



**rural development
& land reform**

Department:
Rural Development & Land Reform
REPUBLIC OF SOUTH AFRICA

Chief Directorate:
National Geo –spatial Information

Standard for the Scanning of Film-based Aerial Photography

Document Reference:
Version:

QLAS.SD.14
v1

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SECTION A

Preliminary Informative Elements

A 1 Document Control

Version and Amendment Schedule

Version No.	Version Date	Author	Description of Amendments
Draft1	21 July 2010	Standards Committee	Document Created
Draft 2	30 August 2010	D Sutherland S Kay	Public Review Process
Draft 3	14 September 2010	Standards Committee D Sutherland S Kay D Clarke	Public Review Process Amendments
Draft 3	29 September 2010	Standards Committee D Sutherland S Kay D Clarke	Senior Management Review Process Amendments
v1	30 September 2010	S Kay	Senior Management Approval

Approval and Control Schedule

Version No.	Approved By	Designation	Signature	Date Approved	Copy Status
v1	Dr D.G. Clarke	Chief Director			<i>Master Copy</i>

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A 3 Foreword

This standard covers Scanning of Film-based Aerial Photography by the Chief Directorate: National Geo – spatial Information (CD:NGI), Department of Rural Development and Land Reform. The CD:NGI is mandated by the Land Survey Act, Act 8 of 1997 to provide mapping that covers the Republic of South Africa.

This standard is the revised Standard for the Scanning and Ortho-Rectification of Imagery and the decision by the Standards Committee was that the original standards be split to reflect the following two standards.

1. Standard for the Scanning of Film-based Aerial Photography. (QLAS.SD.14)
2. Standard for Ortho Rectification and Mosaicing of Imagery. (QLAS.SD.15)

Acknowledgement

This standard was reviewed by the following members of the Standards Committee:

Cameron Williams (Convenor)
Ed Kinsey
Julie Lovesay
Judith Velemani
Inge Owen
Amelia Maclean
Yalezo Rasonti
Sonwabile Duda
Debbie Sutherland (Quality Assurance - Staff Member)

A 4 Terms and Definitions

[Refer to Glossary](#)

A 5 Symbols and Abbreviations

[Refer to Glossary](#)

A 6 Introduction

A 6.1 General

Name of the Standard

The standard described in this document shall be known as the Standard for the Scanning of Film-based Aerial Photography

A 6.2 Scope and Purpose

The Standard for the Scanning of Film-based Aerial Photography comprises all the specifications required for ortho-rectification of imagery for mapping purposes and for the provision of client imagery requirements, and its status is mandatory. This standard does not apply to imagery acquired by means of digital sensors. The purpose of this document is to outline the requirements to be met by the CD:NGI and Contractors providing scanned film-based aerial photography.

A 6.3 Audience

The primary audience of this document is the CD:NGI, contractors providing imagery and users of imagery.

A 6.4 Applicability

This document is applicable to all role players, activities and processes involved in scanning of film-based aerial photography.

A 6.5 Assumptions

It is assumed that users outside CD:NGI shall apply the provisions of this document.

A 6.6 Normative References, other standards and related documents

- The document Recommended Practice for the Structure and Drafting of Standards and Related documents is used to guide the format and structure of this document.
- File Naming Convention Policy
- Standard for the Acquisition of Film-based Aerial Photography

A 6.7 Maintenance Authority

Maintenance of the Standard for the Scanning of Film-based Aerial Photography is the responsibility of the Division: Quality Assurance of CD:NGI. Changes to this Standard will be instructed by the Chief Director as improvements or amendments become necessary, or as required. Any request for amendments to this Standard may be submitted by any institution, body or individual to the Chief Director for consideration. All such requests and any other comments on the Standard must be addressed to:

Chief Director: National Geo – spatial Information
Private Bag X10
Mowbray
7705

and be referenced as : Amendment - Standard for the Scanning of Film-based Aerial Photography.

The Quality Assurance Division shall maintain the provisions and structure of this document through amendment and revision activities.

A 6.8 Roles and Responsibilities

The roles and responsibilities of the main role players as it pertains to the use of this document are stated below.

A 6.8.1 Division: Quality Assurance

- To maintain the provisions of this document.
- Keeping track of all amendments to this document
- Providing assistance and guidance to the Standards Development Committees and CD:NGI Management in interpreting the provisions of this document
- Provisionally approving a proposed revision of this standard with respect to its structure and format.
- Ensuring that the use and purpose of this document is communicated effectively.

A 6.8.2 Standards Development Committee – Standard for the Scanning of Film-based Aerial Photography

- To draft revised specifications to the provisions of this document
- To make recommendations on the update and amendment of the provisions of this document
- Refer to the relevant section in the Terms of Reference of the Standards Development Committee for more details in this regard.

A 6.8.3 Manager: Management Support, and the Geomatics Manager: Quality Assurance

- Evaluate proposed amendments and revisions of this Standard.
- Provisionally approving proposed amendments to this Standard.
- Refer to the relevant section in the Terms of Reference pertaining to the Manager: Management Support, and the Geomatics Manager: Quality Assurance for more details in this regard.

A 6.8.4 CD:NGI Senior Management

- To approve, amendment and revise this Standard.

A 6.8.5 Contractors

- To scan film-based aerial photography according to the provisions of this Standard.

SECTION B
Normative Elements

B 1 Scanning Requirements

B 1.1 Scanning of Film-based Aerial Photography

- (a) All film-based aerial photography shall be scanned on a photogrammetric scanner from photographic film.
- (b) The film shall be clean and free from marks and dust.
- (c) The scanner to be used shall be calibrated according to manufacturer's specifications and before the commencement of each job. Proof of such calibration to be submitted to CD: NGI.
- (d) The scanning resolution shall be a maximum of 25 microns.
- (e) The accuracy required from the scanner must be at least 1/3 of a pixel size at scanning resolution, or better.
- (f) The histogram should be set so that the full range from 0 to 255 grey scale is captured (no empty colour bins).
- (g) Panchromatic images shall be supplied as a positive 8 bit grey scale (monotone) and colour images as colour images at 24 bit RGB scale in a TIFF format.
- (h) Images shall contain all the fiducial marks and all relevant panel information.
- (i) All film-based aerial photography flown in an east-west or west-east direction shall be rotated so that all images are in a "north-up" orientation.
- (j) Image manipulation techniques such as dodging or colour balancing shall not be applied to scanned images.
- (k) Convolution filters shall not be applied to scanned images.
- (l) The image file name shall consist of a Job Number, Strip Number and Photo Number as per the file naming convention defined in the CD: NGI Data Model.