Sea Vision

For most of my naval career, senior colleagues bemoaned the curse of sea blindness, a perception that increased in volume around the time of government reviews of defence and the inevitable scrutiny of naval budgets and resources. We thought ourselves to be ‘out of sight, out of mind’, with few of the general public aware of or caring about the value of our service and our contribution to the national well-being. And, indeed, it was challenging to build a picture of what was happening in our vicinity; using radars, helicopters and good old binoculars we would persistently monitor fishing vessels and merchant ships differentiating between oil rigs, crossing ferries and the ubiquitous yachties, and sharing our picture with other ships in the task group. Building a ‘white picture’ of routine shipping activity required constant, 24/7 dedicated monitoring of a plethora of data sources, bowling out conflicting tracks and resolving identities.

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AIS is, of course, the game changer. Originally conceived by mariners for mariners to improve safety by providing enhanced situational awareness in busy seaways, AIS (and now satellite AIS (S-AIS)) is at the core of my contention that we are on the cusp of sea vision, an epoch when we will know everything we need to about human activity and maritime operations of all kinds in complex sea basins such as the Mediterranean, the South China Sea, the Gulf of Mexico, the North Sea and many, many more. But AIS is not the end of the story because satellite derived data sources such as optical imagery and synthetic aperture radar are exponentially improving in performance, offering corroborating information about maritime operations from space. Rapidly improving satellite communications services allied with a bonanza of CubeSats (miniature satellites deployed in low earth orbit) herald cheap, ubiquitous global constellations providing near total coverage of the Earth’s terrestrial and marine environments. Fusing these space-derived sources with terrestrial coastal radar pictures and historical datasets such as vessel registers will provide a comprehensive, reliable picture of human activities on our seas and oceans. Nor are these data sources the exclusive preserve of maritime and marine professionals; they are commonly available to the previously sea blind public on their mobile devices via a range of paid and free services.

This rapidly growing sea vision phenomenon has direct implications for hydrography as, at the heart of all situational awareness techniques, is the human need for a geographical presentation of information; a map, chart or GIS solution that immediately informs the operator and enables accurate decision making. Bathymetry is the essential prerequisite to understanding our seas and oceans, and our ability to exploit their largely unknown resources in an economically viable but environmentally sustainable manner. Notwithstanding the current O&G depression, there is a real need for data about the bathymetry of these water concealed territories and the state of our marine environments. This is an exciting time, sea vision is here and happening, there will be few places to hide, the concept of the High Seas will become anachronistic, and we will manage our global oceans in a much more sensible way for the benefit of the environment and humanity. The onus is on we the hydrographers – what will be our contribution to this unfolding revolution?