DIVING SAFETY FLASH

Logistics & Operational Support
UNDERWATER OPERATIONS
Recommended practice
SF N°5 2020

Risk Management and Decompression Procedures Control, Monitoring and Performance Improvement

Decompression sickness (DCS) is a disease resulting from the release of gas bubbles from the tissue or the blood. The consequences can range from being relatively minor with full recovery, or causing a permanent impairment or worse, death.

Various conditions in the diver or in his surroundings may cause him to absorb an excessive amount of inert gas or may inhibit the elimination of the dissolved gas during normal controlled decompression. In certain individuals, decompression sickness may occur from no-decompression dive profiles, or decompression dive profiles even when decompression procedures are followed meticulously.

The recurrence of DCS despite compliance with the diving procedures is indicative of a limit that has now been reached.

Numerous DCS cases are reported every year around the world, these accidents occur despite compliance with the diving procedures, we will talk about stochastic risk.

What progress can be made?

Around 30 000 dives per year are carried out offshore within TOTAL E&P. The sensor presented below aims at monitoring the quality of the decompression after completion of a dive. Monitoring the dives allows to assess the risks in terms of saturation and to adapt the diving procedures as required.

The sensor system (O'Dive-PRO) has recently been successfully used by TOTAL ABK (UAE) and in Argentina to monitor Divers decompression during their diving operations.

O'Dive-PRO (by Azoth System) is a patented innovation that enables the analysis of the quality of decompression procedures taking into consideration two proven indicators of DCS risk: the dive exposure parameters and the quantity of microbubbles detected in the divers blood flow after their intervention.

O'Dive-PRO includes a vascular microbubble sensor (ultrasonic Doppler technology) connected to a server with specialized analysis tools.

This compact and robust sensor is coupled with a data-logger watch used to record all the exposure profiles in digital format.

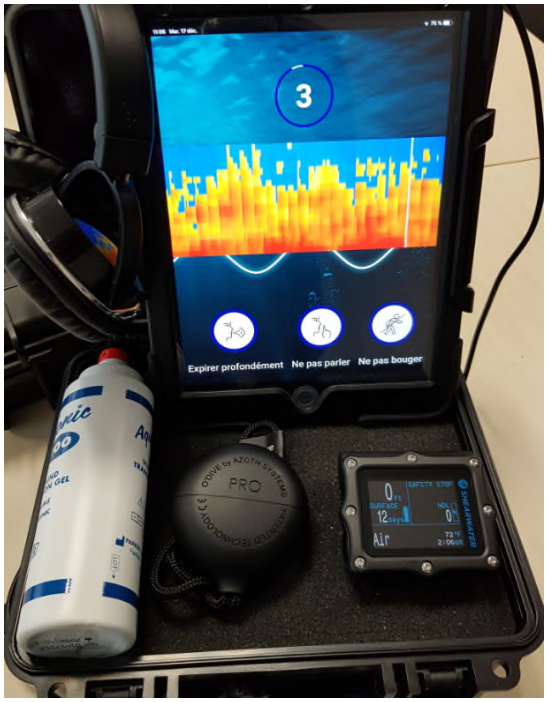
TOTAL E&P was involved with the creation of the system and continues to support its development.

How are the measurements taken?

After the decompression, each diver places the sensor for 20 seconds under his left and then right clavicle and records his signals on the O'Dive-PRO module.

He then imports his exposure profile by connecting his data-logger.

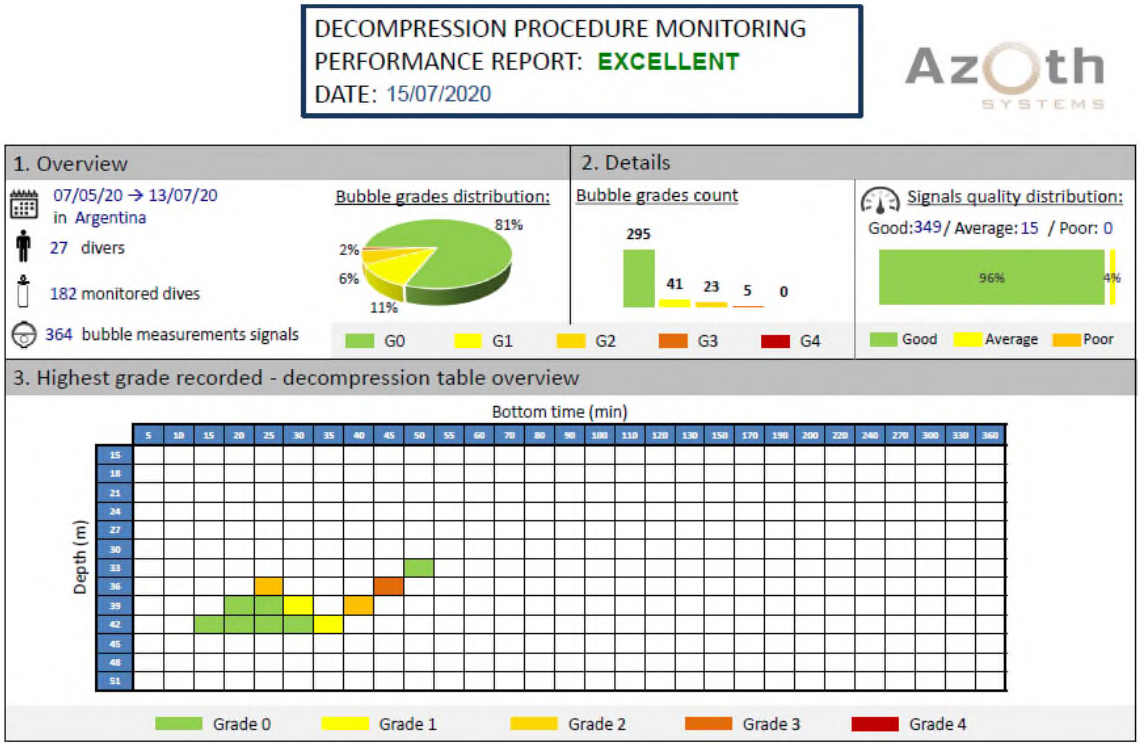
The information is collected anonymously and is analyzed as part of a quality monitoring system.



How does this service work?

The service is based on using the O'dive-PRO sensor to regularly monitor the circulating microbubbles in the divers' blood following an intervention.

The resulting report is available online to monitor the effects of decompression procedures on divers.



More Information:

https://www.azoth-systems.com/en/home/contact@azoth-systems.com

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https://gue.com/blog/oh-deco-oh-doppler-odive-assessing-the-worlds-first-personal-decompression-safety-tool/

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