Liaison Report from ISO TC211 to CEOS WGISS

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- ISO stands for International Organization for Standardization.

- ISO Technical Committee 211 (TC 211) is responsible for setting international standards on geographic information

- ISO has published 79 standards (including update) and 21 standards are under development

- Currently TC 211 has 39 participating member countries and 21 observing member countries

- ISO TC 211 has set up liaison relationship with many related external organizations, including CEOS WGISS

  - CEOS WGISS is a class-A liaison of ISO TC 211

  - ISO TC 211 appointed as its liaison to CEOS WGISS

  - Currently, Dr. Liping Di as ISO TC 211 liaison to CEOS WGISS and also CEOS WGISS liaison to ISO TC 211

Scope of ISO TC 211

- Standardization in the field of digital geographic information.

- TC 211 aims to establish a structured set of standards for information concerning objects or phenomena that are directly or indirectly associated with a location relative to the Earth.

- These standards may specify, for geographic information, methods, tools and services for data management (including definition and description), acquiring, processing, analyzing, accessing, presenting and transferring such data in digital/electronic form between different users, systems and locations.

- The work of TC 211 shall link to appropriate standards for information technology and data where possible, and provide a framework for the development of sector-specific applications using geographic data.

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Current Working Groups in ISO TC 211

- Working group 4 Geospatial services
- Working group 6 Imagery
- Working group 7 Information communities
- Working group 9 Information management
- Working group 10 Ubiquitous public access

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Newly published standards since WGISS-48

- ISO 19116:2019 Geographic information — Positioning service
- ISO 19127:2019 Geographic information — Geodetic register
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- ISO 19136-1:2020 Geographic information — Geography Markup Language (GML) — Part 1: Fundamentals
- ISO 19150-4:2019 Geographic information — Ontology — Part 4: Service ontology
- ISO 19160-3:2020 Addressing — Part 3: Address data quality
- ISO 19161-1:2020 Geographic information — Geodetic references — Part 1: International terrestrial reference system (ITRS)
- ISO 19162:2019 Geographic information — Well-known text representation of coordinate reference systems
- ISO/TS 19163-2:2020 Geographic information — Content components and encoding rules for imagery and gridded data — Part 2: Implementation schema
- ISO 19165-2:2020 Geographic information — Preservation of digital data and metadata — Part 2: Content specifications for Earth observation data and derived digital products
- ISO/TR 19167:2019 Application of ubiquitous public access to-geographic information to an air quality information service
- ISO 19168-1:2020 Geographic information — Geospatial API for features — Part 1: Core

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New Development in ISO Metadata Standards

- New version of metadata standards have been published
  - ISO 19115-1:2014
  - ISO 19115-2:2019
  - ISO 19115-3:2016
  - ISO 19157:2013
  - ISO 19157-2:2016
- Some errors have been found in ISO 19115-1 and ISO 19115-2, especially inconsistency in the time representation. Amendment projects have been set up to produce a corrigenda to correct the errors
  - ISO 19115-1:2014/DAMD 2
  - ISO 19115-2:2019/DAMD 1
- ISO 19115-3:2016 is the implementation schema of ISO 19115-1:2014 but also include the schema for the old version of ISO 19115-2 (The ISO 19115-2:2009).

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Revision of ISO 19115-3:2016

- A revision project has been set up to revise ISO 19115-3:2016.
  - The revision will ensure that XML schema in 19115-3 are consistent with the UML models in ISO 19115-1:2014 and ISO 19115-2:2019
  - The revision project was assigned to working group 7
  - Currently the project team is preparing the working draft (WD stage)

- Scope of revised ISO 19115-3
  - a)   a set of XML schema required to validate metadata instance documents conforming to conceptual model elements defined in ISO 19115-1 and ISO 19115-2; and
  - b)   a set of ISO/IEC 19757-3 (Schematron) rules that implement validation constraints in the ISO 19115-1 and ISO 19115-2 UML models that are not validated by the XML schema.

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- ISO 19124: Calibration and validation of remote sensing data and derived products
  - Proposed by USA
  - A multi-part standard

- Multiple parts
  - Part 1: Fundamentals
  - Part 2: Data from Optical sensors
  - Part 3: Data from Hyperspectral sensors
  - Part 4: Data from Lidar
  - Part 5: Data from SAR/InSAR
  - Part 6: Data from Microwave
  - Part 7: Thematic products
  - Part 8: Cal/Val sites

- Currently the project team is working on part 1

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Status of ISO 19124-1 project

- A project team was formed in December 2019

- The first project team meeting was held in during ISO TC 211 49th Plenary in Japan in December 2019

- The second project team meeting was held in conjunction with ISO TC 211 50th Plenary in June 2019 (Virtual)
  - Discussed the outline of the standard

- Currently, a working draft is being drafted by project team
  - To be discussed in next project team meeting in conjunction with ISO TC 211 51st Plenary in November 2019 (Virtual)

- The working draft will be provided to WGISS for review to solicit comments and inputs from WGISS

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- ISO 19123-1 Coverage – Part 1: Fundamentals
  - ➢ A revision of ISO/TS 19123:2005 Schema for coverage geometry and functions
  - ➢ A committee draft (CD) is being voted
  - ➢ The CD has incorporated OGC coverage model
- ISO/TS 19130-3 Geographic information – Imagery sensor models for geopositioning - Part 3: XML schema implementation
  - ➢ Has been approved as an International Technical Specification
  - ➢ Currently in proofreading, waiting for publication
- ISO 19150-4 Geographic information - Ontology, Part 4: Service ontology
  - ➢ Published as an international standard at the end of 2019

Other on-going projects related to WGISS

- ISO/TS 19159-4 Calibration and validation of remote sensing imagery sensors and data -- Part 4: Passive Microwave Sensors
  - ➢ A working draft has been produced
  - ➢ Being voted as draft technical specification (DTS)
- ISO /TS 19163-2 Content components and encoding rules for imagery and gridded data -- Part 2: Implementation schema
  - ➢ Published as an International Technical Specification
- ISO 19165-2 Preservation of digital data and metadata -- Part 2: Content specifications for earth observation data and derived digital products
  - ➢ Published as an International Standard

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- ISO 19150-6 Geographic information — Ontology — Part 6: Service ontology registry
  - At working draft (WD) stage
  - Standardized the registry for service ontology

Newly proposed projects related to WGISS

- ISO/AWI 19156 Geographic information — Observations and measurements
  - Revision of ISO 19156:2011

- ISO/AWI 19157-1Geographic information — Data quality — Part 1: General requirements
  - Revision of ISO 19157-1:2016

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- ISO TC 211 holds its plenary and working group meeting twice per year (one in May/June and another in November/December)

- The 49th plenary was held in Omiya, Japan in the second week of December 2019

- The 50th plenary was held virtually in June 2020

- The 51st plenary will be held virtually in November 2020

- CEOS WGISS can contribute significantly to ISO standard development, especially in remote sensing and data systems

- **Need WGISS inputs to me for giving a WGISS liaison report to the 51st ISO TC 211 plenary**