

# **NOAA COASTAL MAPPING PROGRAM**

## **PROJECT COMPLETION REPORT**

### ***PROJECT MP0501***

### ***ROTA, NORTHERN MARIANA ISLANDS***

#### **Introduction**

Coastal Mapping Program (CMP) Project MP0501 provides coastal zone mapping data of the entire island of Rota, located at approximately 140° 09' north latitude and 140° 12' east longitude, and 76 kilometers (47 miles) northwest of Guam. Rota is the southernmost island of the United States Commonwealth of the Northern Mariana Islands (CNMI). Songsong and Sinapalo are the two most populated villages of Rota. The digital cartographic feature file may be used in support of the NOAA Nautical Charting Program (NCP) and coastal zone management activities. Project survey data is referenced to the North American Datum of 1983 (NAD 83).

#### **Project Design**

This project was designed per a request from the NOAA Marine Charting Division (MCD) for cartographic data in support of MCD operations, specifically to aid in shifting the chart data to NAD83. Based on an analysis of project requirements and results of a source data search, it was determined that CMP procedures for multiple source projects would apply for this project. Available source data deemed adequate for successful completion of this project included sources acquired in December 1999.

#### **Field Operations**

Routine CMP field operations did not apply for this project based on the origin of the project source data.

#### **Aerotriangulation**

The aerotriangulation task was accomplished by Applications Branch, Remote Sensing Division personnel in November 2005. The image files were imported into SOCET SET, version 5.2 using the DataThruWay software. The importing process also converted the stored and compressed files to a recognized native SOCET SET format (NITF 2.0) and included supporting data extension files consisting of previously measured sensor model parameters. Aerotriangulation procedures were completed on a Digital Photogrammetric Workstation using the Multi-Sensor Triangulation (MST) Tool of SOCET SET. The Automatic Point Measurement (APM) tool of MST was used to collect several tie points, and it was determined from running the simultaneous solve adjustment program that the average predicted horizontal circular error for all well defined points in this project area is 12 meters at the 95% confidence level.

## **Compilation**

Digital feature data compilation for this project was accomplished by Applications Branch, Remote Sensing Division personnel in December 2005. The Feature Extraction Tool of SOCET SET was used during the digital cartographic feature data compilation phase of project completion. Feature attributes were established from the C-COAST specification file which provided the definition and attribution scheme for the suite of cartographic features pertinent to the CMP. Cartographic features were compiled to meet a horizontal accuracy of 15 meters at the 95% confidence level. The water level at the time of imagery was 0.5 meters above MLLW, as measured at the Guam tide station. The mean tide range at this station is 0.7 meters.

## **Quality Control / Final Review**

A final review was conducted interactively by Applications Branch, Remote Sensing Division personnel in January 2006, and independently upon initial completion of feature extraction. The process included a review of the aerotriangulation results, a review of the identification and attribution of cartographic features based on image analysis and criteria defined in C-COAST, and a review of client specific support products such as the CEF generated for NCP application. The entire suite of project products was evaluated for compliance to CMP requirements. The last step in the quality control process was the evaluation of the DCFF contents focusing on the integrity of topology once the DCFF was converted into shapefile format.

A copy of NOAA nautical chart 81063, Rota, 1:25,000 scale, May 26/90, 5th edition, was used for chart comparison and for the Chart Evaluation File.

## **End Products and Deliverables**

The following specifies the location and identification of end products generated during the completion of this project:

### **RSD Applications Branch Archive**

- Hardcopy of the Project Completion Report (PCR)
- Page size graphic plot of GC10589 file contents, attached to PCR

### **Remote Sensing Division Electronic Data Library**

- Project Database
- Digital copy of DCFF GC10589 in shapefile format
- Digital copy of the PCR in Adobe PDF format
- Chart Evaluation File in shapefile format

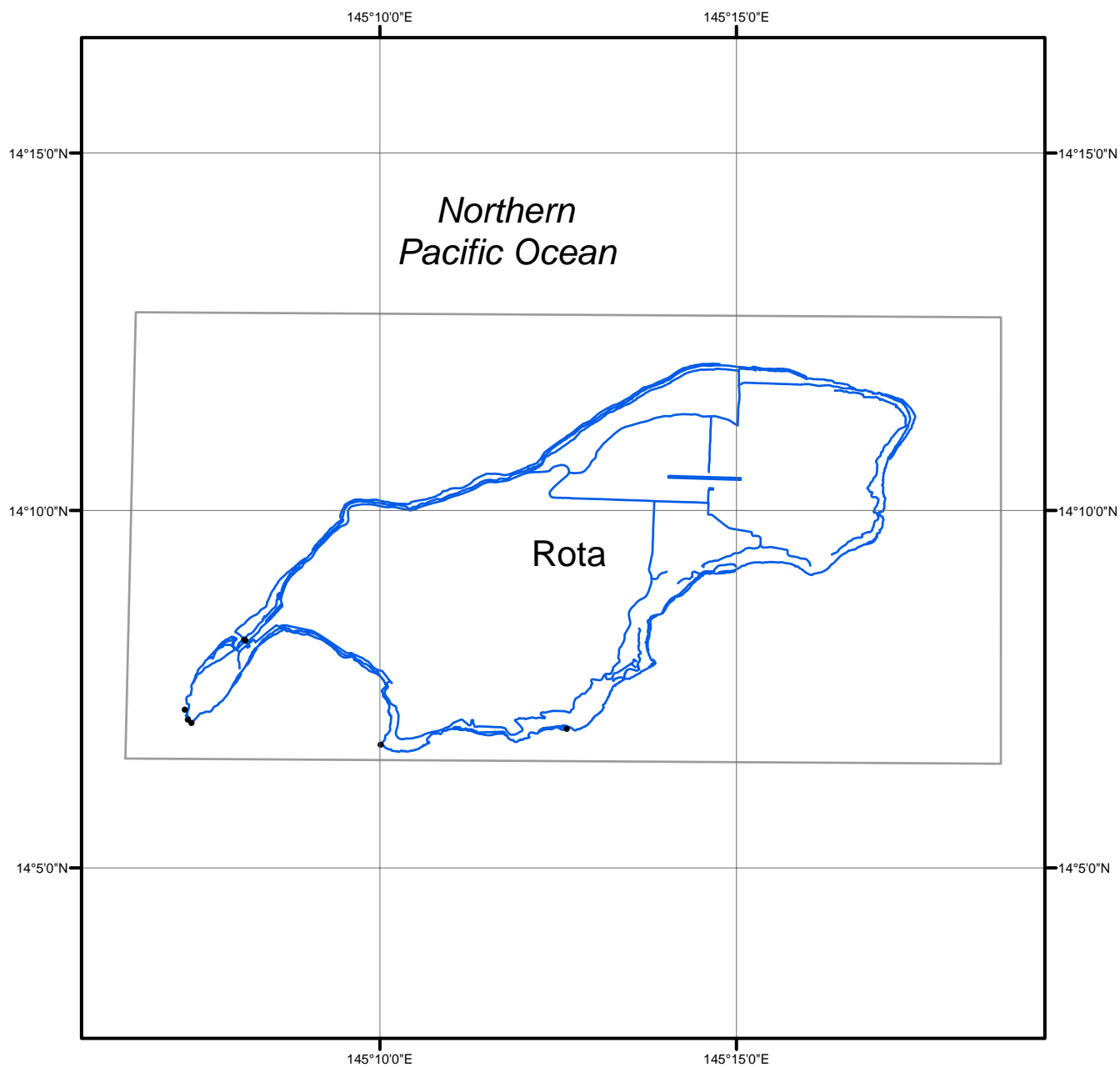
### **NOAA Shoreline Data Explorer**

- DCFF for GC10589
- Metadata file for GC10589
- Digital copy of the PCR in Adobe PDF format

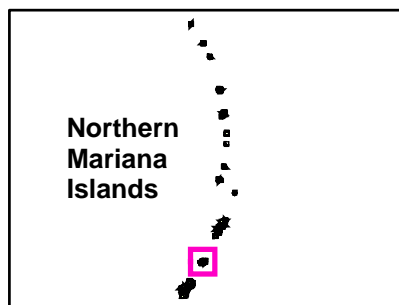
## **End of Report**

# ROTA

## NORTHERN MARIANA ISLANDS



Overview



MP0501

GC10589