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Coastal Zone Mapping and Imaging Lidar (CZMIL)

- Description** The Coastal Zone Mapping and Imaging Lidar (CZMIL) is a new sensor development effort within the National Coastal Mapping Program. During the past 4 years, the NCMP has produced high-quality, high-resolution information products from airborne lidar bathymetry, topography, and accompanying RGB and hyperspectral imagery data: 1-m bathy/topo rasters, 1-m bare earth rasters, 20-cm RGB image mosaics, 1-m, 36-band hyperspectral image mosaics, 1-m landcover classifications, 2-m bottom reflectance images, and shoreline vectors. All of these products have been generated from data collected by airborne lidar bathymeters designed to measure primarily water depth, and using available COTS software packages in a processing flow that proved cumbersome by challenging the throughput of the programs, or by applying them in a non-standard manner to achieve desired results.
- Issue** Priority areas for the USACE, like the surf zone and turbid waters, are often confounded by current lidar sensors. Advances in processing of bathymetric lidar signals and in the fusion of these signals with ancillary sensor data like hyperspectral imagery have revealed opportunities to improve current hardware to support the more advanced environmental applications of the data. Current lidar sensor technology is a decade old and any new design will benefit from general advances in hardware components.
- Users** USACE District engineers and scientists, JALBTCX Partner agencies, State and local sponsors, Coastal Zone Managers, and the public.
- Products** An integrated lidar and imagery sensor suite and software package designed for highly automated generation of physical and environmental information products for the coastal zone, including those currently generated for the NCMP, along with water column attenuation, chlorophyll concentration, CDOM concentration, and automated bottom classification.
- Benefits** The new sensor suite and accompanying software will improve the speed of data and product delivery, the quality of information products derived from fused lidar and imagery datasets, and the performance of the lidar sensor in problematic areas like turbid water and in the surf zone.
- Corps Program** National Coastal Mapping Program, Jennifer Wozencraft, Program Manager.
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- Additional information can be found at <http://www.jalbtcx.org>