EARTH OBSERVATION SYMPOSIUM (B1)
Future Earth Observation Systems (2)

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DESIGN CONSIDERATIONS FOR AN AQUATIC ECOSYSTEM IMAGING SPECTROMETER: RESULTS OF A CEOS FEASIBILITY STUDY

Abstract

Many earth observing sensors have designed, built and launched for either terrestrial or ocean RD or applications. Often these are also used for doing freshwater, estuarine and coastal water, bathymetry and benthic mapping. However these land and ocean sensors are not designed for these complex aquatic environments and consequently do not perform as well as a dedicated sensor would. As a Committee on Earth Observation Satellites (CEOS) action CSIRO and DLR have taken the lead on a feasibility assessment to determine the benefits and technological difficulties of designing an imaging spectrometer satellite mission focused on the biogeochemistry of inland, estuarine, deltaic and near coastal waters as well as mapping macrophytes, macro-algae, sea grasses and coral reefs. These environments need

higher spatial resolution that current and planned ocean colour images offer and need higher spectral resolution than current and planned land earth observing sensors offer (with the exception of several RD type imaging spectrometry satellite missions). The GEO Community of Practice Aquawatch suggested that alternative approaches, involving augmenting designs of spaceborne sensors for terrestrial and ocean colour applications to allow improved inland, near coastal waters and benthic applications, could offer an alternative pathway to addressing the same underlying science questions. Accordingly, this study also analizes the benefits and technological difficulties of this option as part of the high level feasibility study.