Migrating to a container-based Cloud BPMS platform at BBVA

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Principal Solution Architect, Red Hat

Kris Verlaenen
Senior Principal Software Engineer

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Presenters Intro

**Antonio Valle, BBVA
Global Head BPM Architecture**

In his current role he manages and lead the team that develop and maintain the BPM Platforms that serve the different countries where BBVA operates.

**Marcos Regidor, Red Hat
Principal Solution Architect**

In his current role he helps BBVA to achieve their Digital Transformation journey leveraging Red Hat Open Source culture, PaaS, IaaS and Middleware Solutions in the different countries where BBVA operates.
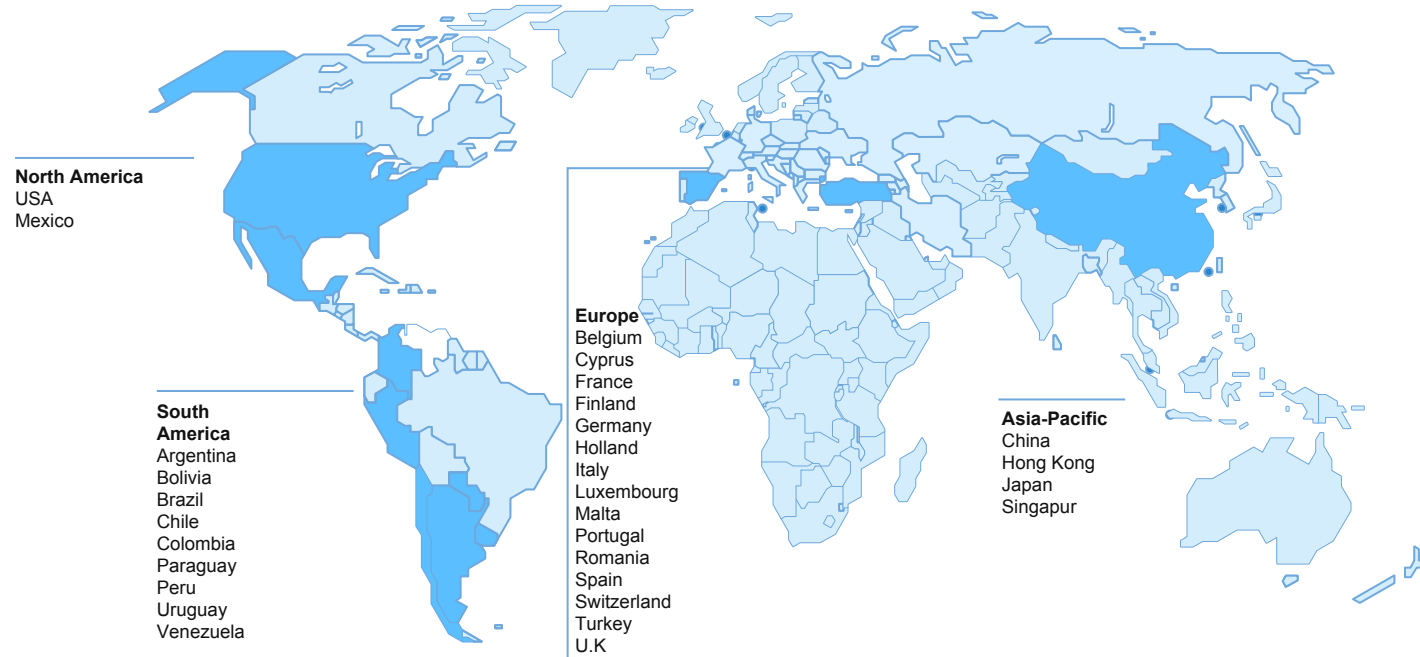
**Kris Verlaenen, Red Hat
Senior Principal Software Eng.**

Red Hat Business Automation product architect and jBPM community lead, is interested in everything related to business process management.

Schedule

BBVA Intro

North America
USA
Mexico

South America
Argentina
Bolivia
Brazil
Chile
Colombia
Paraguay
Peru
Uruguay
Venezuela

Europe
Belgium
Cyprus
France
Finland
Germany
Holland
Italy
Luxembourg
Malta
Portugal
Romania
Spain
Switzerland
Turkey
U.K

Asia-Pacific
China
Hong Kong
Japan
Singapur

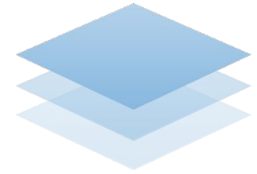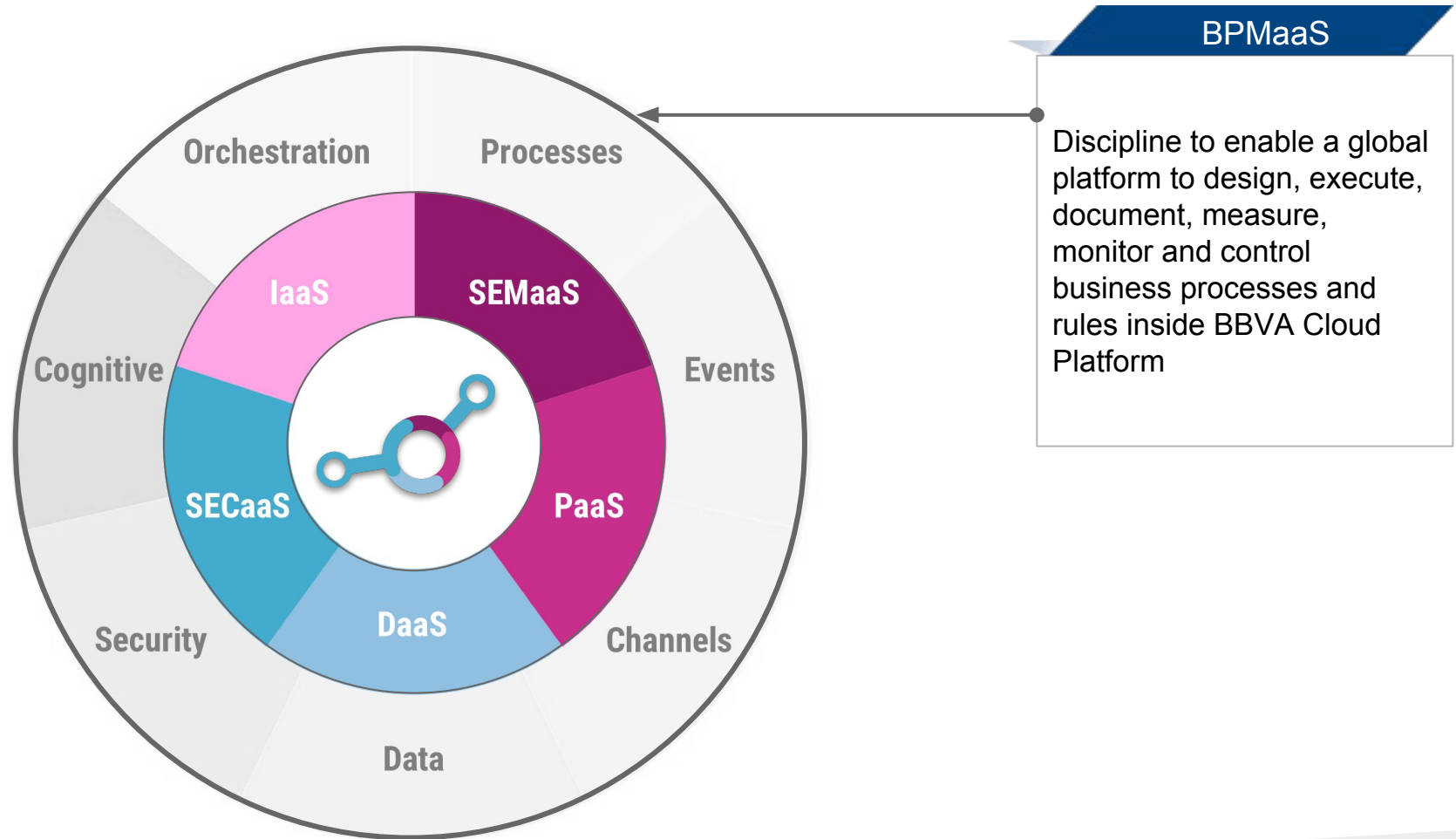| € 690	72	>30	8.271	31.688	131.856
Billions of total assets	Millions of customers	Countries	Branches	ATM's	Employees

BBVA Transformation

The pillars of transformation in BBVA

Transform BBVA Technology = (**New Tech Stack in new platform** + **Transform developers** + **Rebuild banking apps**)

BBVA Platform

BPMaaS

Discipline to enable a global platform to design, execute, document, measure, monitor and control business processes and rules inside BBVA Cloud Platform

What was needed?

The transformation...

Global **Multilocal** complex and heterogeneous products and platforms: lack of seamless experience

Manual processes loosely controlled with **ad-hoc measures**, reactive and slow with **poor agility** to launch new products or improvements rapidly

Know-how externalization, siloed local teams, no 'Global Community' approach

High **maintenance and operating cost,** non scalable, manual operation

What was needed? BBVA Requirements

Our objective is to build a platform to enable truly digital processes automation...

Global Cloud Platform

1 As **global** as possible, **auto-provisioning**, **auto-scalable**, with a high degree of reuse and **same developer experience**

Automated

3 **Fully automated processes** and **self-served standard** and **interoperable** (end-to-end operational alerts/metrics, logs and traces)

Lifecycle and API

5 **Processes life cycle depending on the related app** (devops embedded). Improve reuse with a Global API Catalog

Real time

2 Enable highly **distributed monitoring for processes and tasks** (event based) **reducing time**, **costs** and **errors**

Open Source

4 Leveraging **open-source** technologies based on subscription model to **avoid vendor** lock-ins. Low cost computing
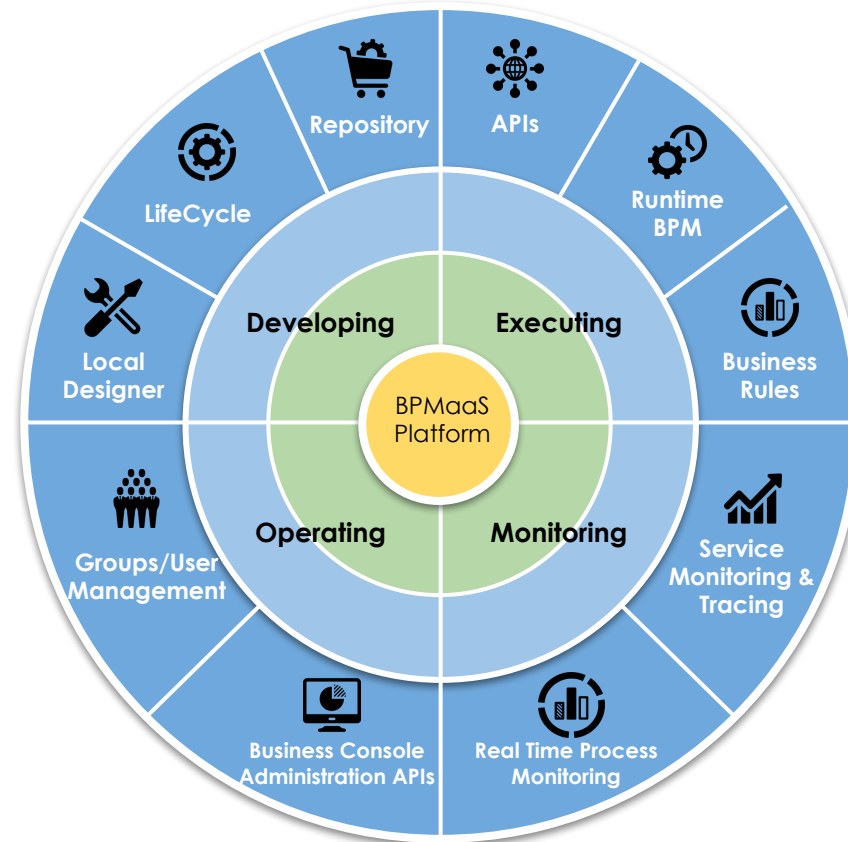
Talent

6 Hyperskilled in-house **Talent**, **Global communities**, **agile teams** collaborations. Ninja Academy, Tech University
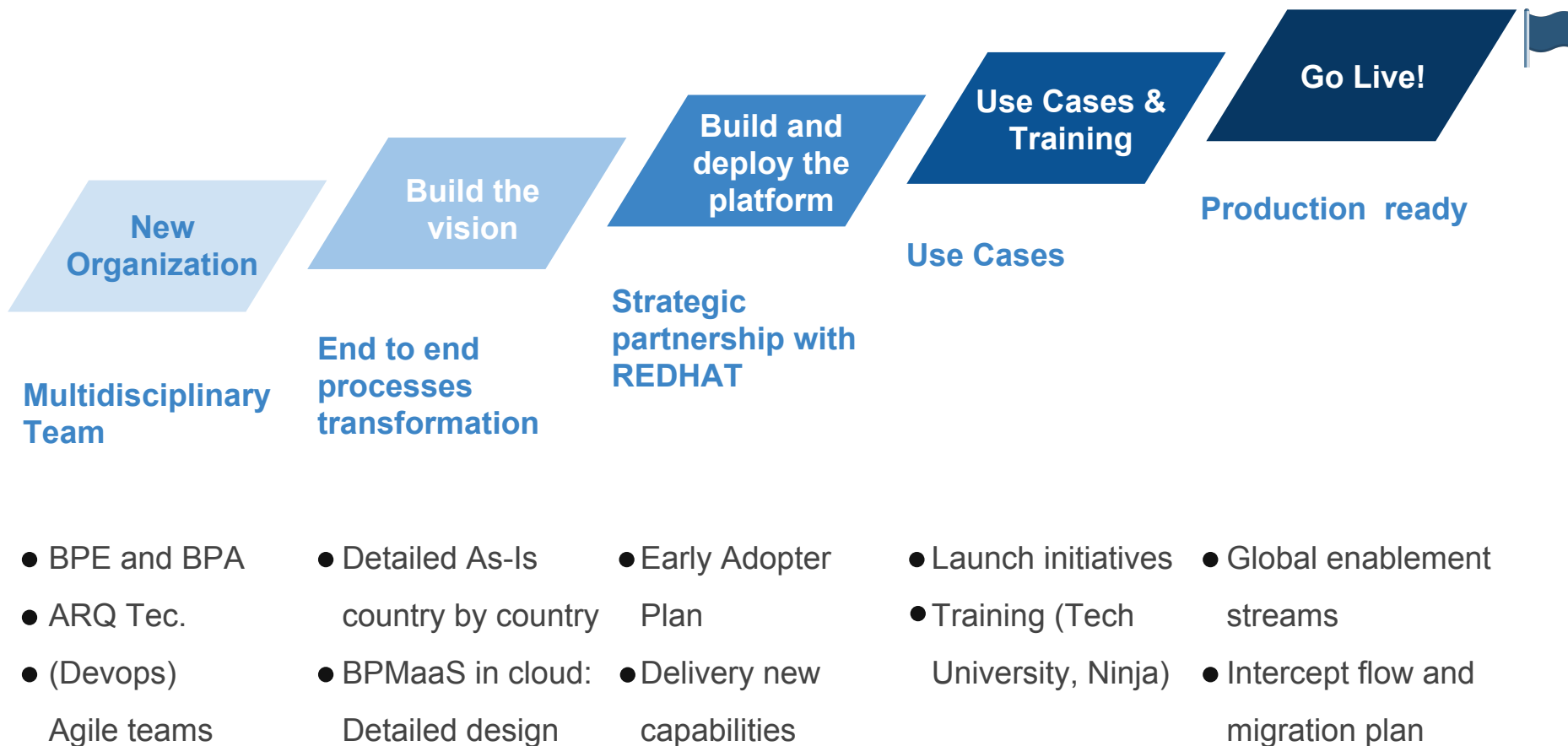
Advanced Process Automation Capabilities

Platform Overview

BPM Platform - Product RoadMap

New Organization

Build the vision

Build and deploy the platform

Use Cases & Training

Go Live!

Multidisciplinary Team

End to end processes transformation

Strategic partnership with REDHAT

Use Cases

Production ready

- BPE and BPA
- ARQ Tec.
- (Devops)

  Agile teams

- Detailed As-Is country by country
- BPMaaS in cloud: Detailed design

- Early Adopter Plan
- Delivery new capabilities

- Launch initiatives
- Training (Tech University, Ninja)

- Global enablement streams
- Intercept flow and migration plan

How we get there? Collaboration Set up

Product Manager visited BBVA on January 2017 with this outcomes:

Initial Functional Gaps Assessment

1 First set of functional requirements identified and defined as "Gaps" were explained and understood by Product Management

Initial Architecture Gaps Assessment

2 The requirement to deploy RH BPM on top the Openshift were initially assessed
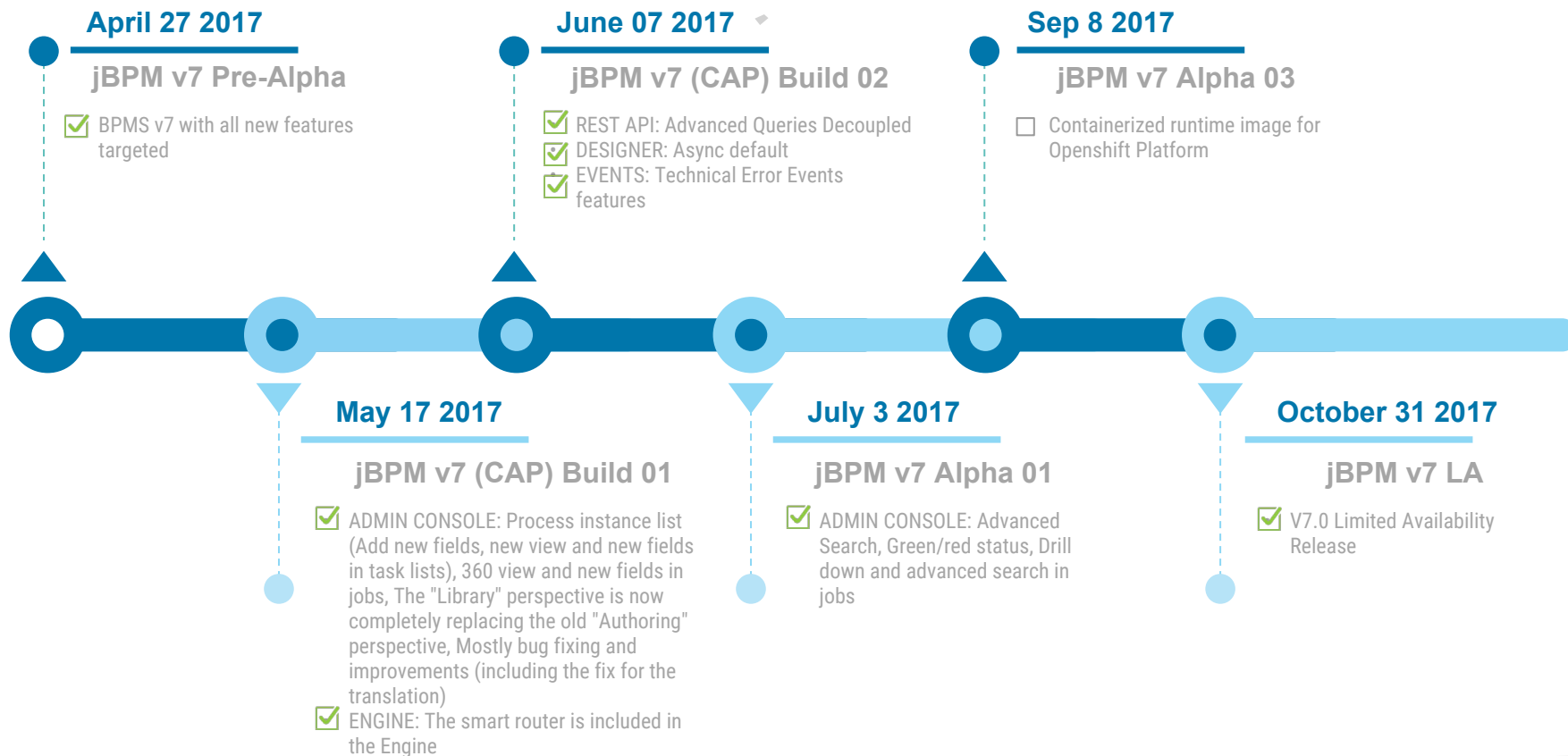
FDE Role

3 Proposed to add a new role in the Project: Forward Deployed Engineer to act as the voice of BBVA in the Engineering team and enhance collaboration

LA Version and Releases plan

4 PM Delivered a releases plan with a Limited Availability Version special release to be used to start to develop processes.
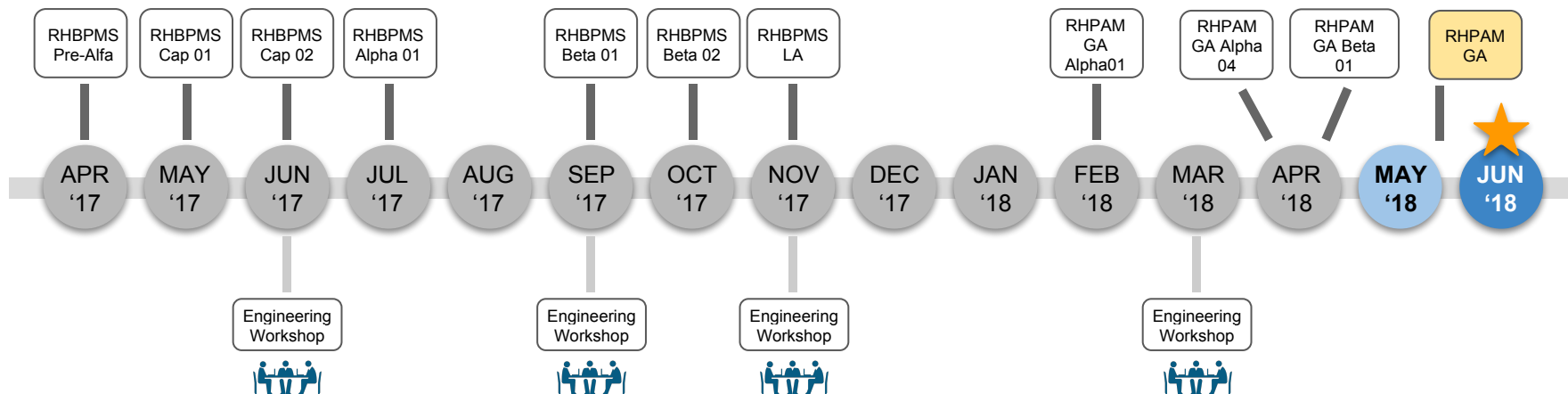
Initial releases plan

April 27 2017

jBPM v7 Pre-Alpha

☑ BPMS v7 with all new features targeted

June 07 2017

jBPM v7 (CAP) Build 02

☑ REST API: Advanced Queries Decoupled
☑ DESIGNER: Async default
☑ EVENTS: Technical Error Events features

Sep 8 2017

jBPM v7 Alpha 03

☐ Containerized runtime image for Openshift Platform

May 17 2017

jBPM v7 (CAP) Build 01

☑ ADMIN CONSOLE: Process instance list (Add new fields, new view and new fields in task lists), 360 view and new fields in jobs, The "Library" perspective is now completely replacing the old "Authoring" perspective, Mostly bug fixing and improvements (including the fix for the translation)
☑ ENGINE: The smart router is included in the Engine

July 3 2017

jBPM v7 Alpha 01

☑ ADMIN CONSOLE: Advanced Search, Green/red status, Drill down and advanced search in jobs

October 31 2017

jBPM v7 LA

☑ V7.0 Limited Availability Release

Process automation platform - RoadMap

RHPAM v7

2017   **2018**

| RHBPMS Pre-Alfa | RHBPMS Cap 01 | RHBPMS Cap 02 | RHBPMS Alpha 01 | | RHBPMS Beta 01 | RHBPMS Beta 02 | RHBPMS LA | | | RHPAM GA Alpha01 | RHPAM GA Alpha 04 | RHPAM GA Beta 01 | RHPAM GA |

| APR '17 | MAY '17 | JUN '17 | JUL '17 | AUG '17 | SEP '17 | OCT '17 | NOV '17 | DEC '17 | JAN '18 | FEB '18 | MAR '18 | APR '18 | MAY '18 | JUN '18 |

Engineering Workshop (JUN '17)

Engineering Workshop (SEP '17)

Engineering Workshop (NOV '17)

Engineering Workshop (MAR '18)

BBVA BPMaaS: Release 1 July '18

- Delivering the Platform
- Support to Pilots

The Journey till now: Workshops Performed
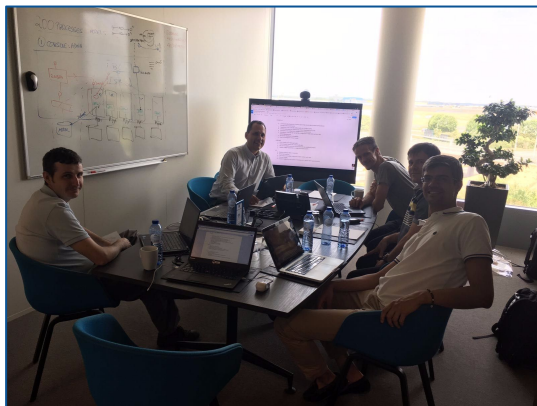
June 2017 - Brussels, Belgium

September 2017 - Madrid, Spain

November 2017 - Madrid, Spain

November 2017 - Mexico City, Mexico

March 2018 - Madrid, Spain

Working together to build RHPAM v7
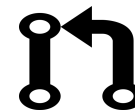
How we have done so far?

Pull Request Sent
+79
Pull request sent by BBVA

Pull Request Accepted
+71
Accepted and incorporated into the product

Enhancement highlights

- Better support of BPMN2.
- Management console improvements.
- Error management. Detailed information about errors.
- Additional info to the events API. Now a complete information abouts events is available at Process & Task listeners.
- New mappers and query builders for custom queries.
- Application templates for Openshift deployments.

"FDE" Red Hat role working on-site at BBVA with process automation team

New "ADE" role in BBVA working with FDE and Red Hat engineering team

Focus on the resolution of critical gaps identified in line with Red Hat engineering team

Prioritization of new features and bugs with Red Hat engineering team

Workshops with Red Hat engineering team & product management ensuring product alignment

BBVA is involved with UX team to ensure product vision

Working together to build RHPAM v7

How we have done so far?

Pull Request Sent

+79

Pull request sent by

Pull Request Accepted

"FDE" Red Hat role working on-site at BBVA with automation team

VA working with engineering team

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Better support of B

Management cons

Error management

Additional info to t
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New mappers and

Application templates for Openshift deployments.

UX team to ensure product vision

What's next?

◉ Better coverage of BPMN2 standard.

◉ Improvement in collaborative work at design time.

◉ Enhance the capabilities of BPM designer. Provide a new wizard for gateway expressions.

◉ Extensions to the REST API for a complete environment automation.

◉ Projects templates: a customized default project to meet basic corporate.

Gaps "Bite": Design and Development Tools

|		GAP	Open	Assigned to	BBVA Requir	Analysis	Design	BBVA Valid	Impl	Status	Jira	Included version (Draft)
Designer	BPMN	jBPM does not support Reusable Event Definitions	3 Oct	Red Hat	100%	--	--	--	--	Done	BAPL-802	Alpha 03
		BPMN swimlanes (Autoclaim)	16 Oct	Red Hat	100%	--	--	--	--	Done	BAPL-808	Alpha 03
		BPMN swimlanes import	11 Oct	Red Hat	100%	--	--	--	--	It will be resolved in the new designer. Meanwhile, using RHAMT/Saxon wtih old Designer	BAPL-803	Pending
	Enhance UX	Improvements in the graphical constraint editor	08/03	Red Hat	100%	100%	--	--	--	Waiting for Red Hat solution	BAPL-912	7.1 GA
		M I: Mapping automatically from MI data to I/O assignments (Human tasks)	08/03	Red Hat	100%	--	--	--	--	In progress	BAPL-895	7.0 GA
		Adding support for multi instance: parallel or sequentially	08/03	Red Hat	100%	100%	--	--	--	Waiting for Red Hat solution	BAPL-910	7.1 GA
		Enrich compilation error messages	15/03	Red Hat	100%	--	--	--	--	Waiting for Red Hat solution	--	Pending
	Cloud	Collaborative work	15/03	Red Hat	100%	100%	--	--	--	Waiting for Red Hat solution	--	Pending
	Projects BC	It is not possible to delete a project.	08/03	Red Hat	100%	--	--	--	--	Done	AF-984	Alpha 03
		Pom.xml when creating a project with quick setup is different than pom.xml with advanced configuration	15/03	Red Hat	100%	100%	--	--	--	Waiting for Red Hat solution	BAPL-914	7.1 GA
		Rules: Rules service task does not detect a ruleflow-group defined in xslx rule file.	15/03	Red Hat	100%	--	--	--	--	Waiting for Red Hat solution	BAPL-915	7.1 GA

Gaps "Bite": Real time monitoring

		GAP	Open	Assigned to	BBVA Requir	Analysis	Design	BBVA Valid	Impl	Status	Jira	Included version (Draft)
Events	Enhance Events data	Not Available fields in TaskLifeCycleEventListener	11/11	Red Hat	100%	100%	--	--	--	Done.	BAPL-819	Alpha 03
		Required events that don't exist in the User Task event listener	10/11	Red Hat	100%	--	--	--	--	Done	BAPL-813	Alpha 03
		Status completed in nodes when the process is aborted	26/1	Red Hat	100%	100%	--	--	--	Done	BAPL-877	Alpha 03
		Information not available in NodeInstance event listener	26/1	Red Hat	100%	--	--	--	--	Done	BAPL-876	Alpha 03
		Information is not available in ProcessEventListener	10/11	Red Hat	100%	--	--	--	--	Done. Waiting for BPMS release.	BAPL-814	Beta 01

Gaps "Bite": API processes and tasks

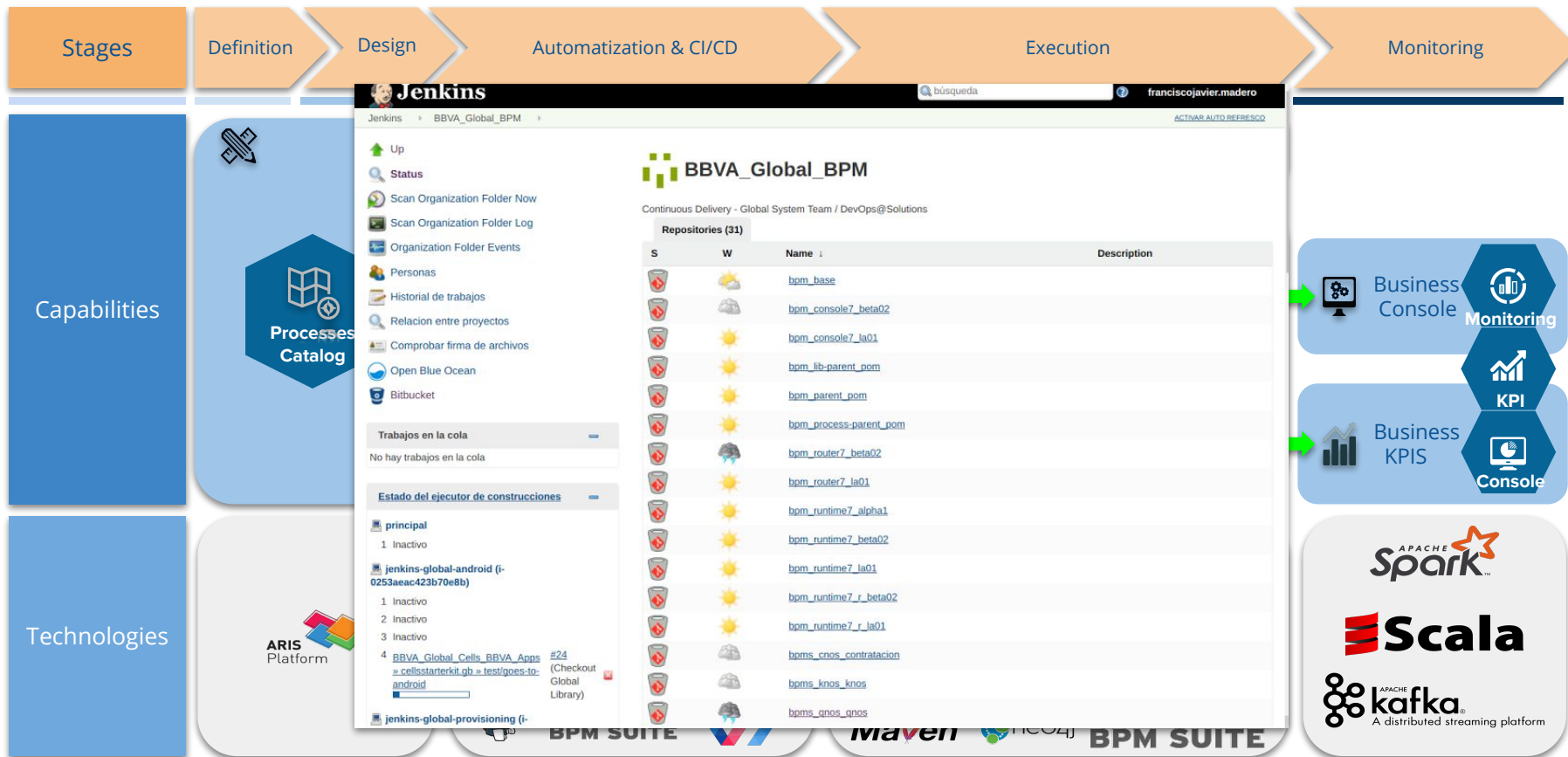|		GAP	Open	Assigned to	BBVA Requir	Analysis	Design	BBVA Valid	Impl	Status	Jira	Included version (Draft)
API	Advanced Queries	Add filter Potential Owner for Adv. Queries (Group Search)	21 Aug	Red Hat	100%	--	--	--	--	Done	BAPL-781	Alpha 03
		Business Data (Advanced Queries)	4 Sept	Red Hat	100%	--	--	--	--	Done	BAPL-835	Alpha 03
	Operations	Forward task to a list of potential owners	12 Sep	Red Hat	100%	100%	--	--	--	Done	BAPL-589	Alpha 03
	Model	Not Exists customTaskId Field	25 Sep	Red Hat	100%	--	100%	100%	--	Done. Waiting for BPMS release.	BAPL-801	Beta 01
	Error Messages	Enrich error messages from API REST	08/03	Red Hat	100%	--	--	--	--	Waiting for Red Hat solution	BAPL-911	7.1 GA

BPMaaS: Technologies
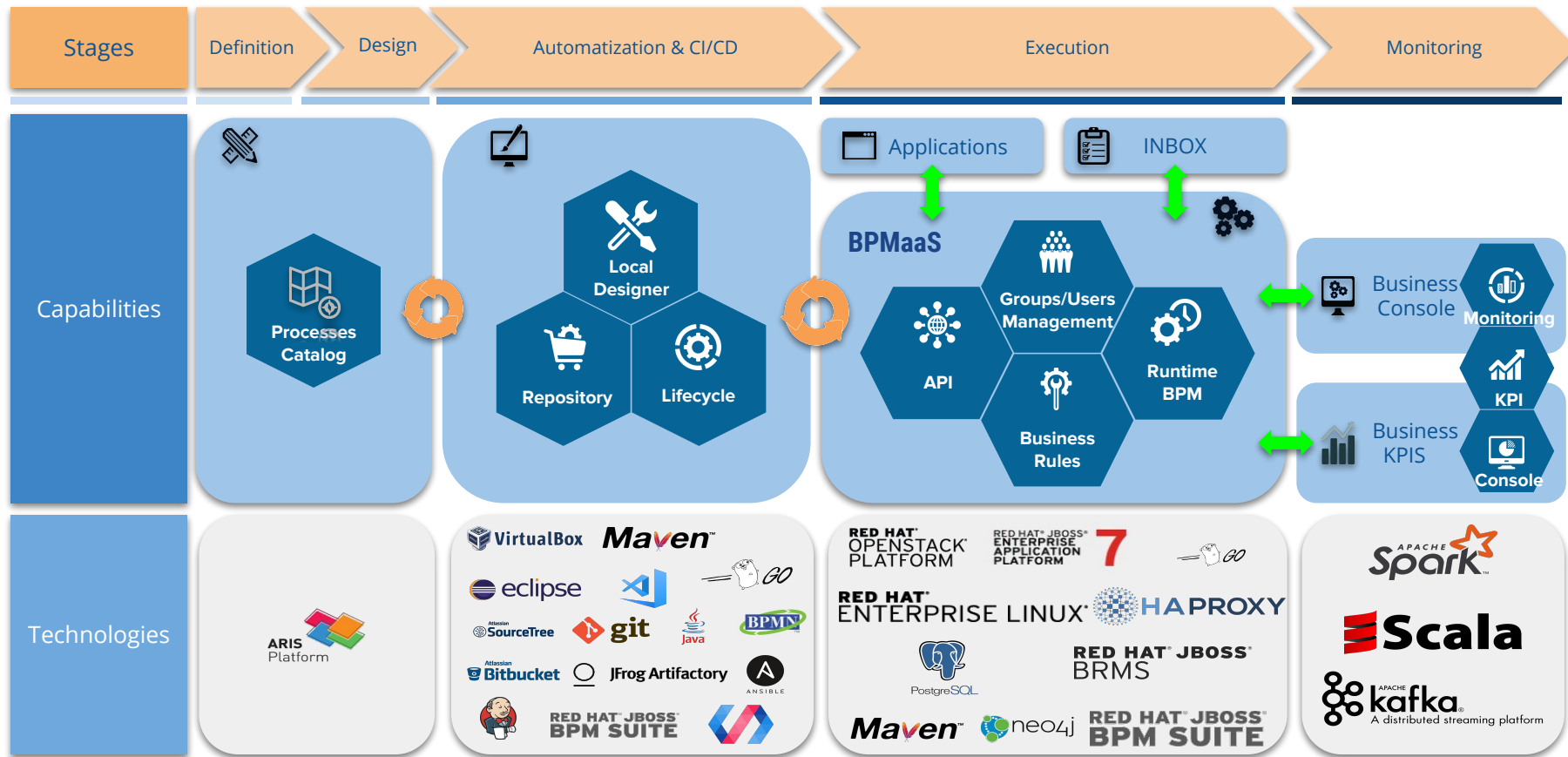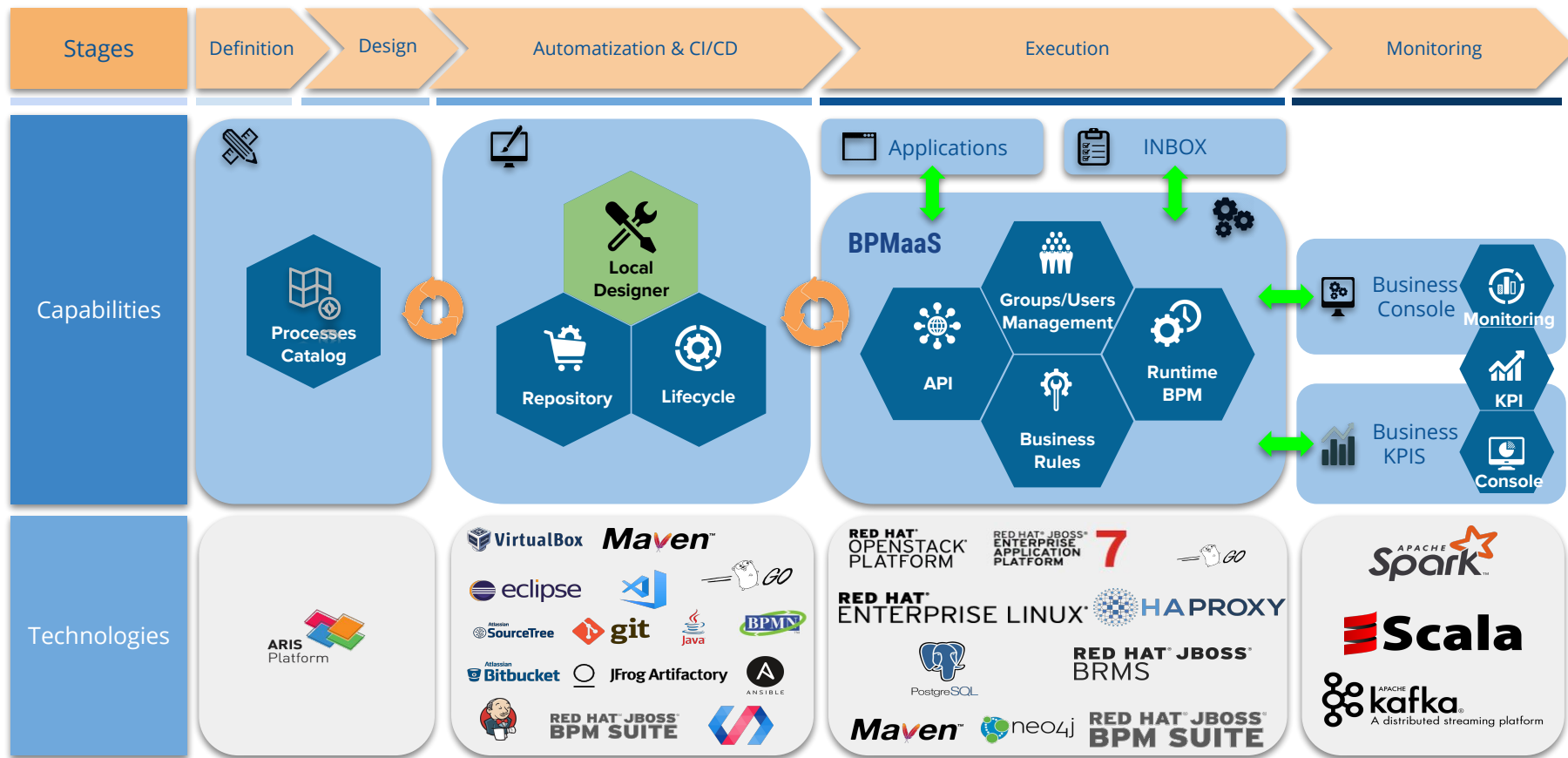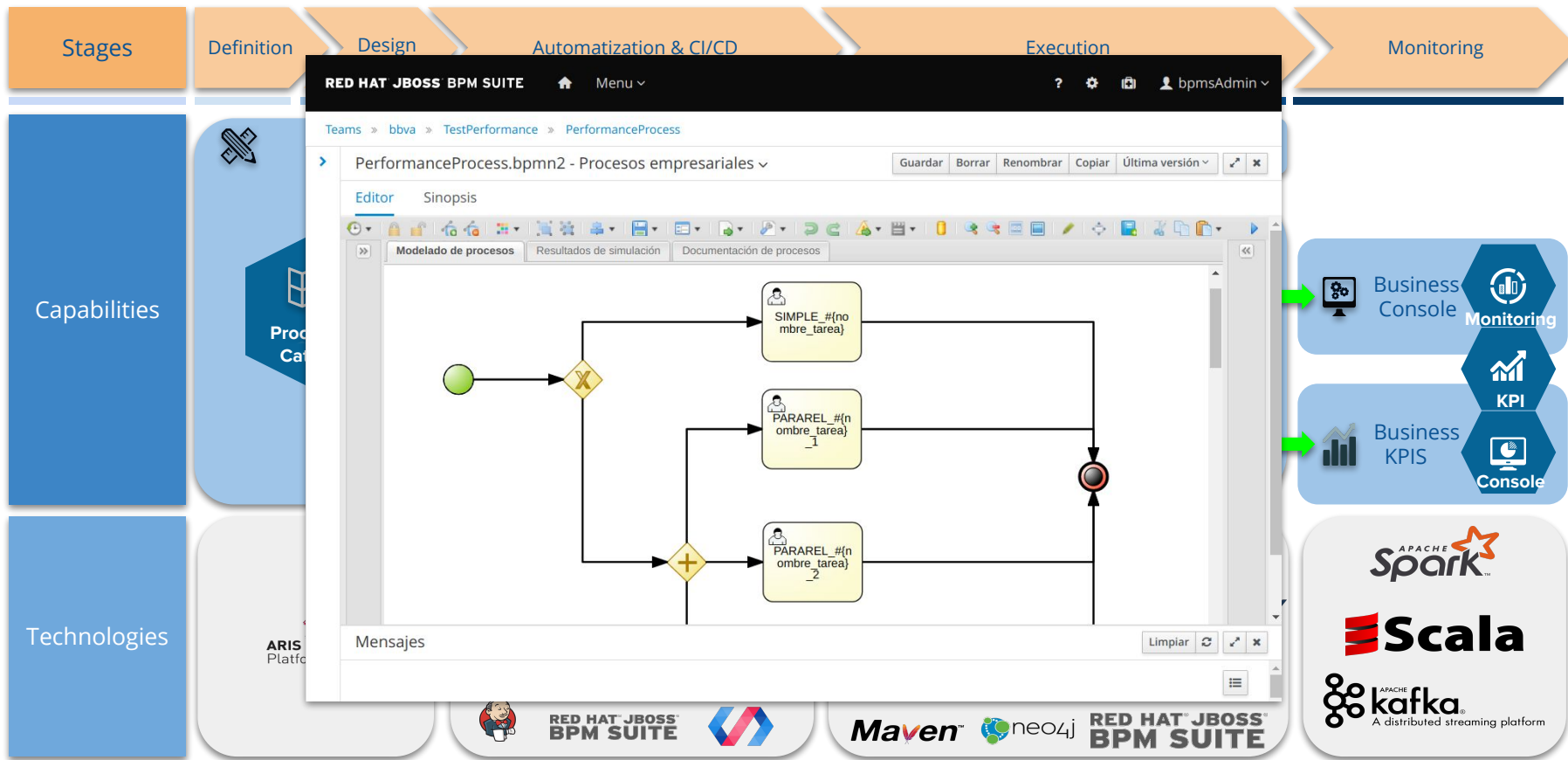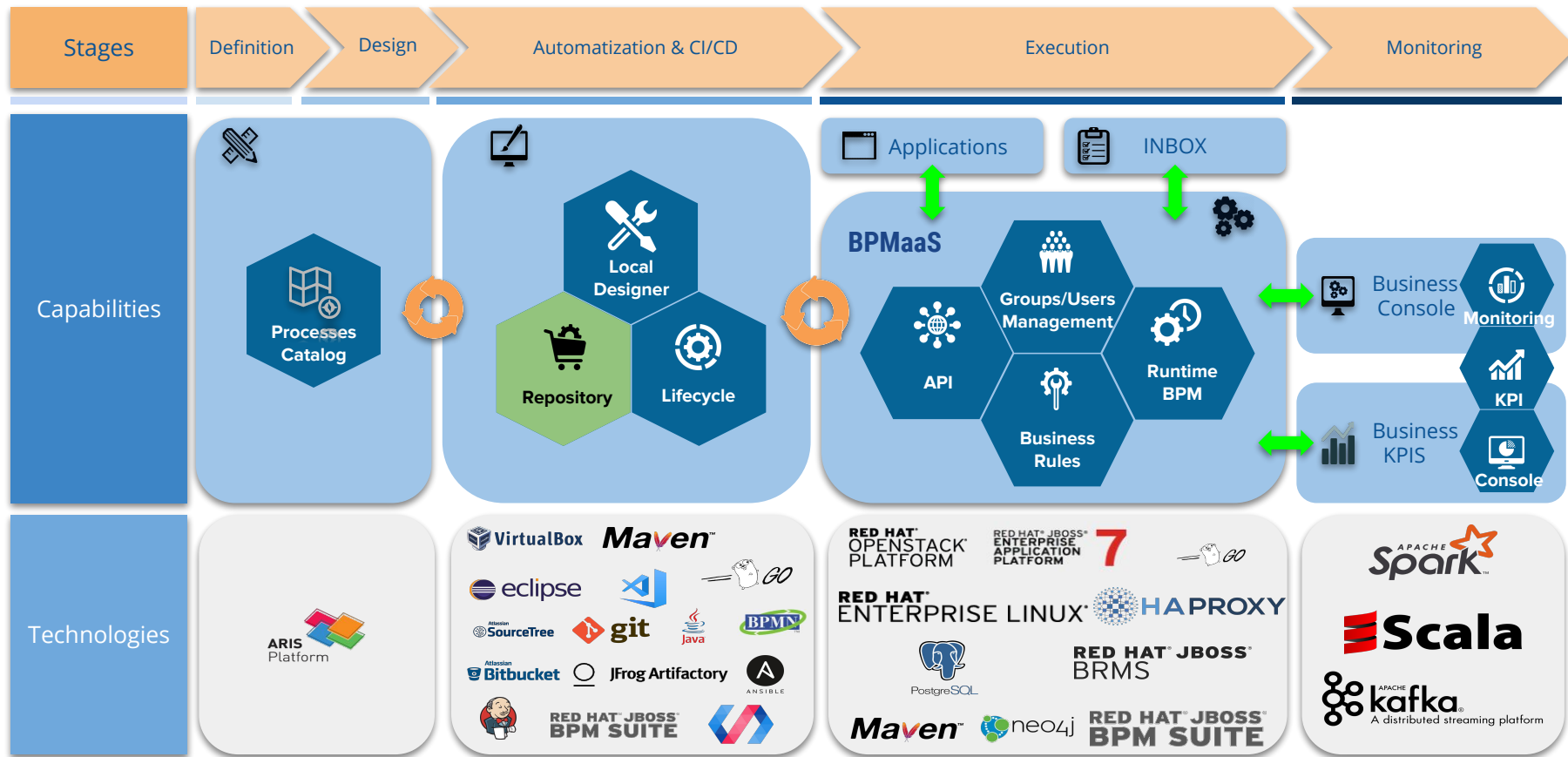
BPMaaS: Technologies

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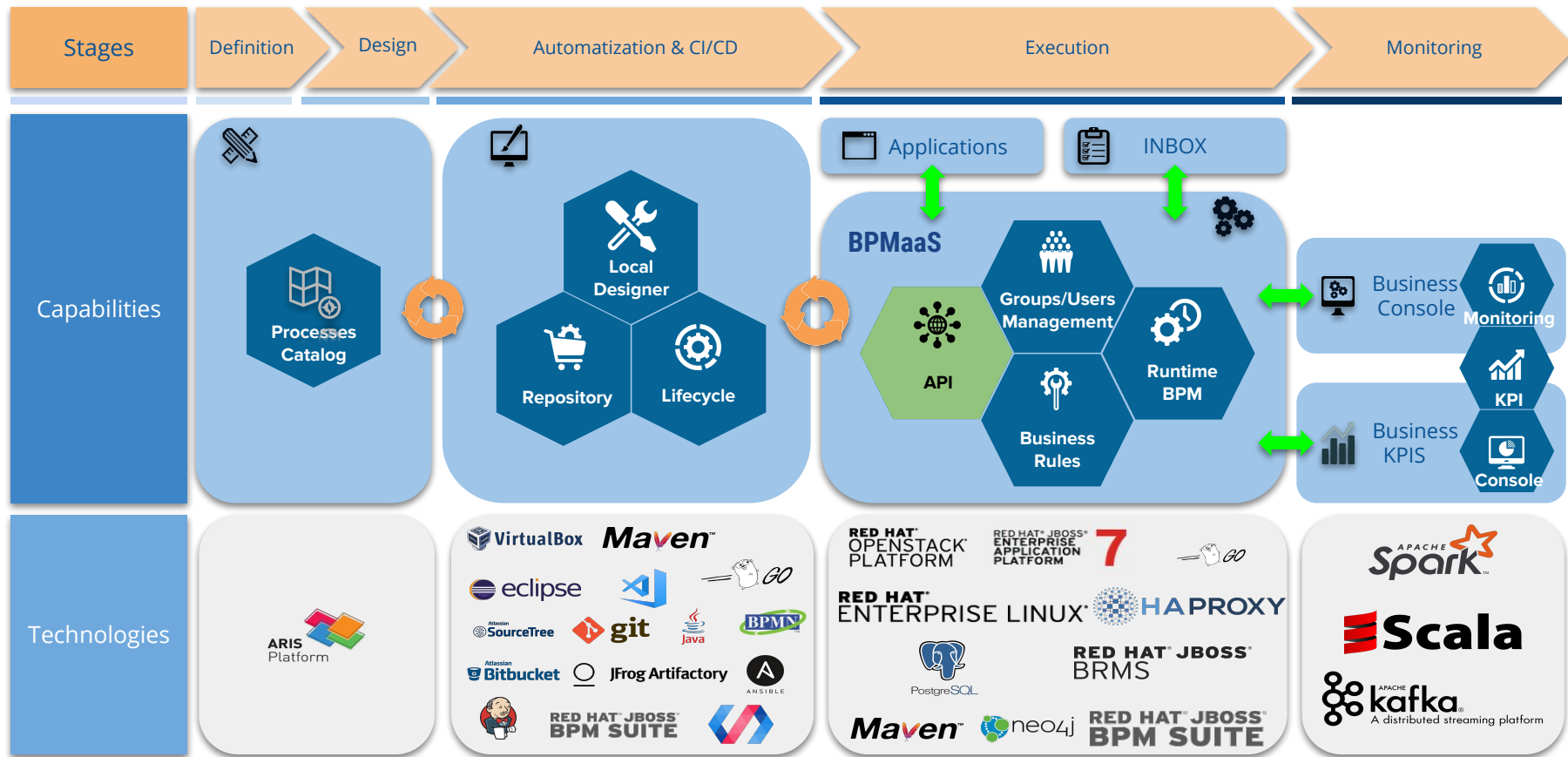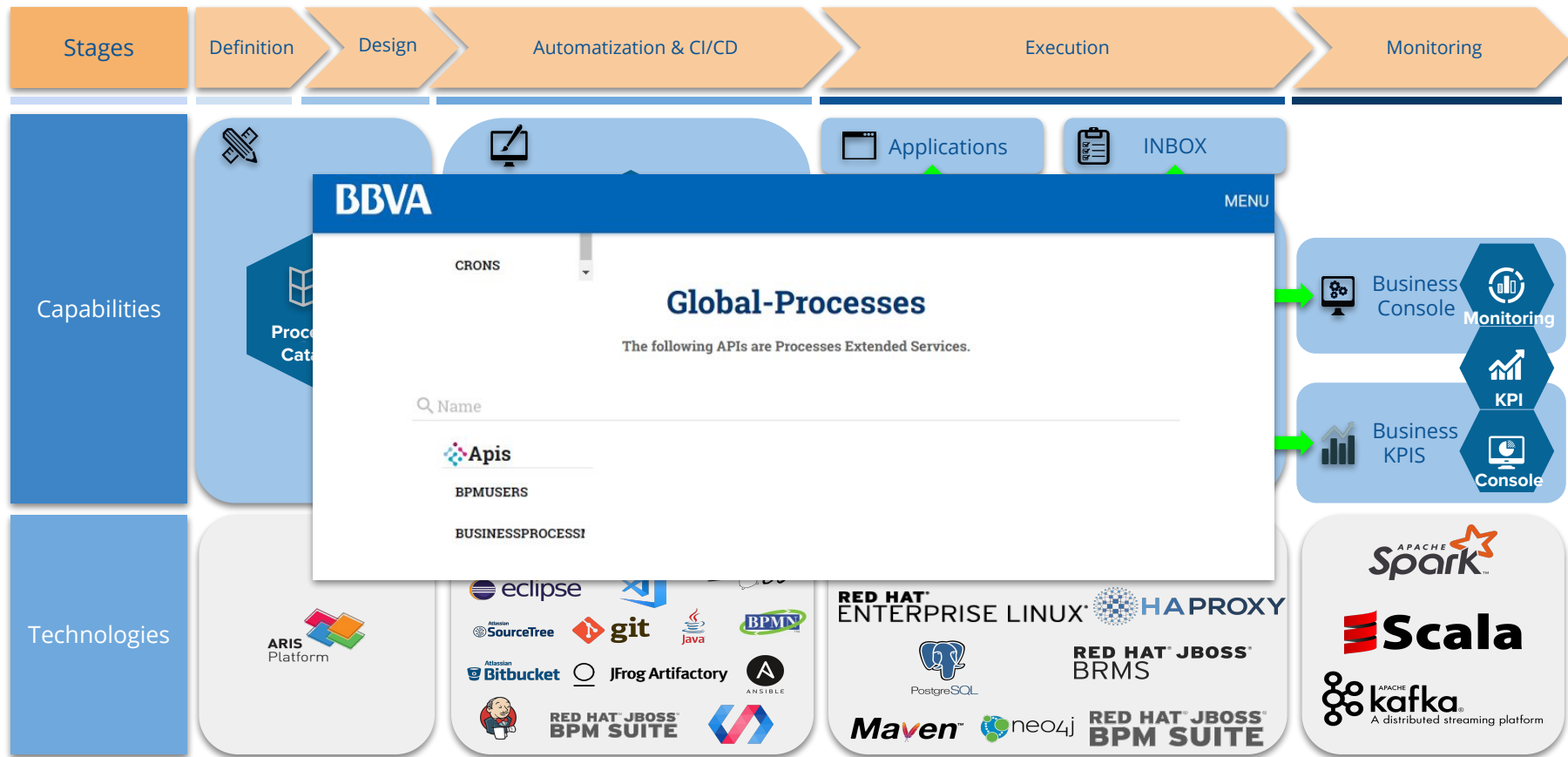# BPMaaS: Technologies

BPMaaS: Technologies

BPMaaS: Technologies

BPMaaS: Technologies

| Stages | Definition | Design | Automatization & CI/CD | Execution | Monitoring |

Capabilities

Processes Catalog

Technologies

ARIS Platform

Jenkins — BBVA_Global_BPM

Business Console — Monitoring

Business KPIS — Console — KPI

Apache Spark

Scala

Apache Kafka — A distributed streaming platform
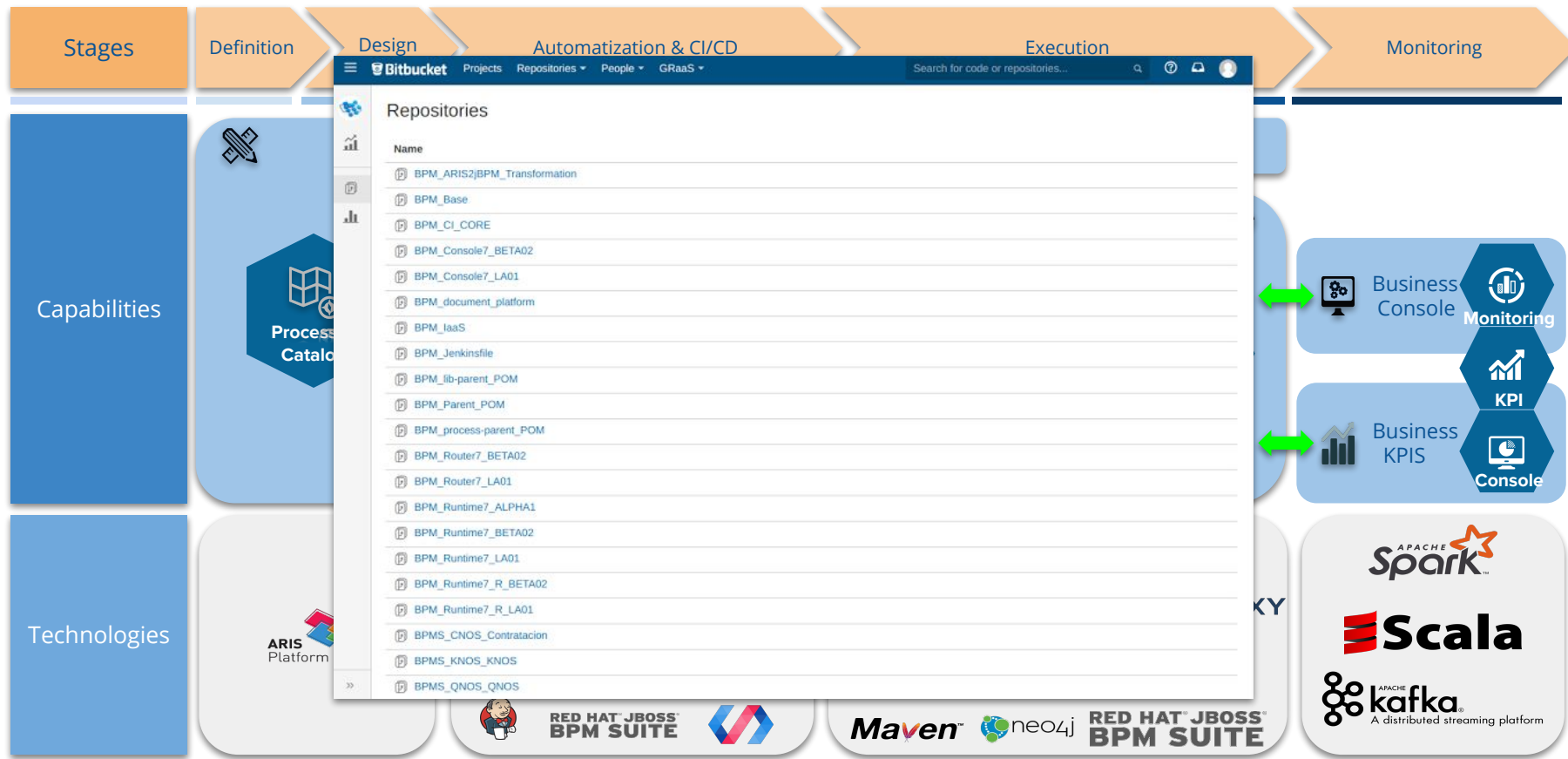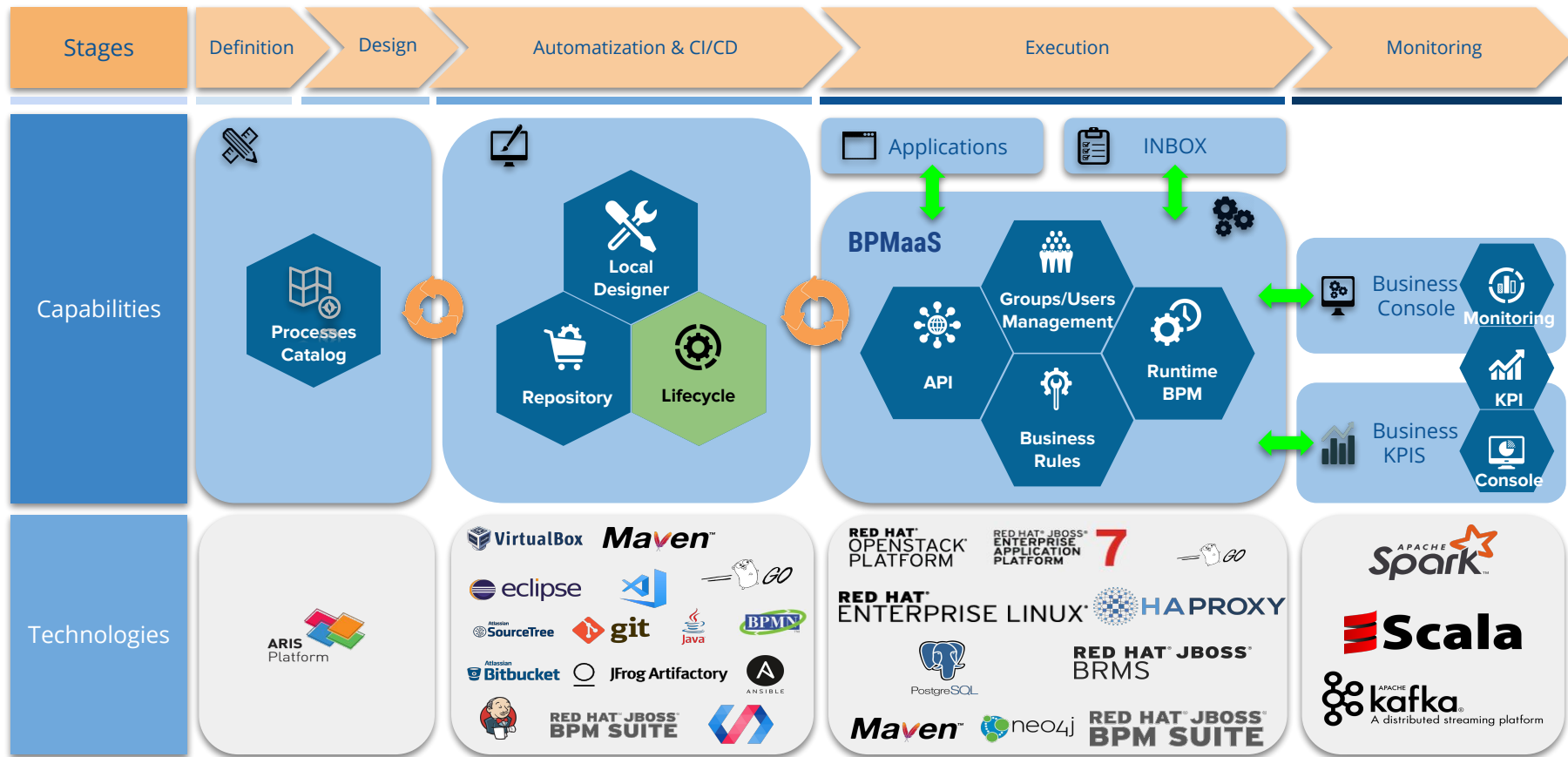
BPMaaS: Technologies

BPMaaS: Technologies

How RH BPM looks like now and roadmap

Red Hat BPM Suite v 6.x

- Includes Process Execution as a service

Red Hat Process Automation Manager 7.0

- Case management
- Process and task administration
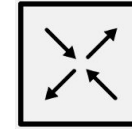- Cloud
- Authoring and getting started experience
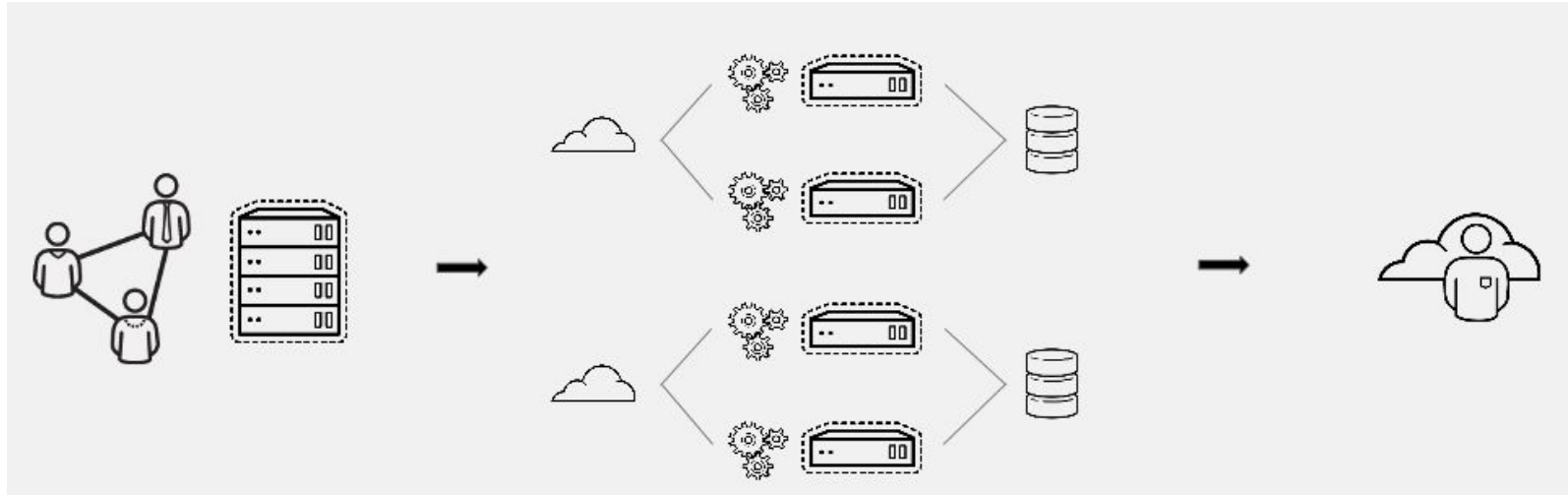
Authoring **Execution** **Monitoring**
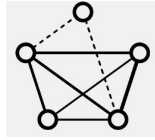
Controller

- Keeping track of server instances
- Server configuration
  - Capabilities (Rule, Process, Planning, etc.)
  - Deployed containers, for example
    - Project A – v1.0
    - Project A – v2.0
    - Project B – v1.1

- Update existing server configurations
 - Add containers
  - Remove containers

Smart Router

- Acts a server instance

- Delegate requests to the right server instance
  - Across different server configurations
  - Based on minimal information

- Aggregate data
  - From different server instances

Cloud images

The Open-Source Way

- Layered
- Configurable
  - Out-of-the-box configuration
  - Security + SSO
  - JMS, timers, etc.
- Customizable
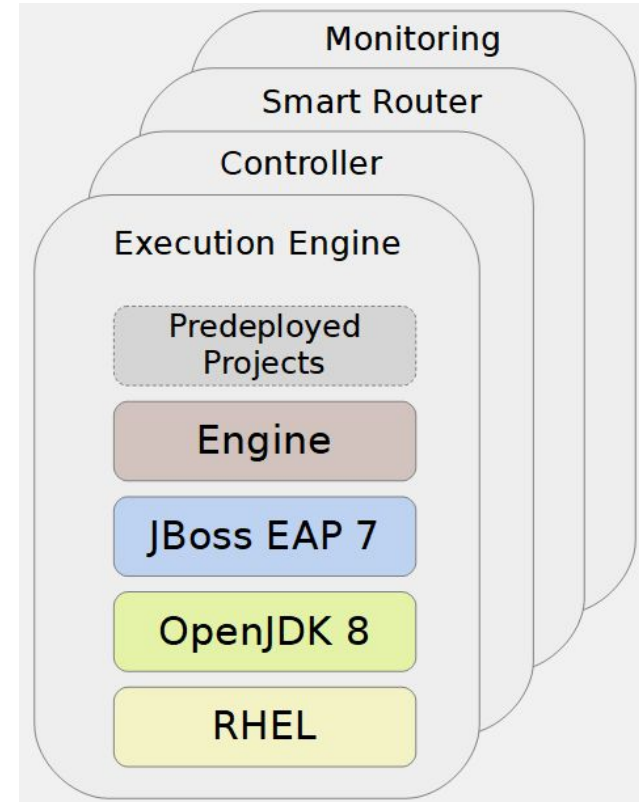
Process automation platform - RoadMap

RHPAM v7

Lessons learnt and future goals

Our objective is to build a platform to enable truly digital process automation...

1 Communication for Use Cases common understanding: Workshops all together

2 There is always area for improvement: new gaps and how to deal with it

3 Designer and Process Modeling requirements first, runtime after that: Process Lifecycle

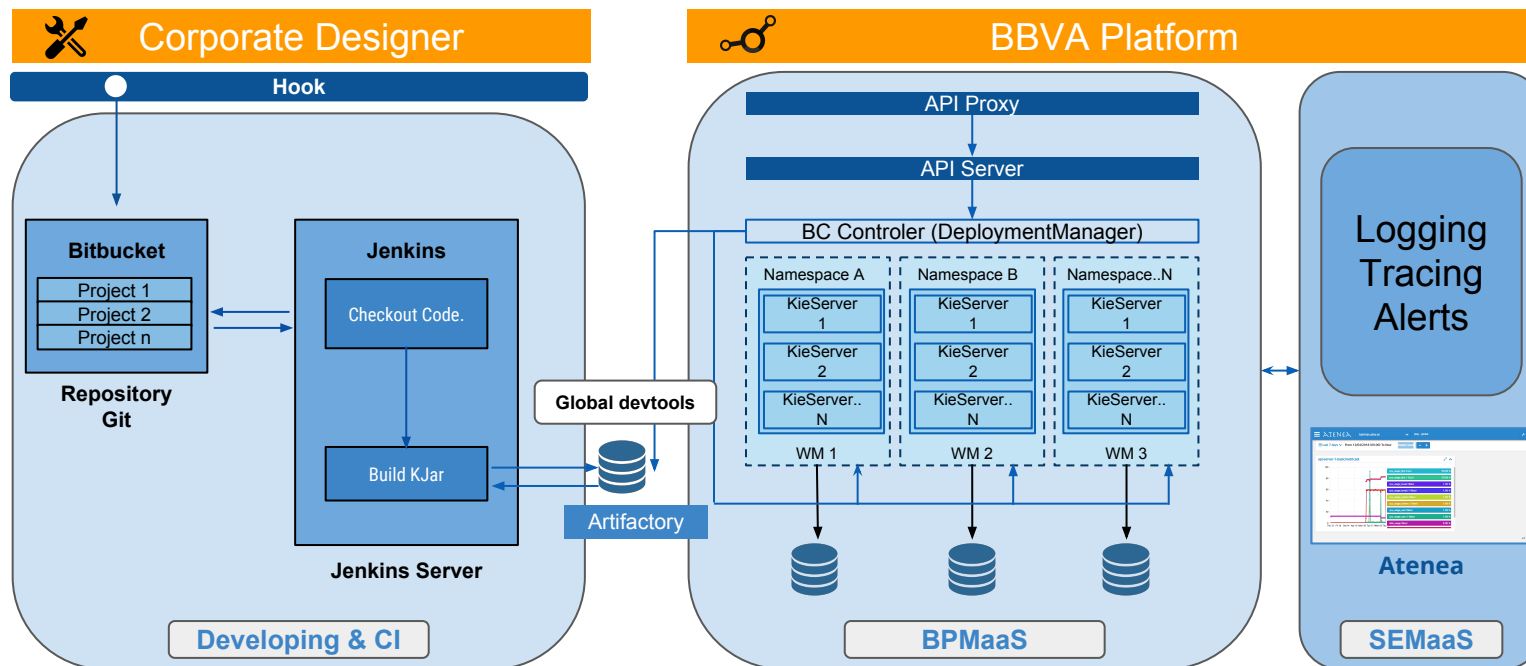**4** **Engage end user/customer since the beginning**

FUTURE **Improve/Industrialize processes migration from other tools and platforms**

BPM Platform as source of lots of event types to be processed in the Analytic platform.

Advanced Process Automation Capabilities

BBVA Platform Overview

SEMaaS provides tools to trace (Rho) and log (Omega) code executed in BPM runtime

Atenea console shows all the information related to log traces ,service executions and delays and Alerts