Marine Information Systems: Reality and Visions of Augmented Reality

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SUMMARY

According to NOAA (2016) oceans contribute more than US$280 billion to the USA's Gross Domestic Product (GDP), and impacts more than 2.8 million jobs with ocean mineral extraction, tourism and recreation accounting for approximately seventy percent of oceans economy's GDP. Worldwide, in 2012, an estimated 58.3 million persons were engaged in the fisheries industry (FAO 2014). Internationally, and apart from tourism, recreation, the transportation of consumer goods, fisheries and aquaculture, the importance of oceans is represented by economic potentials linked to marine bio-prospecting, non-renewable and renewable energy among other things (United Nations 2014). The importance of ocean economies, combined with multiple users having mulitple and often ovelapping rights and objectives, has spawned concepts such as Marine Spatial Planning (MSP). MSP seeks to provide integrated and structured governance frameworks that facilitate collaborative or coordinated informed decisions among multiple users including those from government, the energy sector, conservation stakeholders among others. MSP therefore implies the sharing of information among stakeholders, and therefore the need for appropriate marine spatial information systems and standards to serve multipurposes and objectives, and to support informed decision making. In these scenarios, concepts such as marine cadastres and Marine Spatial Data Infrastructures (MSDI) become relevant.

Augmented reality applied to marine spaces could assist MSP through the provision of additional information to persons moving through those spaces. For example, additional information available on site, such as rights, responsibilities, restrictions, subjects of property, or applicable laws (especially in marine environments were boundary delimitation is limited or impossible) could assist in controlling or managing behaviours in ways beneficial to the sustainable exploitation, or management and conservation, of marine resources. The additional information could come from marine cadastres operating in MSDI environments. However, the reality of developments (in terms

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of implementations) in marine cadastres and MSDI remain at the conceptual stages in most jurisdictions, especially in Small Island Developing States (SIDS), because there is much competition for limited national financial resources and no crisis has yet been directly tied to the lack of these systems.

This paper discusses the current realities of marine cadastre and MSDI in Trinidad and Tobago, as well as the pros and cons of investing in these systems despite the reality of economic constraints.