

Geocoding and Geospatial Standards | Spatial Analysis | Dissemination of Census Results in Africa



United Nations
Economic Commission for Africa

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ECA (Geospatial Information Management Section)



UN-GGIM: AFRICA
UNITED NATIONS INITIATIVE ON
GLOBAL GEOSPATIAL
INFORMATION MANAGEMENT

ISO/IEC JTC 1/SC 32

Data management and interchange



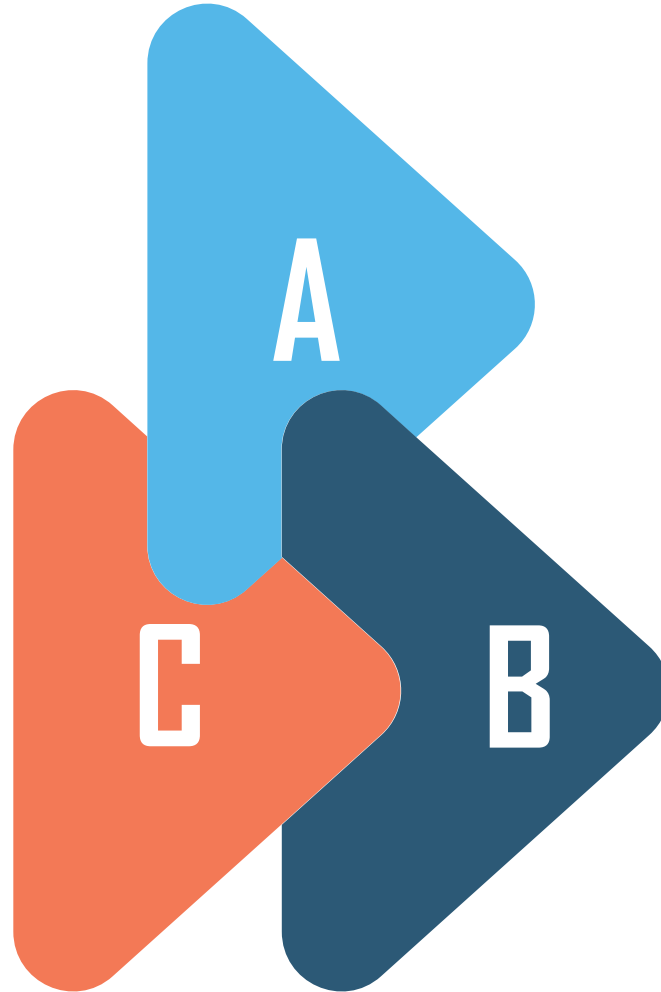
Identify

- ❑ Standards for data management within and among local and distributed information systems environments.
- ❑ SC 32 provides enabling technologies to promote harmonization of data management facilities across sector-specific areas.



Improve

- ❑ Reference models and frameworks for the coordination of existing and emerging standards; definition of data domains, data types, and data structures, and their associated semantics; languages, services, and protocols for persistent storage, concurrent access, concurrent update, and interchange of data



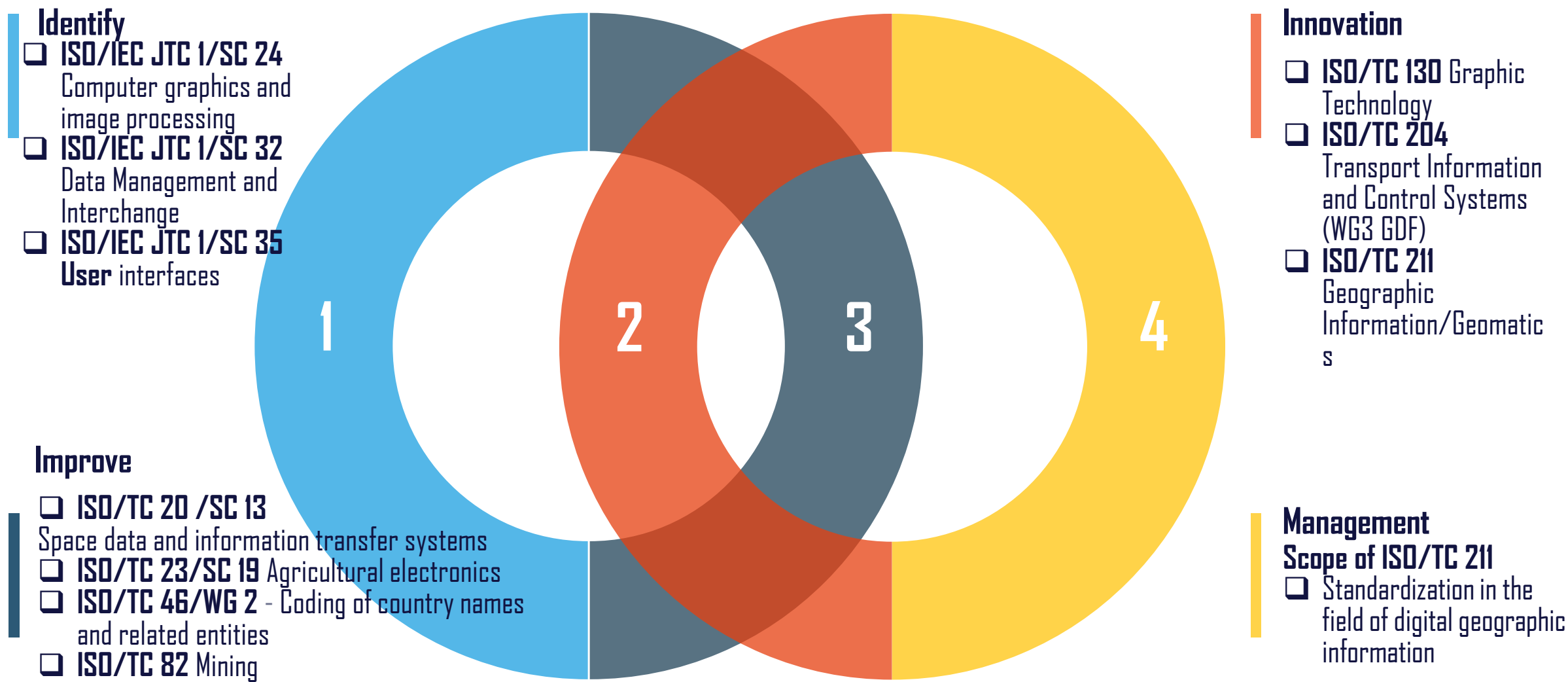
Management

- ❑ Methods, languages, services, and protocols to structure, organize, and register metadata and other information resources associated with sharing and interoperability, including electronic commerce.

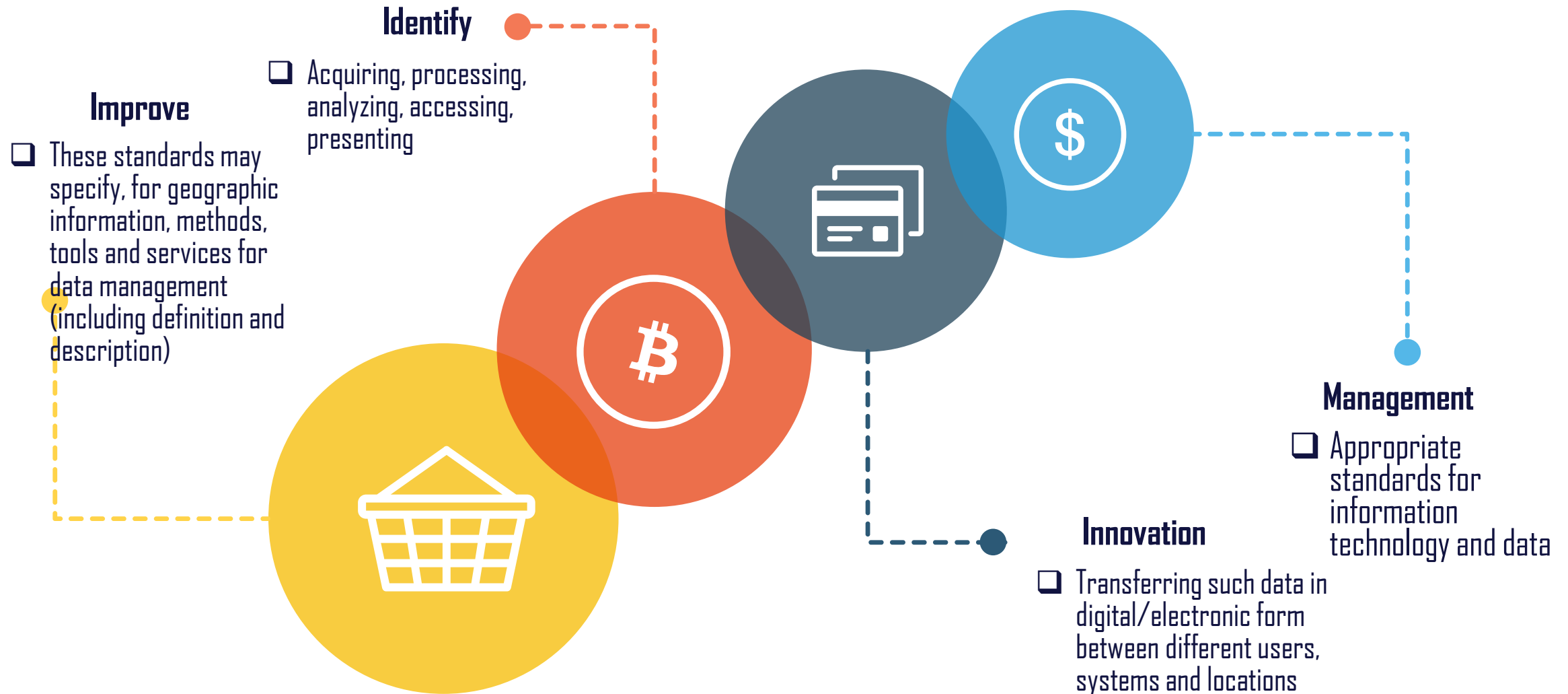
Technical Committee 211

- ❑ ISO 19103 - Conceptual schema language
- ❑ ISO 19106 - Profiles
- ❑ ISO 19107 - Spatial schema
- ❑ ISO 19108 - Temporal schema
- ❑ ISO 19109 - Rules for application schema
- ❑ ISO 19110 - Feature cataloguing methodology
- ❑ ISO 19111 - Spatial referencing by coordinates
- ❑ ISO 19113 - Quality principles
- ❑ ISO 19114 - Quality evaluation procedures
- ❑ ISO 19115 - Metadata
- ❑ ISO 19118 – Encoding
- ❑ ISO 19119 - Services
- ❑ ISO 19123 - Schema for coverage geometry and functions
- ❑ ISO 19125 - Simple feature access – Part 1-3
- ❑ ISO 19126 - Profile - FACC Data Dictionary
- ❑ ISO 19127 - Geodetic codes and parameters
- ❑ ISO 19128 - Web Map Server Interface
- ❑ ISO 19131 - Data product specification
- ❑ ISO 19132 - Location based services possible standards
- ❑ ISO 19133 - Location based services tracking and navigation
- ❑ ISO 19136 - Geographic mark-up language
- ❑ ISO 19138 - Data quality measures
- ❑ ISO 19139 - Metadata Implementation Specification
- ❑ ISO 19140 - TS to harmonize stds.

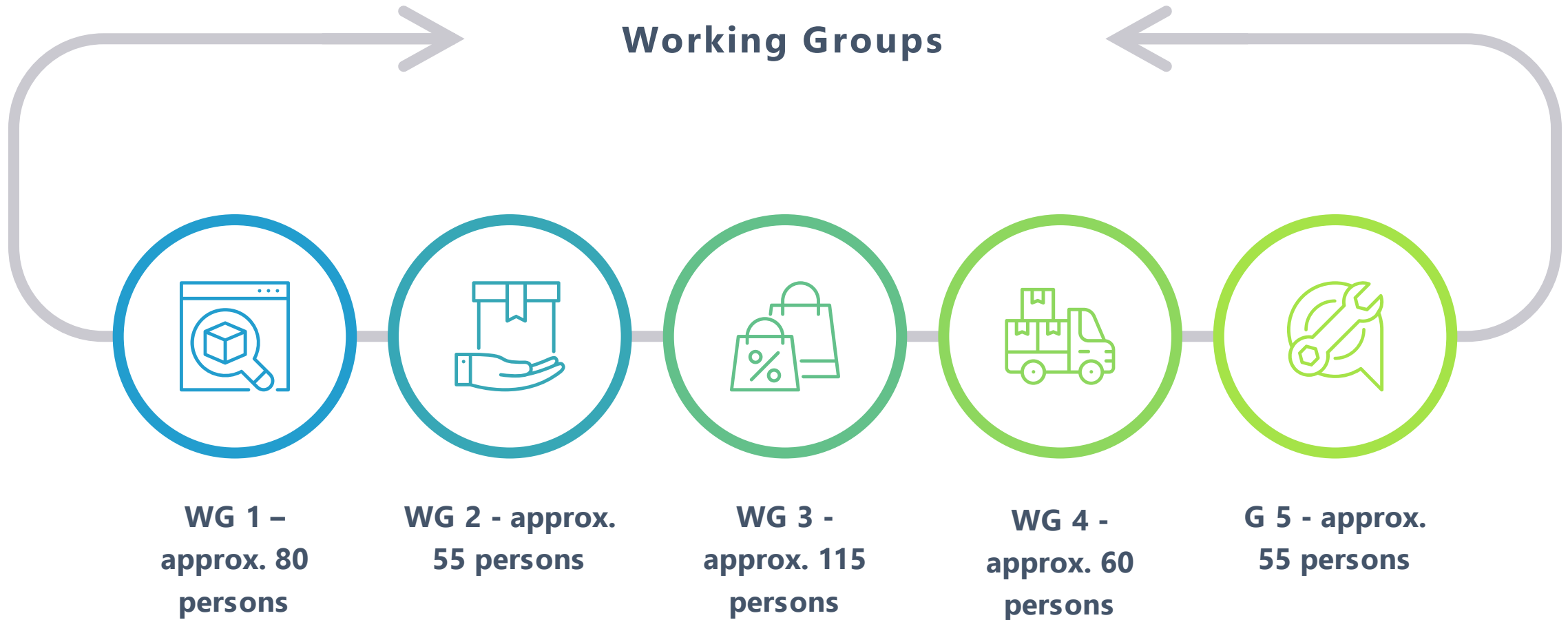
ISO Committees and the Geographic Community



ISO Committees and the Geographic Community



O/TC 211 Statistics More than 500 persons involved since start



Other projects: 90 persons 400 have attended one or more plenaries 16 plenary meetings have been convened in 13 different countries NB! Figures are approximate and vary over time

The Table Joining Service (TJS)

Open Geospatial Consortium

OGC standard that defines how to join attribute data to its associated geographic framework, or framework data.

Attribute data

Data that can be mapped, but is not directly attached to and bundled with geographic coordinates

Framework data

Data that describes the positioning on the surface of the earth of a set of geographic features such as countries. Framework data must include a framework key field, an identifier that allows attribute data to be attached to an individual geographic feature.

LINKING GEOGRAPHY AND STATISTICS



TJS web services

here are three primary operations that are streamlined through TJS, and which can become simple, fast, and totally seamless for an end-user

TJS

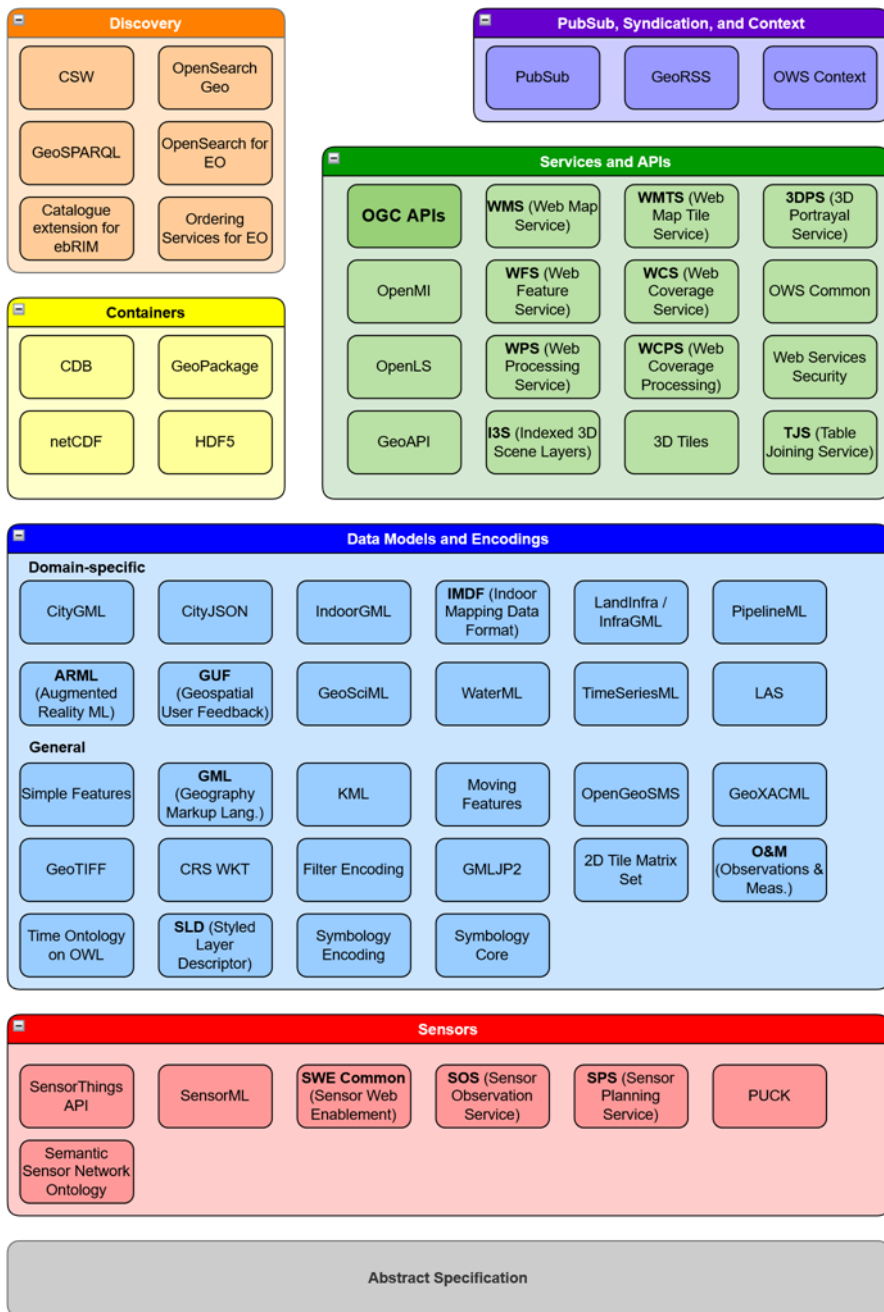
TJS offers a simple web-based method of finding, accessing, and using attribute data from multiple sources dynamically, in order to populate databases, perform analyses, and/or make maps.

The need for TJS

Almost all corporate databases contain some kind of geographic identifier, regardless of whether or not the database is housed in a computing environment that supports GIS. That is, the data contain geographically related information, but do not include their spatial description.

Advantages of TJS

The main advantage of TJS is interoperability. It allows organizations to house their corporate data on systems that are optimized for the management of that data, and yet allow themselves and others to take advantage of Geographic Information System (GIS) technology to examine and analyze that data.



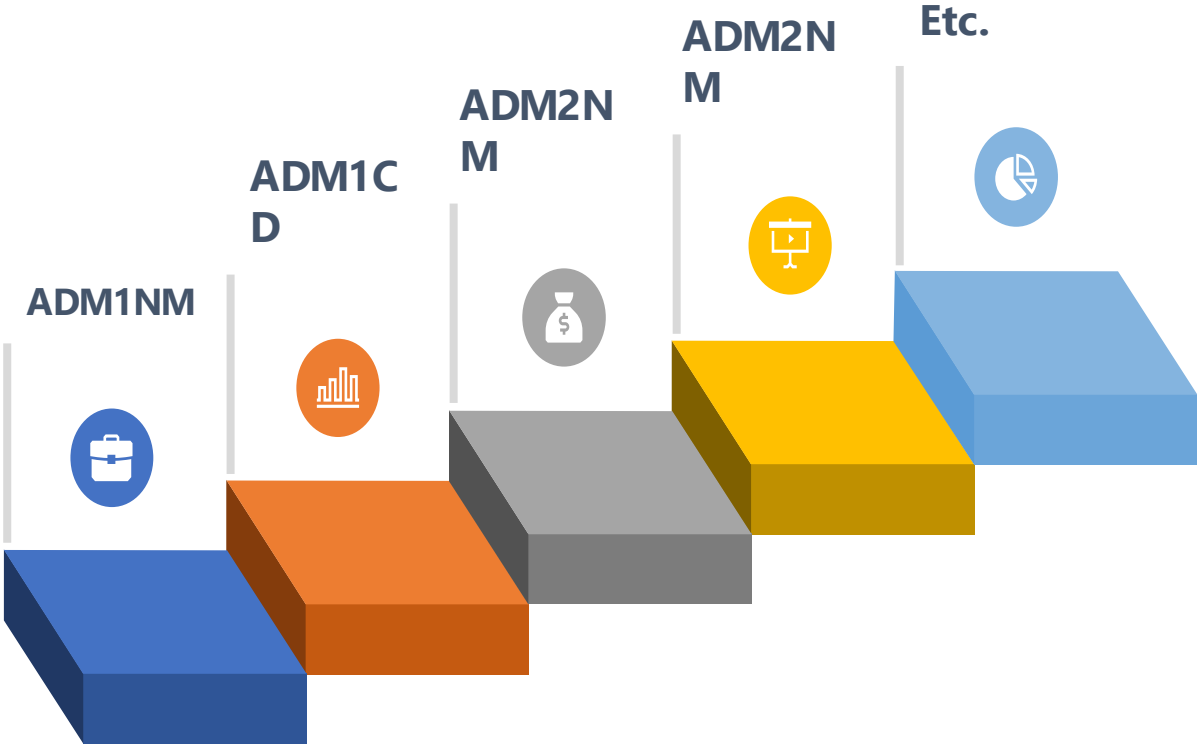
First and second administrative levels below the national level

Metadata

Country	Cameroon
Administrative levels	First and second administrative levels below the national level
Last update	2021-02-22
Temporal validity (Admin1)	1990-01-01 to last update
Temporal validity (Admin2)	2000-01-01 to last update
Source of the administrative unit names and historic changes	Institut National de Cartographie
Source of the codes	SALB programme, United Nations 2021
Historic changes comments (Admin1)	The temporal validity of the historic changes for the 1st subnational level starts on the 1 January 1990. The change of administrative unit name from "Province" to "Region" is based on Decree No. 2008/376 of 12 November 2008 (http://bibliotheque.pssfp.net/index.php/textes-et-lois/decrets/420-decret-n-2008-376-du-12-novembre-2008-portant-organisation-de-la-republique-du-cameroun/file).
Historic changes comments (Admin2)	The temporal validity of the historic changes for the 2nd subnational level starts on the 1 January 2000.

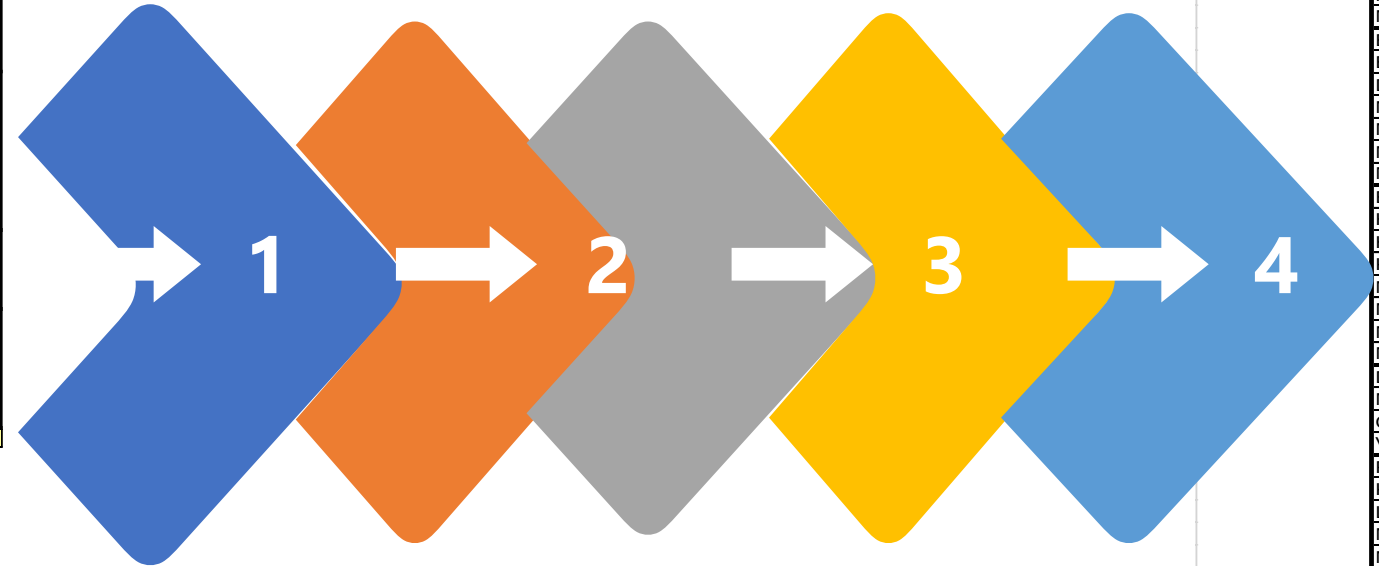
Data catalog

ADM1NM	Administrative unit level 1 name in Roman characters
ADM1CD	Administrative unit level 1 code
ADM2NM	Administrative unit level 2 name in Roman characters
ADM2CD	Administrative unit level 2 code



2000-01-01 to last update			
ADM1NM	ADM1CD		ADM2CD
Adamaoua	CMR001	Djerem	CMR001001
Adamaoua	CMR001	Faro-et-Déou	CMR001002
Adamaoua	CMR001	Mayo-Banyo	CMR001003
Adamaoua	CMR001	Mbéré	CMR001004
Adamaoua	CMR001	Vina	CMR001005
Centre	CMR002	Haute-Sanaga	CMR002001
Centre	CMR002	Lekié	CMR002002
Centre	CMR002	Mbam-et-Inoubou	CMR002003
Centre	CMR002	Mbam-et-Kim	CMR002004
Centre	CMR002	Mefou-et-Afamba	CMR002005
Centre	CMR002	Mefou-et-Akono	CMR002006
Centre	CMR002	Mfoundi	CMR002007
Centre	CMR002	Nyong-et-Kéllé	CMR002008
Centre	CMR002	Nyong-et-Mfoumou	CMR002009
Centre	CMR002	Nyong-et-Soo	CMR002010
Est	CMR003	Boumba-et-Ngoko	CMR003001
Est	CMR003	Haut-Nyong	CMR003002
Est	CMR003	Kadei	CMR003003
Est	CMR003	Lom-et-Djerem	CMR003004
Extrême-Nord	CMR004	Diamaré	CMR004001
Extrême-Nord	CMR004	Logone-et-Chari	CMR004002
Extrême-Nord	CMR004	Mayo-Danay	CMR004003
Extrême-Nord	CMR004	Mayo-Kani	CMR004004
Extrême-Nord	CMR004	Mayo-Sava	CMR004005
Extrême-Nord	CMR004	Mayo-Tsanaga	CMR004006
Littoral	CMR005	Moungo	CMR005001
Littoral	CMR005	Nkam	CMR005002
Littoral	CMR005	Sanaga-Maritime	CMR005003
Littoral	CMR005	Wouri	CMR005004
Nord	CMR006	Bénoué	CMR006001
Nord	CMR006	Faro	CMR006002
Nord	CMR006	Mayo-Louti	CMR006003
Nord	CMR006	Mayo-Rey	CMR006004
Nord-Ouest	CMR007	Boyo	CMR007001
Nord-Ouest	CMR007	Bui	CMR007002
Nord-Ouest	CMR007	Donga-Mantung	CMR007003
Nord-Ouest	CMR007	Menchum	CMR007004
Nord-Ouest	CMR007	Mezam	CMR007005
Nord-Ouest	CMR007	Momo	CMR007006
Nord-Ouest	CMR007	Ngo-Ketunjia	CMR007007
Ouest	CMR008	Bamboutos	CMR008001
Ouest	CMR008	Haut-Nkam	CMR008002
Ouest	CMR008	Hauts-Plateaux	CMR008003
Ouest	CMR008	Koung-Khi	CMR008004
Ouest	CMR008	Menoua	CMR008005
Ouest	CMR008	Mifi	CMR008006
Ouest	CMR008	Ndé	CMR008007
Ouest	CMR008	Noun	CMR008008
Sud	CMR009	Dja-et-Lobo	CMR009001
Sud	CMR009	Mvila	CMR009002
Sud	CMR009	Océan	CMR009003
Sud	CMR009	Vallée-du-Ntem	CMR009004
Sud-Ouest	CMR010	Fako	CMR010001
Sud-Ouest	CMR010	Koupé-Manenguba	CMR010002
Sud-Ouest	CMR010	Lebialem	CMR010003
Sud-Ouest	CMR010	Manyu	CMR010004
Sud-Ouest	CMR010	Meme	CMR010005
Sud-Ouest	CMR010	Ndian	CMR010006
10 units		58 units	

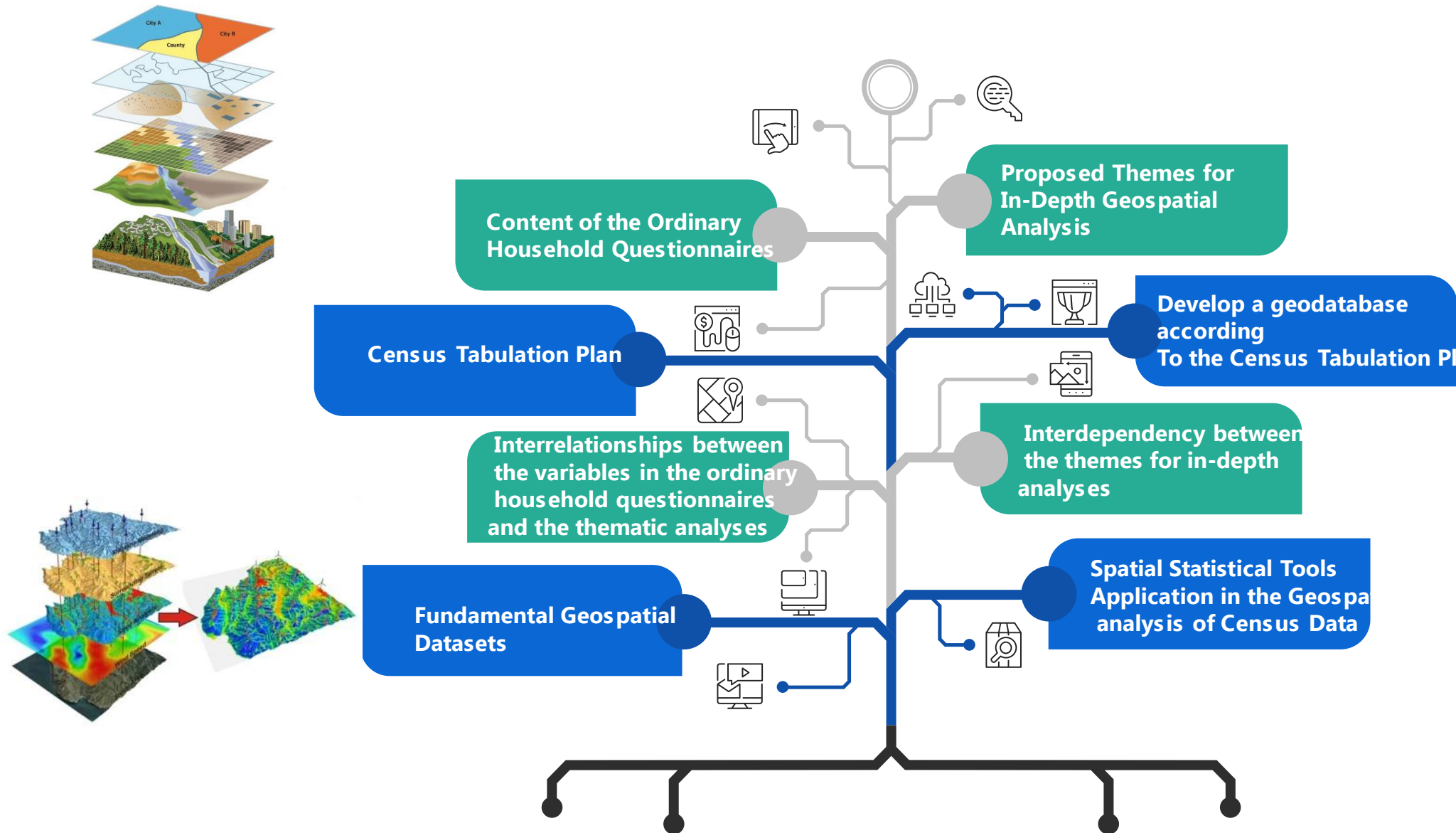
Period	1990-01-01 to 2008-11-11		2008-11-12 to last update	
Unit type	Provinces		Regions	
Unit names and codes	ADM1NM	ADM1CD	ADM1NM	ADM1CD
	Adamaoua	CMR001	Adamaoua	CMR001
	Centre	CMR002	Centre	CMR002
	Est	CMR003	Est	CMR003
	Extrême-Nord	CMR004	Extrême-Nord	CMR004
	Littoral	CMR005	Littoral	CMR005
	Nord	CMR006	Nord	CMR006
	Nord-Ouest	CMR007	Nord-Ouest	CMR007
	Ouest	CMR008	Ouest	CMR008
	Sud	CMR009	Sud	CMR009
	Sud-Ouest	CMR010	Sud-Ouest	CMR010



Period	2000-01-01 to last update	
Unit type	Départements (departments)	
Unit names and codes	ADM2NM	ADM2CD
	Djerem	CMR001001
	Faro-et-Déou	CMR001002
	Mayo-Banyo	CMR001003
	Mbéré	CMR001004
	Vina	CMR001005
	Haute-Sanaga	CMR002001
	Lekié	CMR002002
	Mbam-et-Inoubou	CMR002003
	Mbam-et-Kim	CMR002004
	Mefou-et-Afamba	CMR002005
	Mefou-et-Akono	CMR002006
	Mfoundi	CMR002007
	Nyong-et-Kéllé	CMR002008
	Nyong-et-Mfoumou	CMR002009
	Nyong-et-So'o	CMR002010
	Boumba-et-Ngoko	CMR003001
	Haut-Nyong	CMR003002
	Kadei	CMR003003
	Lom-et-Djerem	CMR003004
	Diamaré	CMR004001
	Logone-et-Chari	CMR004002
	Mayo-Danay	CMR004003
	Mayo-Kani	CMR004004
	Mayo-Sava	CMR004005
	Mayo-Tsanaga	CMR004006
	Moungo	CMR005001
	Nkam	CMR005002
	Sanaga-Maritime	CMR005003
	Wouri	CMR005004
	Bénoué	CMR006001
	Faro	CMR006002
	Mayo-Louti	CMR006003
	Mayo-Rey	CMR006004
	Boyo	CMR007001
	Bui	CMR007002
	Donga-Mantung	CMR007003
	Menchum	CMR007004
	Mezam	CMR007005
	Momo	CMR007006
	Ngo-Ketunjia	CMR007007
	Bamboutos	CMR008001
	Haut-Nkam	CMR008002
	Hauts-Plateaux	CMR008003
	Koung-Khi	CMR008004
	Menoua	CMR008005
	Mifi	CMR008006
	Ndé	CMR008007
	Noun	CMR008008
	Dja-et-Lobo	CMR009001
	Mvila	CMR009002
	Océan	CMR009003
	Vallée-du-Ntem	CMR009004
	Fako	CMR010001
	Koupé-Manenguba	CMR010002
	Lebialem	CMR010003
	Manyu	CMR010004
	Meme	CMR010005
	Ndian	CMR010006
Number of units		58 units

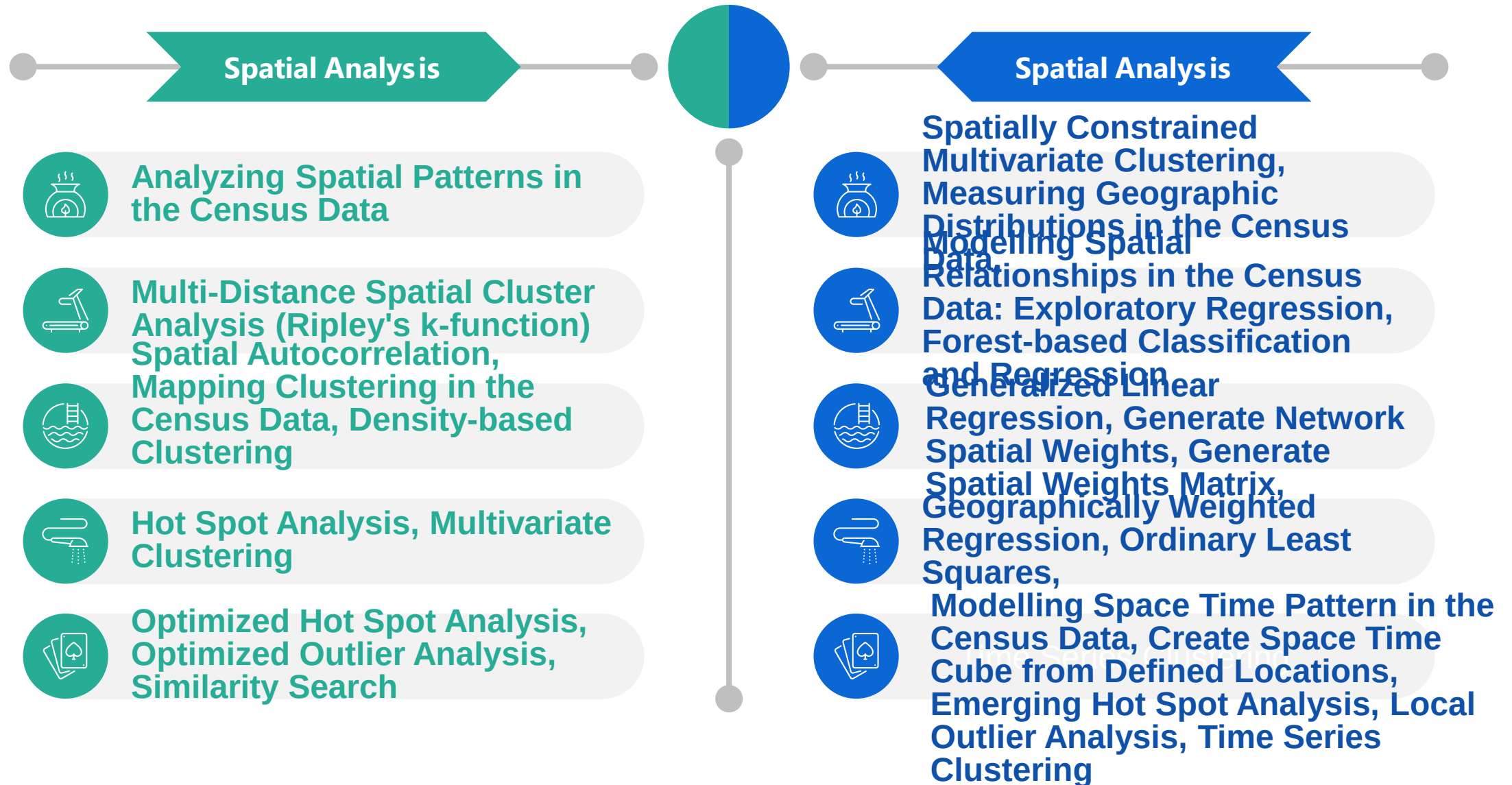
Geocoding and Spatial Analysis of Census Results

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Spatial Statistical Tools Application in the Geospatial analysis of Census Data

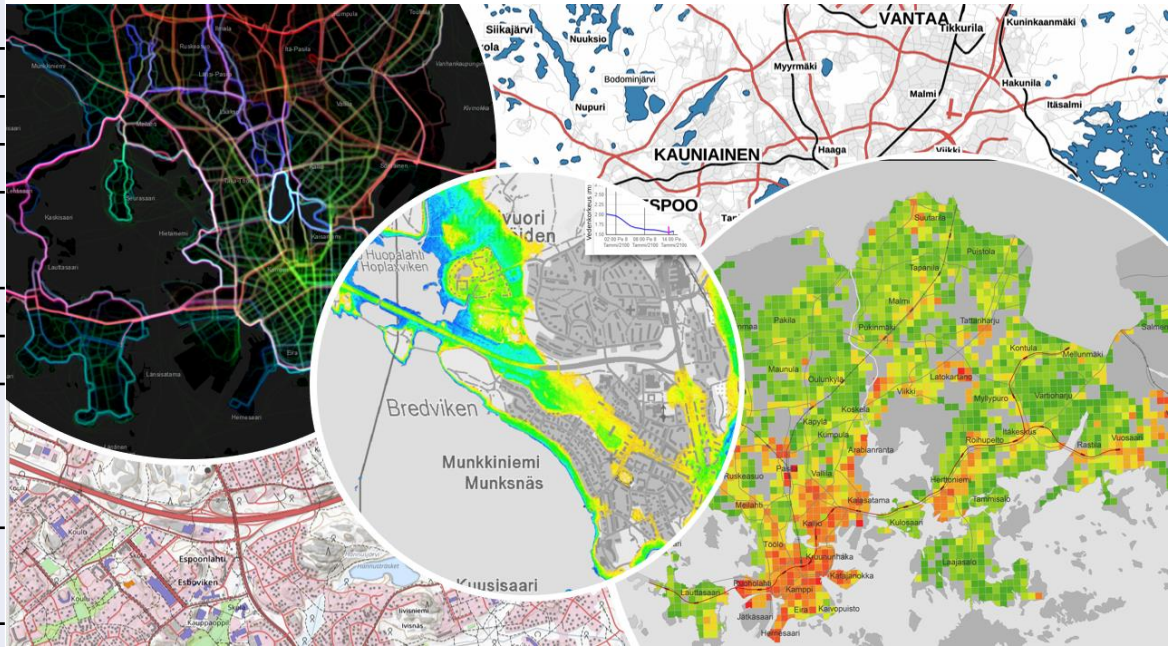
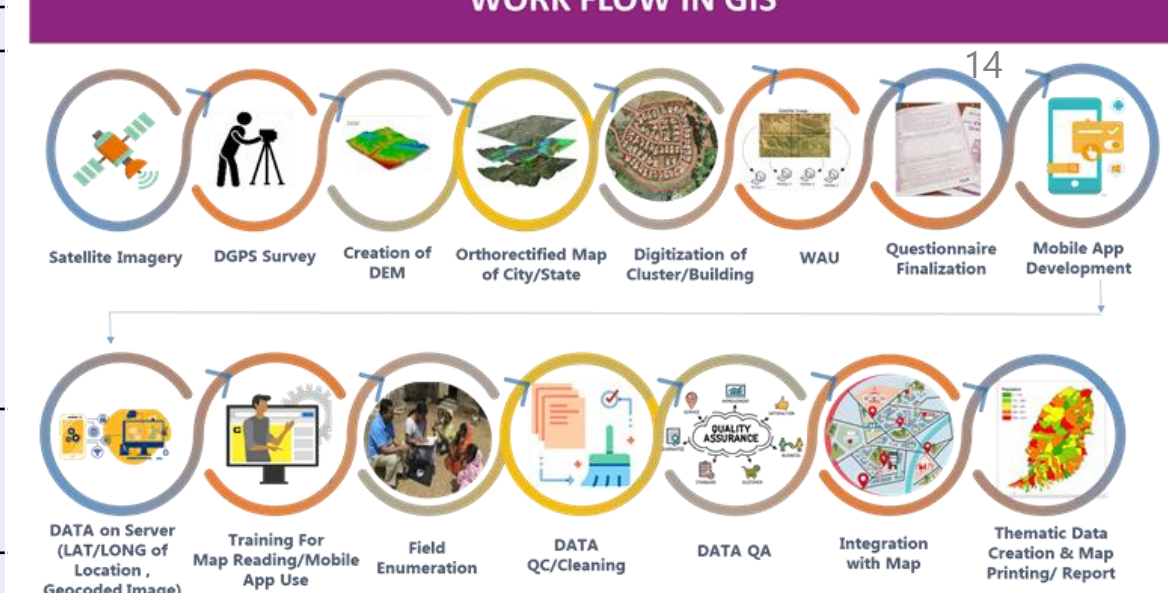
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INTERDEPENDENCIES BETWEEN THEMES FOR IN-DEPTH GEOSPATIAL ANALYSES

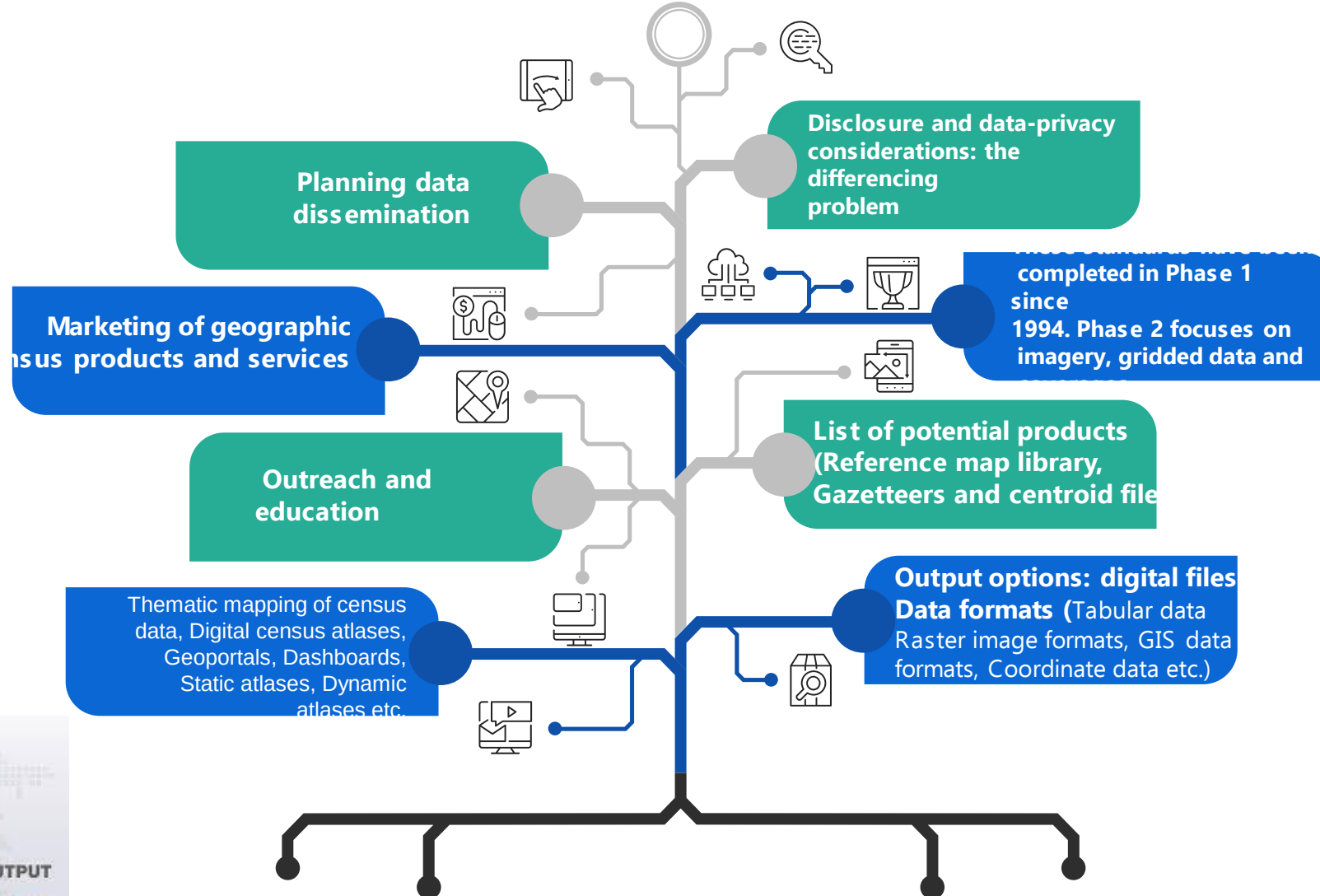
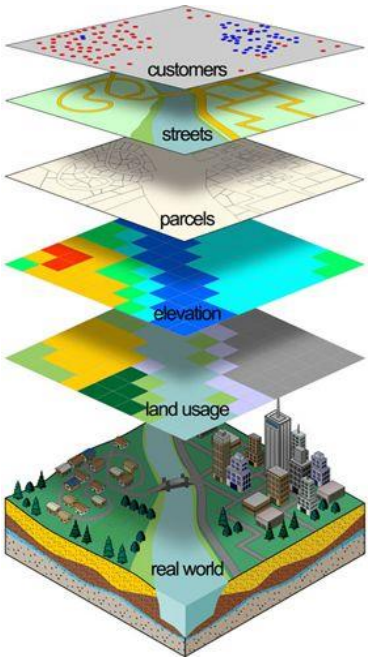
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
	Pop. Size, Distribution & Structure	Marital Status	Fertility	Mortality	Socio-cultural characteristics.	Migration	Households	Economic Activity	Educational characteristics	Housing	Situation of Women	Situation of Handicapped persons	Situation of Children and Youth	Situation of Elderly persons	Population Projections	Analysis of Poverty
Pop. Size, Distribution & Structure		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Marital Status	X		X			X	X	X		X	X	X	X	X		
Fertility	X	X		X		X			X		X		X	X	X	X
Mortality	X		X								X		X	X	X	
Socio-cultural characteristics.	X					X		X	X		X	X	X	X		
Migration	X	X	X		X		X	X	X	X	X	X	X	X	X	
Households	X	X				X		X	X	X	X	X	X	X	X	X
Economic Activity	X	X			X	X	X		X	X	X	X	X	X	X	X
Educational characteristics	X		X		X	X	X	X		X	X	X	X	X	X	X
Housing.	X	X				X	X	X	X		X	X	X	X	X	X
Situation of Women	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X
Situation of Handicapped persons	X	X			X	X	X	X	X	X	X		X	X	X	X
Situation of Children and Youth	X	X	X	X	X	X	X	X	X	X	X	X			X	X
Situation of Elderly	X	X	X	X	X	X	X	X	X	X	X	X			X	X

WORK FLOW IN GIS



Geocoding and Dissemination of Census Results

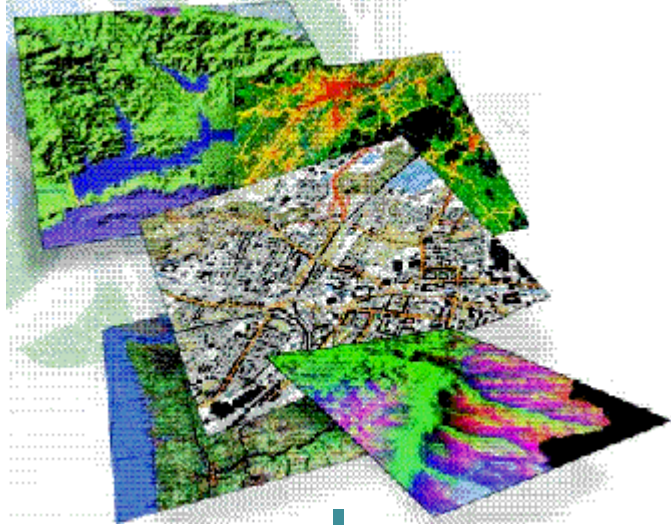
Geographic databases for the dissemination of census results, products and services



Dissemination and Collaboration

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Use GIS to create the information products your users need



Engagement

- ❑ Organizations today need to maximize engagement.



Types of user requirements

- ❑ NSOs need to consider the many different types of user requirements when planning their data dissemination strategies.

Meeting Data Needs of Users

- ❑ Content Sharing
- ❑ Content Management
- ❑ Data Discovery
- ❑ Data Visualization
- ❑ Collaboration



(SDGs)

- ❑ If you need to report on key indicators or United Nations (UN) Sustainable Development Goals (SDGs), create policy maps, or produce press briefings or media kits, you can use GIS to create the information product you need, share data, enable collaboration, track initiatives, inspire action, and create vibrant communities.





ECA



COVID-19
RESPONSE



THANKS