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2019 Oil & Gas Project Management Conference

P & J Live Aberdeen

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Next Generation Project Delivery

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BP at a glance

78
countries

73,000
employees

$12.7bn
underlying replacement cost profit

63,000 km^2
new exploration access

18,700
retail sites

3.7
million barrels of oil equivalent per day – hydrocarbon production

Our strategy

bp

Growing advantaged oil and gas in the upstream

Invest in more oil and gas, producing both with increasing efficiency.

Market-led growth in the downstream

Innovate with advanced products and strategic partnerships.

Venturing and low carbon across multiple fronts

Pursue new opportunities to meet evolving technology, consumer and policy trends.

Modernizing the whole group

Simplify our processes and enhance our productivity through digital solutions.

Sustainably improving safety, performance & feel

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Agility	Digital	Mindset
"Transforming and simplifying the way we work"	"Transforming how we deliver - Digitizing and automating our operations"	"Transforming the way we think"

Improving Safety, Environment & Performance   **Improving Employee Experience**
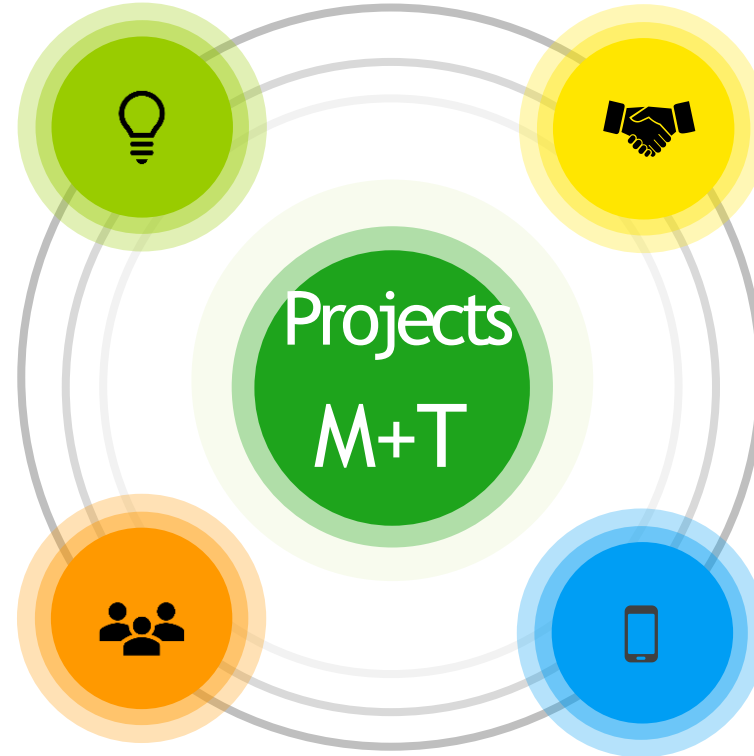
BP Projects M+T themes

Next Generation Concepts

Collaborative Project Delivery

Projects M+T

Mindset and Agility

Digital Project Delivery

Introduction to Digital Performance Management

Our challenge

- Project data comes from multiple sources and can be hard to keep track of

- The longer it takes to access the information you need and respond to problems, the greater the chance of your project being delayed

- This can lead to poor decision making, increased errors and increased costs

Our solution

- System of insight that puts all project performance reporting in one place

- Real time performance data, sourced from BP to contractor systems

- Standardised way of working across all projects to enable data to be visualised from delivery line, project, region and global portfolio view

Project Overview - Alligin

HSSE

IRIS
HSE Performance Report

IRIS Performance Library

SCHEDULE

Metric	Planned	Actual/Forecast
Overall % (Execute)	97.5	93.5 ↓
Operational Readiness	92.7	82.6 ↓

COST

Current Forecast	Previous Forecast
$238.1M	$238.1M

VOWD	Remaining Spend
$205.3M	$32.8M

PEOPLE

Baseline	Actual	Forecast
86	70	77

Variance	Upcoming Vacancies (Next 3M)
7	3

QUALITY

Failures Post SH	0
NCR Commissioning	0
NCR Manufacture / Construction / I & I	34
Actions to Prevent & Correct (from Failures & CARs)	12
Overages, Shortages & Damaged	0
Planned Surveillance Findings	40
Quality Observations	192

Lagging Indicator / Leading Indicator
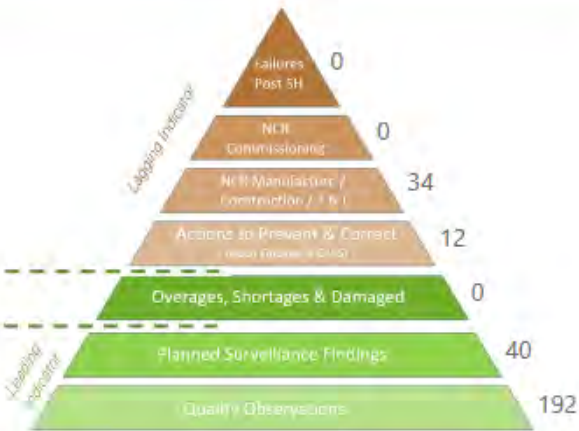
MOC

Proposed	Open
1	0

Appr. for Imp.	Overdue
2	0

Open Actions	Overdue Actions
4	0

ACTIONS

Event Category	Open	Overdue
Orange Book	0	0
Other	17	2
VAP	9	2
Total	**26**	**4**

RISK

Active	Proposed	Overdue
12	0	0

Open Actions	Overdue Actions
0	0

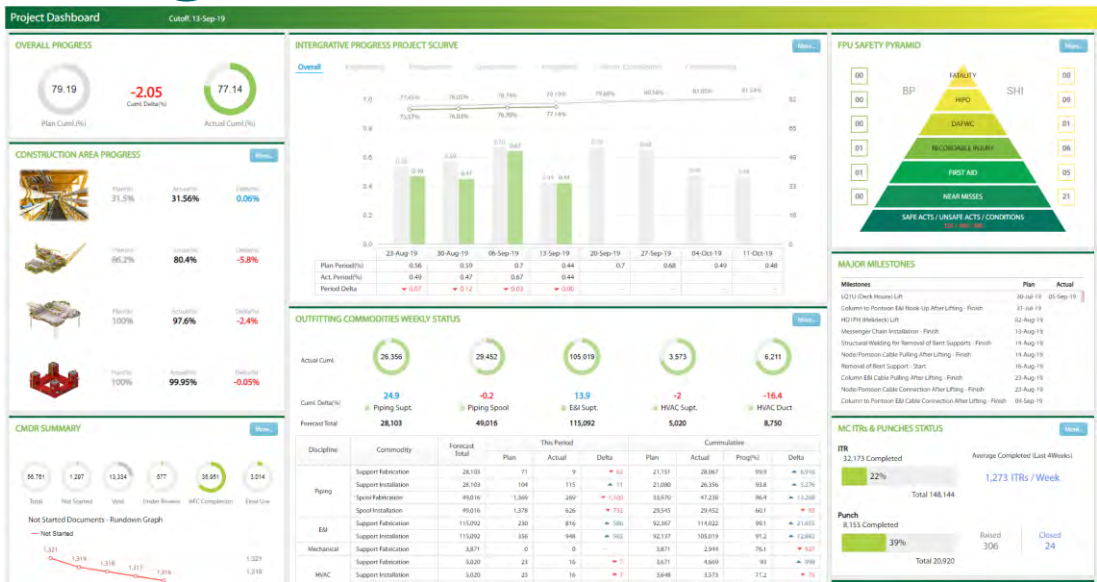## DOC STATUS

INTERFACES ⚠
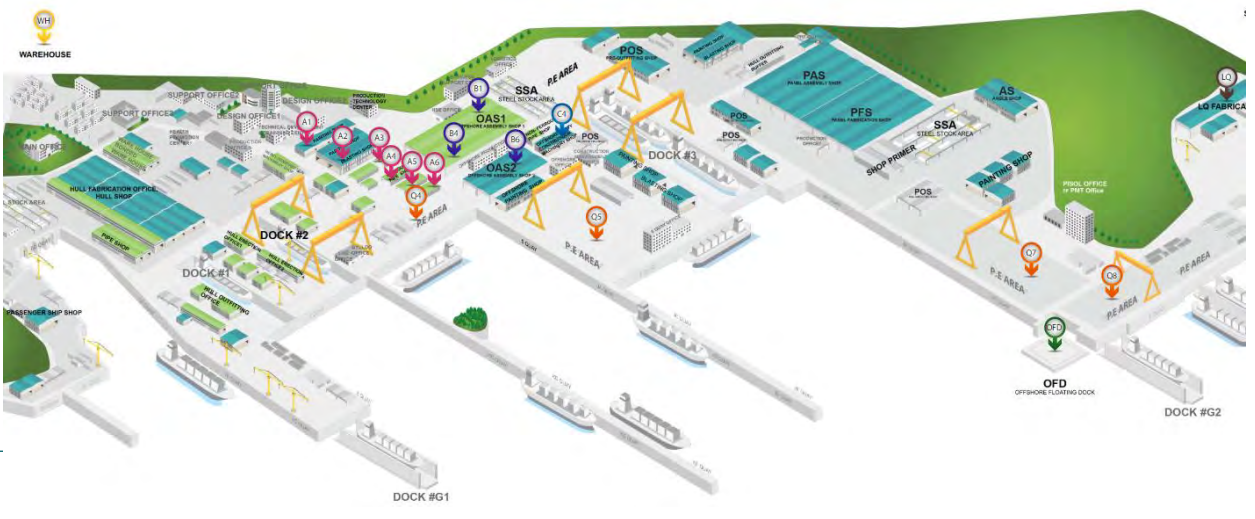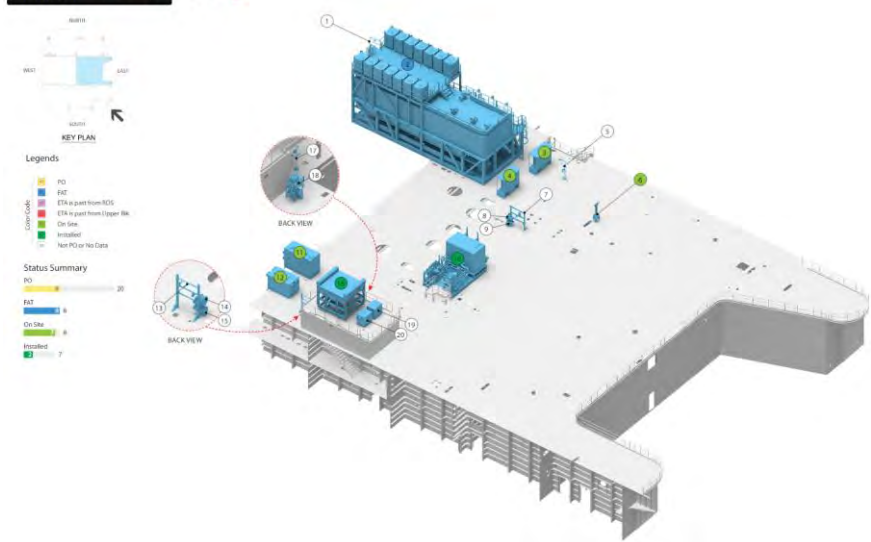
ETPDR

TQ

CDR ⚠

NEDR

Digitisation of Construction

Robotic Process Automation (RPA) in Global Projects

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WHAT IS RPA?

- RPA is the use of software code (Bots) to perform simple tasks using different applications just as a human would do

- Bots run on BP servers with their own NTid credentials

- Bots can read graphical info to make basic decisions

- Bots free up valuable staff time performing low-value, repetitive, rule-based tasks

- Bots report via email the errors they encounter

- Bots are easily re-configured to respond to evolving needs

HOW IS GPO USING BOTS?

- GPO has developed 4 Bots to date, serving the PIMS discipline

- GPO has or is deploying these Bots to 9 GPO projects in 3 regions and 1 function (19 unique Bot instances in all)

- As use in GPO grows, cost per Bot is reduced

Nov 2018 first GPO Bot went live. Results as of September, 2019:

55k
Hours
of productivity

300k
Documents
processed

WHERE IS BP DEPLOYING BOTS?

M&S
1 Bot in Dev

GoM - Seoul
2 Bots Live

GoM - Houston
6 Bots Live
4 Bots in Dev

Trinidad
1 Bots Live
4 Bots in Dev

WND/GPS
2 Bots Live
1 Bot in Dev

pde
Project Delivery Environment

bp
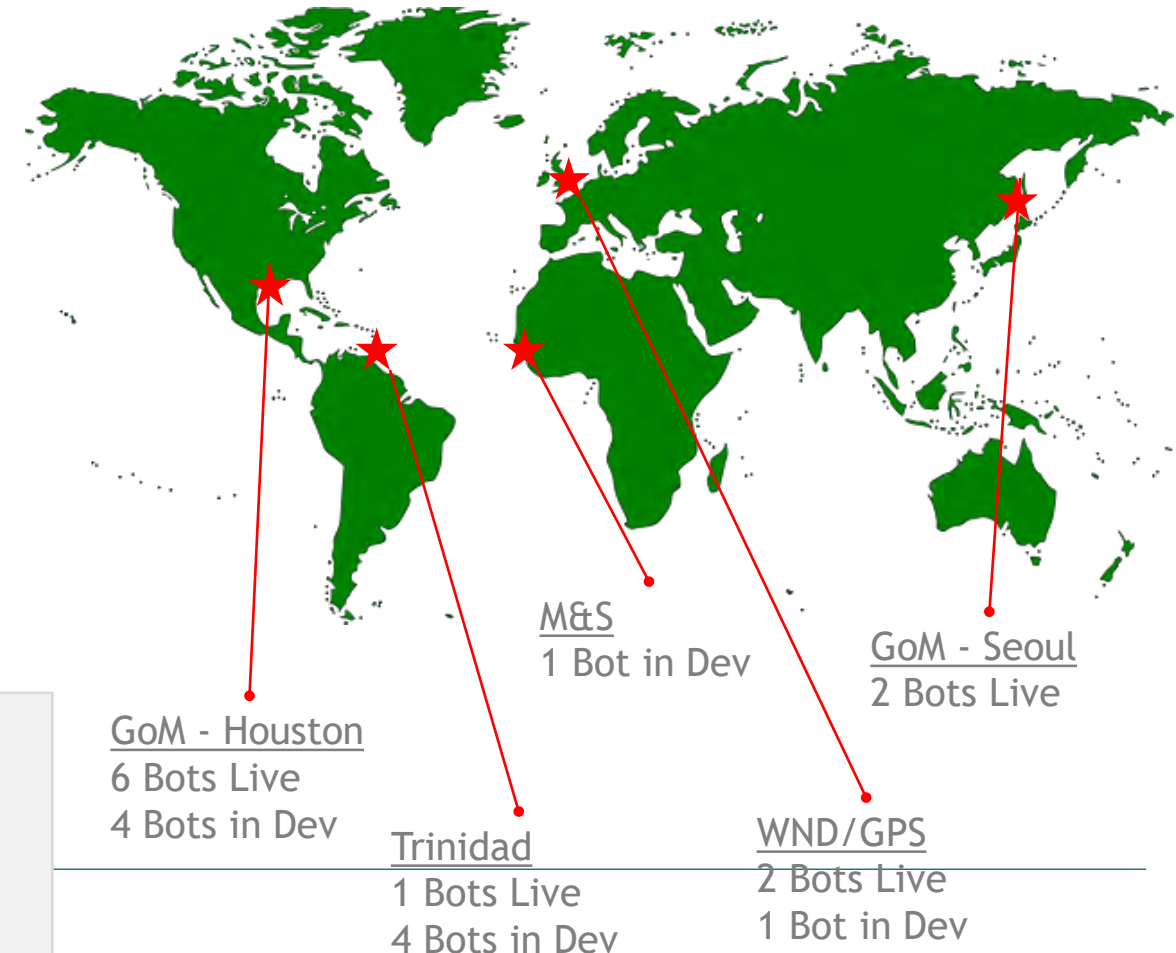
Our purpose

Set up as one of 6 digital M&T GPO initiatives, the Project Delivery Environment (PDE) is an 'out of the box' PLM web-based software solution enabling delivery of BP capital projects that will fully integrate with existing BP legacy tools. It will create the foundation of future capital projects delivery by digitalizing the Major Projects Common Process (MPcp v5), mapping our GPO processes into workflows and incorporating data-based management of the requirements from the GPO practices, procedures and guides, allowing real-time self-verification. In doing so, the PDE will enable GPO to move from using document-based work processes to a more streamlined data-centric workflow.

Our scope of work for 2018 is to configure the PDE into a sustainable minimum viable product (MVP) that we can then deploy on a real 'sponsor' project. The MVP will concentrate on digitalizing some of the MPcp v5 workflows for the BP deliverables in four functional areas, namely; project management, project services, major project operations and engineering. This will make use of a subset of the PLM capabilities, namely; workflow automation, requirements management, document management, reporting and schedule integration with Primavera P6.

Why this project?

The M&T agenda is designed to systematically enhance several areas within GPO and the wider organisation aligned with our path to 2020 and has identified PDE as one of its key initiatives. By pursuing new digital ways of working, we will be able to break down existing silos through integrated workflows, drive faster decision making and reduce working capital and cycle times. This means improved overall capital performance, schedule quality and highly reliable assets delivered to GOO.

PDE will provide all these benefits, enabling teams to work faster, more efficiently and effectively in a highly predictable way to ultimately deliver safe, cost effective & competitive projects aligned with the Major Projects common process in GPO.

Who is impacted?

All BP teams either delivering, governing or providing input into capital projects in GPO.

Adding value to existing project delivery practices

- ✓ Improvement in consistency and quality of project workflow
- ✓ Standardisation and cross-project sharing of processes and templates
- ✓ Data centric systems engineering and requirements management
- ✓ Vastly improved information management, visualisation and access
- ✓ Quality improvements in how we deliver against MPcp requirements
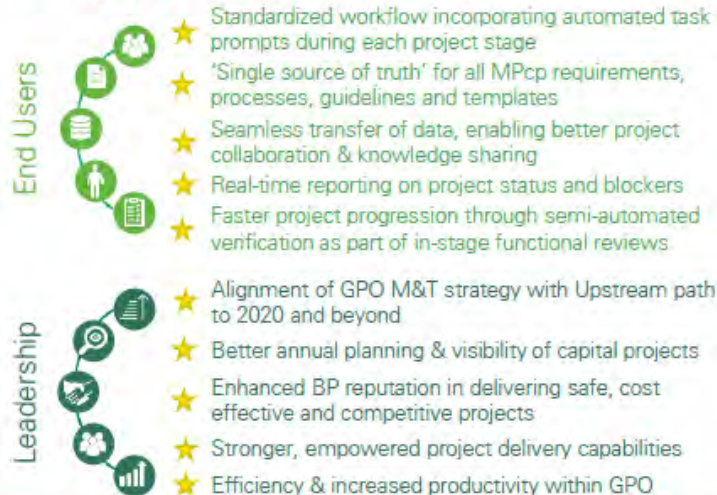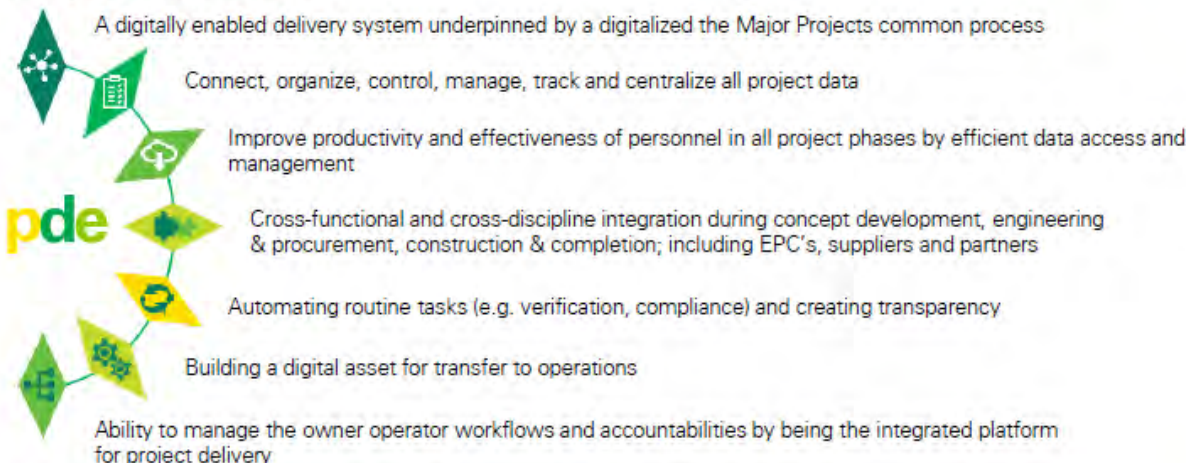- ✓ Semi-automated verification of deliverables against requirements

Key benefits to end users and leadership

MPcp (As Is)

MPcp digitalized in PDE (To Be)

End Users

- Standardized workflow incorporating automated task prompts during each project stage
- 'Single source of truth' for all MPcp requirements, processes, guidelines and templates
- Seamless transfer of data, enabling better project collaboration & knowledge sharing
- Real-time reporting on project status and blockers
- Faster project progression through semi-automated verification as part of in-stage functional reviews

Leadership

- Alignment of GPO M&T strategy with Upstream path to 2020 and beyond
- Better annual planning & visibility of capital projects
- Enhanced BP reputation in delivering safe, cost effective and competitive projects
- Stronger, empowered project delivery capabilities
- Efficiency & increased productivity within GPO

MPcp (As Is) points:
- Siloed working
- Heavily manual processes
- Varying working practices
- Multiple data repositories & systems
- Additional effort to collate data for reporting
- Resource intensive project handover & execution

Project Objectives

- A digitally enabled delivery system underpinned by a digitalized the Major Projects common process
- Connect, organize, control, manage, track and centralize all project data
- Improve productivity and effectiveness of personnel in all project phases by efficient data access and management
- Cross-functional and cross-discipline integration during concept development, engineering & procurement, construction & completion; including EPC's, suppliers and partners
- Automating routine tasks (e.g. verification, compliance) and creating transparency
- Building a digital asset for transfer to operations
- Ability to manage the owner operator workflows and accountabilities by being the integrated platform for project delivery

High level project timeline

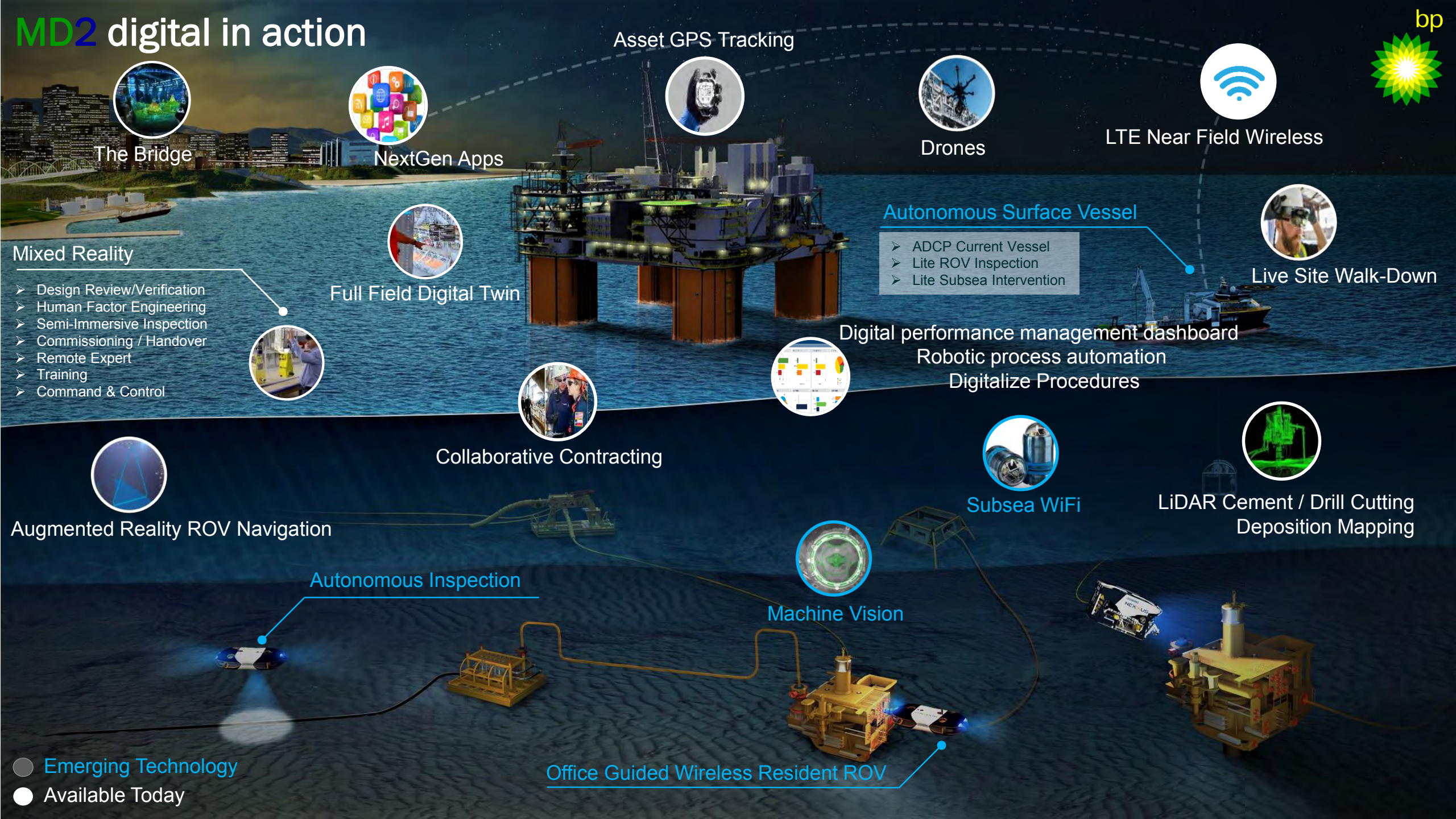| Jul 2017 – Feb 2018 **Mobilise**	Mar – May 2018 **Organise**	Jun – Dec 2018 **Stabilise**	2019 – 2020 (& beyond) **Formalise**
• Vision, Objectives and Design Principles • PDE Piloted • Team Established	• Confirm Business Case • Select Vendor • Select Service Integrator	• Commence MPcp Digitalization • Identify Sponsor Project • Install System	• PDE MVP Available • Deploy PDE with Category A Project • Testing Completed • Rollout to wider BP

Digital Twin

- BP projects now deploy digital twin technology

- Combination of Engineering models, visualisation technology & data feeds

- AR & VR use cases in place

- Fully connected models with facilities, subsea, wells & reservoir

- Campaign rooms designed around this technology

- Operational use cases bring in predictive analytics, operating condition and photogrammetry

Thank You

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