EARSC Guideline Document

EARSC EO Industry Certification Scheme

Scheme Description

EARSC/CERT/REQ/2015/001

Contents

This document contains a total of 15 Pages

Change Record Sheet

Date	Issue/ Rev.	Pages Affected	Description	DCR	Approval Authority
March 2015	1.0	All	First Issue		
November 2016	1.1	2, 3, 4, 11	Amendment of conditions for Certification Bodies Changes to ISO9001 Completion of Abbreviations	N/A	EARSC

1   INTRODUCTION

1.1   Background

The European Association of Remote Sensing Companies (EARSC) is the European organization which – on a non-profit basis – coordinates and promotes activities of their members in the area of services based on the delivery of geo-information products on customer demand. Formed in 1989 EARSC has been acting for over 24 years on behalf of the geospatial services industries in Europe and especially those dealing in EO services. The members of EARSC are active on the growing market for the exploitation of EO data by converting these data in geo-information suitable and accessible for their clients. This conversion process, the customization of the products and the development and provision of services is characterized by addition of value for users/customers in the chain between data collection and exploitation of information.

During the period 2010 to 2013, the European Space Agency has financed a project to look into the feasibility of a quality certification scheme for the Earth Observation Industry. This project, with Hollidge Consulting Limited, has led to a close working relationship with EARSC and the founding of the EARSC Industry Best Practices Working Group.

As a result, the following documentation has been developed:

- A Scheme Description (This Document), based on the relevant ISO standards and Guidelines pertaining to certification schemes.
- Management System Requirements (this document) based on ISO9001:2008 (ND01) and focusses on the needs of the Earth Observation industry with respect to management system requirements
- Document Requirements Definition for Product Specifications (AD08).

EARSC has now decided to issue this document as a guideline for the industry to be available for use by any organisation supplying EO Products and Services

1.2   Scheme Outline

As the market for Earth Observation data-based products and services grows and more applications are found for this resource, the industry supplying these products and services shall also grow and develop.

One of the key barriers to the growth of the industry and the use of Earth Observation products and services is the level of confidence that customer organisations may have in the product or service being offered.

In its formative state, the Earth Observation Industry consisted of mostly science orientated organisations concentrating in specific studies for bespoke customers. As the

market developed, more and more organisations started to offer more commercial, off the shelf, product and services.

To cater for the maturation of the industry and the assistance in increasing confidence within the customer base, and, in fact, growing the customer base, an Earth Observation Industry Certification Scheme has been developed.

1.3   Scheme Objectives

The Objectives of the Earth Observation Industry Certification Scheme are to provide:

- An indication of the maturity of the EO Product and Service Industry
- A framework within which companies grow can improve
- A mechanism to recognise expertise and excellence within the Industry

In addition it is an objective of the scheme NOT to prove a barrier for any organisation, no matter how small, entering the market.

1.4   Changes to this Document

This document is intended as a living document that shall evolve as the requirements of the industry and its customers change. As a result, suggestions for changes to this document to improve its utility are welcomed. Suggestions for change shall be forwarded to the EARSC Secretariat for consideration.

2   SCOPE

The Earth Observation Industry Certification Scheme is designed to be applicable to any organisation providing a product or service based on Earth Observation data or data products.

At this point, the scheme provides only for the certification of management systems. It is intended to investigate the feasibility of expanding this to cover product certification in the future.

3   DEFINITIONS AND ABBREVIATIONS

3.1.1   Definitions

For definitions and vocabulary relating to Quality and Quality Management Systems please refer to RD01. Similarly for Product Certification refer to RD02.

3.1.2   Abbreviations

The following abbreviations are used in this document:

DRD   Document Requirements Definition
EARSC   European Association of Remote Sensing Companies
EC   European Commission

EMS	Environmental Management System
EO	Earth Observation
ESA	European Space Agency
IAF	International Accreditation Forum
IBPWG	Industry Best Practices Workjing Group
NAICS	North American Industry Classification System
QMS	Quality Management System
SIC	Standard Industrial Classification

4 APPLICABLE AND REFERENCE DOCUMENTS

4.1.1 Normative Documents

The following normative documents are applicable to this document:

ND01 ISO9001:2015	Quality Management Systems - Requirements
ND02 ISO/IEC17011:2004	Conformity assessment -- General requirements for accreditation bodies accrediting conformity assessment bodies
ND03 ISO/IEC17021:2015	Conformity assessment -- Requirements for bodies providing audit and certification of management systems
ND04 ISO/IEC TS 17021-3	Conformity assessment – Requirements for bodies providing audit and certification of management systems – Part 3 Competence requirements for auditing and certification of quality management systems

Notes:
- ISO/IEC 17011 is currently being revised; the new version is expected to be published 2017/8.

4.1.2 Applicable Documents

AD01 EARSC/CERT/REQ/2015/002	Earth Observation Industry Certification Scheme – Management System Requirements for Earth Observation Data Based Products and Services
AD02 EARSC/CERT/DRD/2013/001	Document Requirements Definition for Product Specifications
AD04 EARSC/CERT/REQ/2015/003	Earth Observation Industry Certification Scheme – Management System Requirements for Earth Observation Data Based Products and Services – Self-Assessment Checklist

4.1.3 Reference Documents

The following documents allow a better understanding of some of the issues raised by this document:

RD01 ISO9000:2015   Quality management systems – Fundamentals and vocabulary

RD02 ISO/IEC 17000:2004   Conformity Assessment – Vocabulary and general principles

RD03 IAF ND5: 2013   IAF Mandatory Document for Duration of QMS and EMS Audits
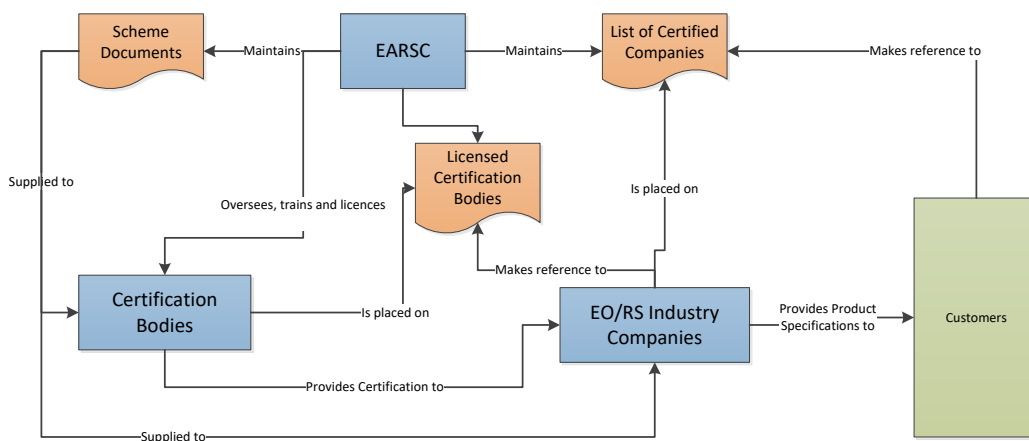
5 SCHEME STRUCTURE AND OPERATIONS

Figure 1: Scheme Structure

5.1 Scheme Structure

Figure 1 represents how the scheme is structured:

- EARSC
  - Manages and Operates the scheme in accordance with this document
  - Issues and maintains scheme documents
  - Provides assessor training services to the Certification Bodies
  - Maintains a list of approved certification bodies
  - Maintains a list of companies certified under the scheme
- Certification Bodies
  - Provide certification services
  - Complies with the requirements of the scheme
- EO/RS Industry
  - Implements a QMS in accordance with ISO9001 and/or scheme requirements
  - Submits QMS to certification body for certification

There are two levels of management system certification:

- Approved Supplier, meets the requirements of the Product Realisation elements of ISO9001 as stated AD01
- Certified Supplier – certified to ND01 with EO scope applying AD01 to their management system

AD01 forms the Management System Requirements for the scheme and is a guide to the application of ND01 to organisations providing product and services using Earth Observation data. It has been produced to address specific requirements relating to Earth Observation Data, it procurement, use and delivery. As such it only addresses applicable aspects of ND01, using the standard as a template for the description of requirements.

5.2 Scheme Documents
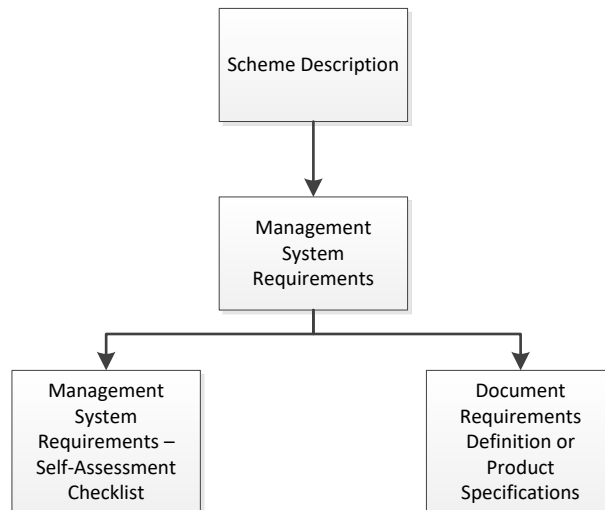
There are four scheme documents:

- Scheme Description (This document)
- Management System Requirements (AD01)
- DRD for Product Specification (AD02)
- Self-Assessment Checklist (AD03)

However, it should be noted that other documents relating to the performance of activities in Accreditation and Certification Bodies also apply as defined in the following section.

6 SCHEME REQUIREMENTS

Roles and responsibilities for certification schemes are well established and are defined within ND01 to ND05, inclusive. For the purposes of this document they are summarised below.

6.1 EARSC Undertakings

6.1.1 Maintenance of Scheme Documentation

EARSC shall maintain all scheme documentation in a controlled manner to ensure their accuracy and applicability to the activities covered under the scheme.

To this end, all documents under the scheme are subject to change as stated within the introduction to each scheme document.

All proposed changes shall be reviewed and approved by the EARSC Industry Best Practices Working Group (IBPWG) prior to final incorporation and issue.

Documents shall be issues via the EARSC web-site. It is the responsibility of all users of the documents to ensure that they continually monitor the EARSC Web-Site to ensure that they are using the latest issue of the document.

6.1.2 Provision of Training Services

EARSC shall provide training services to Certification Bodies covering:

- The particular attributes of the Earth Observation Industry
- Specific requirements relating to scheme documents and how they should be audited.

Attendance certificates shall be awarded and EARSC shall retain a register of all attendees.

To qualify for the training, an individual shall:

- Satisfy the competence requirements of ND04
- Have experience and/or background in an industry relevant to the Earth Observation Industry, for example
  - Development and supply of Data Products and Services
  - Software development, data processing
  - Remote sensing technologies and signal and data processing

6.1.3 Monitoring of Certification Bodies

Certification Bodies providing certification under the EARSC Scheme shall be subject to surveillance by EARSC appointed personnel. The level of such surveillance shall be dependent upon the number of certifications carried out and may range from the remote review of documentation pertaining to audits carried out up to the performance of sample audits on the site of the Certification Body.

EARSC shall maintain a register of Certification Bodies participating in the EARSC Scheme on the EARSC Web-Site which shall also be made available to all industry sector companies.

6.1.4 List of Certified Companies

EARSC shall maintain and publish via its web-site a list of companies that have been successful in being certified to the requirements of the EARSC Scheme. This list shall detail the company, its contact details, and scope of certification, including whether the certification is to the EARSC Scheme requirements alone or combined with ND01.

This list shall be made available to customer organisations requiring Earth Observation base products and/or services.

6.1.5 Complaints Process

The following complaint processes shall be implemented:

For Certification Bodies

Certification Bodies wishing to complain with respect to any decision of EARSC may write to the EARSC secretariat. The following process shall be followed:

- The complaint shall be forwarded to the IBPWG for review and initial decision as to action to be undertaken.
- The result of this shall be communicated to the Certification Body.
- Where there is no agreement, the issue may be passed to the EARSC Board for final decision.

For EO Industry Companies

Certified companies wishing to complain shall, in the first instance, submit their complaint to their certification body. Where the complaint cannot be resolved companies may complain to EARSC with respect to the conduct or performance of a Certification Body. In these cases the following process shall be followed.

- The Scheme Administrator shall investigate the issue with the Company concerned and the certification body and decide whether action is needed
- The result of this shall be communicated to both parties in the complaint
- Where this result is not deemed satisfactory, the issue may be passed to the IPBWG for final resolution.

6.2 Requirements on Certification Bodies

6.2.1 Management System and Accredited Status

In order to qualify for the scheme, Certification Bodies shall implement and maintain a management system in accordance with ND03.

In addition, the Certification Body shall have and maintain accredited status with a European Accreditation Body appointed as a national accreditation body by its national

government in accordance with Regulation EC/765:2008 for a scope compatible with the scope of Earth Observation Products and Services, e.g.

SIC Codes:

7371:   Computer Programming Services
7374:   Computer Processing and Data Preparation and Processing Services

NAICS Codes:

518:    Data Processing, Hosting and Related Services
541511:   Custom Computer Programming Services

All audits shall be carried out in accordance with the procedure in place within the Certification Body.

Failure to maintain such accredited status will result in the withdrawal of permission to assess the EARSC Scheme.

6.2.2   Assessor Qualifications

Certification Bodies shall ensure that at least one team member is suitably qualified for the conduct of the assessment of a company under the EARSC Scheme.

The assessor shall:

- Satisfy the competence requirements of ND04
- Have attended the relevant EARSC training course

In addition, the Certification Body shall ensure that the company being certified has had the opportunity to review the CV(s) of the assessment team to ensure that they will have an appropriate level of understanding of the company and its processes.

6.2.3   Specific Assessment Requirements

With respect to the EARSC Scheme, the Certification Body shall require the Organisation requesting assessment/certification to complete and submit to them a completed self-assessment questionnaire.

The assessment with respect to the EARSC Scheme requirements shall be based on a sample audit of the Self-Assessment.

As a result of this approach the following man-days effort shall be implemented for assessments:

Assessment	Company Size	Minimum Man-Days
EARSC Scheme Only	1-10	1
	10+	1.5
ISO9001 plus Scheme	1-10	RD03 plus additional 0.5 Day
	10+	RD03 plus additional 1 day

Surveillance:

- It is not expected that organisations with ISO9001 certification shall require any additional surveillance effort for scheme requirements (RD03)
- Organisations certified to the scheme only shall be subject to 1 day every 18 months.

Recertification:

- Re-certification of organisations with ISO9001 shall be as per the nominal practices in place with the Certification Body. They shall be required to repopulate the Self-Assessment Checklist (AD03) and assessment days shall be as for the original certification
- Organisations certified to the EARSC Scheme shall be recertified every 3 years and shall be required to repopulate and submit the Self-Assessment Checklist (AD03). Audit time shall be as for the original certification.

6.2.4 Award of Certificates and Use of Logos

The EARSC Scheme Logo is the property of EARSC. Certification Bodies shall be licenced to place the logo only on certificates awarded to organisations successfully passing assessment activities. The Certificate shall clearly state the scope of certification, and, where applicable, any products of services where the management system is limited to such.

It is expected that Certificates awarded to organisations for ISO9001 and the EARSC Scheme may contain both the EARSC Scheme logo and the relevant Accreditation Body Logo.

The Certification Body shall ensure that the use of the EARSC Logo by certified companies is limited in the same way as the use of Accreditation Body Logos, i.e. limited to letter heads and advertising material specifically mentioning the scheme and its certification.

6.2.5   Cost of Certification

It is the intention of the scheme that the cost of certification shall be kept to a minimum. The Certification Body shall not charge an excessive day-rate for any activities performed under the scheme. They are, however, permitted to offer a reduced rate where unaccredited certificates are to be offered (i.e. where the Accreditation Body Logo is not used in the case of organisations being certified to the EARSC Scheme requirements alone).

6.2.6   Complaints Process

The Certification Body shall implement a complaints process in accordance with ND03. In addition, the Certification Body shall inform its clients of the possibility of appeal to EARSC with respect to certification activities performed under the EARSC Scheme.

6.3   Requirements on Organisations Supplying Product or Service

6.3.1   Acceptance of Scheme Requirements

Organisations requiring certification under the EARSC Scheme shall accept all of the scheme requirements pertaining to their scope of business including the fact that the company name and details shall be published by EARSC should it be successful in being certified.

Organisations requiring certification under the EARSC Scheme shall implement the requirements of AD01 in addition to any other standard being used for its Management System.

6.3.2   Use of Self-Assessment Checklist

Organisations requiring certification under the EARSC Scheme shall complete a Self-Assessment Questionnaire (AD03) and submit it to the certification body as part of the assessment process.

The Self-Assessment Questionnaire (AD03) shall be re-populated and submitted to the certification body every three years for the purposes of re-certification.

6.3.3   Right to Appeal

Organisations subject to assessment and certification under the EARSC Scheme shall have the right to appeal ant decision of the certification body:

- Firstly to the certification body via their implemented appeals/complaints process
- Secondly, should no resolution be achieved, to EARSC where the issue shall be addressed and decided upon by the EARSC IBPWG.

6.4 Requirements on Customers

All certification schemes recognise that customers of organisation carrying scheme certification have a role to play in the scheme. Customers are responsible for:

- Recognising that the scheme provides levels of confidence specific to the domain certified
- Choosing certified organisations where the certification scope is coincident with the product or service being procured
- Notifying the certification body where certified companies have failed to provide the expected levels of quality

It is not widely known outside the certification industry that the last bullet above exists for certification such as ND01 and the customers of certified organisation have a right to complain to the providers of certification to their suppliers.

7 OTHER ISSUES

7.1 System Implementation Requirements

Under the EARSC Scheme, organisations requiring certification shall have implemented and utilised **all** their documented process and procedure for a minimum of three months prior to any assessment being carried out.

7.2 Scheme Payments and Benefits

The EARSC Scheme is intended to be self-funding, i.e. not reliant upon subsidies from public bodies such as the EC or ESA nor from EARSC members.

The Certification Bodies shall become Observer Members of EARSC and pay the applicable fee. In addition a fee of €100 shall be paid to EARSC for each certificate issued.

As a result the Certification Body shall:

- Be able to attend EARSC meeting and events as applicable for observer organisations
- Be included in the review process for changes to scheme documents and invited to applicable Industry Best Practices Working Group meetings.

It is expected that this is to be considered as an investment by the Certification Body with the return being seen in terms of customer base and the man-day effort charges made in accordance with section 6.2.3, above.

A schedule of charges for Observer status shall be made available to Certification Bodies upon request to EARSC.

7.3   *Product Certification Requirements*

At this time Product Certification is not part of the EARSC Certification Scheme.

8   ACKNOWLEDGEMENTS

EARSC Wishes to acknowledge the input and participation of the following to the development of the EARSC Certification Scheme

- European Space Agency
- Hollidge Consulting Limited
- Member of the EARSC Industry Best Practices Working Group during the development of this scheme
- Pilot activity participants:
  - o Stevenson Astrostat Ltd of Edinburgh, Scotland
  - o AnsuR Technologies or Fornebu, Norway
  - o Lloyd's Register Nederland BV, Special Project Division, Rotterdam, The Netherlands
  - o Flyby Srl, Livorno, Italy
  - o Planetek Italia Srl, Bari, Italy
- Presenters and participants in the two workshops addressing this subject held at ESA ESRIN, Frascati, Italy in 2013 and the premises of Tullow Oil, London, England in 2014