



Decommissioning and Restoration – Fostering Excellence through Regulations, Innovation, and Sustainable Practices

30–31 JULY 2024 | BANDAR SERI BEGAWAN, BRUNEI

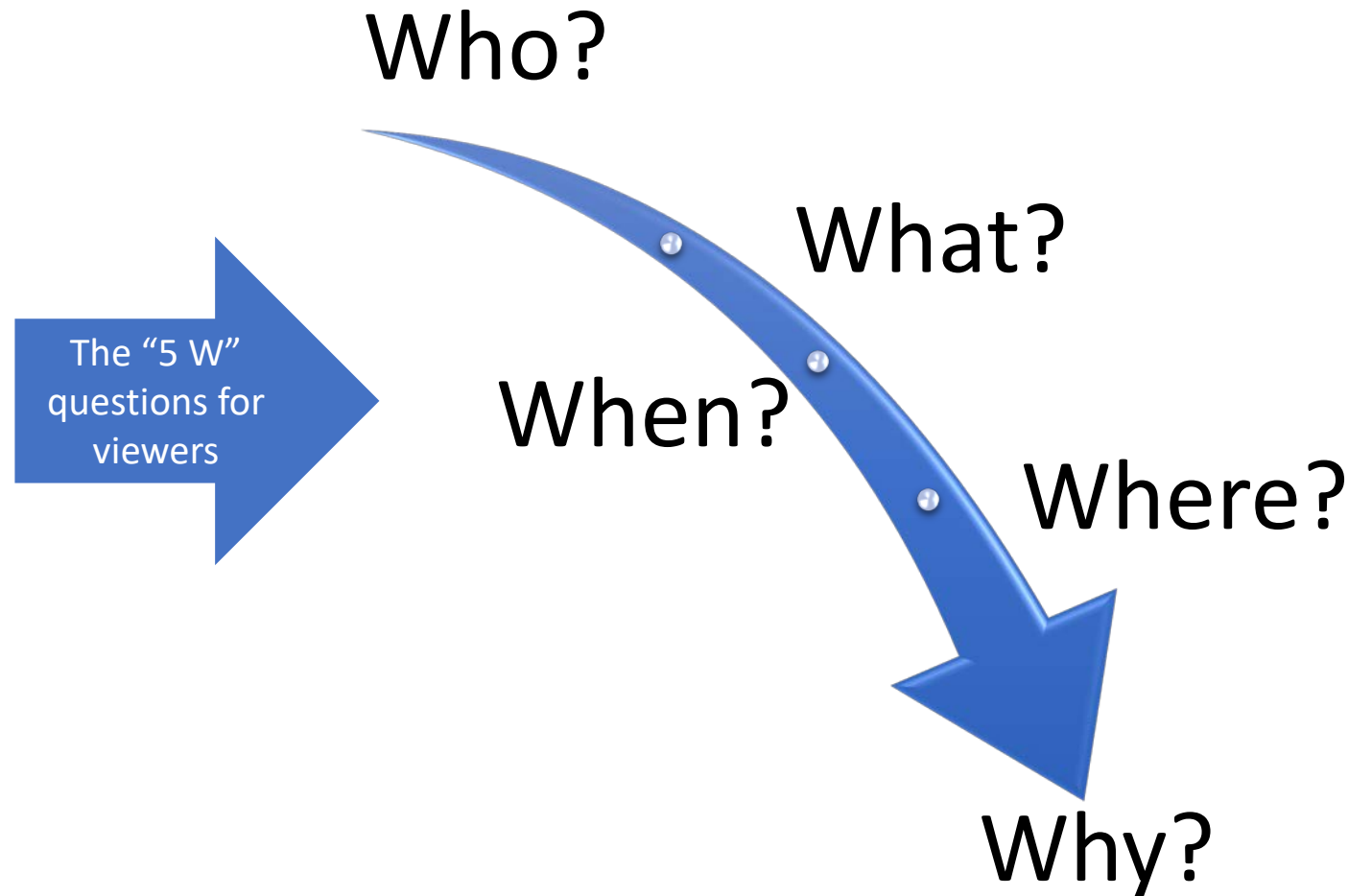


Streamlining Well Plug and Abandonment: Strategies for Efficiency, Collaboration and Compliance in the Oil and Gas Industry

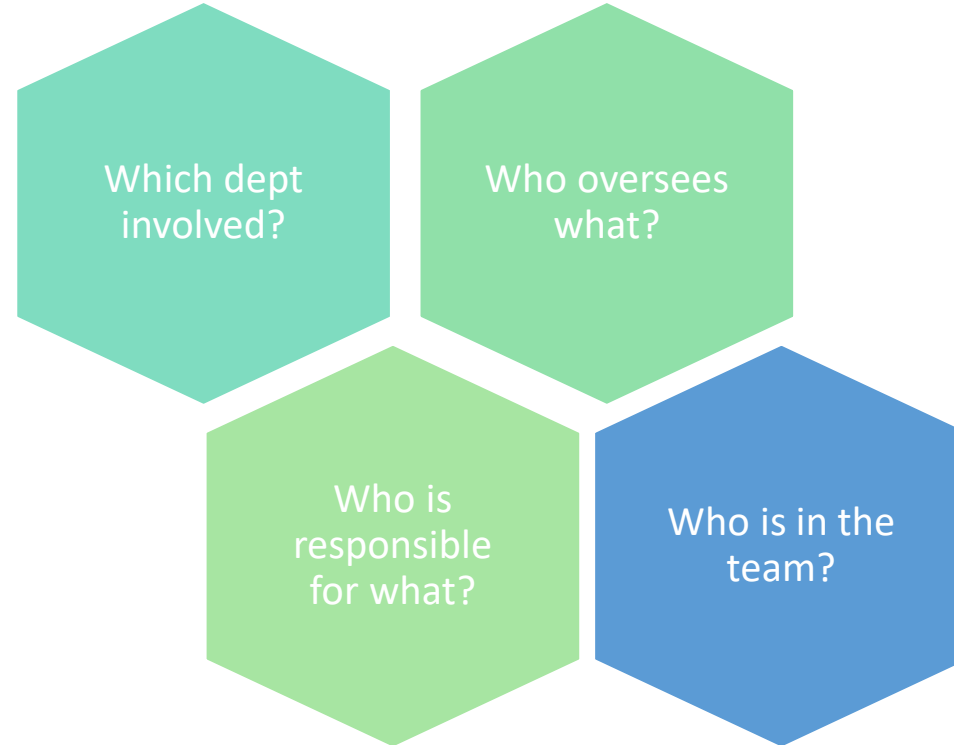


Decommissioning and Restoration Scope:

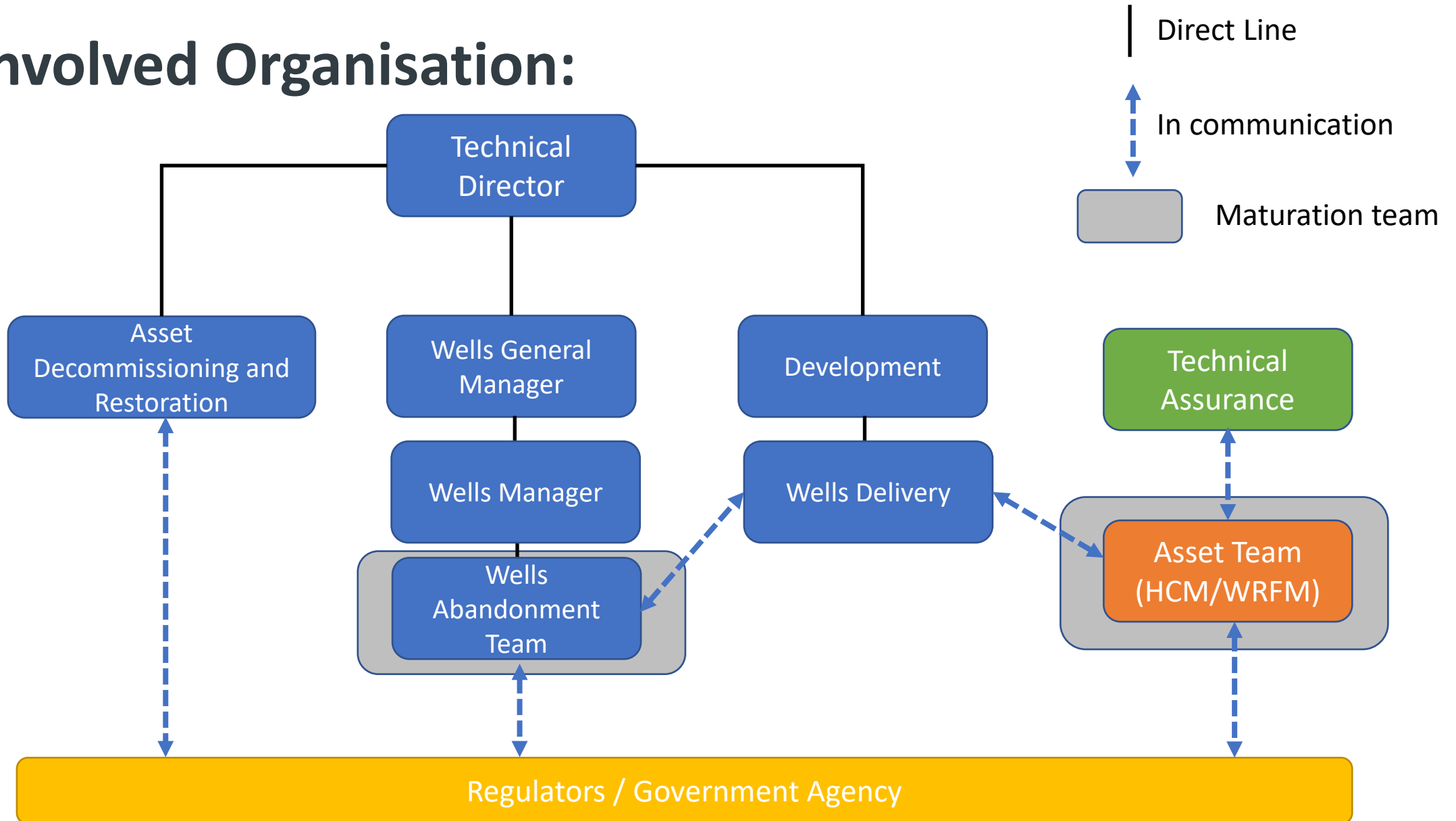
'BSP has the duty to decommission assets at the end of their useful economic life, in compliance with applicable laws and contractual requirements, and an opportunity to restore the location in a safe, affordable, environmentally and socially responsible manner, reducing footprint (UOC) and preserving our reputation and license to operate'



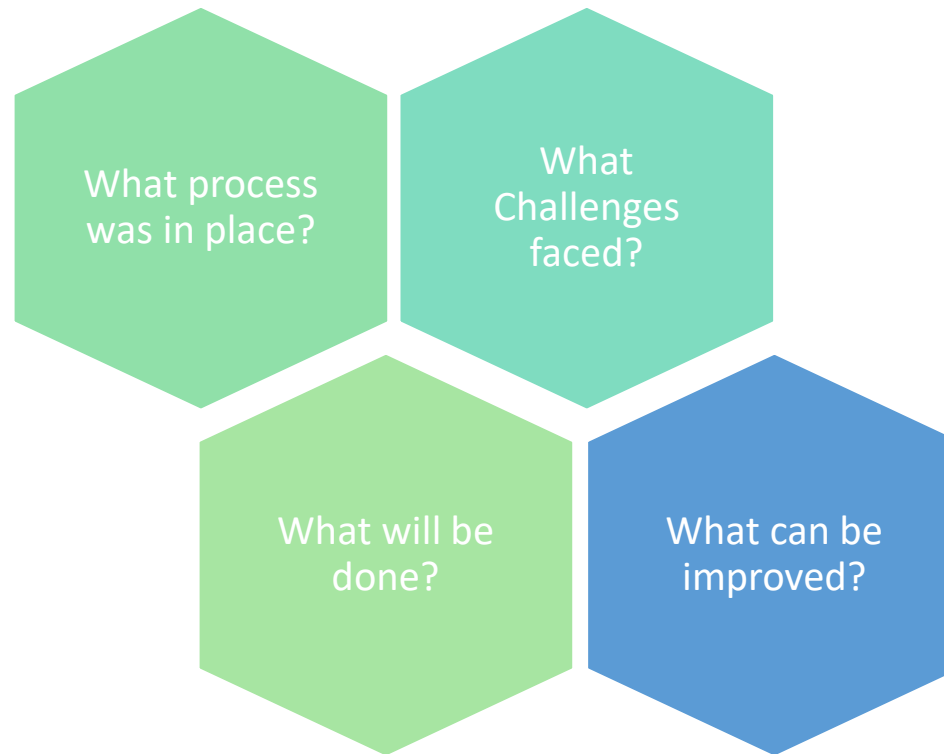
1. Who?



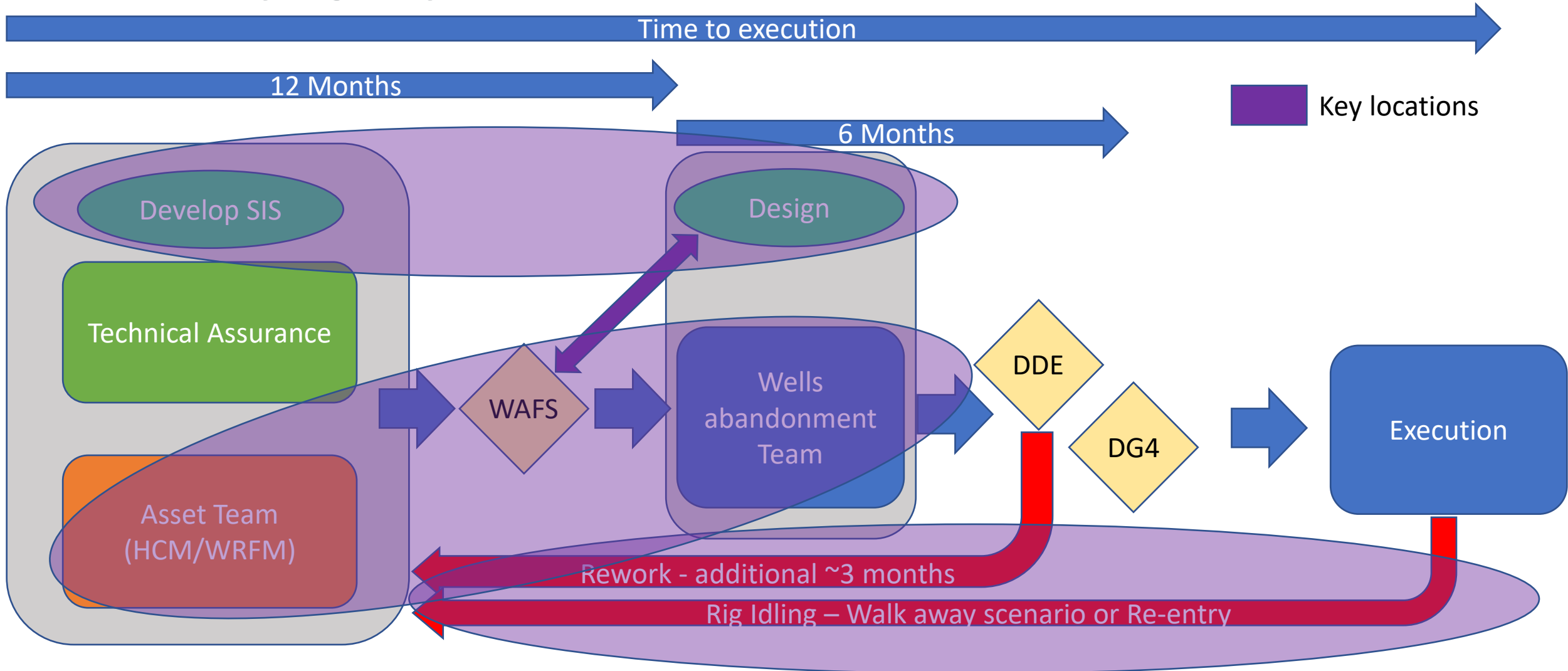
Involved Organisation:



2. What?



Identifying Key Locations for Collaborative Connections



Turning Challenges into Opportunities

Challenges

Project Management

- Responsibilities not being aligned
- Ineffective Abandonment Sequence
- Potential rework of SIS
- Resources availability
- Regulatory Requirements unaligned

Technical

- Complex field abandonment
- Data availability or consistency
- Lack of alignment in abandonment strategy



Opportunities

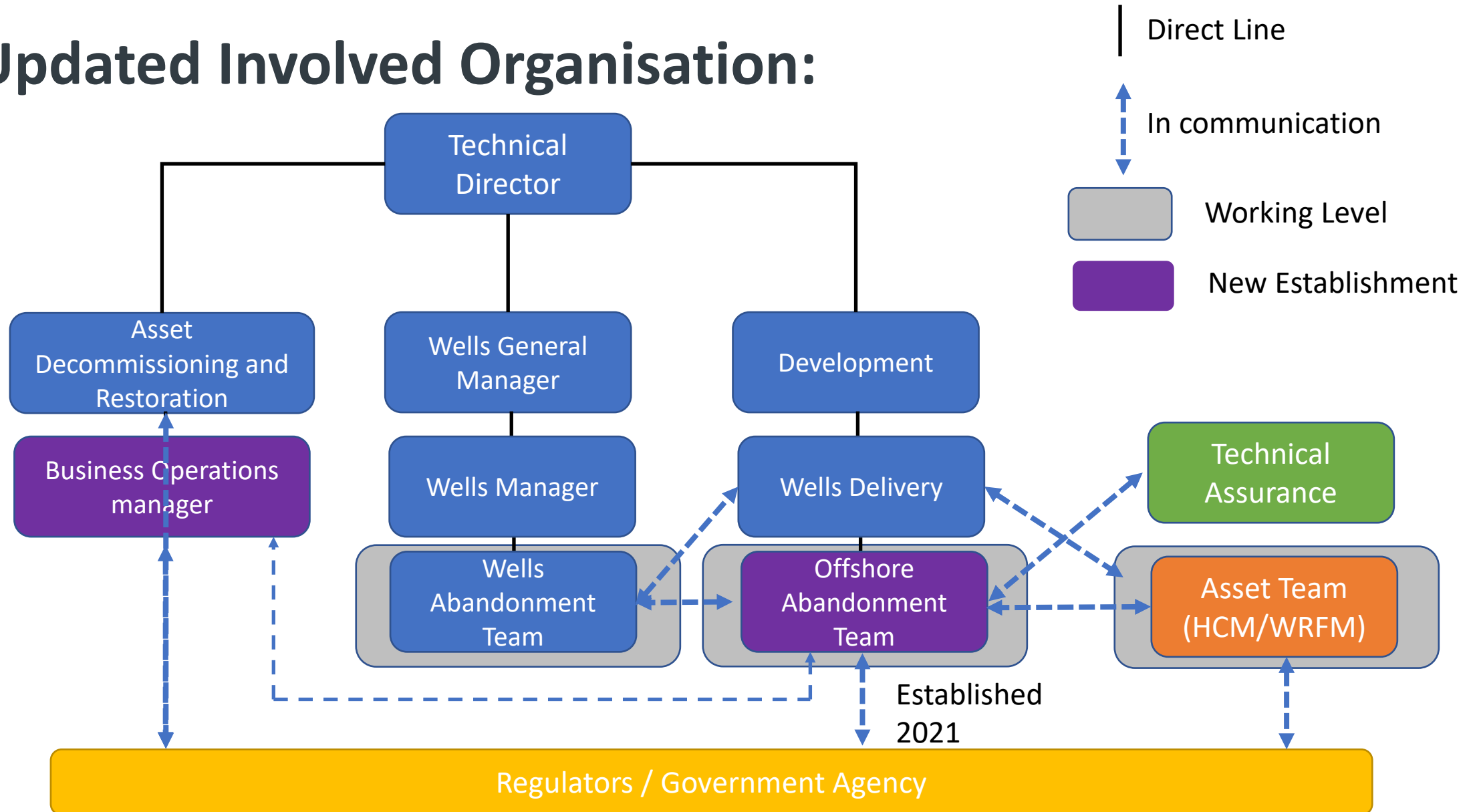
Project Management

- Combined Project Maturation Team
- Combining development project
- Project improvement
- Focused submission on regulatory requirements

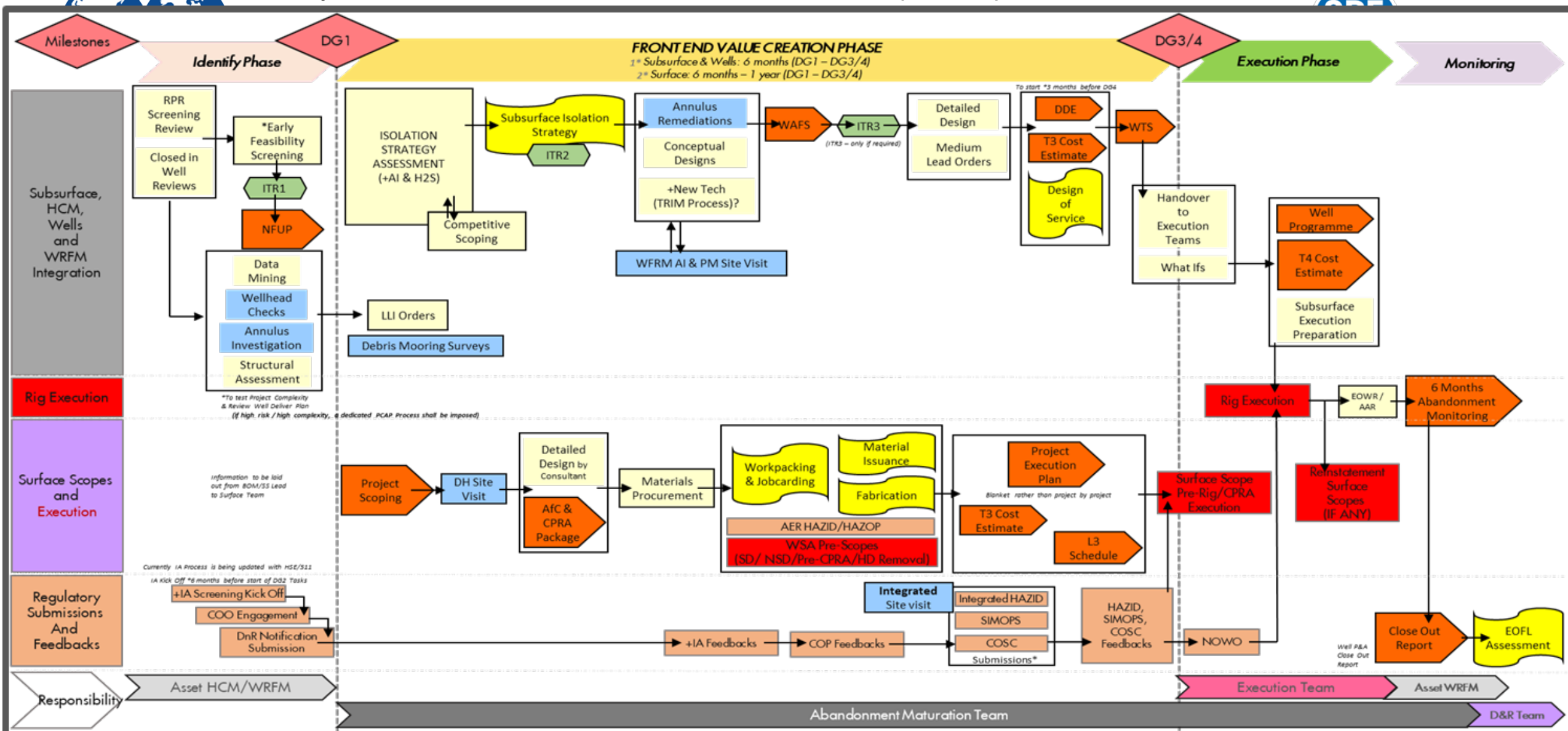
Technical

- Project Continuation/Integration
- ALARP approach
- Technology trial
- Alternative verification workflow

Updated Involved Organisation:



Discipline Control Assurance Framework (DCAF) Control Point



During the process of maturing every single abandonment, there is a requirement to follow the DCAF Process. There are a few key assurance points which requires a full ITR with all the TA2 endorsement.

3. When?

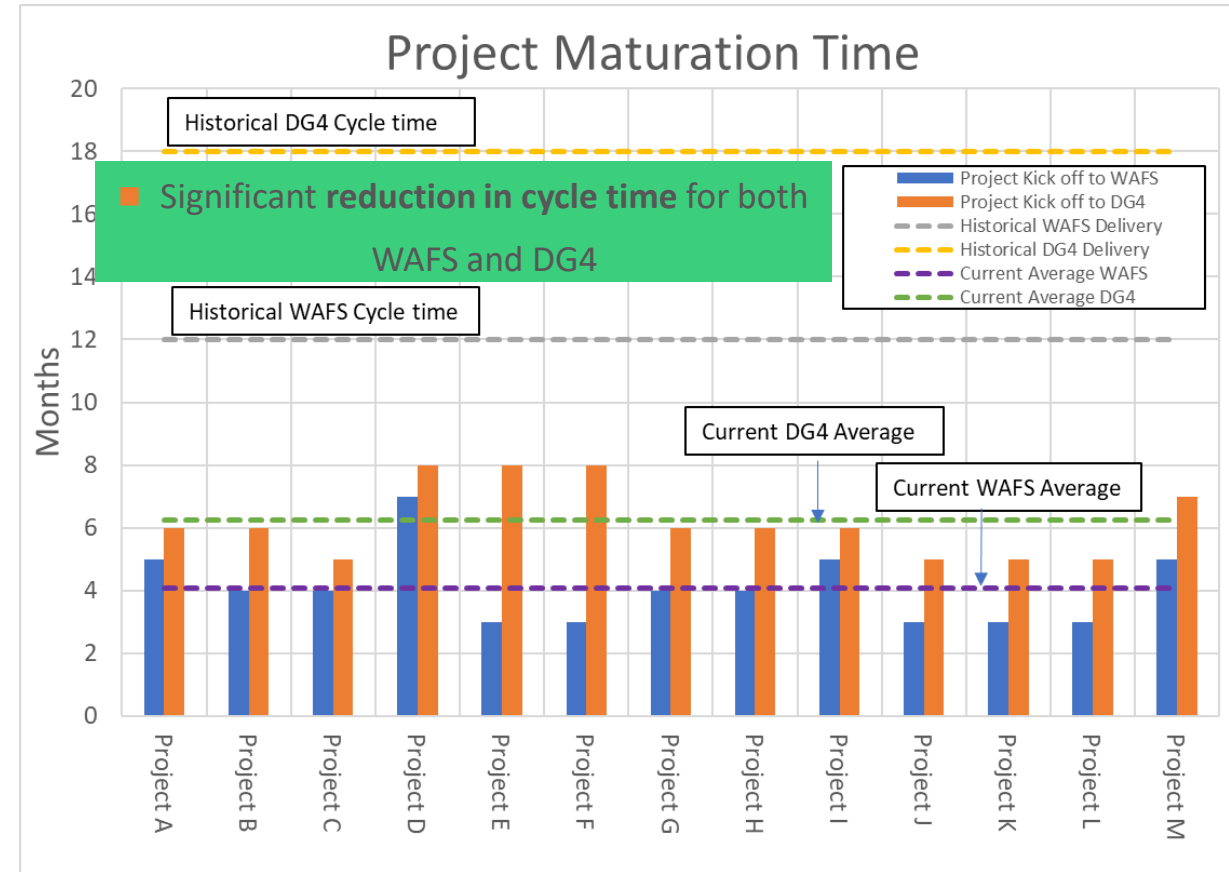
When will the system be implemented?

When can we see the changes?

Outcome

- Observed outcomes by the Subsurface Maturation team:
 - **Focused maturation** by a single team leading to improved project delivery
 - Enabling maturation of projects in parallel with **no rig idle time incurred**
 - Maturation of a large full-field D&R project
 - Scope optimization through **competitive scoping** leading to cost avoidance

Standardization of work and early integration Shared Product	Significant Reduction in Cycle time for WAFS and DG4	No Recycling of Work
Competitive Scoping of Abandonment Design via early SIS	Feasibility vs Risk Value trade-offs Done Earlier in the Process	Technological Solution Enabler



4. Where?

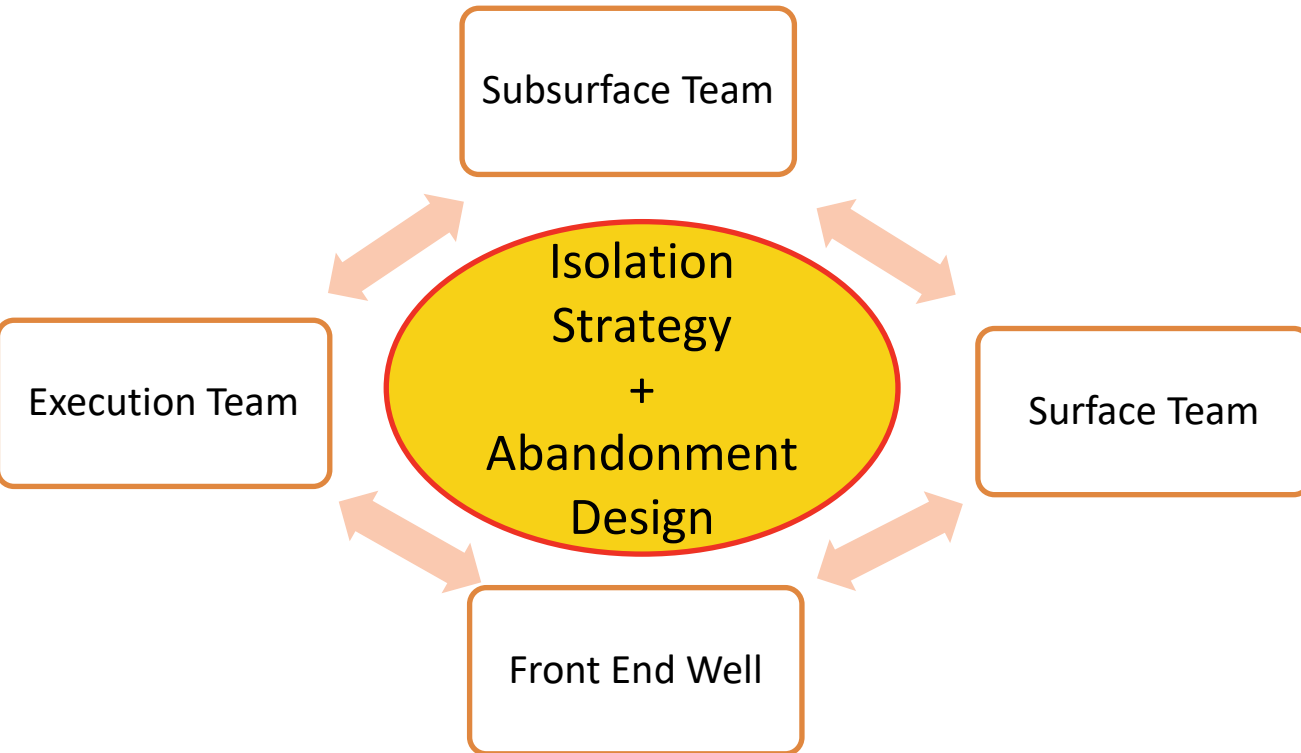
Where can we improve the process?

Where do we go from here?

Collaborations, Integrations & Improvements

Competitive Scoping

Early Screening Tool



		Updated Wells Offshore Plug and Abandonment Roadmap can be applied:		Dedicated Project Plan Required
		Low Complexity	Medium Complexity	High Complexity
Platform	Platform Age	<20 years	20-30 years	>30 years
	In Production	Y	Y	N
	Date since platform shut-in	<5 years	5-10 years	>10 years
Platform Integrity	Platform Integrity	Good integrity	Minor accessibility issue e.g. missing gratings, rotting wooden beams on main deck	Major flaws required for entry
	Accessibility	Good access	Minor accessibility issue e.g. missing gratings, rotting wooden beams on main deck	No access
Well	Well Integrity	No issues	Known integrity issues, outside allowable limit for vessel, rig entry but manageable by plugs and filling up annulus	Major flaws required e.g. casing / wellhead failure resulting in loss of containment
	Annular Isolation Data availability	CBL, pressured and well status known	Cement quality and annulus pressures unknown however, monitoring possible	Cement quality and annulus pressures unknown and monitoring not possible e.g. no wellhead access
	Accessibility	Rig entry possible	Minor flaws required for well entry	Major flaws required for well entry
	Data acquisition	None required	Wellbore MWD below casing depth	Wellbore MWD above casing depth
	Well head retrieval requirements	Off-the-shelf	Data required as the project progresses	Data required to begin maturation work
Subsurface	Well head retrieval requirements	Up to 12 months lead time	>12 months lead time	>18 months lead time
	Remaining development plans	No further development	Further development planned in the same reservoir	Unclear
	Data availability	Reservoir pressures, fluids, lithology logs and CBL known	Missing information in overburden	Missing information in both overburden and reservoir section
	Data acquisition	None required	Data required as the project progresses	Data required to begin maturation work
	Wells plumbing network	Wells only stay within a reservoir block	Wells penetrate multiple reservoir blocks	Wells penetrating multiple reservoir blocks with missing information
Asset Pre-Handover Readiness	Poor historical cementing	None	Yes	Unknown
	Overpressures	No	Yes	Unknown
	HSE	No	Yes	Unknown but present in well-bourning platforms
	NFUP	Approved	Semi-Approved (On-Going)	Not been done
Offshore Resource/Activity Readiness	CO2 Approval	Approved	Incomplete (Last feedback from RA)	Not been done (check local stat)
	Surface BFO Scope & Platform Readiness	No complications seen	Slight Complications (Accessibility, Pre-Rig Entry Req)	Major Complications (Accessibility, Pre-Rig Entry Req, HSE Hazards, Production/Deferment Risk)
	Helideck	No Helideck Lifting required	Yes - Resource & timeline alignment	Yes - Resource & timeline needs further alignment
Safety Criticality	CPRA	No further activity required	Minimal scope and/or timeline needs further alignment with resources	Major scope and/or timeline needs further alignment with resources
	Deferment	No Production	Minimal deferment booking required	Significant deferment booking required (PRODUCTION HAZARD)
		No	No	Safety Critical Wells (Time driven due to critically)

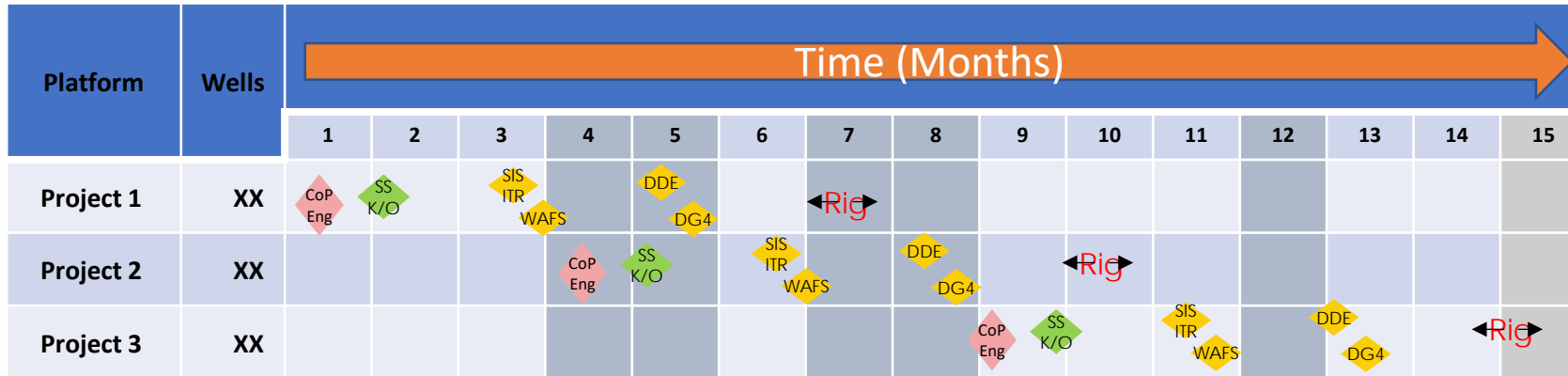
Improved RACI



Subsurface Wells and Abandonment catalogue

Feasibility vs risk-value trade-offs Identified Early

Laying The Foundations For The Future:



Early Screening Tool implemented and aided in next sequence to be done

Early Screening Tool implemented and aided in next sequence to be done



5. Why?



Benefits / Positives

Efficiency

Streamlined Workflow and project maturation

Optimized Abandonment strategy

Improved Regulatory submissions

Collaboration

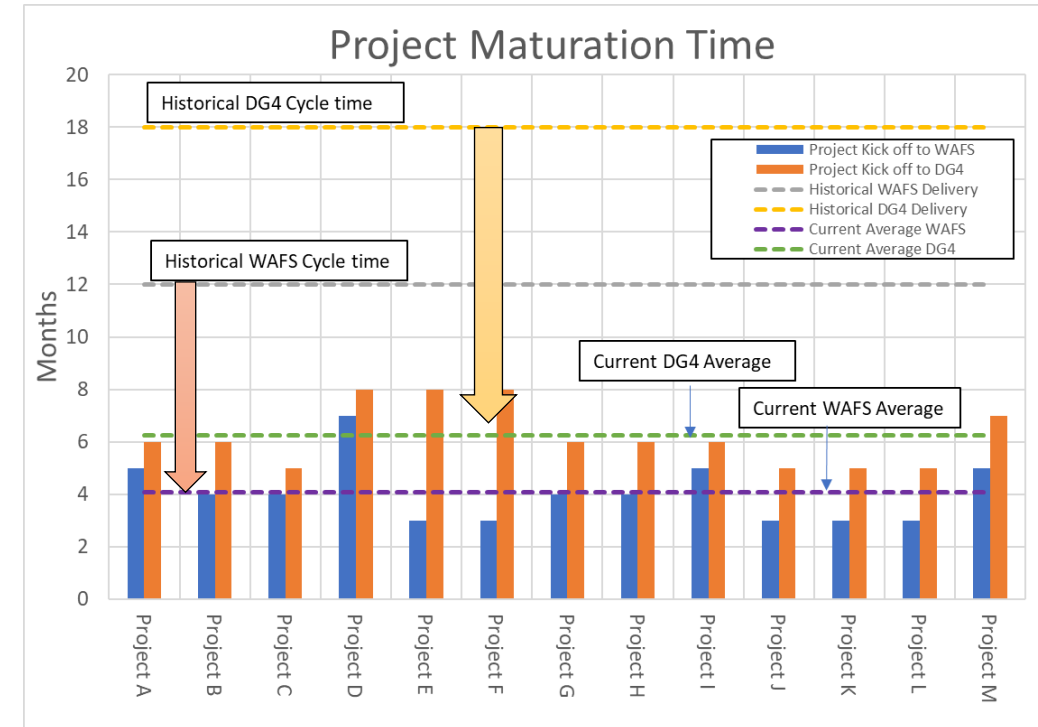
Inter-department collaboration

Improved team dynamics

Cost Benefits

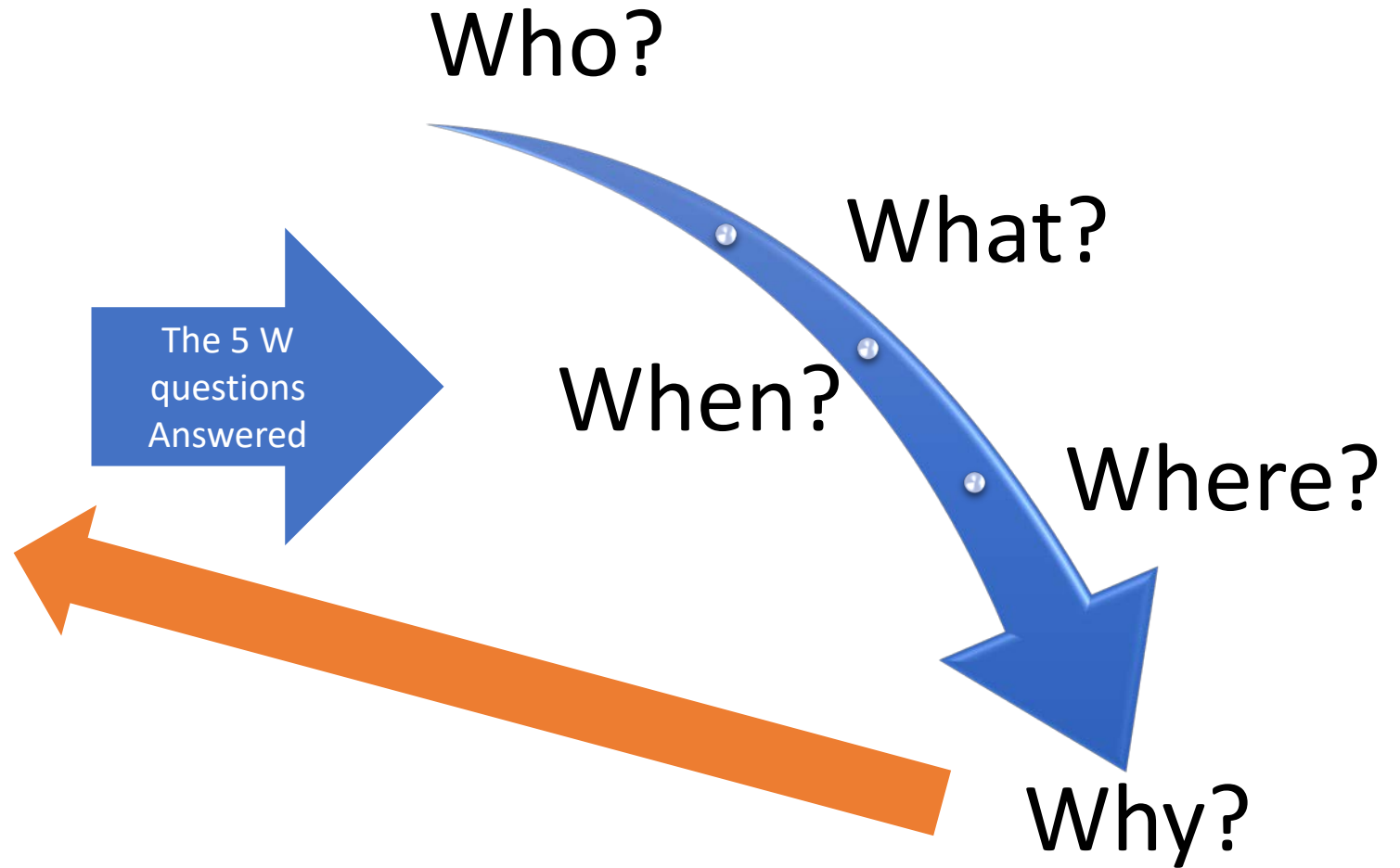
Reduces OPEX

Prolong Asset Life



Observed 67% improvement in project delivery time for both WAFS and DG4, leading to improvement in Project maturation as well as decreasing possibility of rig idling

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End