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Improvement of observational and networking potential of the regional Black Sea operational oceanographic system

H. Slabakov, **A. Palazov** and N. Valchev
Institute of Oceanology, Varna, Bulgaria, (palazov@io-bas.bg / Phone: +359-52-370486)

Understanding the Earth system and providing prediction of the environmental variability are crucial to enhance the human health, safety and welfare. Global Earth Observation as a critical element of such system is sustained by operational services. This strongly motivates development of oceanographic services in the Black Sea basin and improvement of their quality through underpinning of existing observing and forecasting capacity. The initial effort on coordination of related activities in the region was done by the ARENA project. It has managed to develop and test the main components of an operational system and to raise the public and end user awareness on the sustained services potential impact. The shortcoming of the launched basin-scale distributed pilot system consists primarily in insufficient communicational capacity to manage the data flow requirements as well as in situ data availability. Overcoming of these key issues entail further improvement.

Therefore, the achieved progress was uphold by number of national and international projects aimed to improve real time data acquisition and sharing together with circulation and ecosystem models performance. A particular opportunity for advance offers the EC 6FP project ASCABOS. It constitutes a part of a co-operative ocean program designed to bring up to date the communication and other essential facilities for monitoring and forecasting of the basin processes. Communications, data and information exchange are the key elements of the operational ocean observing networks, defined in the Global Ocean Observing System (GOOS). Development of operational observing and closely related forecasting system in the Black Sea region requires the exchange of significant data and information volumes. ASCABOS contributed to building capacity through strengthening of the communications capabilities providing a flexible

operative infrastructure for data and information exchange. Closely related is the task tending to combine experiences and instruments in order to develop a Black Sea information system, containing all available metadata, validated and efficiently updatable through the Internet.

Voluntary Observing Ships (VOS) scheme have always been an important component of the global observing system of WMO, providing meteorological and oceanographic data essential to operational meteorology, maritime safety services, and a range of marine climatologic applications. More recently, it has become clear that these observations can also be of critical importance to global climate studies as well as to provide routine observations for forecast. One of major ASCABOS contributions is establishment of a cost-effective VOS pilot program in the Black Sea, applying modern technologies and developments for data collection, transmission, storage, use and dissemination. The VOS program will respond to the GOOS demand for long-term monitoring of the marine ecosystems.

This paper aims to present the improvement of the regional operational system related to technological development with observational and data acquisition dimension. In particular it describes the networking system and established communication flows as well as the design of the of the Black Sea VOS system. The consolidation of long-term observations requires national and international commitments. Therefore, the ASCABOS project supports the dialogue and collaboration between the Black Sea relevant oceanographic and meteorological institutions towards operational status of basin scale oceanographic services.