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The Integrated Ocean Carbon Observing System

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The Oceans have taken up 20-25% of the carbon dioxide released to the atmosphere by human activities, in the process slowing the rate of climate change and giving us more time to adapt to and mitigate the effects of global warming. However this 'sink' has not been stable over the recent past and there is therefore a need to measure it in near real time with higher confidence than currently possible so that appropriate policy measures can be developed and implemented in response to any change. We have a wide array of tools including satellites, ship based and autonomous (gliders, moored, floats and surface vehicles) measuring systems which together with the associated data infrastructure can demonstrably come together to deliver this vision. These have largely been developed under short-term funding streams and, as a consequence do not currently deliver the robust, near real time, sustainable estimate of ocean C uptake that we believe is necessary to support international climate negotiations and the development of adaptation/mitigation strategies. We are currently developing a blueprint for the 'Integrated Ocean Carbon Observing System' which we believe will be as necessary for reliably forecasting climate over the next 5-10 years as meteorological observations currently are for forecasting weather over the next 5-10 days. In this contribution we will describe the key elements of this blueprint and outline a timeline for assembling them together to deliver an annual near realtime databased estimate of ocean carbon uptake to the annual COP in support of international climate negotiations.