



# GeoSpace Census Base Map Solutions



## Introduction

Image base maps are widely accepted as the most suitable base map for Census Enumeration Area (EA) and Supervisor Area (SA) maps. Colour Image maps are easy to interpret. This greatly enhances pre-enumeration mapping in terms of accuracy and overall quality. It also implies minimal training of census enumerators and supervisors in the use and interpretation of EA and SA maps.

Nowadays huge imagery archives exist and a range of recently launched modern satellites ensures swift acquisition of new imagery. Modern imagery from satellites and airborne digital aerial photography systems provide a realistic, cost-effective and current image base map of a country.

## Our product offering

GeoSpace is a registered aerial survey operator. We do large format digital aerial photography (DAP) with a resolution of 4 - 50cm. This is ideally suited for urban base maps - especially very dense informal settlements where more detailed imagery is required as close as possible to the date of enumeration. Our DAP is complimented by Airbus Defence and Space satellite imagery. Our product offering can be summarised as follows:

Sensor	GeoSpace DMC	Pleiades 1&2	SPOT 6&7
Resolution	4 - 50cm	50cm	1,5m
Swath	6.7km at 50cm	20km	60km
Recommended use in Census Mapping	Formal urban and very dense informal settlements	Formal urban settlements	National coverage

## What makes our offering unique?

We understand the technology as well as the unique requirements of image base maps in censuses. This enables us to recommend the optimal base map relevant to each country's unique circumstances such as geography, demography, climatic conditions, timeframe, and budget.

The imagery we propose is an integral part of the total census mapping solution that we offer. The imagery specifications surpass the detail and precision required by census mapping standards. Hence the relevance and usability of the imagery in the methodology and ultimately the EA/SA maps are guaranteed.

We facilitate and manage the procurement of imagery on behalf of the NSO. This includes image processing as well as the incorporation of the imagery in the master census spatial database and relevant census mapping applications.

We guarantee success - GeoSpace has a 100% record in the successful delivery of census mapping projects!

The constellation of Airbus satellites has unique characteristics that are extremely relevant and important for census applications:

- SPOT 6&7 have no direct competitors in the industry - they provide the optimal balance between image detail, costs and huge acquisition capacity;
- Pleiades provides VHR imagery that compliments SPOT 6&7 in dense urban areas where more detail is required;
- Large imagery archive at various resolutions;
- Unrivalled image acquisition capacity; and
- Multiple tasking plans per day » flexible and responsive.

Airbus Defence and Space is a partner of GeoSpace in Census Mapping solutions since 1999.



Geospace International. Over two decades of success in more than 15 countries!

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measure it. manage it.

# GeoSpace Population and Housing Census Mapping Solutions

## Introduction

Population and Housing Censuses require current and detailed maps for the accurate delineation of enumeration area (EA) boundaries.

In most developing countries these maps are either dated or do not exist.

**The solution?** Modern satellite imagery and digital aerial photography (DAP) base maps that are packaged in a GIS-based census mapping application.

GeoSpace is a specialist GIS company focusing on spatial data capturing through remote sensing (airborne and satellite imagery) and GPS fieldwork. Pre-enumeration census mapping is key specialist focus area of the company.

## What do we offer?

Total pre-enumeration census mappings solutions, including:

- Situational assessments;
- Methodology development;
- The preparation of census mapping project documents (including methodology outlines, budgets, resource calculations, and project scheduling);
- Project implementation;
- Database development;
- SmartClient for Census® - dedicated census mapping software;
- Provision of hardware, software and imagery base maps;
- Training, technical support and project management.

GeoSpace is a member of the United Nation's Expert Group on Population and Housing Census Mapping, as well as:

- The census mapping specialist partner of Airbus Defence and Space - the operator of the SPOT and Pleiades range of satellites; and
- An authorised reseller and census domain technology partner of Intergraph® SG&I.

## Our track record

Over the years, national statistical offices (NSOs) in several African countries have benefitted from our census mapping solutions, technical support, training and related services:

- Namibia (2001 & 2011) - census;
- South Africa (2001 & 2011) - census;
- Tanzania (2002 & 2012) - census;
- Lesotho (2006) - census;
- Southern Sudan (2008) - post-enumeration mapping EA project;
- Botswana, Ethiopia, Ghana, Kazakhstan, Malawi, Nigeria, Seychelles, Swaziland, The Gambia and Zambia - technical support and training to the NSOs.

Our clients include:

- World Bank;
- UNFPA;
- UNSD;
- Lux Development;
- Sida; and
- Statistical agencies - many have opted for our services in consecutive censuses.

As a result, GeoSpace has established itself as a reputable company and the leading census mapping service provider in Africa.

## What makes us unique?

The key to our success is our application specific knowledge.

### **We understand censuses and surveys and hence also the mapping requirements thereof:**

- Our core group of specialist census mapping consultants have been part of the company for the last two census cycles - our expertise and experience are unrivalled in the industry; and
- We're a leading socio-demographic field survey company in South Africa - we understand mapping needs associated with censuses and large surveys.

### **We understand the (appropriate) technology:**

- Current, national coverage image maps at appropriate levels of detail is a fundamental component of our methodology:
  - GeoSpace DAP: 4-50cm imagery;
  - Pleiades 1&2: 50cm imagery;
  - SPOT 6&7: 1,5m imagery;
- Software relevant to census mapping includes:
  - SmartClient for Census®: an intelligent, census specific, WEB GIS application with intuitive EA digitising capabilities (in the field or office) that can be used online (internet or intranet) or offline (through intelligent caching);
  - ERDAS APOLLO for the managing of imagery;
  - ERDAS Imagine for the processing and manipulation of imagery; and
  - GeoMedia Professional for high-end GIS office work.

### **We provide a total solution:**

- Our edge lies in integrating our knowledge of census taking with modern remote sensing and GIS/GPS capability to provide a total solution that is:
  - *Realistic;*
  - *Cost effective; and*
  - *Relevant (to the unique circumstances of a country).*
- This guarantees superior results within the timeframe of the bigger census project.

GeoSpace is a proud sponsor of the Africa Symposia on Statistical Development (ASSD) since the inaugural event was held in 2006.

