could be enhanced with the capability for the supervisor to send messages to the diver. The communication protocol could be improved with an acknowledgement for each package sent, avoiding any data loss in harsh environment conditions and economizing the battery life.

Such system could be integrated in a dive computer to display the glucose levels to the diver while transmitting the same data to surface. In the future, the monitoring system could extend automatic alerts to inform both the surface staff and the diver (sound, vibration and/or light). This system could be extended further to interface with a web server, for remote monitoring and to alert authorities in case of a safety threat. Finally, the supervisor could use such system to send messages to the diver, such as requesting an abortion of the dive and to start the ascent.

CONCLUSION

Today, diabetic divers measure their level before a dive, sometimes twice with a time interval to guess the trend. However, while underwater, it is impossible for them to know whether their glucose is reaching dangerous levels (either high or low).

The prototype of the system presented in this study is fully assembled, programmed, validated and tested on scuba divers at the Istanbul Aquarium, Istanbul, Turkey, in May 2017. The system is in use to collect more data on a diabetic diver since May 2017. Such development participates in making recreational diving a safer activity for the diabetic divers. The system presented in this study brings an extra layer of security while diving and visibility of the trend of the glucose level. Diabetic divers could benefit from real- time blood glucose monitoring during their dives to prevent worsening of hypoglycaemia and to correctly interpret hypoglycaemia-like symptoms whilst diving.

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