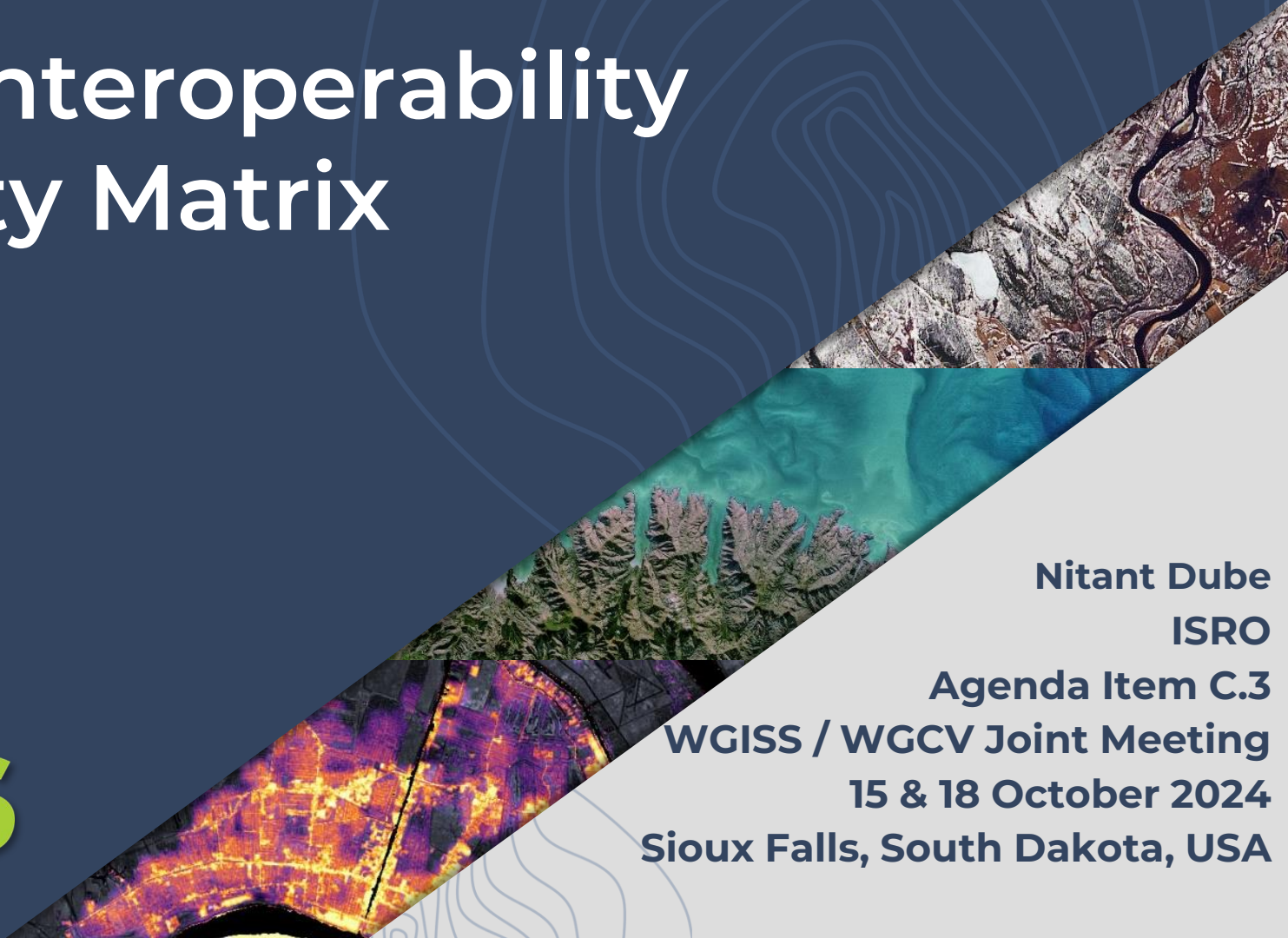
CEOS Interoperability Maturity Matrix



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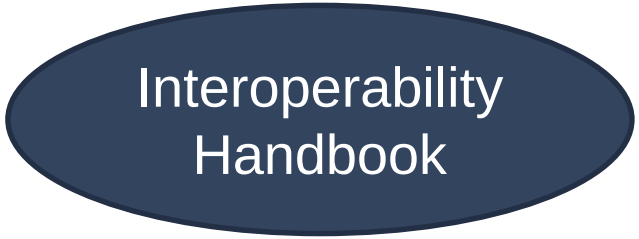
Agenda Item C.3
WGISS / WGCV Joint Meeting
15 & 18 October 2024
Sioux Falls, South Dakota, USA

CEOS
Committee on
Earth Observation Satellites

CEOS Interoperability Handbook V 2.0

- **Objective**
  - **CEOS Interoperability Handbook Version 2.0 should provide guidance to the organizations for development of Interoperable Data and Services and help them in measuring their maturity level**



Interoperability Maturity Matrix

- Interoperability Maturity Matrix is an **Assessment tool** that
  - Help users to measure how well interoperability factors are implemented in their organization
  - Monitor progress of interoperability implementation with time
  - Identify barriers and area of improvement for interoperability of Earth Observation Data and Services

Interoperability Maturity Levels

Based on CMM Maturity Levels

0	**INITIAL**	Processes are ad-hoc, chaotic, and success depends on individual effort
1	**REPEATABLE**	Basic management processes are established, and successes can be repeated
2	**DEFINED**	The organization develops a standard process that is documented, standardized, and integrated into all processes
3	**MANAGED**	The organization monitors and controls its processes through data collection and analysis
4	OPTIMIZED	Processes are constantly improved through feedback and by introducing new ideas and technologies.

Structure of Maturity Matrix

Sample…

Factors	Recommendations	Initial	Repeatable	Defined	Managed	Optimized	Current Level
Policy	**Open Data**	Data is provided as Open Data on ad-hoc basis	Open Data Policy is defined and based on requirements data is disseminated as open data	Open Data is documented, discoverable and disseminated based on standards	Open Data can be discovered and its utilization is monitored	Open Data can be discovered , utilization is monitored and process exist for their improvement	

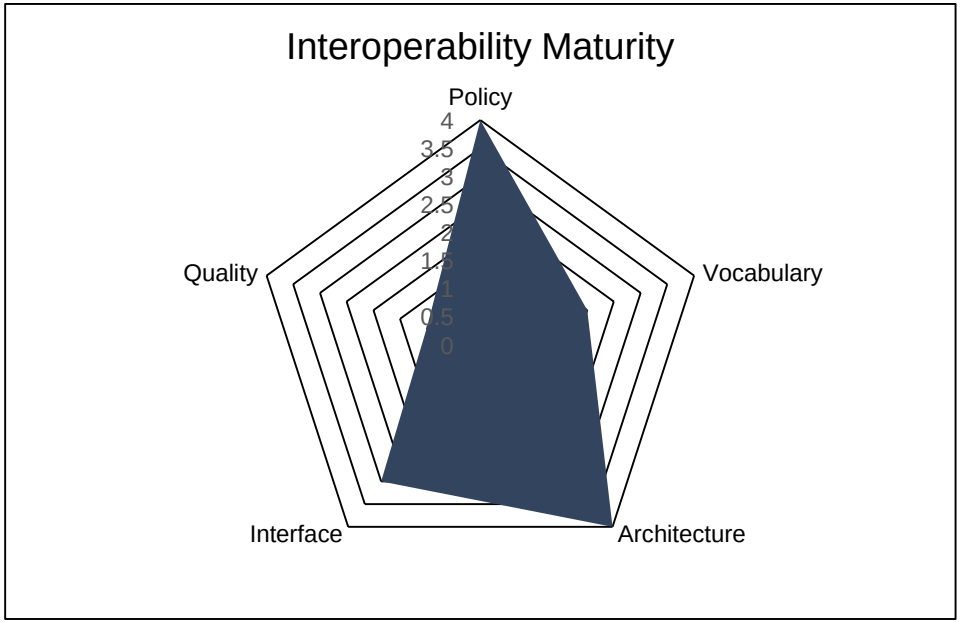
Vocabulary	**Thesaurus**	Vocabulary is used on ad-hoc basis in document form	Vocabulary is implemented using Thesaurus	Thesaurus is documented and available for other processes	Thesaurus is managed and change of records is controlled	Thesaurus is reviewed and updated based on user feedback an approval process	
Architecture	**Analysis Ready Data (ARD)**	ARD is generated based on local specifications	ARD product is documented and is generated based on requirements	CEOS ARD Framework is used for development of ARD	ARD products follows CEOS Product Family Specification and are Self Certified	ARD products are CEOS certified and	
Interface	**Data Discovery**	Data is accompanied with its metadata	Metadata format is standardized and Data is accompanied with its metadata	Data collections are part of Connected Data Assets and are discoverable using Open Search/STAC	Each granules is accompanied with link for download/order and its utilization is monitored	Formal mechanism exists for updating Data Discovery based on current standards and technology	
Quality	**Calibration**	Calibration is carried out on ad-hoc basis	Calibration is carried out based on internal standards and procedures	CEOS/WGCV developed Data Quality Assurance Strategy is followed	Using QA strategy Products are calibrated using CEOS endorsed CAL/VAL sites	There is a regular review mechanism for updating Calibration techniques, instruments and processes for new sensors	

Maturity Level of Each Factor

- Maturity Levels have weights from 0 to 4 (Initial to Optimized)
- Each Factor have multiple recommendations and the user may have different maturity levels for each of the recommendation
- Maturity Level for each Factor is calculated as average/weighted average of all recommendations
- Finally each Factor will have Maturity Level from 0 to 4 (Initial to Optimized)

Visualization of Maturity Level

- Maturity Levels can be visualized in the form of Radar chart



Thanks

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