ICA Commission Workshop

**OGC and its Geospatial Interoperability Standards**

*ICA Commission on SDI & Standards, Namibia University of Science and Technology (NUST), Windhoek, Namibia, and the* *Namibia Statistics Agency coordinator of the NSDI for Namibia*

08 – 09 Oct 2018, *Department of Geo-Spatial Sciences and Technology,* *Namibia University of Science and Technology (NUST), Windhoek, Namibia*

**Thursday (08 Nov)**

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| 8:30  | Arrival and registration |
|  | ***Session 1 – Technological Foundation – an overview****Chair: Franz-Josef Behr, Co-Chair ICA Commission on SDI & Standards* |
| 9:00  | Welcome |
| 9:10  | Introduction to web technologies*Basic principles of web services and the underlying standards, protocols and addressing principles (URIs, IP addresses, ports), interoperability* |
| 10:00  | Encoding spatial data: CSV, XML, XML Namespaces, GeoJSON, *You will get an understanding how geodata can be encoded to make them readable for programs* |
| 10:45  | Break |
|  | OGC specific standardized encodingsSimple Features/WKT, GML |
| 11:15 | Standardization: An overviewThe process of standardization, the involved bodies, the procedureRelationship between different standards and standardization bodies |
| 12:30 | Lunch  |
| *13:30* | Session 2 – Hands-on: OGC Specifications in detail*Essential services are presented and practically explored by analysing the different operations and the results from the server.**The connection between metadata, data models and presentation will be analysed. Modifications of query parameters help us to understand the approach of communication and the power of the services.* |
|  | Getting Geospatial Data: OGC/ISO 19142 Web Feature Service (WFS)We will see how metadata, data models and data are intertwined and how XML Schema is used to describe the data model. The server will provide its data in different encodings (formats) and different spatial reference systems – at your fingertips! |
|  | Getting Map Images: OGC/ISO 19128 Web Map Service (WMS)What’s the server offering: Understanding the metadata, getting maps, querying feature propertiesWeb Map Tile Service (WMTS) and some supporting standards (Web Map Context (WMC, very brief), Styled Layer Descriptor (SLD) and Symbology Encoding (SE)) |
|  | Extending the WFS approachWeb Feature Service Transactional (WFS-T), OGC/ISO 19143 Filter Encoding 2.0, Web Feature Service Gazetteer (WFS-G) |
| 16:00 | End |

**Friday (09 Nov)**

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| 8:30  |  |
| *09:00* | ***Session 3* –*Standardization: An overview****The process of standardization, the involved bodies, the procedure, Relationship between different standards and standardization bodies**OGC: its goal, structure, processes and documents.*  |
|  | **Reading a standard** UML-Class diagrams, XML Schema as basic languages, structure of OGC specifications |
| 9:45  |  |
| 10:00  | Web Coverage Service (WCS)An introduction into coverages and multidimensional datasets (data cubes) is given. Different options of retrieving data are explored. |
|  | Making data searchable: Catalogue Service for the Web (CSW) |
|  | Further ServicesLocation Services (Open LS)Sensor Web Enablement (SWE)Web Processing Service (WPS)Web 3D Service (W3DS) |
| 12:00 | Break |
|  | ***Session 4 – Outlook: Expected developments*** |
|  | Towards REST and Semantic Web |
|  | WFS 3.0 |
|  | Questions and answersClosing |
| 13:00 | End |