
INTERMAP

# Philippines NSDI Foundation Data Program

Andrew Bashfield

# Overview

Part 1: Building the NSDI Framework

Part 2: Collecting Foundation Datasets

# Building the NSDI Framework

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- Background & NDSI Overview
- Geoscience Australia Involvement
- Philippine Geoportal

# Philippines Overview

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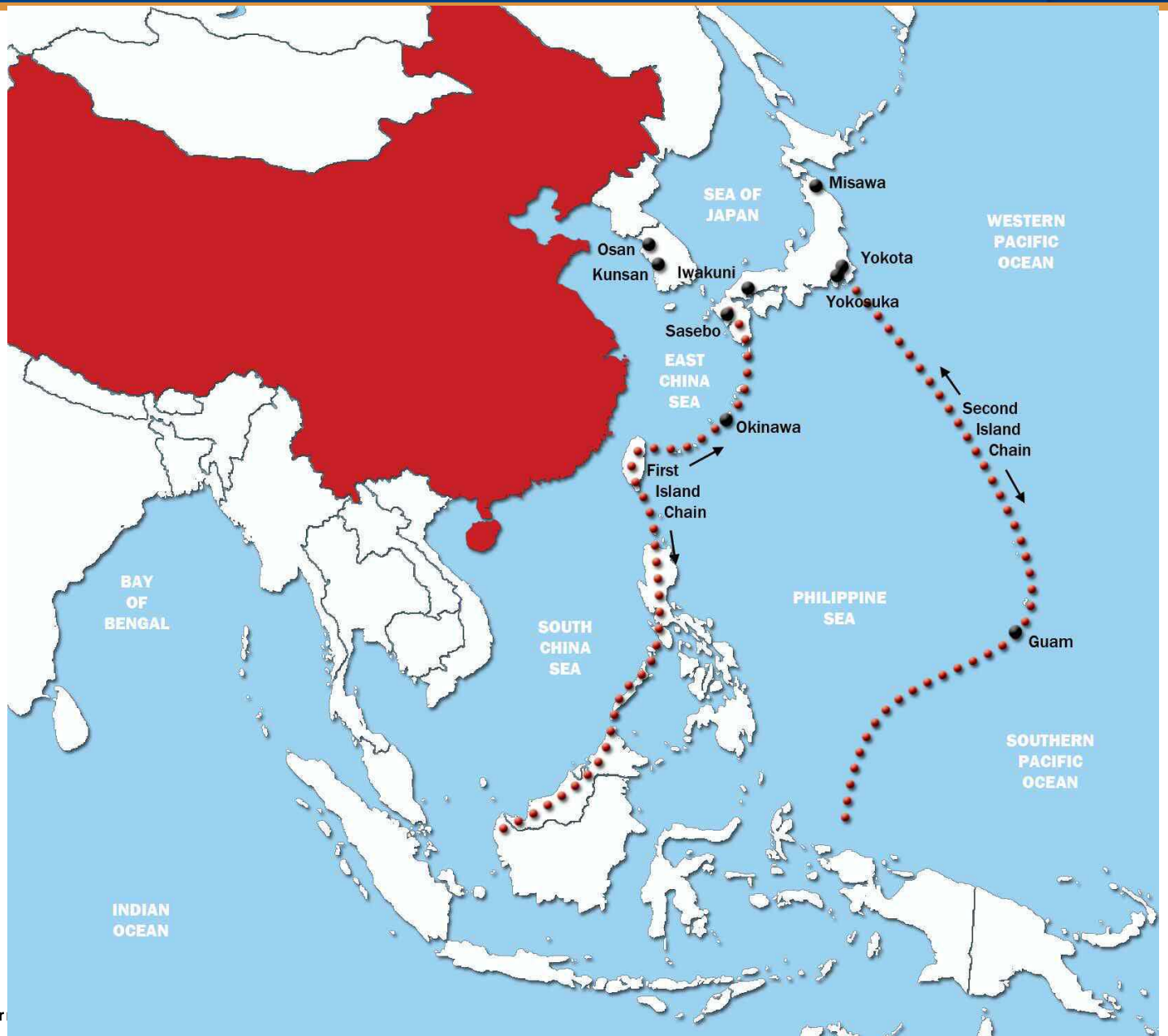
# First Island Chain Country



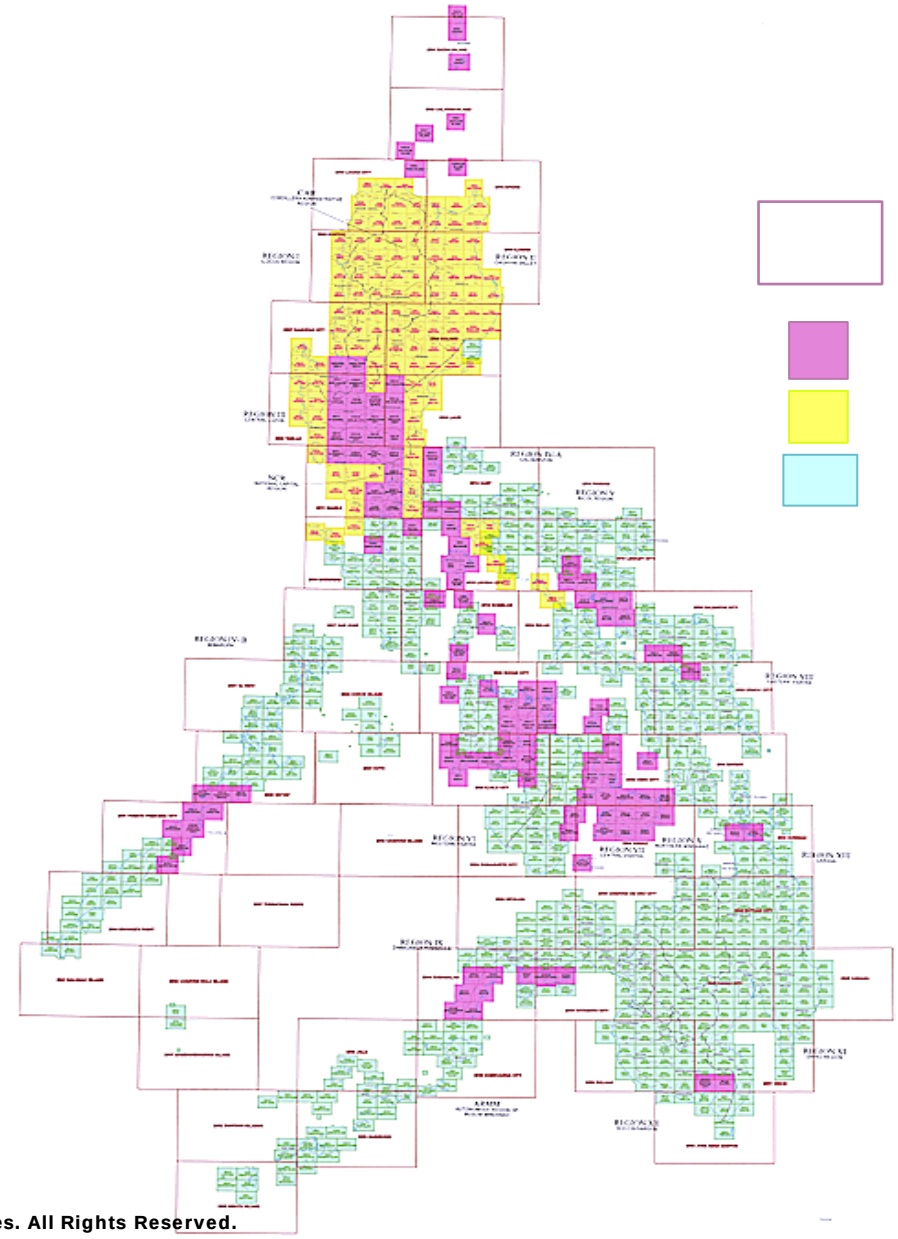
# Philippines Today

# Mapping Responsibility

- National Mapping and Resource Information Agency – NAMRIA


- Land Management Bureau - LMB

# Topo Mapping Extents 2012



**INDEX**
**TOPOGRAPHIC MAP**

**SCALE 1:250,000**

**PNTMS, 1:50,000**
**Series 701, 1:50,000**
**Series 711, 1:50,000**

# Philippine NSDI Beginnings

- Creation of an Inter-agency Task Force on Geographic Information on April 15, 1993 by Memorandum Order No. 01-93 issued by the National Statistical Coordination Board.

- The National Spatial Data Infrastructure (NSDI) Framework Plan formulated in July 2001.

- World Bank-funded project entitled: "The Establishment of a Technical, Operational and Legal Framework for the Management of Geographic Information in the Philippines".

- Because of its high initial cost requirements, incremental development of NSDI was adopted by NAMRIA by launching the NSDI Development Program

- 2005: The seamless digital topographic database produced from 1:50,000 NAMRIA topographic maps.

# Spatially Related Legislation

**Executive Order 45 s. 1993**

To establish the Philippines reference system: PRS92

Adopt-a-Mojon – preservation of geodetic control points


**Administrative Order 16, July 2011**

Directing government bodies to coordinate with NAMRIA for acquisition of data from airborne & spaceborne platforms

# Philippines NDSI Progress

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## Philippine Geoportal:
## One Nation One Map

This project is a collaborative effort of the National Mapping and Resource Information Authority (NAMRIA), an attached agency of the Department of Environment and Natural Resources (DENR), and the DOST-ASTI.

Funded and Conducted under the budget theme of:
Anti-Corruption, Transparent, Accountable, and Participatory Governance

# Philippines NDSI Progress

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## Philippine Geoportal: One Nation One Map

The main project deliverables

- platform for the Philippines' national spatial data infrastructure;
- a geospatial data center;
- an Internet-based mechanism for sharing of geospatial information;
- and a policy for the government's one-basemap advocacy.

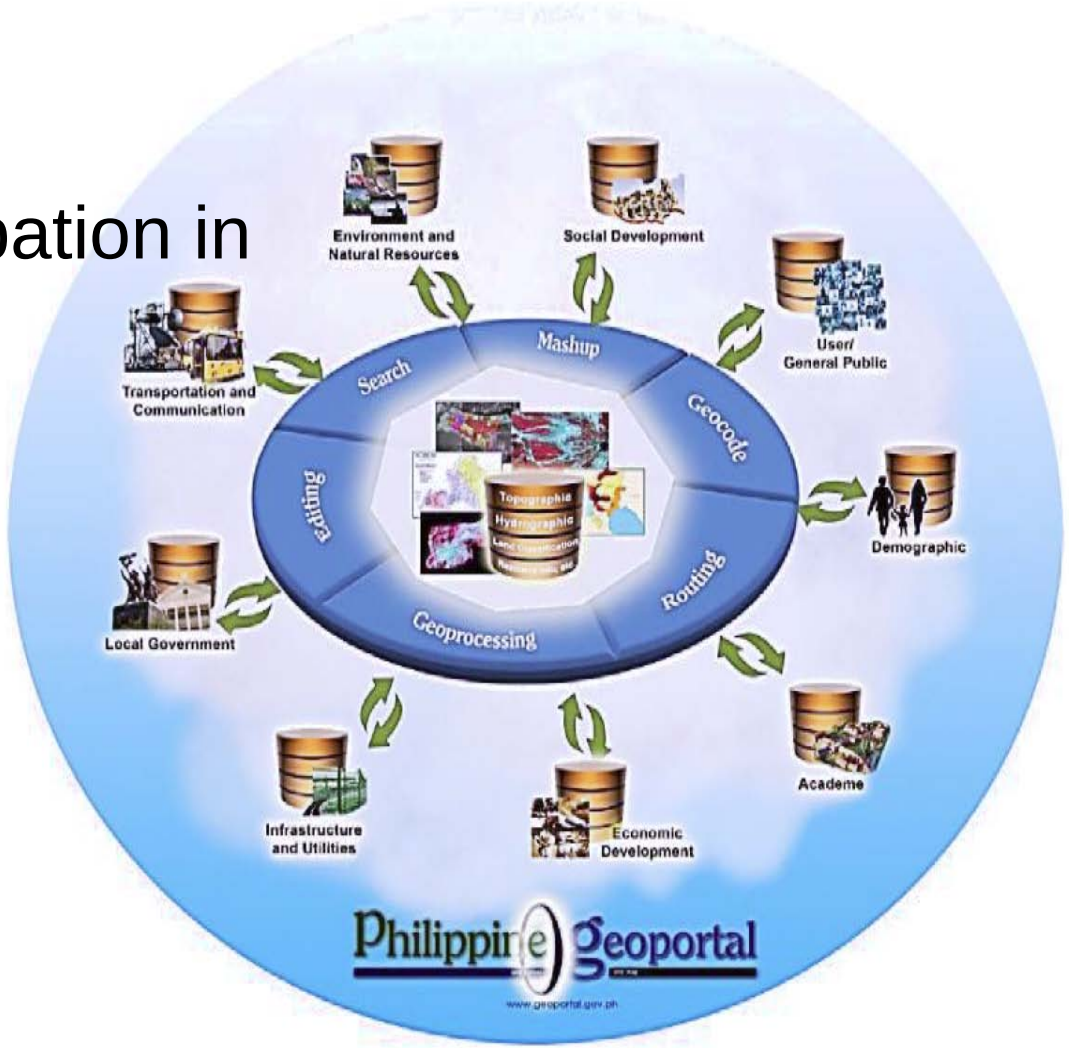
# Geoportal Benefits and Impact

- Provides authoritative, consistent, relevant, and updated maps
- Facilitates thematic mapping
- Facilitates mash-ups and integration of information
- Avoids duplication of effort
- Avoids wasting money
- Facilitates collaboration and cooperation among agencies
- Provides platform for integration of data from many sources

**Deputy Administrator**
**NAMRIA**
**Linda Papa**

# Desired Ultimate Outcome

- One multi-scale framework map
- Standards & Policies
- Map Services
- Private sector participation in ICT



# Geoscience Australia

- GA working with AusAID & Philippines Government since 2008

- Collective Strengthening of Community Awareness for Natural Disasters (CSCAND)

- 2009: Technical Assistance in 3 areas:
  - Review of data validation process
  - nSDI strategic and implementation plan
  - Small pilot system

# http://www.geoportal.gov.ph/

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HOME | WHAT IS GEOPORTAL? | MODULES | DOWNLOADS | CONTACT US

# WHAT IS GEOPORTAL?

## Geoportal is used to find and access geospatial data and services.

The Philippine Geoportal also advocates the use of standard multiscale basemaps that serve as tools for strategic planning, decision making, situational analysis and other common requirements.

### DISCOVER DATA

You can search for geospatial data using our map catalog or browse thru the data using our online map viewer.

### USE DATA

Download geospatial data for offline use or consume web services straight from your application.

### SHARE DATA

Got data you want to share? Use the map builder for uploading geospatial data and defining related metadata.

# Map Catalog

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ting Started  Country and regional ...

ERS  MAPS  MEMBERS  SEARCH

## MABUHAY!

The Philippine Geoportal's Map Catalog is a platform for sharing geospatial data and maps. This platform is based on open source projects like GeoNode, GeoServer, GeoExt, OpenLayers, PostGIS, and Django.

Explore Layers  Explore Maps

Need help Getting Started?

### LATEST LAYERS

Total: 1

◇ Provincial Administrative Boundary

Layer from catalog, 1 month ago

No abstract provided

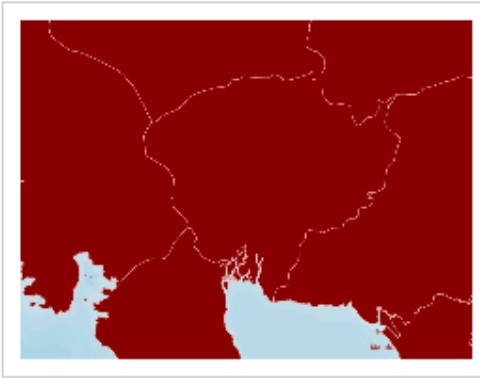
156 views

Average rating (1 votes)

Download  Create a map

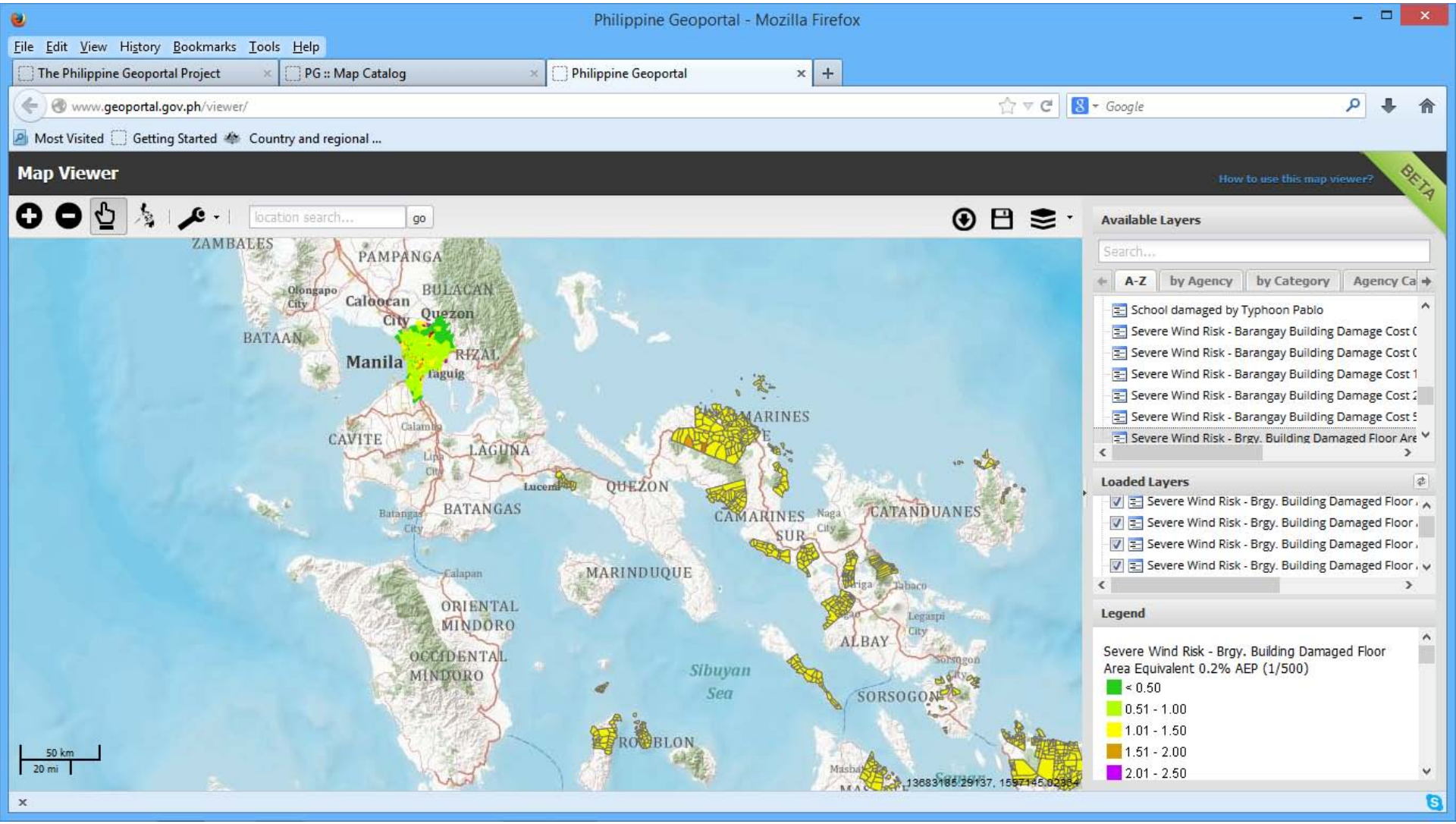
results 1-1 of 1  page 1 of 1

### LATEST MAPS



My Map

# Map Viewer



# Collecting Foundation Datasets

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## Elevation & Imagery Foundation Data Layers

- The Project
- Scale of the Exercise
- Approach Taken
- Execution

# Unified Mapping Program 2011

**DENR Secretary**
**Ramon Paje**

Unification of image acquisition programs of different government agencies.

...to eliminate duplication.

**Major Objective:**

...To provide fundamental and detailed geospatial reference information for multiple applications.

- Nationwide image acquisition
- Nationwide large and medium scale topographic base mapping program

# UMP Specific Objectives

**Dr. Peter N. Tiangco**
**Administrator**
**NAMRIA**

Disaster Risk Reduction Management

- Flooding
- Rain induced landslide
- Earthquake
- and fire

& to serve as official base data of the government for detailed planning

# UMP Specific Objectives

1:10,000 topographic base map and orthoimages for the whole country using:

- interferometric synthetic aperture radar (IFSAR) data
- and very high resolution (VHR) satellite imagery

# Scale of Exercise

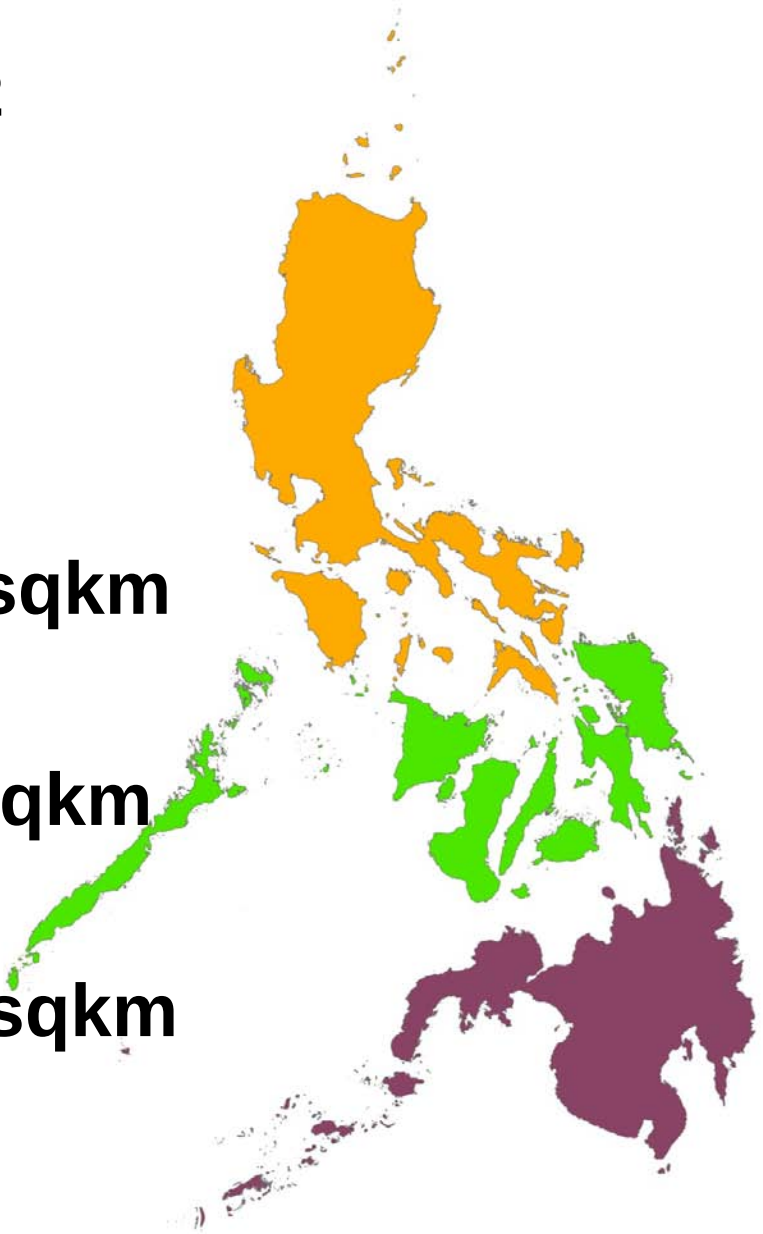
- **Acquisition over 300,000 km2**

- Exclusions:
  - the Spratly Islands
  - the Turtle Islands

**Lot 1 Luzon: 147,964 sqkm**

**Lot 2 Visayas: 59,885 sqkm**

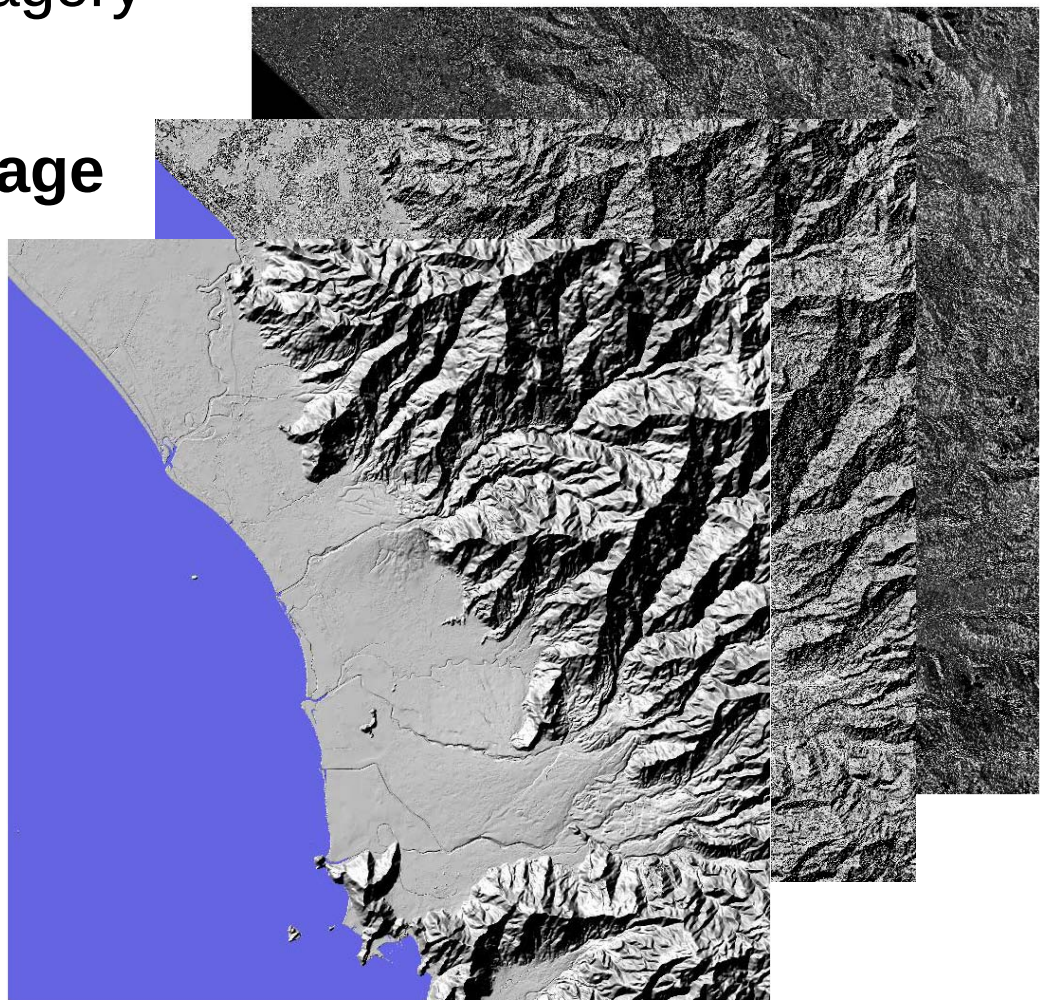
**Lot 3 Mindanao: 135,627 sqkm**



# Tender & Products

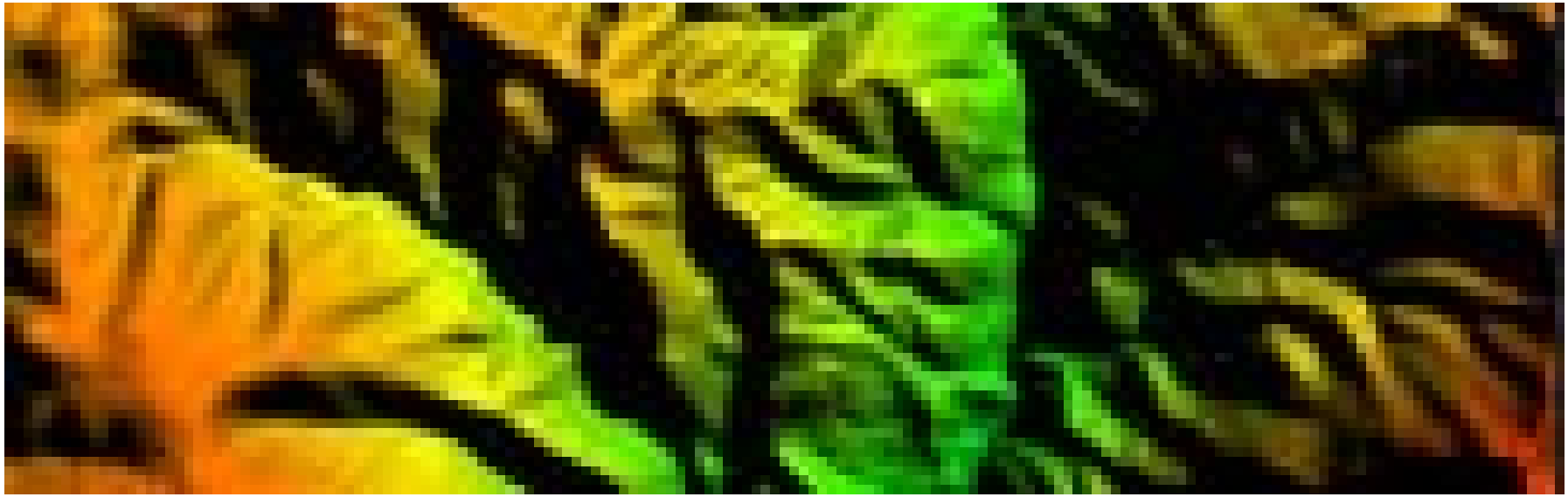
Acquisition of Airborne Interferometric Synthetic Aperture Radar for the production of Nationwide Digital Elevation Model and Ortho-Radar Imagery

- **Orthorectified Radar Image**
- **Digital Surface Model**
- **Digital Terrain Model**



# DEM Specifications

| Name | Vertical Accuracy (RMSE) | Horizontal Accuracy (RMSE) | Pixel Size (Posting) | Mapping Support |
|---|---|---|---|---|
| | **Slope < 10º** | **Slope < 10º** | | |
| DSM | 1.0m | 2.0m | 5.0m | |
| DTM | 1.0m | 2.0m | 5.0m | 3.0m contours & 1:10,000 mapping |



# Image Specification

| Name | Resolution | Planimetric Accuracy |
|---|---|---|
| ORI | 0.625m | 2.0m RMSE |

# Elevation Data Tender

**Tender Process:**

- Invitation to Bid: 12 Sept 2012
- Pre-Bid Conference: 18 Sept 2012
- Deadline of Submission and Opening of Bids: 2 Oct 2012
- Award Announced: 4 Jan 2013
- Contracted: 24 Jan 2013

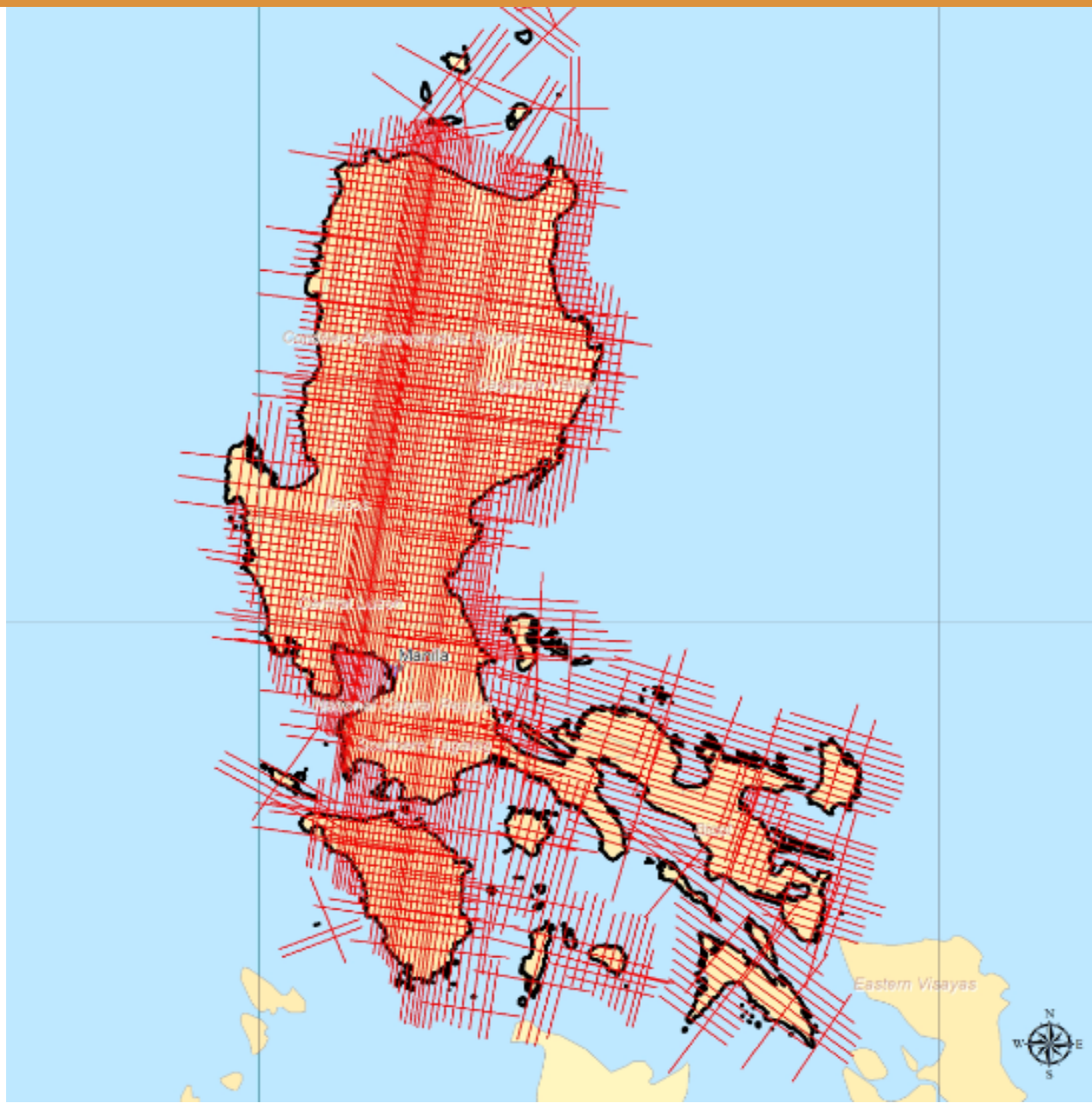
- **Awarded to Certeza Infosys Corporation**
  - **Subcontractor: Intermap Technologies Inc.**

# Approach Taken

**STAR-3 incorporating an X-band IFSAR within a Learjet 36A aircraft**

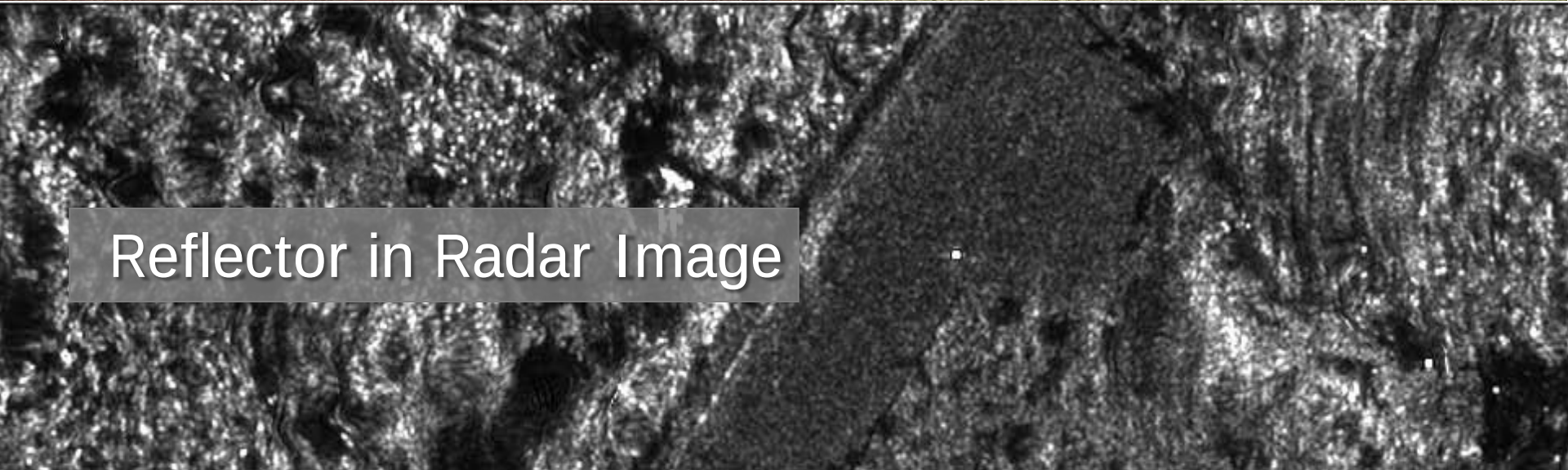
# Approach Taken

Flight lines for
Lot 1: Luzon



# Ground Control





# Speed of Project

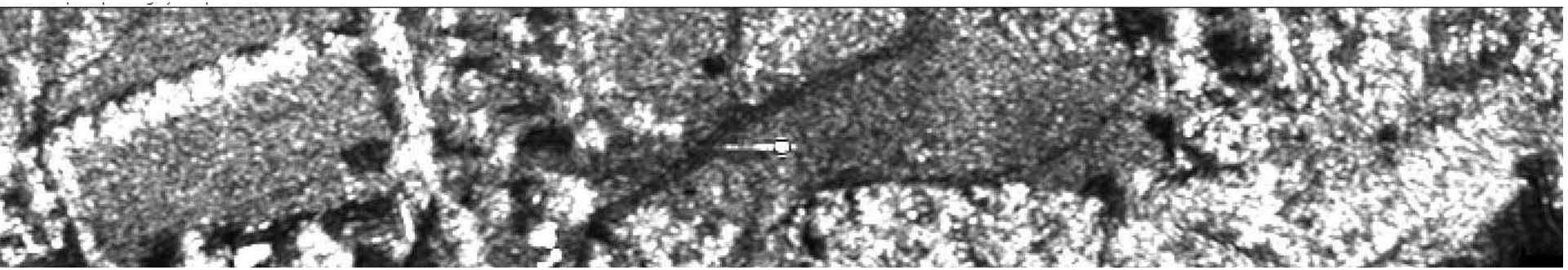
**The primary ground survey operations took place between January 24, 2013 and July 10, 2013.**

**The IFSAR data processing operations began in late May 2013 and continued to September 2013.**

**The data edit process began in July 2013 and ran to December 2013.**

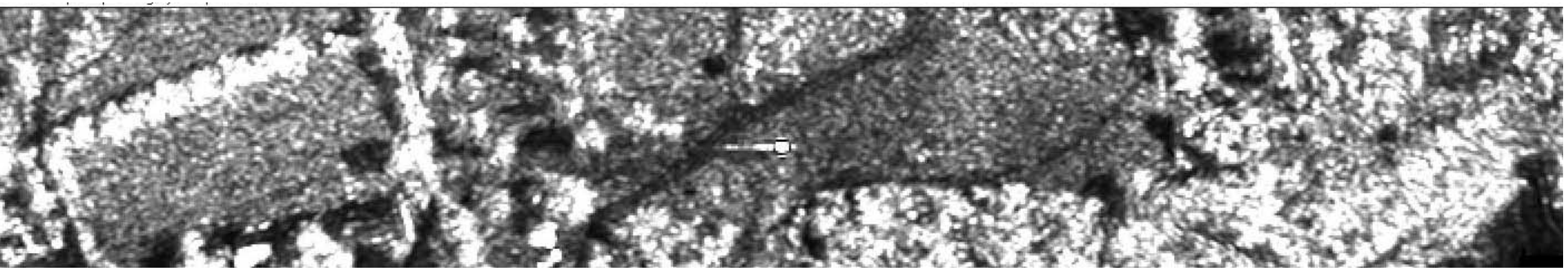
**The digital data deliveries of the mapping data (3' tiles) began in August 2013 and completed in December 2013.**

**A comprehensive two week training program for NAMRIA staff was undertaken June 24 to July 5, 2013.**

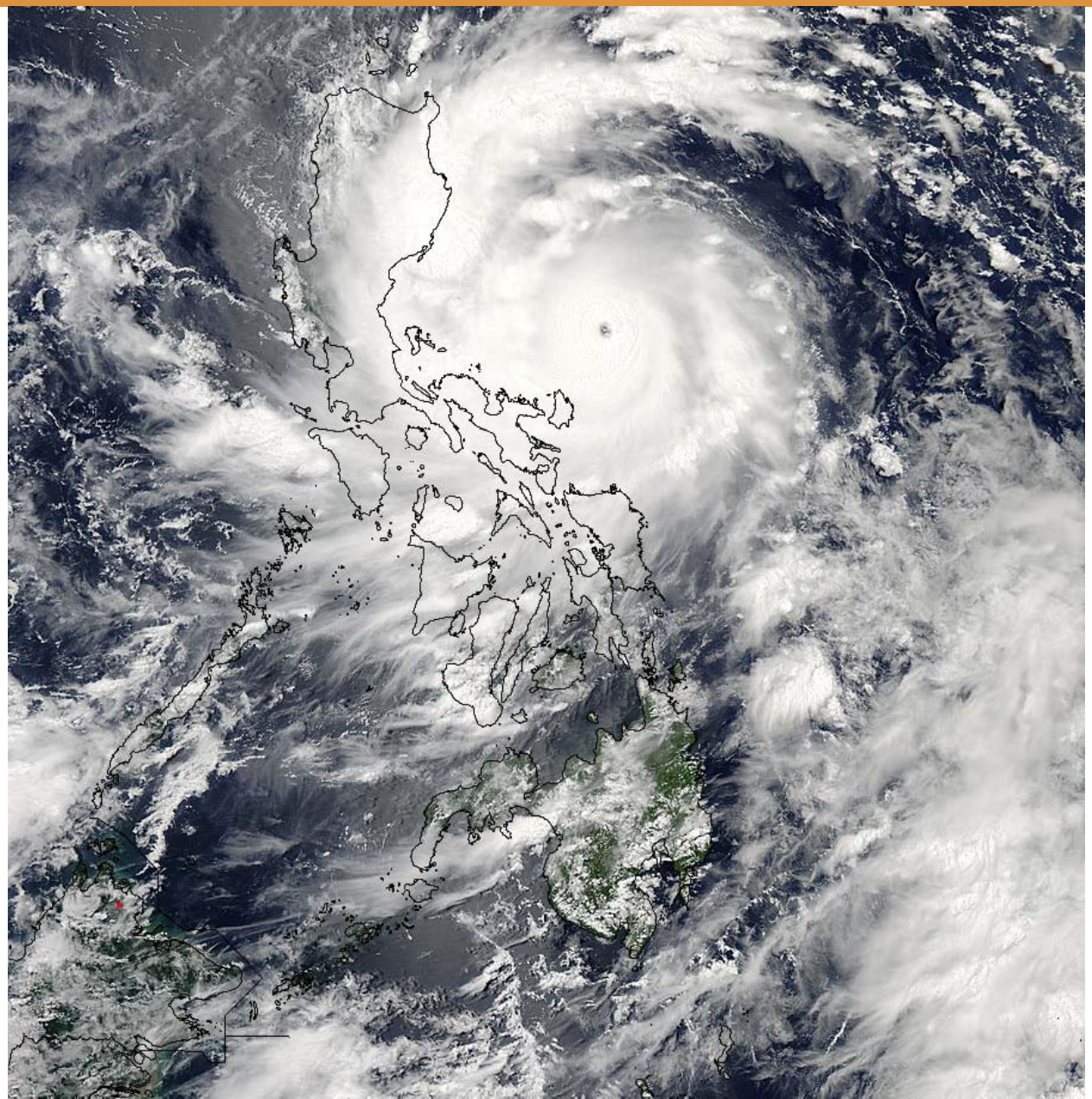


# IFSAR DEM Accuracy Results

| Name | Vertical Accuracy (RMSE) | Horizontal Accuracy (RMSE) | Pixel Size (Posting) | Mapping Support |
|---|---|---|---|---|
| | **Slope < 10º** | **Slope < 10º** | | |
| IFSAR DSM | 1.0m | 2.0m | 5.0m | |
| IFSAR DTM | 1.0m | 2.0m | 5.0m | 3.0m contours & 1:10,000 mapping |
| **Measured Error** | **0.46m** | **0.61 in X<br>0.41 in Y** | | |



# Typhoon Haiyan, Nov 2013



# Typhoon Haiyan, Nov 2013

# Typhoon Haiyan, Nov 2013

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# Results January 2014

# Further information


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