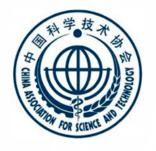
IGF 2020: Internet for human resilience and solidarity - Virtually Together -







Knowledge Generation from Global FAIR Data for Operational Decision Support in Public Emergencies

IGF2020 Session on "AI Solutions and Governance for Global Public Emergencies"

PANELIST: HORST KREMERS
CODATA-GERMANY

CODATA Decadal Programme 'Making Data Work for Cross-Domain Grand Challenges'

https://codata.org/initiatives/strategic-programme/decadal-programme/

International FAIR Convergence Symposium

convened by CODATA and GO FAIR

Virtual, 27 November - 04 December 2020

1. CRISIS REDUCTION AND RESPONSE (learning from COVID-19 outbreak)

- Virus Outbreak Data Network
- COVID-19 initiatives on data exchange
- Balancing public good and individual freedom in disaster data
- Disaster Risk Reduction
- Infectious Disease (including (meta)data collection, description, analysis, modelling, etc.)
- Applying lessons from COVID-19 to other hazards

2. FAIR specifications

- Semantic interoperability
- FAIR vocabularies, FAIR metadata
- Certification of FAIR services (repositories, process)
- Legal challenges to tackle
- Systems analysis
- Core tools for cross-domain interoperability
- FAIR data objects applications

3. FAIR society

- FAIR for SDGs (including contributing to SDG data, scientific analysis of SDGs)
- Traditional knowledge, indigenous data and CARE
- Use cases of FAIR in business and industry
- Ethical dimensions of data, FAIR and open
- Smart, resilient and healthy cities
- Citizen science and the SDGs
- Policy monitoring: transportation, health, planning, and measuring economic impacts
- 4. Data stewardship: training and career opportunities
- Role of data stewardship centres in research institutions
- Data stewardship competences, skills and training
- · Data stewardship career profiles and development
- Distributed learning on Federated Data train







The Symposium

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CODATA

International Symposium on

Risk Models and Applications

Kiev, Ukraine, October 5, 2008

This Symposium is dedicated to the Data Science and Information System Aspects of Risk Model Structure, Implementation, and Application.

Contributions and Participants are expected from a wide range of science disciplines to present and discuss state-of-the-art development and current deficits in Risk Models.

Contact Symposium Chair

Horst Kremers



Download Program 🔼



Download Abstract Template

Post Conference Tour to Sevastopol (Crimea) Oct. 10/11/12 etc. International Council for Science : Committee on Data for Science and Technology















< home > < newsletter > < discussion list > < data science journal > < contact > members area >

CODATA

Working Group on Documentation, Archiving and Open Access to Disaster Information

As approved by the CODATA 26th General Assembly, Kyiv 2008

Members:

Liu Chuang, China Bob Chen, U.S.A. Jean Bonnin, France Shuichi Iwata, Japan Horst Kremers, Germany

There is a strong deficit in disaster data availability for traceback and knowledge mining. This comprises the fields of natural and technical disasters. CODATA should develop a recommendation for best practice of collecting, archiving and providing access to disaster information.

Aim / Deliverables:

Preparing a strategic report highlighting the necessity of data avilability of disasters of differen type.

Addresses disaster organisations (UN bodies, NGOs), government, industry, insurances, etc. on local, regional, national, and international level.

The report will address

- Demand
- · Current state of the art
- Deficits
- Benefits
- Action plan / recommendations
- · Identify initiatives
- Executive summary

Working plan: draw on experience of WG members discuss draft report with disaster actors (Workshop)

Contact:

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Risk Information Management 3 Pillars (Phases)

- Prevention
- Preparedness
- Response

in Volatile, Uncertain, Complex and Ambiguous environments

In addition to comprehensive Management, each one of those Pillars is subject to its separate Information Management elements, phases and processes



Basic Management Principles

- critical thinking
- · gaps and deficits analysis
- decision, action, and control cycle support
- transparent analysis
- · control and extensive reporting obligations
- compliance to regulations and other boundary conditions
- consider phases and techniques in enabling of retrace
- include detailed financial structures, budgets and the use of financial instruments in reporting and control
- constructive goal-reaching and effectivity control
- guidance on human resources (quantity, future competence levels)
- operations concept
- reexamination, analysis
- avoidance of malpractice
- extend concepts of FAIR information principles [FAIR] to support transparency goals and accountability
- indications on weaknesses/vulnerabilities

Basic Management Principles

cf Horst KREMERS (2020) in http://www.susgis.net/LNIS_9_Geoinformation_for_Sustainable_Development__Berlin_2020.pdf#page=93



Knowledge Representation Actors – Roles – Facts Rules and Mappings



- Modelling
- Analyzing
- Reasoning
- Deciding
- Acting
- Goal–Reaching





Algebraic Properties of Information Spaces

- Denseness
- Homogeneousness
- Isotropy
- Continuity
- Differentiability



Knowledge Generation

- Recognition of Facts
- Recognition of Patterns
- Signal / Change Detection
- Correlations / Dependencies
- Finding / Verification of Hypotheses



Knowledge Representation

- Open Data / Information
- Open Software
- Open Analysis
- Open Context Models (weighting schemes)
- Open Process Models
- Open Quality Measures
- Open Knowledge Base

including transparent holistic Documentation



Operational Decision Support

Challenge:

Volatile, Uncertain, Complex and Ambiguous environments

Boundary Conditions:

- Robustness
- Plausibility
- Compliance Checking / Restrictions
 (Technical, Procedural, Legal, Financial, Ethical ...)
 - -> cf. Data Protection Guide in Humanitarian Action



> Knowledge Integration in Open Environments

suggested Action Fields

- Incompatibility
 including Variations in Time and Place
- InconsistencyAccumulation / Propagation / Proliferation
- Similarity
- Absence of Normative Meaning and Processes Governance
- Consistent Multi-Level Generalization
- Preference / Confidence Measure(s)
- Testbeds
- Missing Knowledge Representations of Results

dynamics of situations, fact-related sensitiveness, stability, vulnerability replicability, traceability, quality measures



Main Conclusions

- Knowledge Representation for Operational Purposes is based on Formal Methods that may be enriched by Artificial Intelligence Methods
- 'Open Access' is a key scheme and an essential policy of our time. It reaches way beyond digitization and sharing of data but affects global governance, transparent decision making, repeatable science, industry, wealth, education as well as metadata, risk models and even pandemics.
- UN Instruments information in its complexity is in due need of very broad systematic integration, processing, evaluation and goal oriented applications of large amounts of data of heterogeneous origin in real time.
- There is a need for the public and private sectors and civil society organizations, as well as academia and scientific and research institutions, to work more closely together and to create opportunities for collaboration, and for businesses to integrate extensive interoperability into their management practices.
- Application of informatics state-of-the-art methods and technology that meet the demands of complex multi-actor and cross-organizational information management is urgently required for organizationally as well as technically implementing Treaties, Frameworks and Programs and for granting coherence in the required holistic way.



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RIMMA

join Risk Information Management Community and RISK_List

http://RIMMA.org http://membership-request.rimma.org

