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IRD has initiated a project to make available around 2800 paper maps that are stored in the map library as rectified images. The project has received funding from the region Île-de-France under the NumeriSud project.

Contact:
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This zip file contains the initial scanned maps and the final standardized product with the geocoded maps in ecw format. This technical document explains the folder structure and the file nomenclature.

Three other resources complete this technical documentation: First, a table that presents the regional subdivision. Second, a tables that presents the ISO topic categories and the INSPIRE data themes. And finally, a table that highlights the relationship between different keyword concepts used to classify the maps.

File Name Nomenclature

Field	Signification	Example
SPHAERA	Identifier of the map sheet in the IRD Sphaera database	00947
EDITOR	Editor of the map- three-letter code	IRD
GEOUNIT	Three-letter area code (table 1) See table 1	MDG
TOPIC	IRD topic category - four-letter code (table 2) See table 2.	CGPP
YYYY	Year of publication of the map sheet In case of mosaic over successive years the first year refers to the year of publication of the oldest map sheet and the last two to the year of publication of the most recent map sheet.	1983
SCALE	Reciprocal value of the map scale In case of different map scales the first value refers to the smallest scale and the last value to the largest scale.	1000000
PROJECTION	Datum and map projection See projection file .prj for more information.	Geo_WGS84

The scanned paper maps have undergone different processing steps to produce the final product. The files that the workflow has generated are organized in subfolders:

Main folder

- Main folder and zip file name.

  [EDITOR]_[ISO3]_[TOPIC]_[YYYY]_[SCALE].zip

Subfolder /01_scan

- Scanned maps

  [SPHAERA].tif

- Ground control points (GCPs) that has been used to rectify the map sheets

  [SPHAERA].gcp

Subfolder /02_scan_RC/[PROJECTION]/

- Rectified and cropped map files in ecw format

  [SPHARERA]RC_[EDITOR]_[ISO3]_[TOPIC]_[YYYY]_[SCALE].ecw, .ers, .eww, .tab

- Quicklook (1063×1063 pixels)

  [SPHARERA]RC_[EDITOR]_[ISO3]_[TOPIC]_[YYYY]_[SCALE].png

- Projection file

Coordinate system: Geographic (Latitude/Longitude) / WGS84 / arc degrees unless otherwise specified in subfolder name and projection file.

Rectification method: Triangulation (for >5 GCPs) or Polynomial (for >4 GCPs)

  [SPHARERA]RC_[EDITOR]_[ISO3]_[TOPIC]_[YYYY]_[SCALE].prj

Subfolder /03_scan_RC_MOS/[PROJECTION]

- Mosaic(s) of rectified and cropped map files in ecw format

  [EDITOR]_[ISO3]_[TOPIC]_[YYYY]_[SCALE].ecw, .ers, .eww, .tab

- Quicklook (1063×1063 pixels)

  [EDITOR]_[ISO3]_[TOPIC]_[YYYY]_[SCALE].png

- Projection file

Coordinate system: Geographic (Latitude/Longitude) / WGS84 / arc degrees unless otherwise specified in subfolder name and projection file.

  [EDITOR]_[ISO3]_[TOPIC]_[YYYY]_[SCALE].prj

Subfolder /shapefile

- Index shapefile of the rectified and cropped map files as well as the mosaic(s).

  [EDITOR]_[ISO3]_[TOPIC]_[YYYY]_[SCALE].shp

Subfolder /legend

- Legend(s) of the scanned map sheets

  [SPHAERA]_legend.jpg

Rainer Zaiss (IRD, Institut de recherche pour le développement),
Mauricio, Felice (GMR, Global Mapping Resources)

| Table 1 | | | | Geographic subdivision | | |

Continent	T*	Region	T*	Geounit	T*	ID
Africa	GN	Central Africa	GN	Angola	GN	**AGO**
				Cameroon	GN	**CMR**
				Central African Republic	GN	**CAF**
				Chad	GN	**TCD**
				Congo, Dem Republic of	GN	**COD**
				Congo, Republic of	GN	**COG**
				Equatorial Guinea	GN	**GNQ**
				Gabon	GN	**GAB**
				Sao Tome and Principe	GN	**STP**
		Eastern Africa	GN	Burundi	GN	**BDI**
				Comoros	GN	**COM**
				Djibouti	GN	**DJI**
				Eritrea	GN	**ERI**
				Ethiopia	GN	**ETH**
				Kenya	GN	**KEN**
				Madagascar	GN	**MDG**
				Malawi	GN	**MWI**
				Mauritius	GN	**MUS**
				Mayotte	GN	**MYT**
				Mozambique	GN	**MOZ**
				Puntland	**IRD**	**SOP**
				Reunion	GN	**REU**
				Rwanda	GN	**RWA**
				Seychelles	GN	**SYC**
				Somalia	GN	**SOX**
				Somaliland	**IRD**	**SOL**
		Eastern Africa	GN	**South Sudan**	**IRD**	**SDS**
				Tanzania	**IRD**	**TZY**
				Uganda	GN	**UGA**
				Zambia	GN	**ZMB**
				Zanzibar	**IRD**	**TZZ**
				Zimbabwe	GN	**ZWE**
		North Africa	GN	Algeria	GN	**DZA**
				Egypt	GN	**EGY**
				Libyan Arab Jamahiriya	GN	**LBY**
				Morocco	GN	**MAR**
				Sudan	GN	**SDN**
				Tunisia	GN	**TUN**
				Western Sahara	GN	**SAH**

Table 1   Geographic subdivision

Continent	T*	Region	T*	Geounit	T*	ID
Africa	GN	Southern Africa	GN	Botswana	GN	**BWA**
				Lesotho	GN	**LSO**
				Namibia	GN	**NAM**
				South Africa	GN	**ZAF**
				Swaziland	GN	**SWZ**
		Western Africa	GN	Benin	GN	**BEN**
				Burkina Faso	GN	**BFA**
				Cape Verde	GN	**CPV**
				Gambia	GN	**GMB**
				Ghana	GN	**GHA**
				Guinea	GN	**GIN**
				Guinea-Bissau	GN	**GNB**
				Ivory Coast	GN	**CIV**
				Liberia	GN	**LBR**
				Mali	GN	**MLI**
				Mauritania	GN	**MRT**
				Niger	GN	**NER**
				Nigeria	GN	**NGA**
				Saint Helena	GN	**SHN**
				Senegal	GN	**SEN**
				Sierra Leone	GN	**SLE**
				Togo	GN	**TGO**
Americas	**IRD**	Caribbean	GN	Anguilla	GN	**AIA**
				Antigua	**IRD**	**ACA**
				Aruba	GN	**ABW**
				Bahamas	GN	**BHS**
				Bajo Nuevo Bank (Petrel Is.)	**IRD**	**BJN**
				Barbados	GN	**BRB**
				Barbuda	**IRD**	**ACB**
				British Virgin Island	GN	**VGB**
				Caribbean Netherlands	**IRD**	**NLY**
				Cayman Island	GN	**CYM**
				Cuba	GN	**CUB**
				Curaçao	**IRD**	**CUW**
				Dominica	GN	**DMA**
				Dominican Republic	GN	**DOM**
				Grenada	GN	**GRD**
				Guadeloupe	GN	**GLP**
				Haiti	GN	**HTI**
				Jamaica	GN	**JAM**

| Table 1 | | | | Geographic subdivision | | |

Continent	T*	Region	T*	Geounit	T*	ID
Americas	**IRD**	Caribbean	GN	Martinique	GN	**MTQ**
				Montserrat	GN	**MSR**
				Navassa Island	**IRD**	**BQI**
				Puerto Rico	GN	**PRI**
				Saint Barthelemy	**IRD**	**BLM**
				Saint Kitts and Nevis	GN	**KNA**
				Saint Lucia	GN	**LCA**
				Saint Martin	**IRD**	**MAF**
				Saint Vincent/Grenadines	GN	**VCT**
				Serranilla Bank	**IRD**	**SER**
				Sint Maarten	**IRD**	**SXM**
				Trinidad and Tobago	GN	**TTO**
				Turks and Caicos Is	GN	**TCA**
				US Naval Base Guantanamo Bay	**IRD**	**USG**
				US Virgin Islands	GN	**VIR**
		Central America	GN	Belize	GN	**BLZ**
				Clipperton Island	**IRD**	**CLP**
				Costa Rica	GN	**CRI**
				El Salvador	GN	**SLV**
				Guatemala	GN	**GTM**
				Honduras	GN	**HND**
				Mexico	GN	**MEX**
				Nicaragua	GN	**NIC**
				Panama	GN	**PAN**
		North America	GN	Bermuda	GN	**BMU**
				Canada	GN	**CAN**
				Greenland	GN	**GRL**
				Midway Islands	GN	**MQI**
				Saint Pierre & Miquelon	GN	**SPM**
				United States of America	GN	**USA**
		South America	GN	Argentina	GN	**ARG**
				Bolivia	GN	**BOL**
				Brazil	GN	**BRA**
				Chile	GN	**CHL**
				Colombia	GN	**COL**
				Ecuador	GN	**ECU**
				Falkland Islands	GN	**FLK**
				French Guiana	GN	**GUF**
				Guyana	GN	**GUY**
				Paraguay	GN	**PRY**

Table 1
Geographic subdivision

Continent	T*	Region	T*	Geounit	T*	ID
Americas	**IRD**	South America	GN	Peru	GN	**PER**
				Suriname	GN	**SUR**
				Uruguay	GN	**URY**
				Venezuela	GN	**VEN**
Antarctica	GN	Antarctica	GN	Antarctica	GN	**ATA**
				Bouvet Island	GN	**BVT**
Asia	GN	**Central Asia**	**IRD**	**Baykonur Cosmodrome**	**IRD**	**KAB**
				Kazakhstan	GN	**KAZ**
				Kyrgyzstan	GN	**KGZ**
				Tajikistan	GN	**TJK**
				Turkmenistan	GN	**TKM**
				Uzbekistan	GN	**UZB**
		Eastern Asia	**IRD**	China, Mainland	GN	**CHN**
				China, Taiwan Prov of	GN	**TWN**
				Hong Kong S.A.R.	**IRD**	**HKG**
				Japan	GN	**JPN**
				Korea, Dem People's Rep	GN	**PRK**
				Korea, Republic of	GN	**KOR**
				Korean Demilitarized Zone (north)	**IRD**	**KNZ**
				Korean Demilitarized Zone (south)	**IRD**	**KNX**
				Macao S.A.R	**IRD**	**MAC**
				Mongolia	GN	**MNG**
				Paracel Islands	**IRD**	**PFA**
		South-Eastern Asia	**IRD**	Brunei Darussalam	GN	**BRN**
				Cambodia	GN	**KHM**
				Christmas Island	GN	**CXR**
				Cocos Islands	GN	**CCK**
				East Timor	GN	**TLS**
				Indonesia	GN	**IDN**
				Laos	GN	**LAO**
				Malaysia	GN	**MYS**
				Myanmar	GN	**MMR**
				Philippines	GN	**PHL**
				Scarborough Reef	**IRD**	**SCR**
				Singapore	GN	**SGP**
				Spratly Islands	**IRD**	**PGA**
				Thailand	GN	**THA**
				Viet Nam	GN	**VNM**
		South Asia	GN	Afghanistan	GN	**AFG**
				Bangladesh	GN	**BGD**

Continent	T*	Region	T*	Geounit	T*	ID
Asia	GN	South Asia	GN	Bhutan	GN	**BTN**
				India	GN	**IND**
				Iran, Islamic Rep of	GN	**IRN**
				Maldives	GN	**MDV**
				Nepal	GN	**NPL**
				Pakistan	GN	**PAK**
				Siachen Glacier	**IRD**	**KAY**
				Sri Lanka	GN	**LKA**
		Western Asia	**IRD**	**Ajaria**	**IRD**	**GEA**
				Akrotiri Sovereign Base Area	**IRD**	**WSB**
				Armenia	GN	**ARM**
				Azerbaijan, Republic of	GN	**AZE**
				Bahrain	GN	**BHR**
				Cyprus	GN	**CYP**
				Cyprus No Mans Area	**IRD**	**CNM**
				Dhekelia Sovereign Base Area	**IRD**	**ESB**
				Gaza Strip	GN	**GAZ**
				Georgia	GN	**GEG**
				Iraq	GN	**IRR**
				Iraqi Kurdistan	**IRD**	**IRK**
				Israel	GN	**ISR**
				Jordan	GN	**JOR**
				Kuwait	GN	**KWT**
				Lebanon	GN	**LBN**
				Northern Cyprus	**IRD**	**CYN**
				Oman	GN	**OMN**
				Qatar	GN	**QAT**
				Saudi Arabia	GN	**SAU**
				Syrian Arab Republic	GN	**SYX**
				Turkey	GN	**TUR**
				UNDOF	**IRD**	**SYU**
				United Arab Emirates	GN	**ARE**
				West Bank	GN	**WEB**
				Yemen	GN	**YEM**
Europe	GN	Eastern Europe	GN	Belarus	GN	**BLR**
				Bulgaria	GN	**BGR**
				Czech Republic	GN	**CZE**
				Hungary	GN	**HUN**
				Moldova, Republic of	GN	**MDA**
				Poland	GN	**POL**

Table 1   Geographic subdivision

Continent	T*	Region	T*	Geounit	T*	ID
Europe	GN	Eastern Europe	GN	Romania	GN	**ROU**
				Russian Federation	GN	**RUS**
				Slovakia	GN	**SVK**
				Ukraine	GN	**UKR**
		Northern Europe	**IRD**	**Aland**	**IRD**	**ALD**
				Denmark	GN	**DNK**
				England	**IRD**	**ENG**
				Estonia	GN	**EST**
				Faeroe Islands	GN	**FRO**
				Finland	GN	**FIN**
				Guernsey	**IRD**	**GGY**
				Iceland	GN	**ISL**
				Ireland	GN	**IRL**
				Isle of Man	GN	**IMN**
				Jan Mayen	**IRD**	**NJM**
				Jersey	**IRD**	**JEY**
				Latvia	GN	**LVA**
				Lithuania	GN	**LTU**
				Northern Ireland	**IRD**	**NIR**
				Norway	GN	**NOW**
				Scotland	**IRD**	**SCT**
				Svalbard Is	GN	**NSV**
				Sweden	GN	**SWE**
				Wales	**IRD**	**WLS**
		Southern Europe	**IRD**	Albania	GN	**ALB**
				Andorra	GN	**AND**
				Azores	**IRD**	**PAZ**
				Bosnia and Herzegovina	GN	**BHF**
				Brcko District	**IRD**	**BHB**
				Croatia	GN	**HRV**
				Gibraltar	GN	**GIB**
				Greece	GN	**GRC**
				Italy	GN	**ITA**
				Kosovo	**IRD**	**KOS**
				Macedonia	GN	**MKD**
				Madeira	**IRD**	**PMD**
				Malta	GN	**MLT**
				Montenegro	**IRD**	**MNE**
				Portugal	GN	**PRX**
				Republic Srpska	**IRD**	**BIS**

Continent	T*	Region	T*	Geounit	T*	ID
Europe	GN	Southern Europe	IRD	San Marino	GN	**SMR**
				Serbia	**IRD**	**SRS**
				Slovenia	GN	**SVN**
				Spain	GN	**ESP**
				Vatican	**IRD**	**VAT**
				Vojvodina	**IRD**	**SRV**
		Western Europe	**GN**	**Austria**	GN	**AUT**
				Brussels Capital Region	**IRD**	**BCR**
				Flemish Region	**IRD**	**BFR**
				France	GN	**FXX**
				Germany	GN	**DEU**
				Liechtensten	GN	**LIE**
				Luxembourg	GN	**LUX**
				Monaco	GN	**MCO**
				Netherlands	GN	**NLX**
				Switzerland	GN	**CHE**
				Walloon Region	**IRD**	**BWR**
Oceania	**IRD**	**Australia and New Zealand**	**IRD**	**Ashmore and Cartier Islands**	**IRD**	**ATC**
				Australia	GN	**AUS**
				Coral Sea Islands	**IRD**	**CSI**
				New Zealand	GN	**NZL**
				Norfolk Island	GN	**NFK**
		Melanesia	**IRD**	**Bougainville**	**IRD**	**PNB**
				Fiji Islands	GN	**FJI**
				NewCaledonia	GN	**NCL**
				Papua New Guinea	GN	**PNX**
				Solomon Islands	GN	**SLB**
				Vanuatu	GN	**VUT**
		Micronesia	**IRD**	**Baker Island**	**IRD**	**FQI**
				Guam	GN	**GUM**
				Howland Island	**IRD**	**HQI**
				Jarvis Island	**IRD**	**DQI**
				Johnston Atoll	**IRD**	**JQI**
				Kingman Reef	**IRD**	**KQI**
				Kiribati	GN	**KIR**
				Marshall Island	GN	**MHL**
				Micronesia,Fed States of	GN	**FSM**
				Nauru	GN	**NRU**
				Northern Mariana Is	GN	**MNP**
				Palau	**IRD**	**PLW**

Table 1   Geographic subdivision

Continent	T*	Region	T*	Geounit	T*	ID
Oceania	**IRD**	**Micronesia**	**IRD**	**Palmyra Atoll**	**IRD**	**LQI**
				Wake Atoll	**IRD**	**WQI**
		Polynesia	**IRD**	American Samoa	GN	**ASM**
				Cook Islands	GN	**COK**
				French Polynesia	GN	**PYF**
				Niue	GN	**NIU**
				Pitcairn Islands	GN	**PCN**
				Samoa	GN	**WSM**
				Tokelau	GN	**TKL**
				Tonga	GN	**TON**
				Tuvalu	GN	**TUV**
				Wallis and Futuna Is	GN	**WLF**
Seven seas (open ocean)	**IRD**	**Seven seas (open ocean)**	**IRD**	British Indian Ocean Ter	GN	**IOT**
				French South Terr	GN	**ATF**
				Heard and McDonald Is	GN	**HMD**
				SouthGeorgia/Sandwich Is	GN	**SGS**

* **GN:** Geonetwork regions thesaurus 2.10.2, **IRD**: Natural Earth version 3.1.0, Admin 0 – Details, Map units, http://www.naturalearthdata.com/.

Table 2 | ISO 19115 TOPIC CATEGORIES and INSPIRE SPATIAL DATA THEMES

ISO TOPIC CATEGORIES			INSPIRE THEMES	
Name	**Description**	**Examples**	**Name**	**Description**
biota	flora and/or fauna in natural environment	wildlife, vegetation, biological sciences, ecology, wilderness, sea life, wetlands, habitat, biological resources	**Bio-geographical regions**	Areas of relatively homogeneous ecological conditions with common characteristics.
			Habitats and biotopes	Geographical areas characterised by specific ecological conditions, processes, structure, and (life support) functions that physically support the organisms that live there. Includes terrestrial and aquatic areas distinguished by geographical, abiotic and biotic features, whether entirely natural or semi-natural.
			Species distribution	Geographical distribution of occurrence of animal and plant species aggregated by grid, region, administrative unit or other analytical unit.
boundaries	legal land descriptions	political and administrative boundaries, governmental units, marine boundaries, voting districts, school districts, international boundaries	**Administrative units**	Units of administration, dividing areas where Member States have and/or exercise jurisdictional rights, for local, regional and national governance, separated by administrative boundaries.
			Statistical units	Units for dissemination or use of statistical information.
climatology	processes and phenomena of the atmosphere	cloud cover, weather, climate, atmospheric conditions, climate change, precipitation	**Atmospheric conditions**	Physical conditions in the atmosphere. Includes spatial data based on measurements, on models or on a combination thereof and includes measurement locations.
			Meteorological geographical features	Weather conditions and their measurements; precipitation, temperature, evapotranspiration, wind speed and direction.
economy	economic activities, conditions, and employment	production, labor, revenue, business, commerce, industry, tourism and ecotourism, forestry, fisheries, commercial or subsistence hunting, exploration and exploitation of resources such as minerals, oil and gas	**Energy resources**	Energy resources including hydrocarbons, hydropower, bio-energy, solar, wind, etc., where relevant including depth/height information on the extent of the resource.
			Mineral resources	Mineral resources including metal ores, industrial minerals, etc., where relevant including depth/height information on the extent of the resource.
elevation	height above or below seal level	altitude, bathymetry, digital elevation models, slope, derived products, DEMs, TINs	**Elevation**	Digital elevation models for land, ice and ocean surface. Includes terrestrial elevation, bathymetry and shoreline.

Table 2 — ISO 19115 TOPIC CATEGORIES and INSPIRE SPATIAL DATA THEMES

ISO TOPIC CATEGORIES			INSPIRE THEMES	
Name	**Description**	**Examples**	**Name**	**Description**
environment	environmental resources, protection and conservation	environmental pollution, waste storage and treatment, environmental impact assessment, monitoring environmental risk, nature reserves, landscape, water quality, air quality, environmental modeling	**Protected sites**	Area designated or managed within a framework of international, Community and Member States'legislation to achieve specific conservation objectives.
farming	rearing of animals and/or cultivation of plants	agriculture, irrigation, aquaculture, plantations, herding, pests and diseases affecting crops and livestock	**Agricultural and aquaculture facilities**	Farming equipment and production facilities (including irrigation systems, greenhouses and stables).
geoscientific information	information pertaining to earth sciences	geophysical features and processes, geology, minerals, sciences dealing with the composition, structure and origin of the earth's rocks, risks of earthquakes, volcanic activity, landslides, gravity information, soils, permafrost, hydrogeology, groundwater, erosion	**Geology**	Geology characterised according to composition and structure. Includes bedrock, aquifers and geomorphology.
			Natural risk zones	Vulnerable areas characterised according to natural hazards (all atmospheric, hydrologic, seismic, volcanic and wildfire phenomena that, because of their location, severity, and frequency, have the potential to seriously affect society), e.g. floods, landslides and subsidence, avalanches, forest fires, earthquakes, volcanic eruptions.
			Soil	Soils and subsoil characterised according to depth, texture, structure and content of particles and organic material, stoniness, erosion, where appropriate mean slope and anticipated water storage capacity.
health	health, health services, human ecology, and safety	disease and illness, factors affecting health, hygiene, substance abuse, mental and physical health, health services, health care providers, public health	**Human health and safety**	Geographical distribution of dominance of pathologies (allergies, cancers, respiratory diseases, etc.), information indicating the effect on health (biomarkers, decline of fertility, epidemics) or well-being of humans (fatigue, stress, etc.) linked directly (air pollution, chemicals, depletion of the ozone layer, noise, etc.) or indirectly (food, genetically modified organisms, etc.) to the quality of the environment.
imagery base maps earth cover	base maps	land/earth cover, topographic maps, imagery, unclassified images, annotations, digital ortho imagery	**Land cover**	Physical and biological cover of the earth's surface including artificial surfaces, agricultural areas, forests, (semi-)natural areas, wetlands, water bodies.
			Orthoimagery	Geo-referenced image data of the Earth's surface, from either satellite or airborne sensors.

Table 2			ISO 19115 TOPIC CATEGORIES and INSPIRE SPATIAL DATA THEMES	
ISO TOPIC CATEGORIES			**INSPIRE THEMES**	
Name	**Description**	**Examples**	**Name**	**Description**
inland waters	inland water features, drainage systems and characteristics	rivers and glaciers, slat lakes, water utilization plans, dams, currents, floods and flood hazards, water quality, hydrographic charts, watersheds, wetlands, hydrography	**Hydrography**	Hydrographical elements, including marine areas and all other water bodies and items related to them, including river basins and sub basins.
intelligence military	military bases, structures, activities	barracks, training grounds, military transportation, information collection	**-**	-
location	positional information and services	addresses, geodetic networks, geodetic control points, postal zones and services, place names, geographic names	**Addresses**	Location of properties based on address identifiers, usually by road name, house number, postal code.
			Geographical names	Names of areas, regions, localities, cities, suburbs, towns or settlements, or any geographical or topographical feature of public or historical interest.
-	-	-	**Coordinate reference systems**	Systems for uniquely referencing spatial information in space as a set of coordinates (x,y,z) and/or latitude and longitude and height, based on a geodetic horizontal and vertical datum.
-	-	-	**Geographical grid systems**	Harmonised multi-resolution grid with a common point of origin and standardised location and size of grid cells.
oceans	features and characteristics of salt water bodies (excluding inland waters)	tides, tidal waves, coastal information, reefs, maritime, outer continental shelf submerged lands, shoreline	**Oceanographic geographical features**	Physical conditions of oceans (currents, salinity, wave heights, etc.).
			Sea regions	Physical conditions of seas and saline water bodies divided into regions and sub-regions with common characteristics.
planning cadastre	information used for appropriate actions for future use of the land	land use maps, zoning maps, cadastral surveys, land ownership, parcels, easements, tax maps, federal land ownership status, public land conveyance records	**Area management/restriction/regulation zones and reporting units**	Areas managed, regulated or used for reporting at international, European, national, regional and local levels. Includes dumping sites, restricted areas around drinking water sources, nitrate-vulnerable zones, regulated fairways at sea or large inland waters, areas for the dumping of waste, noise restriction zones, prospecting and mining permit areas, river basin districts, relevant reporting units and coastal zone management areas.
			Cadastral parcels	A single area of land or more particularly a volume of space, under homogeneous real property rights and unique ownership.

Table 2 — ISO 19115 TOPIC CATEGORIES and INSPIRE SPATIAL DATA THEMES

ISO TOPIC CATEGORIES			INSPIRE THEMES	
Name	**Description**	**Examples**	**Name**	**Description**
			Land use	Territory characterized according to its current and future planned functional dimension or socio-economic purpose (e.g. residential, industrial, commercial, agricultural, forestry, recreational).
society	characteristics of society and culture	settlements, housing, anthropology, archaeology, education, traditional beliefs, manners and customs, demographic data, tourism, recreational areas and activities, parks, recreational trails, historical sites, cultural resources, social impact assessments, crime and justice, law enforcement, census information, immigration, ethnicity	**Population distribution -- demography**	Geographical distribution of people, including population characteristics and activity levels, aggregated by grid, region, administrative unit or other analytical unit.
structure	man-made construction	buildings, museums, churches, factories, housing, monuments, shops, towers, building footprints, architectural and structural plans	**Buildings**	Geographical location of buildings.
			Environmental monitoring facilities	Location and operation of environmental monitoring facilities includes observation and measurement of emissions, of the state of environmental media and of other ecosystem parameters (biodiversity, ecological conditions of vegetation, etc.) by or on behalf of public authorities.
			Production and industrial facilities	Industrial production sites, including installations covered by Council Directive 96/61/EC of 24 September 1996 concerning integrated pollution prevention and control (1) and water abstraction facilities, mining, storage sites.
transportation	means and aids for conveying persons and/or goods	roads, airports/airstrips, shipping routes, tunnels nautical charts, vehicle or vessel location, aeronautical charts, railways	**Transport networks**	Road, rail, air and water transport networks and related infrastructure. Includes links between different networks.
utilities communication	energy, water and waste systems and communications infrastructure and services	hydroelectricity, geothermal, solar and nuclear sources of energy, water purification and distribution, sewage collection and disposal, electricity and gas distribution, data communication, telecommunication, radio, communication networks	**Utility and governmental services**	Includes utility facilities such as sewage, waste management, energy supply and water supply, administrative and social governmental services such as public administrations, civil protection sites, schools and hospitals.

ID	IRD level 1	GEMET	IRD level 2	GEMET	INSPIRE Theme	ISO topic category
AGRO	agronomy	Full match	-	-	*land use*	farming planning cadastre
AGRT	agronomy	Full match	agricultural land	Full match	*soil*	farming
AGUN	agronomy	Full match	agronomical units	-	*land use*	farming planning cadastre
AGCU	agronomy	Full match	crop production	Full match	*land use*	farming planning cadastre
AGCE	agronomy	Full match	crops and livestock	-	*land use*	farming planning cadastre
AGAC	agronomy	Full match	cultural aptitudes	-	*soil*	farming geoscientific information
AGPA	agronomy	Full match	cultural aptitudes, actual productivity	-	*soil*	farming geoscientific information
AGPT	agronomy	Full match	cultural aptitudes, potential productivity	-	*soil*	farming geoscientific information
AGEX	agronomy	Full match	farm	Full match	*agricultural and aquaculture facilities*	farming
AGPE	agronomy	Full match	fishery	Full match	*land use*	farming planning cadastre
AGFO	agronomy	Full match	forest	Full match	*land use*	farming planning cadastre
AGFN	agronomy	Full match	land access	Full match	*land use*	planning cadastre
AGAS	agronomy	Full match	landscape	Full match	*land use*	farming planning cadastre
AGEL	agronomy	Full match	livestock	Full match	*land use*	farming planning cadastre
AGCG	agronomy	Full match	physical environment	Full match	*agricultural and aquaculture facilities*	farming
ARCH	archaeology	Full match	-	-	*population distribution -- demography*	society
AAAA	atlas	Full match	map collection	-	*population distribution -- demography*	society

Table 3

Relationships between IRD keywords, ISO 19115 topic categories, INSPIRE spatial data themes, and the GEMET thesaurus

ID	IRD level 1	GEMET	IRD level 2	GEMET	INSPIRE Theme	ISO topic category
BAME	bathymetry	oceanography	-	-	*elevation*	elevation oceans
BGEO	biogeography	Full match	-	-	*bio-geographical regions*	biota
BGBM	biogeography	Full match	biomass	Full match	*bio-geographical regions*	biota
BGEP	biogeography	Full match	evapotranspiration	Full match	*meteorological geographical features*	climatology
BGFA	biogeography	Full match	fauna	Full match	*species distribution*	biota
BGFI	biogeography	Full match	flora (biology)	Full match	*species distribution*	biota
CLIM	climatology	Full match	-	-	*meteorological geographical features*	climatology
CLBI	climatology	Full match	bioclimatology	Full match	*meteorological geographical features*	climatology
CLGE	climatology	Full match	frost	Full match	*meteorological geographical features*	climatology
CLPR	climatology	Full match	precipitation	-	*meteorological geographical features*	climatology
CLTE	climatology	Full match	temperature	Full match	*meteorological geographical features*	climatology
ECON	economy	Full match	-	-	*population distribution -- demography*	economy society
ECAR	economy	Full match	craft	Full match	*population distribution -- demography*	economy society
ECZO	economy	Full match	economic zoning	Full match	*population distribution -- demography*	economy society
ECPR	economy	Full match	primary sector	Full match	*population distribution -- demography*	economy society
ECSC	economy	Full match	secondary sector	Full match	*population distribution -- demography*	economy society
ECST	economy	Full match	tertiary sector	Full match	*population distribution -- demography*	economy society
ENTO	entomology	insect	-	-	*species distribution*	biota
ENAN	entomology	insect	anopheles	-	*species distribution*	biota

ID	IRD level 1	GEMET	IRD level 2	GEMET	INSPIRE Theme	ISO topic category
ENGL	entomology	insect	glossina	-	*species distribution*	biota
EVPH	environment	Full match	physical environment	Full match	*geology*	geoscientific information
ETHN	ethnology	Full match	-	-	*population distribution -- demography*	society
ETBO	ethnology	Full match	ethnobotanics	-	*population distribution -- demography*	society
GEOL	geology	Full match	-	-	*geology*	geoscientific information
GEHY	geology	Full match	hydrogeology	Full match	*geology*	geoscientific information
GEST	geology	Full match	structural geology	-	*geology*	geoscientific information
GMOR	geomorphology	Full match	-	-	*geology*	geoscientific information
GPHY	geophysics	Full match	-	-	*geology*	geoscientific information
GPGR	geophysics	Full match	gravimetry	-	*geology*	geoscientific information
GPIS	geophysics	Full match	isostasy	-	*geology*	geoscientific information
GPMA	geophysics	Full match	magnetism	Full match	*geology*	geoscientific information
HIST	history	Full match	-	-	*population distribution -- demography*	society
SANT	human health	Full match	-	-	*population distribution -- demography*	society
POPU	human population	Full match	-	-	*population distribution -- demography*	society
PODM	human population	Full match	demography	Full match	*population distribution -- demography*	society
POED	human population	Full match	education	Full match	*population distribution -- demography*	society
POET	human population	Full match	ethnic groups	-	*population distribution -- demography*	society
POMI	human population	Full match	human migration	Full match	*population distribution -- demography*	society
POPO	human population	Full match	politics	Full match	*population distribution -- demography*	society
PODE	human population	Full match	population density	Full match	*population distribution -- demography*	society
PODI	human population	Full match	population distribution	Full match	*population distribution -- demography*	society
PORE	human population	Full match	religion	Full match	*population distribution -- demography*	society
POPE	human population	Full match	settlements	-	*population distribution -- demography*	society

ID	IRD level 1	GEMET	IRD level 2	GEMET	INSPIRE Theme	ISO topic category
POSE	human population	Full match	socioeconomics	Full match	*population distribution -- demography*	society
POLO	human population	Full match	spatial distribution	Full match	*population distribution -- demography*	society
POEL	human population	Full match	transhumance	Full match	*population distribution -- demography*	society
HYGR	hydrography	Full match	-	-	*hydrography*	inland waters
HLOG	hydrology	Full match	-	-	*hydrography*	geoscientific information inland waters
ILLU	illustration	map	-	-	*population distribution -- demography*	society
ILSI	illustration	map	situation map	-	*population distribution -- demography*	society
CACA	index map	map chart	-	-	*geographical names*	location
CAAP	index map	aerial photography	aerial photography	Full match	*geographical names*	geoscientific information location
CAAG	index map	agronomy	agronomy	Full match	*geographical names*	farming location
CAGE	index map	geology	geology	Full match	*geographical names*	geoscientific information location
CAGM	index map	geomorphology	geomorphology	Full match	*geographical names*	geoscientific information location
CAGP	index map	geophysics	geophysics	Full match	*geographical names*	geoscientific information location
CAHL	index map	hydrology	hydrology	Full match	*geographical names*	geoscientific information inland waters location
CAPE	index map	soil map	soil science	Full match	*geographical names*	geoscientific information location
CAAS	index map	survey	survey	Full match	*geographical names*	location society

ID	IRD level 1	GEMET	IRD level 2	GEMET	INSPIRE Theme	ISO topic category
CATO	index map	map chart	topographic maps	-	*geographical names*	elevation imagery base maps earth cover location
CAVE	index map	vegetation	vegetation	Full match	*geographical names*	biota location
INFR	infrastructure	Full match	-	-	*population distribution -- demography*	society
INAD	infrastructure	Full match	administration	Full match	*population distribution -- demography*	society
INED	infrastructure	Full match	education	Full match	*population distribution -- demography*	society
INPE	infrastructure	Full match	fishing	Full match	*population distribution -- demography*	society
INSA	infrastructure	Full match	health care	Full match	*population distribution -- demography*	society
INHA	infrastructure	Full match	housing	Full match	*population distribution -- demography*	society
INSC	infrastructure	Full match	industrial equipment	Full match	*population distribution -- demography*	society
INSP	infrastructure	Full match	primary sector	Full match	*population distribution -- demography*	society
INRE	infrastructure	Full match	religion	Full match	*population distribution -- demography*	society
INSO	infrastructure	Full match	sport	Full match	*population distribution -- demography*	society
INST	infrastructure	Full match	tertiary sector	Full match	*population distribution -- demography*	society
INTO	infrastructure	Full match	tourism	Full match	*population distribution -- demography*	society
INTR	infrastructure	Full match	traffic infrastructure	Full match	*population distribution -- demography*	society
INWA	infrastructure	Full match	water supply	Full match	*population distribution -- demography*	society
USOL	land use	Full match	-	-	*land use*	planning cadastre
USDE	land use	Full match	degradation of the environment	Full match	*soil*	geoscientific information
USDS	land use	Full match	desertification	Full match	*natural risk zones*	geoscientific information
USRE	land use	Full match	dry residues	-	*land use*	planning cadastre
USER	land use	Full match	erosion	Full match	*soil*	geoscientific information
USSA	land use	Full match	salination	Full match	*soil*	geoscientific information

ID	IRD level 1	GEMET	IRD level 2	GEMET	INSPIRE Theme	ISO topic category
USZO	land use	Full match	zoning	Full match	*land use*	planning cadastre
LING	linguistics	social science	-	-	*population distribution -- demography*	society
CSVI	map collection	atlas	city	Full match	*population distribution -- demography*	society
CSPA	map collection	atlas	country	-	*population distribution -- demography*	society
CSRE	map collection	atlas	region	Full match	*population distribution -- demography*	society
CSLO	map collection	atlas	village	Full match	*population distribution -- demography*	society
MARI	marine environment	Full match	-	-	*oceanographic geographical features*	oceans
REEN	natural resource	Full match	energy resource	Full match	*energy resources*	economy
REMI	natural resource	Full match	mineral resource	Full match	*mineral resources*	economy
TNYM	place names	map chart	-	-	*geographical names*	location
PGPG	political geography	Full match	-	-	*population distribution -- demography*	society
ESPA	region	Full match	development plan	Full match	*population distribution -- demography*	society
ESGM	region	Full match	general map	-	*population distribution -- demography*	society
ESOR	region	Full match	organisation	-	*population distribution -- demography*	society
ESIM	region	Full match	remote sensing	Full match	*population distribution -- demography*	society
ESUR	region	Full match	urban area	Full match	*population distribution -- demography*	society
RESU	resource	Full match	-	-	*energy resources*	economy
SEDI	sedimentology	Full match	-	-	*geology*	geoscientific information
SEPC	sedimentology	Full match	continental shelf	Full match	*geology*	geoscientific information
PEDO	soil science	soil map	-	-	*soil*	geoscientific information
PECE	soil science	soil map	edaphic constraints	-	*soil*	geoscientific information
PEFA	soil science	soil map	factorial pedology	-	*soil*	geoscientific information
PEMP	soil science	soil map	soil geomorphology	-	*soil*	geoscientific information
ADMI	sub-national boundary	Full match	administrative boundary	Full match	*administrative units*	boundaries

ID	IRD level 1	GEMET	IRD level 2	GEMET	INSPIRE Theme	ISO topic category
ADCA	sub-national boundary	Full match	land register	Full match	*cadastral parcels*	planning cadastre
TOPO	topography	relief (land)	-	-	*elevation*	elevation imagery base maps earth cover
TOPC	topography	relief (land)	continental shelf	Full match	*elevation*	elevation
TOOR	topography	relief (land)	orography	Full match	*elevation*	elevation
TOOH	topography	relief (land)	orohydrographie	-	*elevation*	elevation
TORE	topography	relief (land)	relief (land)	Full match	*elevation*	elevation
TOPE	topography	relief (land)	slope	Full match	*elevation*	elevation
COME	trade (economic)	Full match	-	-	*population distribution -- demography*	economy society
COPA	trade (economic)	Full match	agricultural product	Full match	*population distribution -- demography*	economy society
UROR	urban area	Full match	urban structure	Full match	*population distribution -- demography*	society
VEGE	vegetation	Full match	-	-	*bio-geographical regions*	biota
VEPG	vegetation	Full match	phytogeography	-	*bio-geographical regions*	biota
VEFO	vegetation	Full match	vegetation type	Full match	*bio-geographical regions*	biota