

Calibration and validation of remote sensing imagery sensors

The ISO/TS 19159 consists of four parts.

ISO/TS 19159-x: Calibration and validation of remote sensing imagery sensors – Part x

ISO/TS 19159-1: – Part 1: Optical sensors	ready for publication
ISO/TS 19159-2: – Part 2: Lidar	waiting for vote for DTS (Draft Technical Specification)
ISO/TS 19159-3: – Part 3: SAR/InSAR	recently started by China with support from Germany
ISO/TS 19159-4: – Part 4: Sonar	open, no contributions yet

Formal embedding of the ISO/TS 19159-1

**Specialization of the ISO 19115 “Metadata”
class MD_CoverageDescription**

Usage of existing classes

ISO/TS 19130 “Imagery sensor models for geopositioning”

**ISO 19115-2 “Metadata – Part 2: Extensions for imagery and
gridded data”**

Structure and content of ISO/TS 19159-1

Introduction

1. Scope

2. Conformance

3. Normative references

4. Terms and definitions

5. Symbols and abbreviated terms

5.1 Abbreviated terms

5.2 Symbols

5.3 Variable names of the Jacobsen model

5.4 Conventions

6. Calibration

6.1 Project

6.2 Package OpticsSensor, Geometry

6.3 Package OpticsSensor, Radiometry

6.4 Package OpticsCalibrationFacility, Geometry

6.5 Package OpticsCalibrationFacility, Radiometry

6.6 Package OpticsValidation

7. Documentation

7.1 Semantics

7.2 Package Documentation

Annex A: Abstract test suite (normative)

Annex B: Data dictionary (normative)

Annex C: Calibration and validation quality measures (normative)

Annex D: Self calibration models (normative)

Bibliography

Essentially the ISO/TS 19159-1 is a metadata standard for sensor calibration.

The standard does not include calibration procedures, because no generally accepted procedure exists, neither for airborne nor for spaceborne systems.

Structure and content of the ISO/TS 19159-1

General

Photo flight

Radiation

Target

Geometry

Interior orientation

Sensor system

Optics -> Distortion (detailed)

Detector

Auxiliary devices

GNSS, IMU

Radiometry

Off-sensor

In-sensor

Opto-electronic system

Pre-correction

Post-correction

Filters

Calibration facility, geometry

Laboratory and Inflight

Calibration facility, radiometry

Laboratory and Sensor

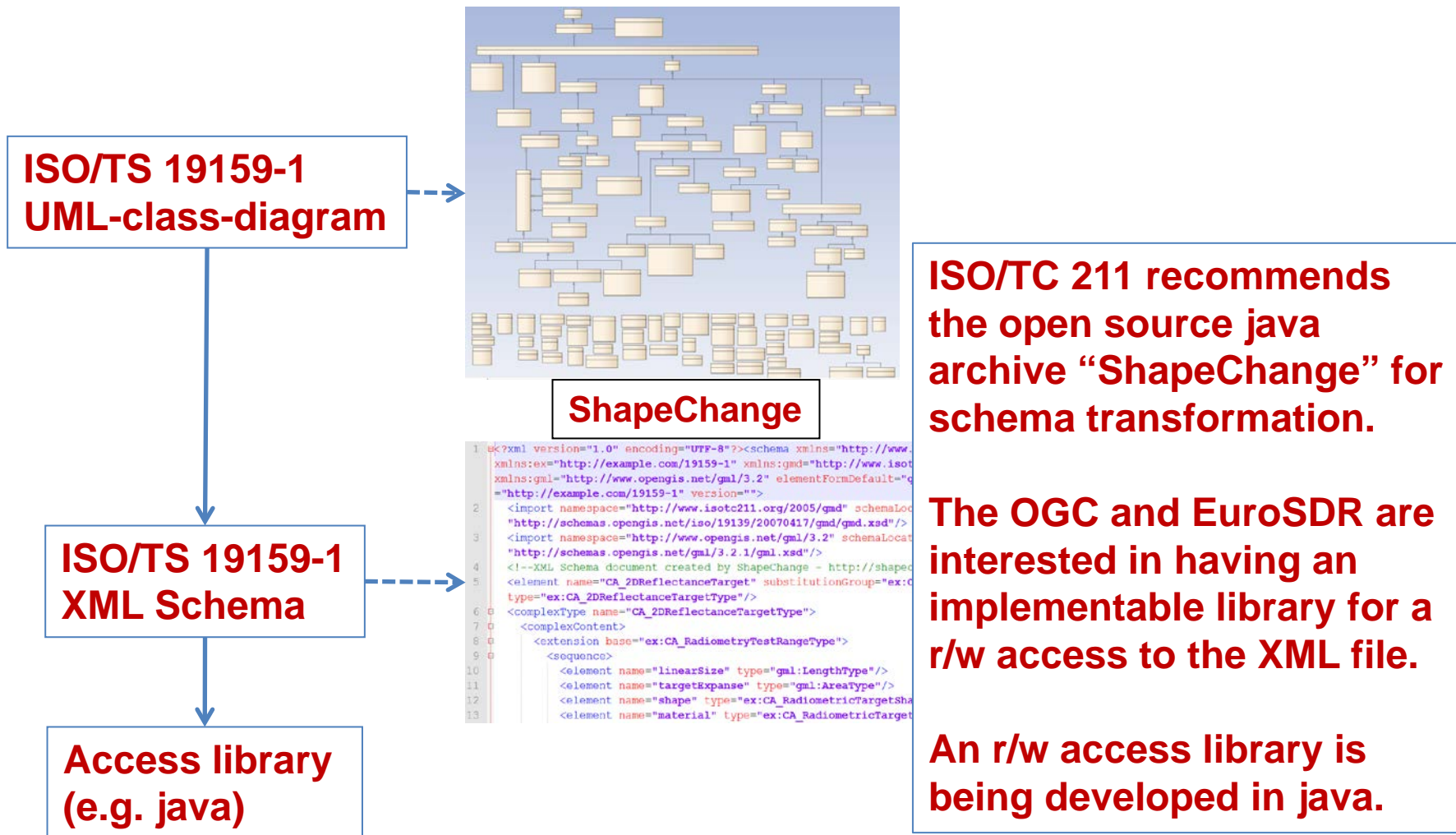
Optics validation

Documentation

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ISO/TS 19159-1: Implementation



ISO/TC 211 recommends the open source java archive “ShapeChange” for schema transformation.

The OGC and EuroSDR are interested in having an implementable library for a r/w access to the XML file.

An r/w access library is being developed in java.

Contributors to the ISO/TS 19159-1

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