



### Transitions to Operations/Applications, 2008 - 2014

<b>What was Transitioned?</b>	<b>When?</b>	<b>To What Organization(s)/group(s)?</b>	<b>Benefit of transition</b>
Miniature Autonomous Plume Recorder	ongoing since 2006	international ocean research community	Used worldwide to identify and discover hydrothermal plumes that enhance our knowledge of seafloor tectonic systems.
TAO Array	2007-2012	NWS/National Data Buoy Center (NDBC)	Allows PMEL to focus on new research areas
Conductivity cell response correction methodology	2008	International Argo community	Improves delayed-mode quality control of Argo data
PIRATA Array	2008-2010	IMPE, Ambibados, U of Sao Paulo	Expands capacity building in Atlantic Ocean in support of PIRATA mooring deployments
FLEX/T-FLEX data logger and telemetry system	2008, 2014	PMEL Ocean Climate Stations group, PMEL Tropical Moored Buoy Array group	The FLEX and T-FLEX systems offer improved data quality, instrument and communication flexibility, and ease-of-use over the existing technology.
DART-ETD tsunami-monitoring buoy	2009	SAIC	Data from DART buoys provide in situ tsunami wave information which allows for global improved tsunami warnings. DART buoys have currently been deployed by 8 Pacific and Indian ocean nations. ETD technology reduces costs and allow ship of opportunity deployments.
Underway pCO2 system	2009	Batelle Memorial Insitute	Increase high quality ocean carbon measurements to assist in the monitoring and research of ocean acidification
Moored pCO2 buoy	2009	PMEL CO2/OA group; (Australian) Commonwealth Scientific and Industrial Research Organisation (CSIRO),UAF, U of NH, U of H, Korea, Iceland, Puerto Rico	Increase high quality ocean carbon measurements to assist in the monitoring and research of ocean acidification
Surface Ocean Carbon Dioxide Atlas, v. 1 and v. 2	2011, 2013	International ocean Carbon research community	The Surface Ocean CO2 Atlas (SOCAT) brings together, in a common format, all publicly available surface water data from the global oceans, including the Arctic, and the coastal seas, for use by researchers and the general public.
Establishment of seasonal sea ice as an ecosystem indicator in the Bering Sea	2012	NOAA/NMFS/North Pacific Fishery Management Council	Establishes the imporantnce of sea ice as an ecosystem indicator used by the North Pacific Fishery Management Council for establishing quotas.
Bottom Pressure Recorders	2012	UW/APL	Originally developed and used by PMEL since the 1990s, bottom pressure recorders have been reengineered and repurposed to provide physical oeanographic measurements to determine Arctic Ocean circulation and sea height.
Carbon Wave Glider	2012, 2013	PMEL CO2/OA group; South Africa Council for Scientific and Industrial Research (CSIR)	Increase high quality ocean carbon measurements to assist in the monitoring and research of ocean acidification
SIFT Tsunami Forecast System v. 3.1	2013	NWS/Tsunami Warning Centers	Improved tsunami forecasts for the Nation
BPR/Tilt and RAS/PPS instruments	2013	Neptune Canada, NSF/Ocean Observatories Initiative (OOI)/ Regional Scale Nodes (RSN)	Seafloor instruments incorporated into NEPTUNE Canada and the NSF's Regional Scale Nodes sea floor cabled observatories to measure seafloor inflation/deflation (via bottom pressure recorders/tilt meters) and collect time-series samples of hydrothermal fluid and particulate material, monitoring changes in hydrothermal systems over time (Remote access sampler and preserved particle sampler).
Hydrophone Technology	2014	NMFS Regional Science Centers; NOS Marine Sanctuaries, National Park Service	Acoustic noise baseline to monitor long-term changes and trends in the underwater ambient sound field
Quephone Acoustic Profiling Float	2014	Teledyne Webb Research	Based on the operating characteristics fo Argo Floats, the QUEphone is an autonomous hydrophone that can return acoustic data in near-real time.
WISPR Board	2014	Embedded Ocean Systems LLC/Kongsberg	Passive acoustic recording module will be an option on Kongsberg Seaglidrs
RAMA Array	2014	First Ocean Institute of China	Expands capacity building in Indian Ocean and observations best practices