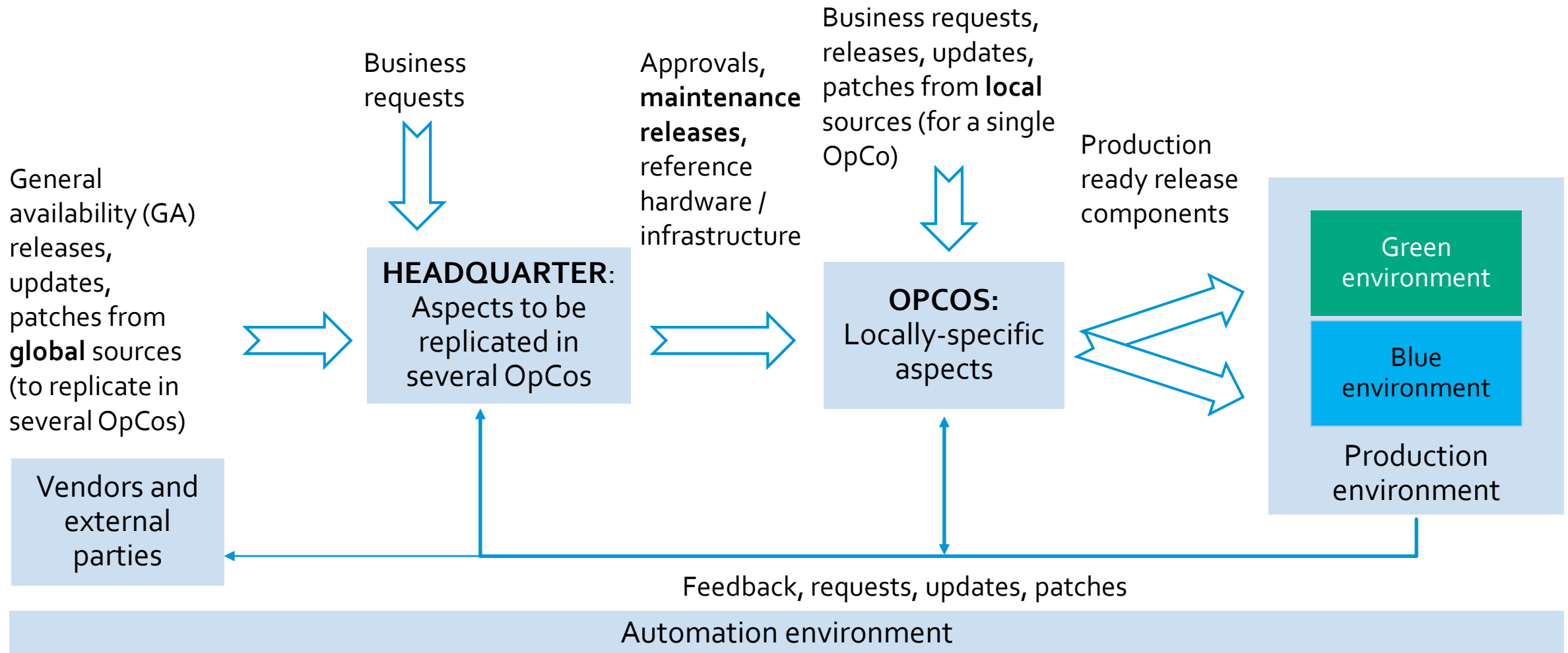
Release & deployment management - “to ensure that the **integrity** of the live environment **is protected and that the correct components are released**”*
regardless of whether the infrastructure and applications are virtualized or not.



Service validation and **testing** – “to ensure **that** deployed Releases and the resulting **services meet ... expectations, and to verify that ... operations is able to support the new service**”*

* Text is from http://wiki.en.it-processmaps.com/index.php/Release_and_Deployment_Management

HQ and OpCo integration



Changes required

Both in HQ and OpCos

- ▶ **New roles:**
 - ▶ Release manager
 - ▶ “responsible for planning and controlling the movement of Releases to test and live environments. His primary objective is to ensure that the integrity of the live environment is protected and that the correct components are released”
 - ▶ Project manager (release management and testing)
 - ▶ “is responsible for planning and coordinating the resources to deploy a major Release within the predicted cost, time and quality estimates”
 - ▶ Test manager
 - ▶ “ensures that deployed Releases and the resulting services meet ... expectations, and verifies that IT operations is able to support the new service”
- ▶ **Automation environment** for release management and testing

Overview

RELEASE MANAGEMENT AND TESTING

Update vs. Upgrade

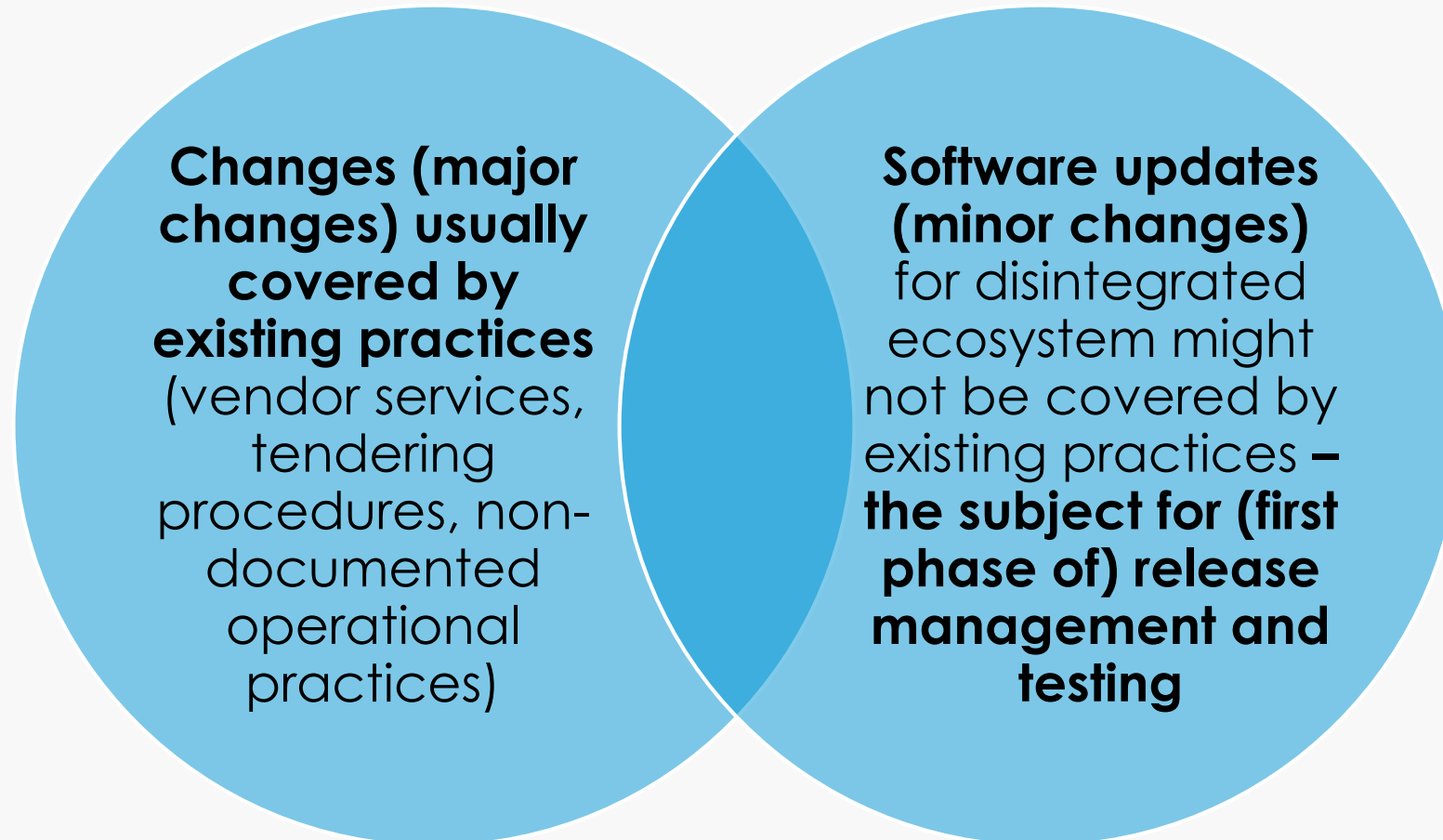
Interfaces between elements – key point in disintegrated ecosystem

- ▶ Update (patch, hotfix, bugfix) – fixes what is not working or (and) implements minor improvement not affecting external* interfaces
- ▶ **Upgrade** – introduces new or significantly changes functionality, **changes external* interfaces**

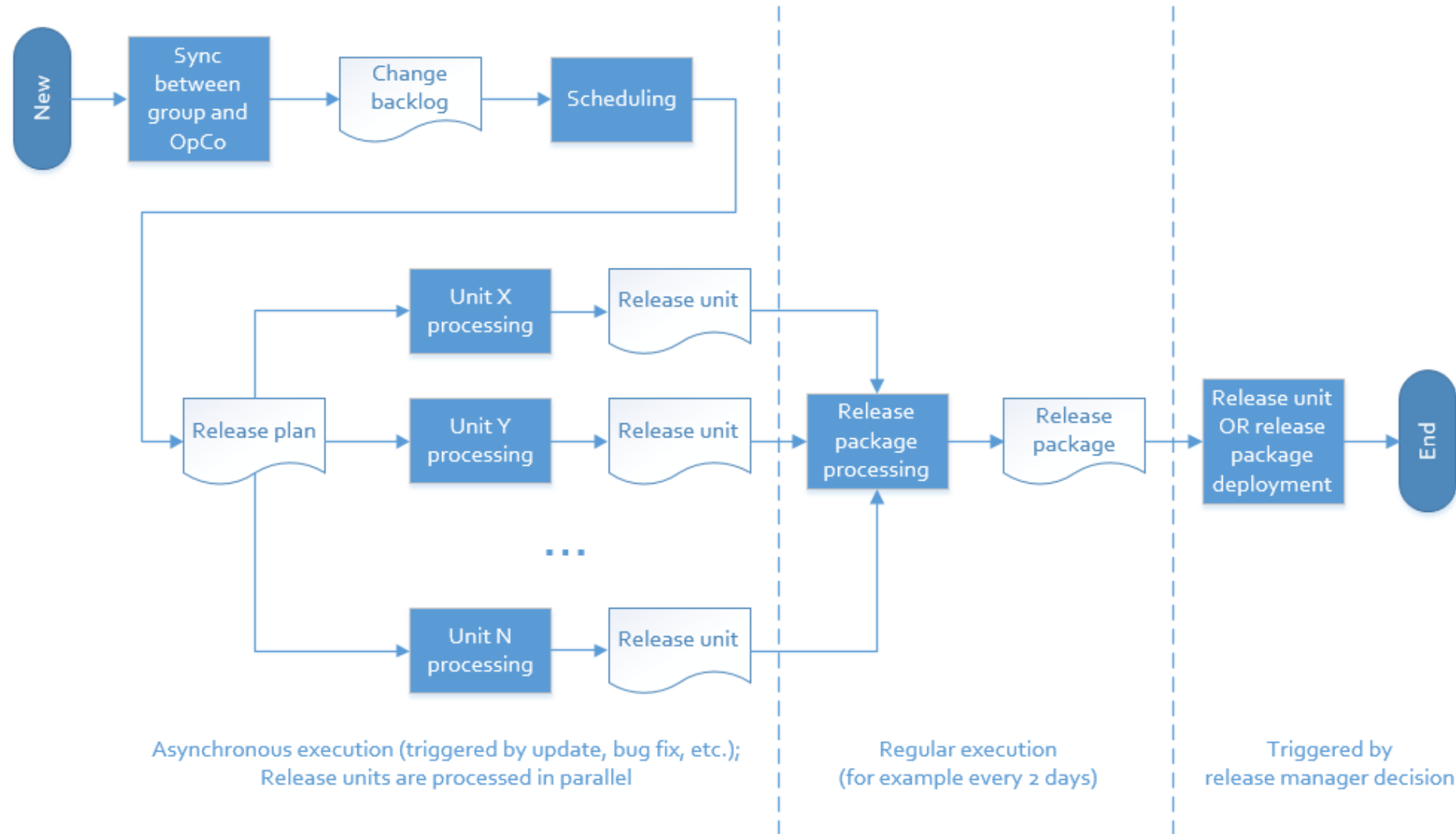
* external from viewpoint of upgraded element

Initial scope – software updates

Minor update in one component might cause major disruption somewhere else



Process flow overview



Process flow details

Please see separate slide deck attached

Main roles and responsibilities

Process	Inputs	Outputs	Release manager		Project manager		Test manager		Service owner (OpCo)	Service user (OpCo)
			HQ	OpCo	HQ	OpCo	HQ	OpCo		
Planning: HQ	Changes	Release unit backlogs, release plan	AR	R	R					
Planning: OpCo	Changes	Release unit backlogs, release plan	R	AR		R				
Release unit processing: HQ	Release unit backlog	Release unit	AR	R	R		R			
Release unit processing: OpCo	Release unit backlog	Release unit	R	AR		R		R		
Integration and testing: HQ	Release units	Release package	AR	R	R		R			
Integration and testing: OpCo	Release units	Release package	R	AR		R		R		
Deployment, early life support (outside of initial scope)				AR						R

From http://wiki.en.it-processmaps.com/index.php/Release_and_Deployment_Management :

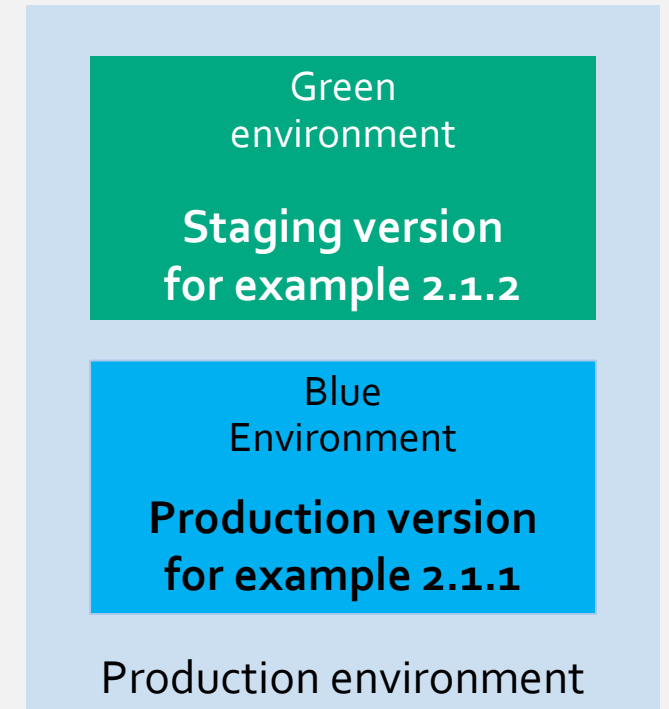
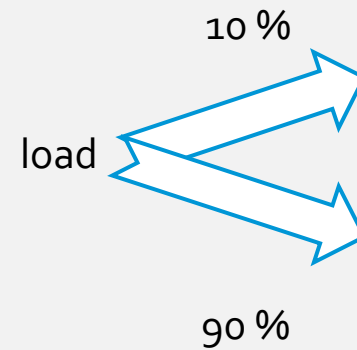
A: Accountable according to the RACI Model: Those who are ultimately accountable for the correct and thorough completion of the ITIL Release & Deployment process.

R: Responsible according to the RACI Model: Those who do the work to achieve a task within Release Management.

Deployment

Gradual new version scale up with synchronous scale down of the old one

- ▶ Start with current production (in this case it is **blue**) environment – carrying 100% load
- ▶ Deploy an update to a parallel (staging - **green**) environment
- ▶ Do the final tests in green environment
- ▶ Redirect small portion of the load (for example, 10%) to the staging environment
- ▶ Monitor the green environment
- ▶ **Continue redirecting load from the blue environment to green**
- ▶ If needed, roll back to blue
- ▶ **When 100% of the load migrated to green environment, it becomes production and blue becomes staging**



Required changes

IF SOMETHING IS OUTSOURCED, RELATED ITEMS WILL BE APPLIED
APPROPRIATELY

Changes required on group (HQ) level

- ▶ **New roles:**

- ▶ Release manager

- ▶ “responsible for planning and controlling the movement of Releases to test and live environments. His primary objective is to ensure that the integrity of the live environment is protected and that the correct components are released”

- ▶ Project manager (release management and testing)

- ▶ “is responsible for planning and coordinating the resources to deploy a major Release within the predicted cost, time and quality estimates”

- ▶ Test manager

- ▶ “ensures that deployed Releases and the resulting services meet ... expectations, and verifies that IT operations is able to support the new service”

- ▶ **Automation environment** for release management and testing

Changes required in OpCos

- > New roles (same as for HQ):
 - ▶ Release manager
 - ▶ Project manager (release management and testing)
 - ▶ Test manager
- > Automation environment for release management and testing

In/outsourcing, training

- ▶ If something is outsourced, roles are delegated appropriately.
 - ▶ For example, if testing is outsourced, release manager might be in-house, but project and test managers might be in the outsourcing party.
- ▶ If release management and testing activities are processed by current employees, they should be refocused / hired / trained

Summary

RELEASE MANAGEMENT AND TESTING

Initial scope (1st phase)

Key characteristics

- ▶ **Proposed process structure is to regulate minor software updates** in disintegrated ecosystem*
- ▶ The **process suite is designed to work with insourcing, outsourcing or hybrid approaches****
- ▶ High level of automation is required for release management and testing practices (please see extra slide deck for clarification)

* NFVI+MANO and VNFs+VNF managers might be from different vendors

** To cover release management and testing workloads with current resources (staff, testing environment), labor work should be outsourced to vendors.

Thank you!