



Exploration & Production

GENERAL SPECIFICATION

GEOINFORMATION

GS EP GIN 303

**Cartography and geo-referenced Data Management
for Geosciences**

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1. Scope

Cartography and cartographic representation aim at various types of data, software and representation.

The purpose of this general specification is to outline the mandatory elements in creating and managing Geographical information data for the purpose of generating maps dedicated to the needs of the Geosciences.

This general specification applies to all maps produced within Geosciences teams at headquarters and affiliates, using standard cartographic or geographic information system (GIS) software.

2. Reference documents

The reference documents listed below form an integral part of this General Specification. Unless otherwise stipulated, the applicable version of these documents, including relevant appendices and supplements, is the latest revision published at the EFFECTIVE DATE of the CONTRACT.

Standards

Reference	Title
ISO 19115 :2003	Geographic Information -- Metadata
ISO/TS 19139 :2007	Geographic Information – Metadata--XML schema implementation

Professional Documents

Reference	Title
Not applicable	

Regulations

Reference	Title
Not applicable	

Codes

Reference	Title
Not applicable	

Other documents

Reference	Title
Not applicable	



Total General Specifications

Reference	Title
Not applicable	

3. Resume

1: Traceability

Data must be reusable and updatable. Data shall therefore be structured, thus classifying all information objects according to type, each following unique rules (also called specialty criteria).

To insure traceability, one must record through specialized catalogue such as ArcCatalog or Project Wise, or else through an Excel File:

- Each file contributing to the map (including geographic scale & geodesic description)
- For each of these files: all elements necessary for reconstructing them: i.e. the color palette, the original ASCII file, the SQL query, etc.

2: Formats

Formats generated shall be one of the following:

- **ASCII** for punctual data (wells, grids). The most constrained ASCII formats: ZMAP ASCII, Grid Surfer, UKOOA files (P190, SPS ...) are preferred. Free ASCII formats files shall include description of their format.
- For image formats **geotiff**, **tiff**, **jpeg** associated with **tfw** or **jgw** geo-referenced file and with compressed **ecw** or **mrsid** files for geo-referencing parameters.

3: DBMS

The recommended DataBase Management System (DBMS) for cartographic data is **DBMS ArcSDE**.

4: Standards

Geodesy: All maps and associated files shall be referenced to an official TOTAL or EPSG geodesy.

Colors: For geological or litho logical representation, one shall comply with the internal standards, that is a unique color code available from headquarters EXPLO/IGEO/ARI in charge of this specification.

Wells representation: In representing well status and fluid types, one shall use the definitions of the "Chambre Syndicale de la Recherche et de la Production du Pétrole et du Gaz Naturel".

5: Printing Formats

cgm, **postscript** and **pdf** are the recommended printing formats. In order to retrieve the data for further processing, several outputs will be required.



4. Forewords

Cartography is a precious mean for analysis and communication in geography.

It requires the association of several techniques to generate maps for the representation of space, territories and landscapes, but also to display a representation of objects, events, or any associated phenomenon in their relation in space, with their specific characteristics

A map shall be making sense, good looking, and easy to read.

A map shall be updatable and reusable.

In the domain of Cartography, depending on the complexity of the data to be searched, processed or simply displayed, it is necessary to use the specific techniques of Computed Aided Design (CAD) or Geographical Information System (GIS).

The tools utilized must allow importing a wide variety of data and formats, for both vector and imaging types.

Managing each map is essential in tracing its components for validity as well as further updating.

Reusing the data can only result from data structuring, thus classifying all information objects according to type, each following unique rules.

All files and maps shall be associated to a geodetic reference.

5. Cartographic Environments

When generating maps, operational constraints may lead to using different cartographic environments:

5.1 The CAO type maps

These maps are generated using Computer Assisted Design software in conjunction with Geospatial extension (ex: Autocad+ Map 2D GIS, Microstation Bentley Map). These applications are extremely powerful for graphical representation and creation/conception but have poor GIS functionalities.

5.2 The GIS type maps

These maps are generated using Geographical Information System software, such as ArcView, ArcGis, MapInfo, Cadcorp, ... These applications associate the standard graphical edition tools with topological logic and meta data analysis and management, thus allowing a more dynamic representation of the information.

5.3 Mandatory Title Blocks contents

The above two types of maps must be generated within a strict compliance to the geodesy and projection representation.

All maps produced shall include a Title block full with all the document essential information for traceability purposes.