



Shah Deniz 2 project

Safe and Compliant diving operations from seal to seal

Kristopher Chambers, BP *Global Diving Technical Authority*
Massimo Garbo, CNS International *Business Development Manager*

9th November 2021



Shah Deniz 2 Project Overview

Shah Deniz 2 Project

Key Facts – SD2 offshore

26 gas production wells

500 km of subsea pipelines and flowlines

2 bridge linked platforms

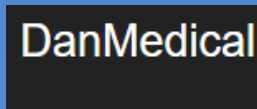
Purpose built SCV Khankendi

16 billion cubic meters of gas per year

"Shah Deniz field has become a reliable source of energy supply for both regional and international markets. **It is the largest gas discovery bp has made over the past quarter of a century**, and a gateway to the Southern Gas Corridor. **Shah Deniz 2 and SGC turned out to be one of the most complex energy projects in the world, and it was delivered safely, ahead of schedule and under budget.** Of course it was only possible thanks to the extraordinary partnerships that we built along the entirety of this massive gas value chain."

Gordon Birrell, BP Executive VP Production and Operations





Key Facts

BP GLOBAL SATURATION DIVING ACTIVITIES

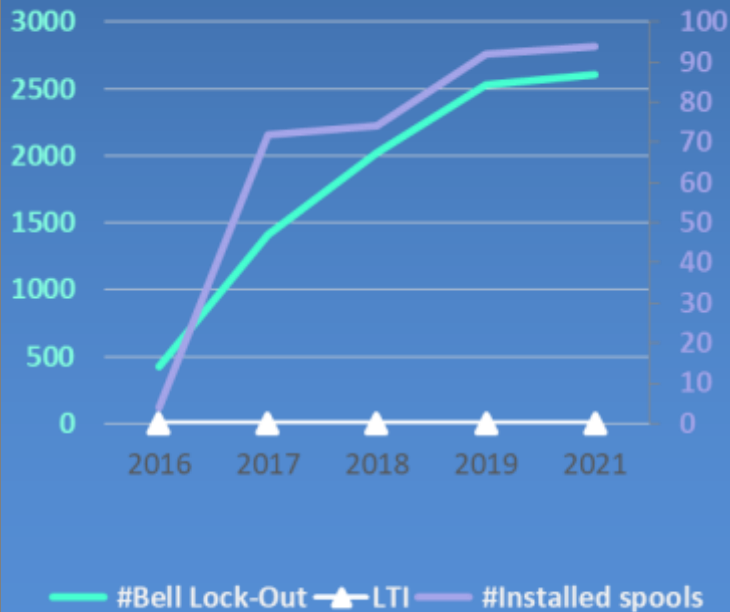


1.1 Million Manhours
0 Lost Time Injuries

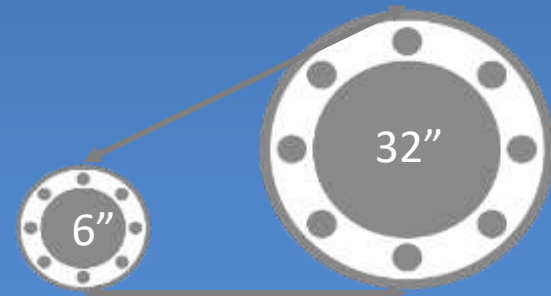


1320 Bell Runs
2545 Bell Lock-Out

SD2 PROJECT



MWD -175 msw



94 SPOOL INSTALLED
129 Flange Tie-ins
110 Thermal Shrouds

How it started

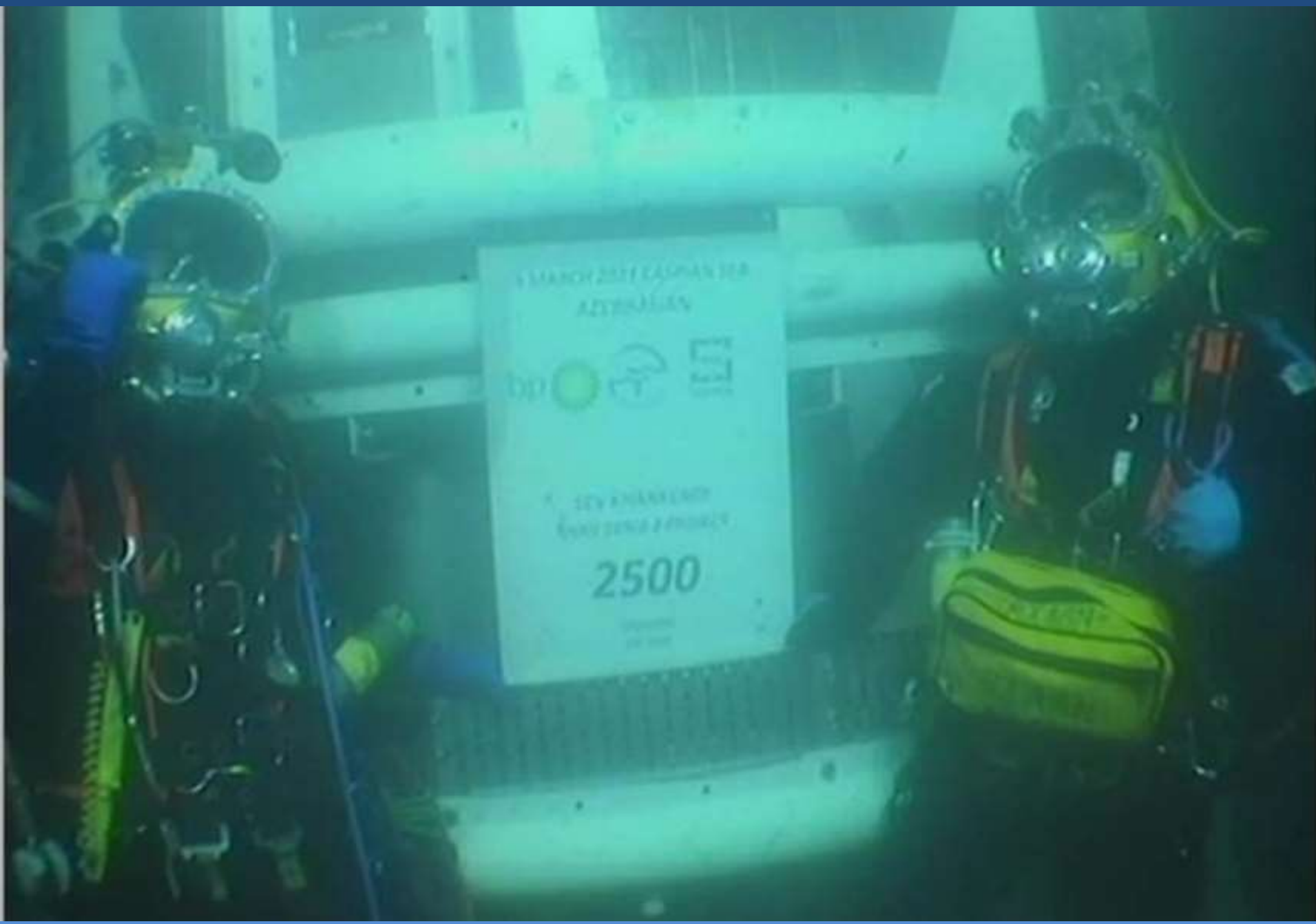


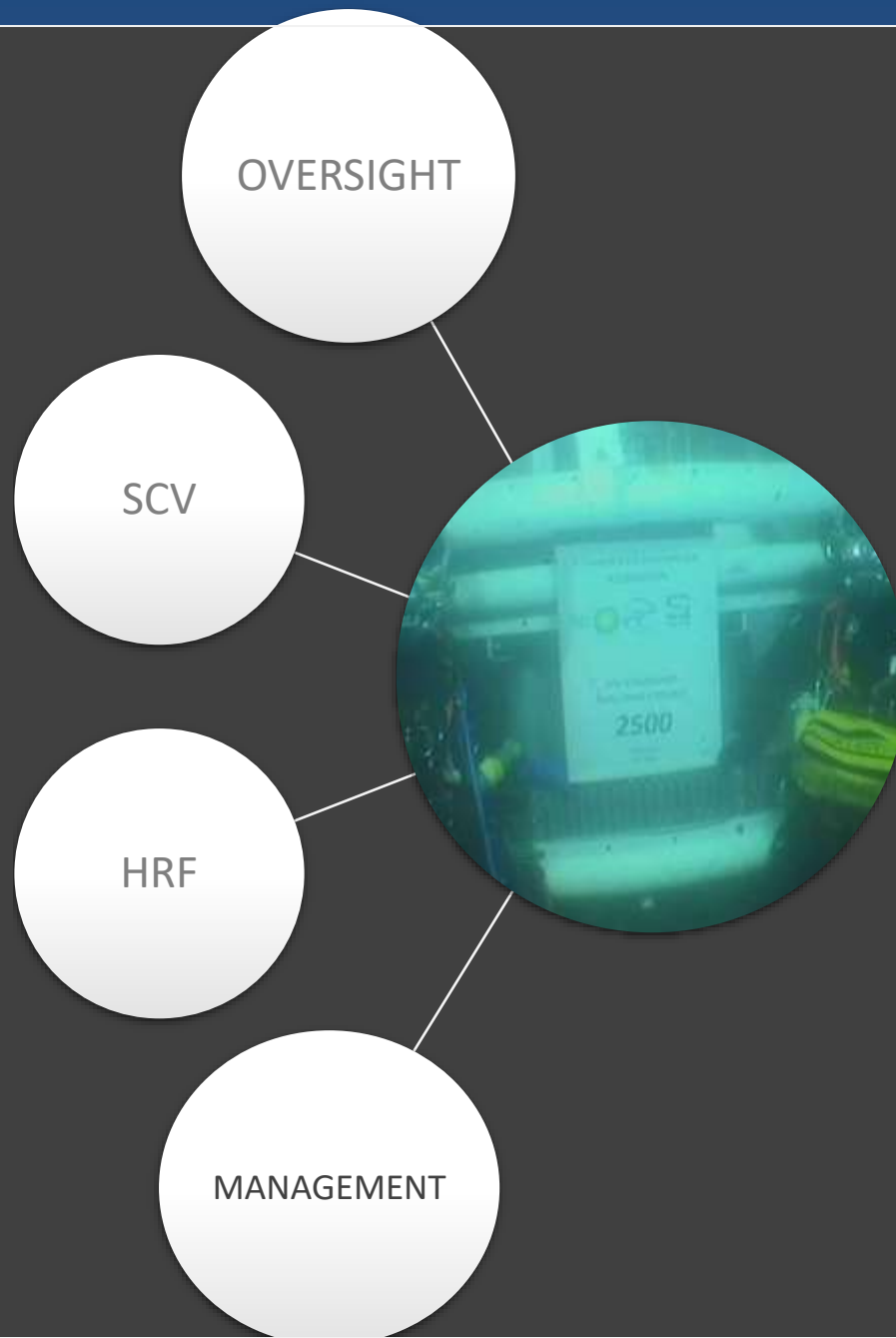
Finished Product



September 2017







Safety | Respect | Excellence | Courage | One Team



Safety | Respect | Excellence | Courage | One Team

STORAGE DEPTH	BELL	BIBS	MIX	DEPTH	BOB	OBG
20 msw	1	20%	20%	19-26 msw	20%	20%
46 msw	1	12%	16% (680 mbar)	33 msw	16%	16%
			16% (830 mbar)	42 msw		
			12% (756 mbar)	53 msw		
			12% (864 mbar)	62 msw		
86 msw	1	8%	7.5% (615 mbar)	72 msw	7.5%	7.5%
			7.5% (682 mbar)	81 msw		
			6% (624 mbar)	94 msw		
			6% (670 mbar)	102 msw		
			6% (732 mbar)	112 msw		
120 msw	2	4%	6% (840 mbar)	130 msw	6%	6%
160 msw	2	4%	4% (740 mbar)	175 msw	4%	4%



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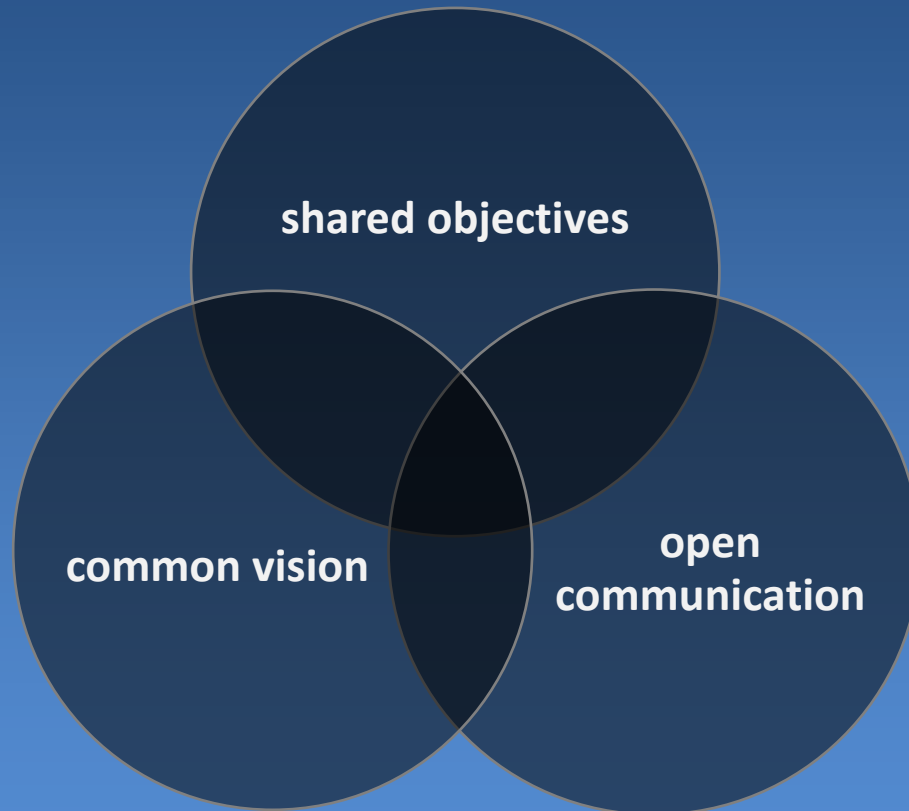
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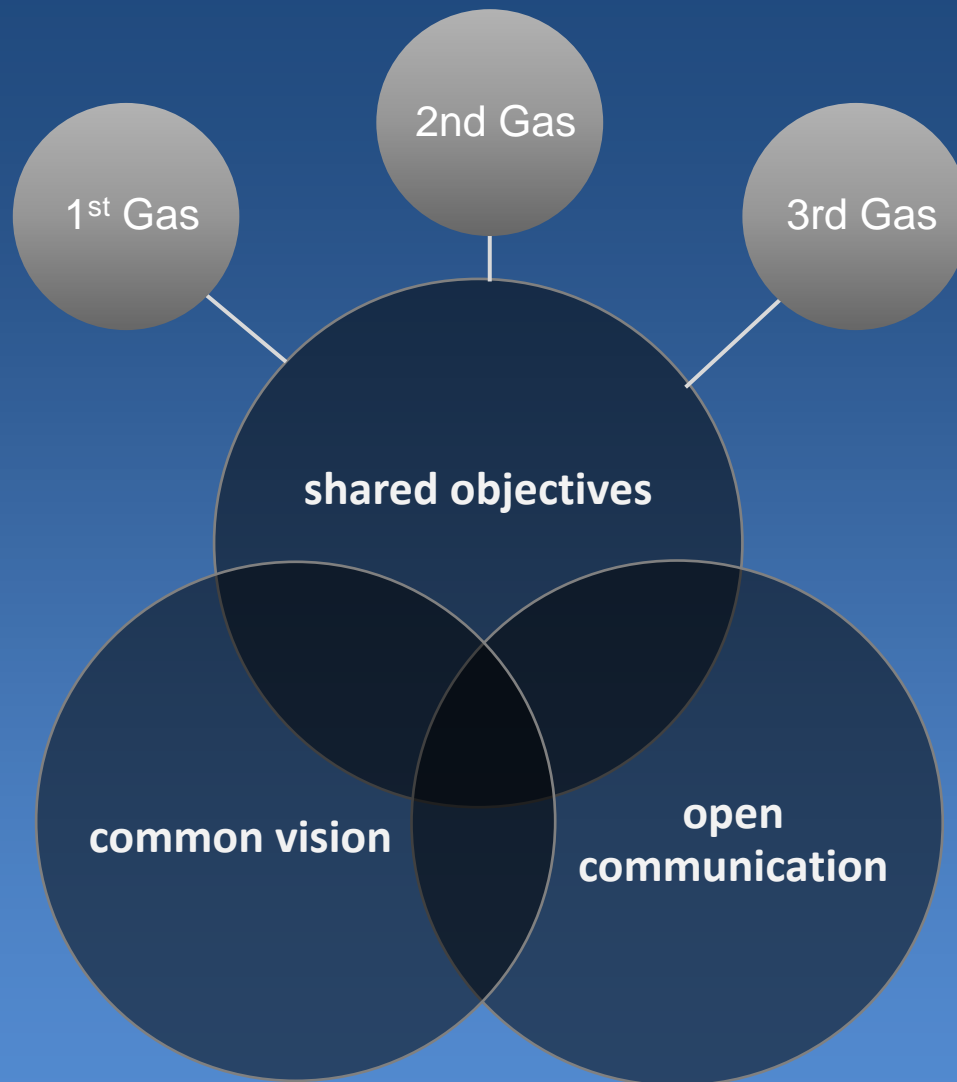
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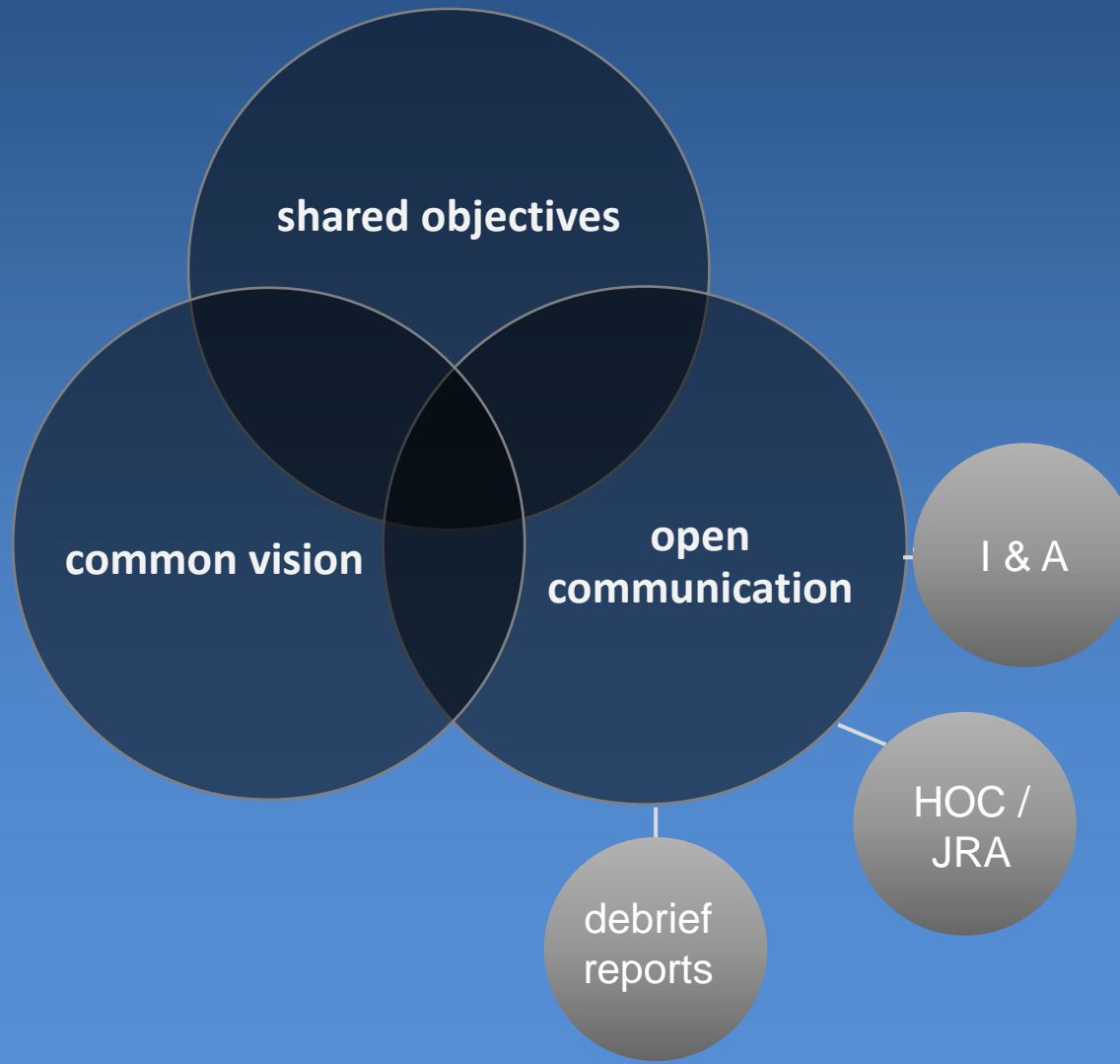


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1633-SD2 PROJECT- CO7 TEAM DEBRIEFING RECORD

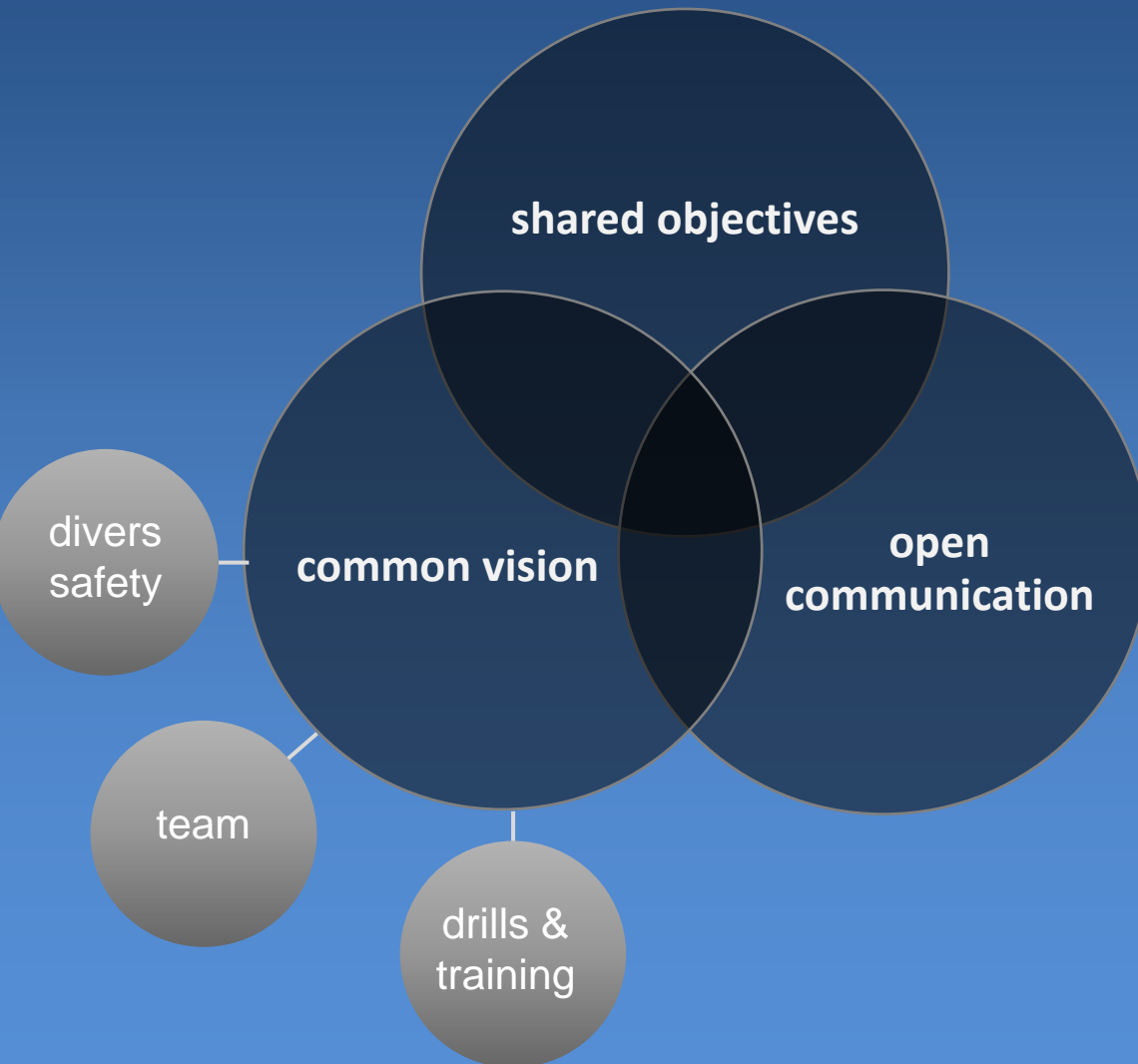
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Project Data	
Project Name: SHAH DENIZ 2	
Location: OFFSHORE AZERBAIJAN	Date: 11/04/2018

Written by:		
Name:	Position:	Signature: /
	SAT DIVER	
	DIVE SUPERINTENDENT	
	DIVE SPECIALIST	

Topics
<p>A - General Comments on this last Saturation</p> <p>THANKS TO THOROUGH FAMILIARIZATION THE INTERNAL BELL LAY OUT AND RELATED OPERATION BECOMES SECOND NATURE, THE SYSTEM IS VERY COMFORTABLE AND THE SUIT SEA WORK WELL ORGANISED. <small>WRITE IN CAPITAL LETTERS</small></p>
<p>B - Thermal Shroud Installation. Would you have tips on managing of Shroud Installation?</p> <p>* ALWAYS INSTALL <u>ALL</u> T-PIECE IN BOTTOM SECTION AND <u>ALL</u> EYE BOLTS IN TOP SECTION.</p> <p>* AFTER INSTALLING TOP SHELL "FEEL" FOR SPIGOT ALIGNMENT AND MAKE A MARK ON SPOOL/LINE AS REFERENCE</p> <p>* USE 4 CARGO STRAP - 2 RATCHET @ 3 O'CLOCK & 2 @ 9 O'CLOCK <small>WRITE IN CAPITAL LETTERS</small></p>
<p>C - Could you help us to improve communications by suggesting what types of information you think are important and how they should be shared?</p> <p>* BEFORE EACH DIVE TOOL BOX TALK WAS VERY THOROUGH ALL INFORMATION WAS PASSED TO DIVE TEAM.</p> <p>* IT WOULD BE GOOD TO SEND A SCREENSHOT OF VESSEL ORIENTATION AND HEADING IN RELATION TO THE WORKSITE. <small>WRITE IN CAPITAL LETTERS</small></p>





It is of essence to conduct realistic drills and allowing the time to execute them



WROV Emergency Umbilical connection
(trial)



Emergency drill in Sat



“...Trials should be carried out regularly to train personnel and to test the adequacy of the procedures, interfaces, communications and equipment...”

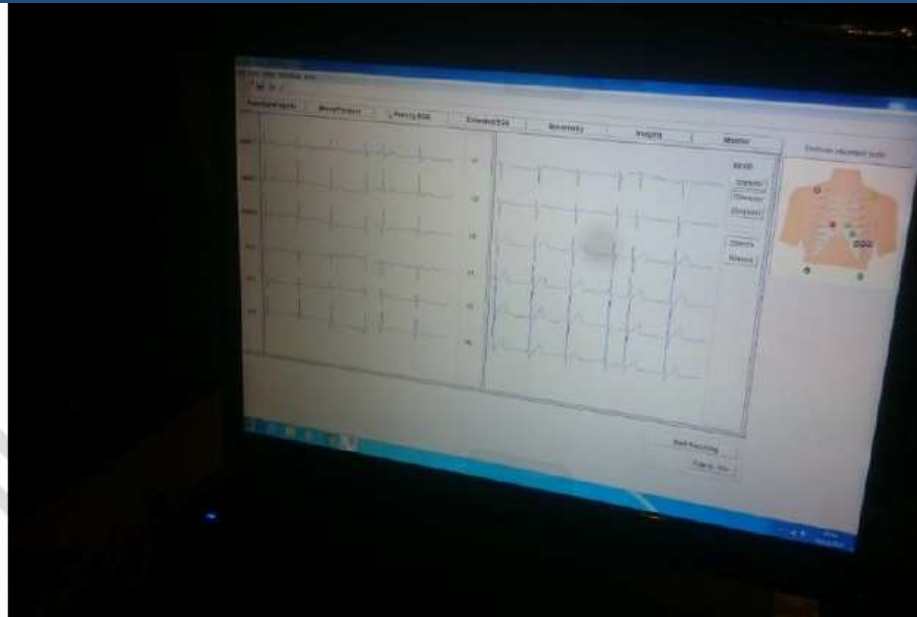


In-water diver recovery exercise



Air Dive Control
Emergency Fire Drill

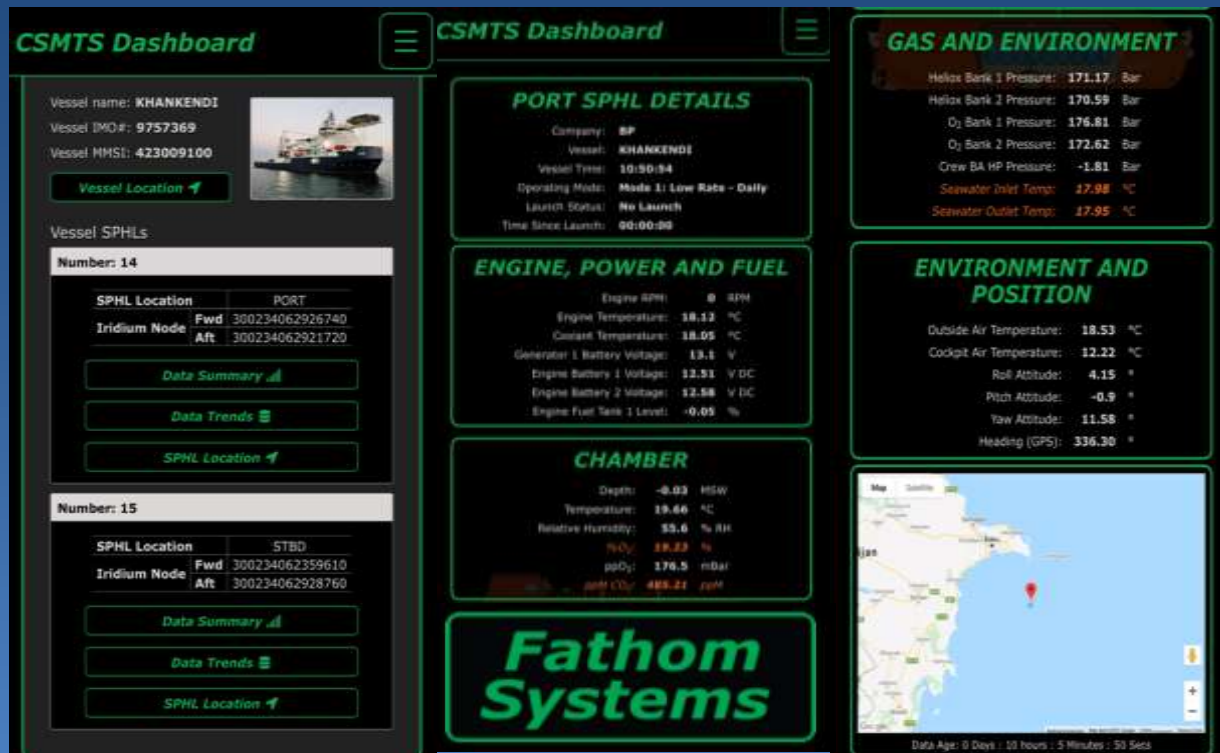




Telemedicine exercise

“...Medical equipment [...] that is capable of measuring [...] and able to transmit this information from the inside of the chamber to a doctor remote from the worksite, such that the information can be viewed in real time...”





"...The CSMT equipment should be a system capable of monitoring, tracking and communicating critical system information from the SPHL to a specified location..."

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