



Joint Campaign to Abandon Stand-alone Wells Offshore

6 Operators in Dutch sector North Sea

SWIPA Conference

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About Nexstep

Nexstep is the joint initiative of EBN and Element NL, representing the Dutch O&G industry

Our ambition is to stimulate re-use and reduce cost for decommissioning of O&G infrastructure

We collaborate, share learnings, drive innovation and promote effective and efficient regulations



Role of platform

- 1 Act as the **public face of decommissioning**
- 2 Create **transparency in decom activities** to support the development of a **competitive service industry**
- 3 Collect, compile and analyze info to enable **benchmarking**
- 4 Develop a **dedicated innovation agenda**
- 5 Propose amendments to existing **regulations**
- 6 Stimulate **collaboration amongst key stakeholders**
- 7 Identify and share opportunities to **re-use and/or re-purpose**
- 8 Collect, develop and share **lessons learned**
- 9 Engage with relevant **(inter)national bodies**
- 10 Support and promote efforts to **standardize**

Joint MLS wells campaign – objectives



Scope

- A substantial number of (mudline suspended) wells
- In a multi-operator campaign

Technology & legislation

- Using vessel-based technology, applying new technologies
- In compliance with regulatory requirements

Cost & learning curve

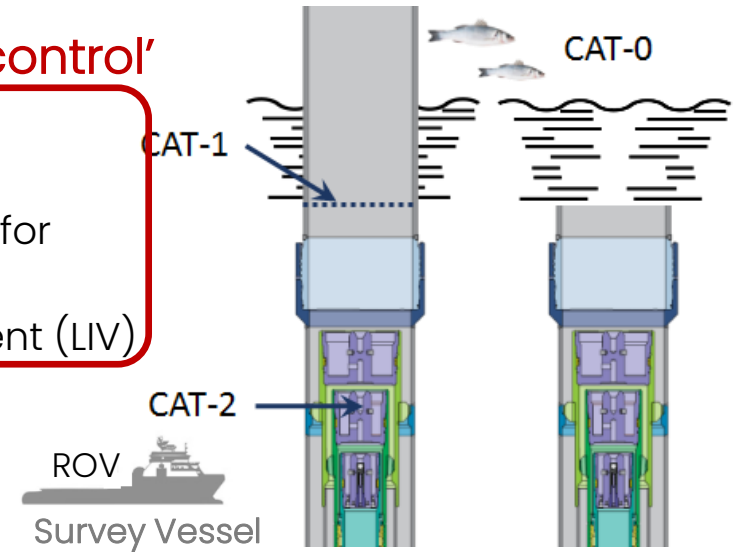
- At significant lower cost
- With reduced risk per operator due to sharing and learning curve

Decommissioning Complexity for MLS campaign

Archetypes:

>> in scope only wells that do NOT require 'well control'

- ✓ • CAT0 Conductor already cut below mudline (not necessarily >6m), no intervention required
- ✓ • CAT1 Conductor/multistring to be cut, current suspension status acceptable for abandonment (MSV; LIV)
- ✓ • CAT2 Well intervention required to remediate shallow isolation/annulus cement (LIV)
- ✗ • CAT3 Requires deep intervention, drill-out surface cement (jack-up rig)
- ✗ • CAT4 As CAT3 with extensive work remediation work (jack-up rig)



✗ Standard/Heavy Jackup

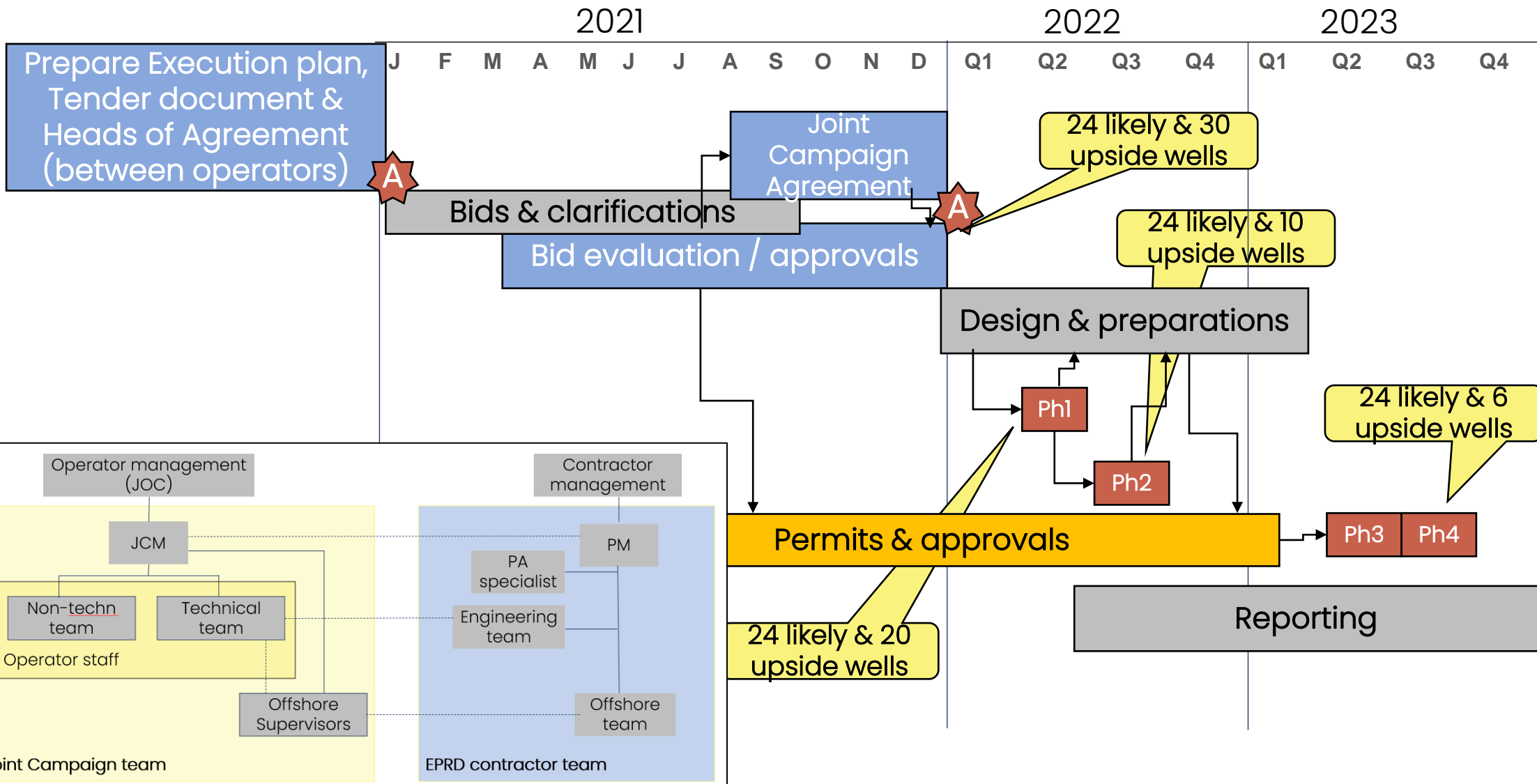


✓ Light Intervention Vessel (LIV)



✓ Multi Service Vessel (MSV)

Campaign planning roadmap



Joint MLS campaign – approach

Operator collaboration

- Initiated & facilitated by Nexstep
- Heads of agreement with collaboration principles 'fair & transparent'
- Joint Market enquiry, shortlisting & tendering via Nexstep
- One EPRD* contract with same Terms & Conditions for all Operators
- Joint Campaign Agreement with cost allocations, decision making, liabilities, etc; shared Operator offshore reps

**Engineering, Preparation, Removal & Disposal*

Execution model

- Vessel based, separate equipment spread per operational phase
- One main contractor, lumpsum with hours ceiling for some activities
- Contractor to manage execution, sequencing & optimising plan
- Operators to approve generic execution procedures and arrange required permitting for well interventions
- Nexstep providing overall management 'on behalf of operators'

Joint MLS campaign – cooperation benefits

Executed safely, within time, with > 30% cost saving

- Execution in 4 phases by different fit-for-purpose vessels
- Larger scope, sharing cost, risk, benefits and learnings
- Applying well ALARP assessments
- Using newly developed tools

Flexible contract

- Cancel wells in case of no approvals
- Add optional wells
- Adjust plans in case of surprises
- Add contingency tooling when required

Risk sharing of uncertainties

- WoW/NPT by contractor
- Well related risks by operators
- Operational optimisation/sequencing by contractor

Reducing environmental impact

- Lower CO₂ emissions using vessels vs. rig
- Avoiding NOx deposition in Natura 2000 areas
- OBM removal with Mud Containment system, zero spill

Operator involvement

- Alignment of approach and procedures
- Limited operational involvement
- Direct (technical) lines during execution
- Shared supervision & project management

Joint Campaign MLS Wells – 4 phases – different spreads

Phase 1 – survey – Q2 '22



Phase 2 – cleaning & inspection – Q3 '22



Phase 3 – tower & Mud Containment System

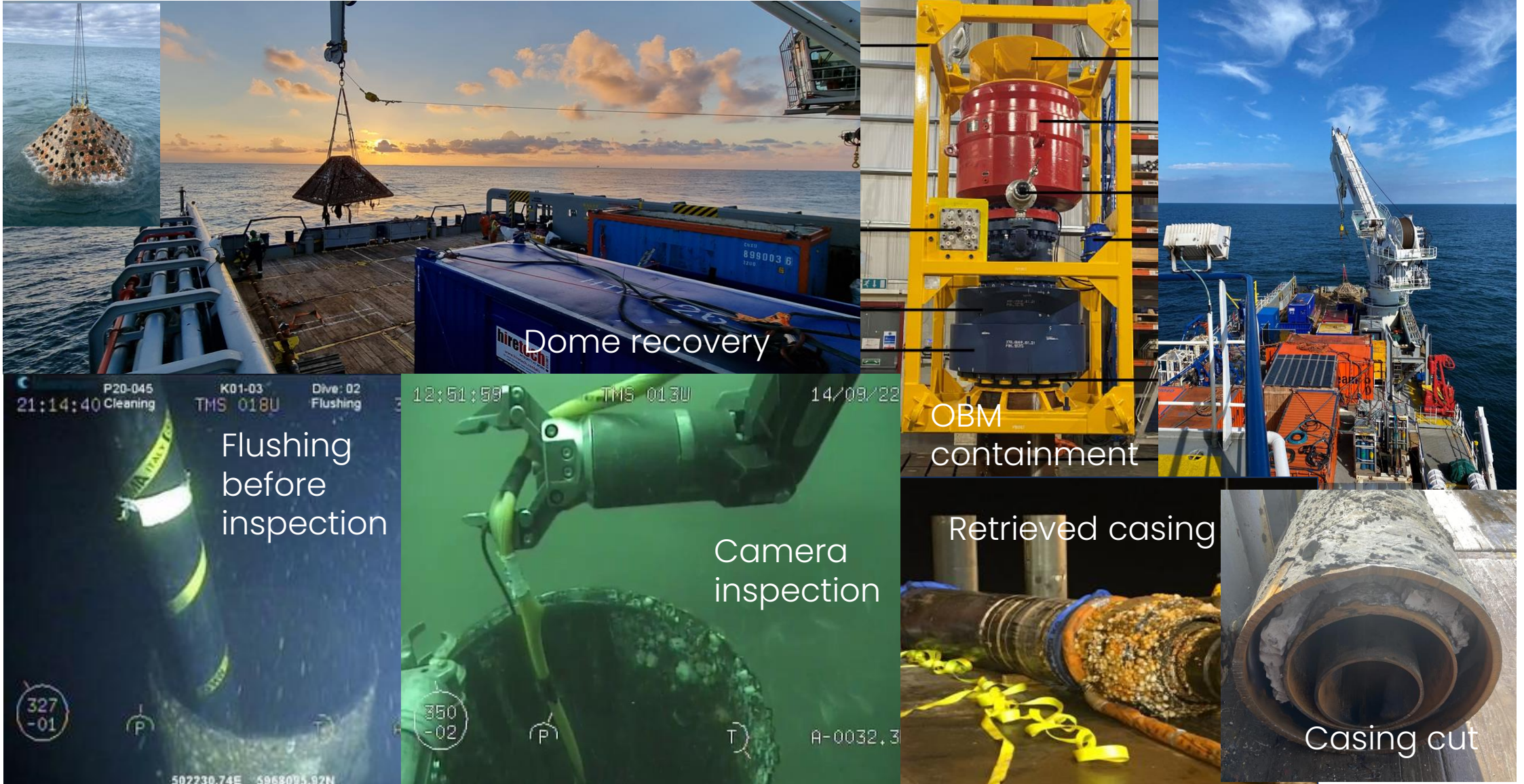


Phase 3 – perforate & cement – Q2 '23

Phase 4 – conductor cuts – Q3 '23



Vessel execution - impressions



Joint MLS campaign – key learnings

Operator collaboration

- Operator management support is crucial AND Operator staff responsible for execution to be involved in decision making in tender-phase
- Consequences of changing insights to be considered; challenge early assumptions
- Building trust will take time but dissenting views enable a fully considered campaign
- In alignment of Terms & Conditions focus on intent instead of wording
- Ensure process is well-considered, thorough research in technical, legal and commercial matters to ensure the best options are chosen
- Campaign size facilitates use of new techniques / technologies, such as vessel-based approach and applying new Oil Based Mud Containment system
- Joint approach facilitates discussions with authorities on permits & dispensations
- Having an independent Joint Campaign Manager with 'skin in the game' helps to keep pace and ensures effective decision making by Operators

Joint MLS campaign – key learnings

Technical – execution

- Phased approach allowed use of ‘fit-for-purpose’ vessels per phase and time between phases to adjust plans to new information:
 - Phase 1: survey to confirm location and status of well > *use of different coordinate systems.*
 - Phase 2: cleaning, inspection & identification of TA-caps > *slow cleaning progress due to insufficient velocities inside casing & ad-hoc camera runs*
 - Phase 3: perforation & cementing > *required complex operations with constraints on deck-space. OBM containment worked very well; manual pipe handling on deck and use of crane in combination with A-frame proved to be highest risk.*
 - Phase 4: conductor cutting & retrieving > *was very efficient.*
- Size of campaign due to collaboration gave sufficient ‘size of the price’ to try new things!



QUESTIONS