Information Management Supporting Civil-Military Cooperation in Situations of Exceptional Need

(Suggestions September 2025)

Horst Kremers (Berlin), RIMMA CoE

RIMMA CoE

CoE International Community of Experts and Interdisciplinary International Conference Series on RISK Information Management, Risk Models and Applications

RIMMA Community of Experts

The RIMMA Community on Risk Information Management, Risk Models, and Applications will enable sharing of digital strategies, best practices as well as giving space for discussing methodological problems in risk (NaTech) and security (CBRNE) modeling from the information systems point of view for all phases of the disaster management cycle.

https://RIMMA.org

Structure

- Germany's Intensive Care Patient and the Interoperability Conceptual Model
- Situation and Complexity of Current Tasks
- Basic Elements in Information Management
- Humanitarian and Health Information
- Towards a Comprehensive and Structured Approach, Challenges and Common Goals

Just-in-Time Information Management by Procedural Interoperability

Timelines and Processes Networks Will Be the Real Test

dangerously tight highly dynamic set of conditions, speed of cross-organizational process chains,
pre-defined critical events, execution,
providing Situations alternatives, decisions, actions, control of goal-reaching
with timelines becoming the true measure of civil preparedness and civil-military operations readiness
in Local, National, European, Global "Situations of Exceptional Need".

Joint cross-organizational policy promises must meet
the realities of delivery (information, goods, decisions, results)
in a holistic cross-organizational and cross-domain way.

Aditional Key Terms: Complexity, Licenses and Procurement Barriers, Workforce Readiness.

Horst Kremers (Berlin), RIMMA CoE

DEUTSCHLANDS INTENSIVPATIENT: DIE DIGITALISIERUNG

transl. Germany's Intensive Care Patient: Digitalization

Albrecht Broemme: Deutschland in der Krise. riva Verlag, München 2025, ISBN 978-3-7423-2779-6, Seite 270

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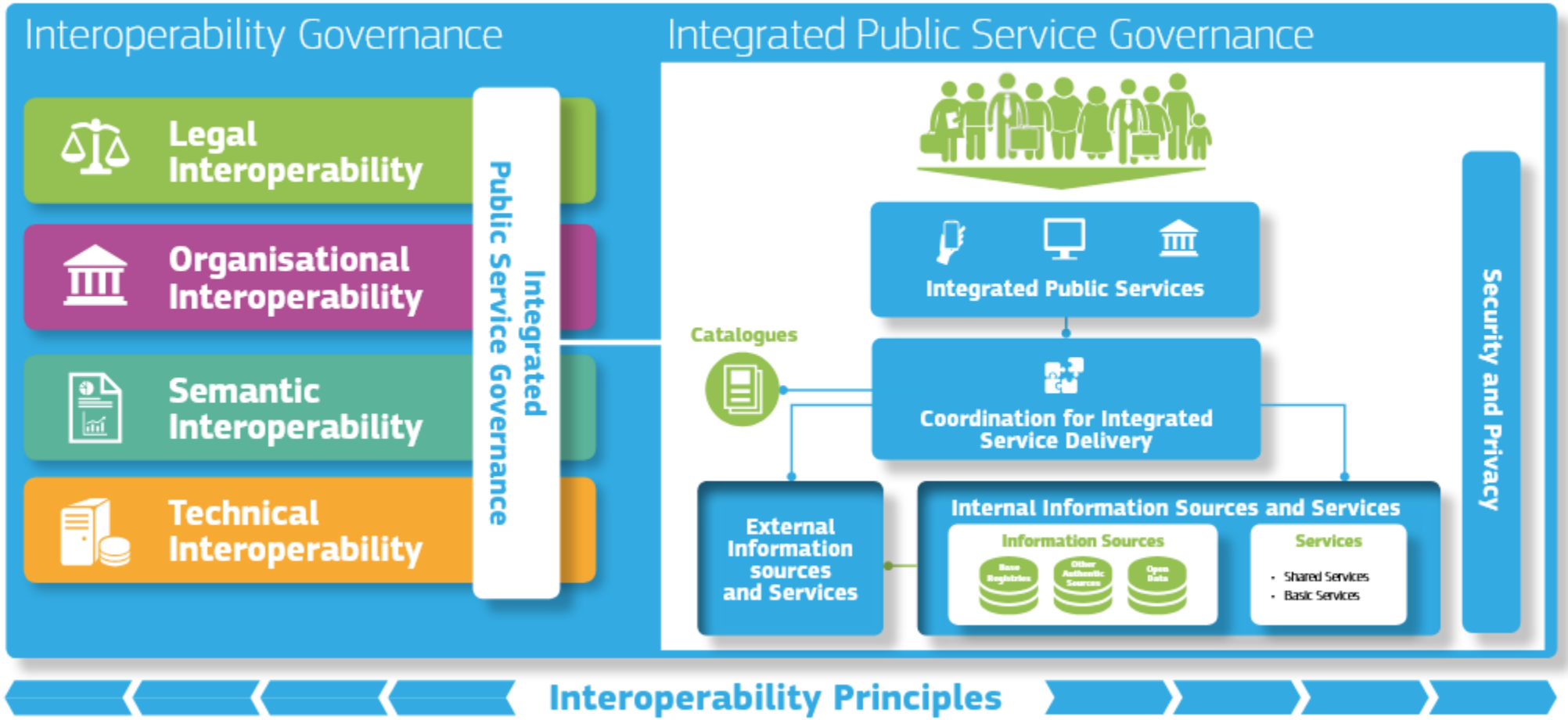
EIF Conceptual Model



New Interoperability Framework for European Public Services

EIF is a key instrument for establishing interoperable digital public services at regional, national and EU level

New Interoperability Framework for European Public Services

https://ec.europa.eu/isa2/sites/default/files/eif_brochure_final.pdf

Interoperability Principles

- Subsidiarity and proportionality
- Openness
- Transparency
- Reusability
- Technological neutrality
- user-centricity
- Inclusion and accessibility
- Security and privacy
- Multilingualism
- Administrative simplification

- Openness
- Technological neutrality and data portability
- Security and privacy
- Preservation of information
- Transparency
- User-centricity
- Multilingualism
- Assessment of Effectiveness and Efficiency

Interoperability Layers

- Interoperability governance
- Organisational interoperability
- Integrated public service governance
- Semantic interoperability
- Legal interoperability
- Technical interoperability

Interoperability Layers

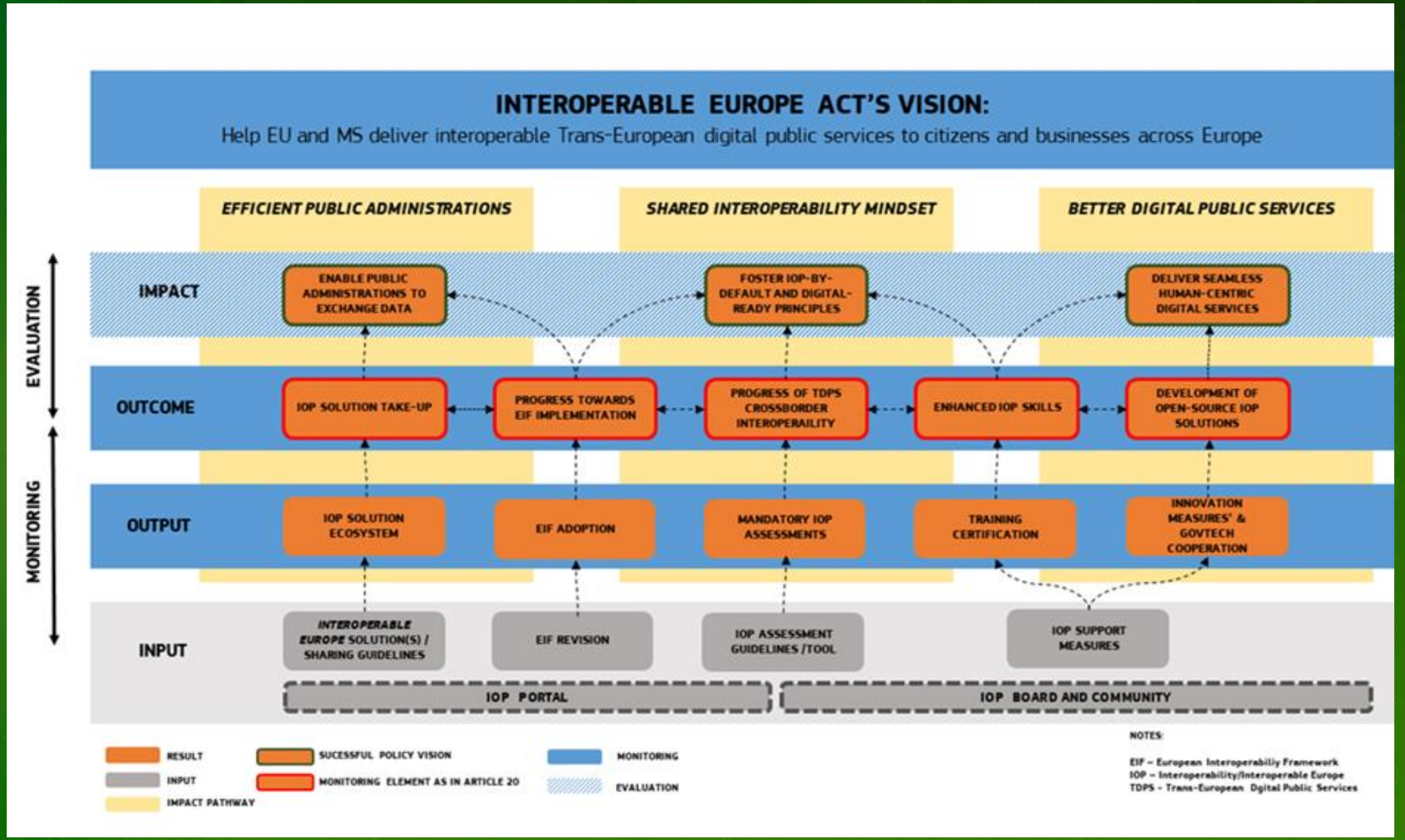
- Interoperability governance
- Organisational interoperability
- Integrated public service governance
- Semantic interoperability
- Procedural Interoperability
- Legal interoperability
- Technical interoperability

Interoperability Conceptual Model

- Internal information sources and services
- Base registries
- Open data
- Catalogues
- External information sources and services
- Security and Privacy

Interoperability Conceptual Model

- Internal information sources and services
- Vocabularies
- Processes
- Ontologies
- Base registries
- Open data
- Catalogues
- External information sources and services
- Security and Privacy



Interoperable Europe Act intervention Logic

(Source: Joint Research Centre)

https://interoperable-europe.ec.europa.eu/collection/community/have-your-say

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Situation and Complexity of Current Tasks (1)

The massive complexity of cross-organizational information flows

for decision support and operational management

for emergency services, public administration, law enforcement agencies, critical infrastructure operators, the private sector, civil society organizations/institutions and civil-military cooperation

requires comprehensive interoperability for information in all phases of disaster management (prevention, resilience management, long-term and short-term preparedness, early action, first aid/response, aftercare and reconstruction).

Situation and Complexity of Current Tasks (2)

Based on the current recommendations on how to proceed and with clear demands for adequate information management

at global, European and national level (UN Sendai Framework Midterm Review, G7, European Union Disaster Resilience Goals 2030 and National Resilience Strategy)

the task is to ensure the required homogeneity, coherence, interoperability and synergy for cross-organizational, cooperative and cross-border use.

Situation and Complexity of Current Tasks (3)

Decision Support

- for all
- at any time
- just-in-time

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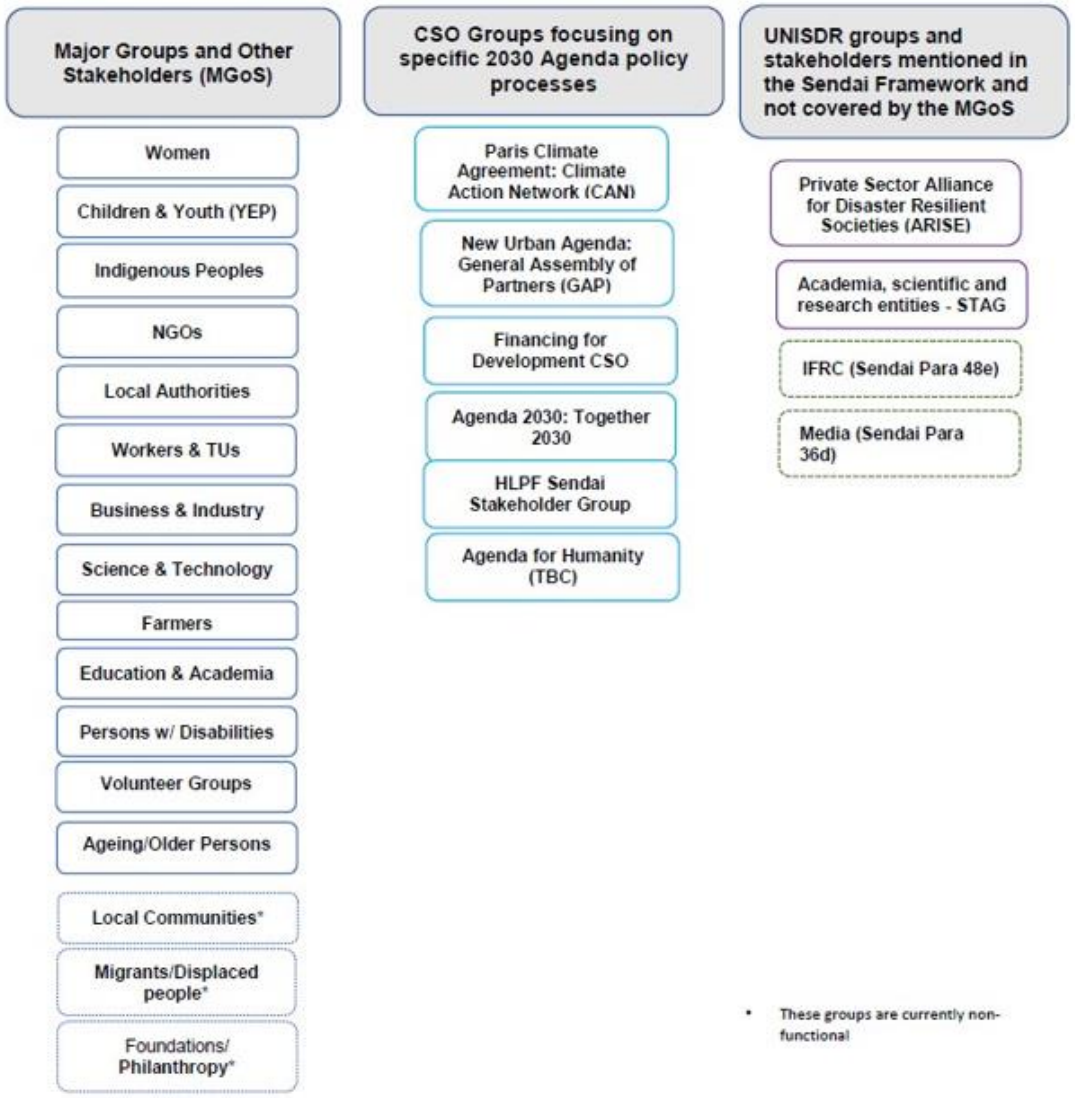
Annex II List of Stakeholder groups

Core

Stakeholder Advisory Group Visual



UNDRR SEM Terms of Reference 2019, p. 6

Stakeholders / Pillars of Societal Resilience in all Phases of the Disaster Management Cycle

Organizations that stand up for people
Parliamentarians
Lawyers
Insurance companies
Local and national charities
Organizations for family caregivers
Technical and material assistance for reconstruction
Damage repair in relation to race, education and poverty
Support in the search for financial aid
Medical Chambers
Chambers of pharmacists
Chambers of nursing
Chambers of psychotherapists
Health insurance companies
Property owners' associations
Chambers of industry and commerce
Chambers of engineers
State Council for Building Regulations
Surveillance
Sociologists, psychotherapists, psychologists and behavioral consultants
Refugee-migrant organizations of people with disabilities (OPDs)
Organizations run by deaf people
Promoting policies that benefit children
Faith-based organizations and communities
Nurses (practitioners, professional organizations, etc.)
Ambulatory care midwifery
Advocacy for patients
Children in care homes
Salvation Army, missions
Medical Care Organizations
Health and Care Providers Organizations and Associations (public and private services)
School services/parent-teacher associations
Community research and service centers
Amateur radio associations
Media (radio, TV, newspapers, magazines, etc.)
Social media
Food industry, nutrition logistics, transportation and distribution
Animals (zoo, pets, farm animals)
Consumer protection organizations
Auditors (public and private)
Legislators
Standardization organizations

etc.

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The main capabilities we need to develop are:

- **Descriptive analytics** that help us answer "What happened?" by evaluating historical data, for example to measure results or costs against targets.
- **Diagnostic analytics** to help us understand "Why did it happen?" through data discovery, data mining or correlation analysis.
- **Predictive analytics** that tries to give an answer to the question "What will happen?" based on historical data, statistical modelling and AI/machine learning.
- **Prescriptive analytics**: analyses the best course of action given a certain scenario, incl. through AI/machine learning.

United Nations Decade of Action: Data Strategy of the Secretary-General for Action by Everyone, Everywhere 2020-2022 *https://www.un.org/en/content/datastrategy/index.shtml*

Basic Elements of Management

- Gaps and deficits analysis
- Decision, action and control cycle management
- Transparent analysis
- Compliance with regulations and other constraints
- Phases and techniques to ensure traceability
- Detailed financial structures
- Financial instruments (financial budgets, subsidies) and their use
- Reporting and controlling
- Targets achievement and effectiveness control
- Human resources
- Operational concept
- Avoidance of misconduct
- Analysis of weaknesses and vulnerabilities
- Innovations
- Accountability

Basic Elements of Information Management

Recommender Systems

- Repository of Best Practices
- Homogenized / coherent terminology / vocabulary
- Formats (syntax)
- Meta information (semantics)
- Standardized workflows networks (pragmatics)
- Service Level Agreements
- SOPs - Standard Operating Procedures (automation, quality, traceability)

Decisions, Actions, Alternatives

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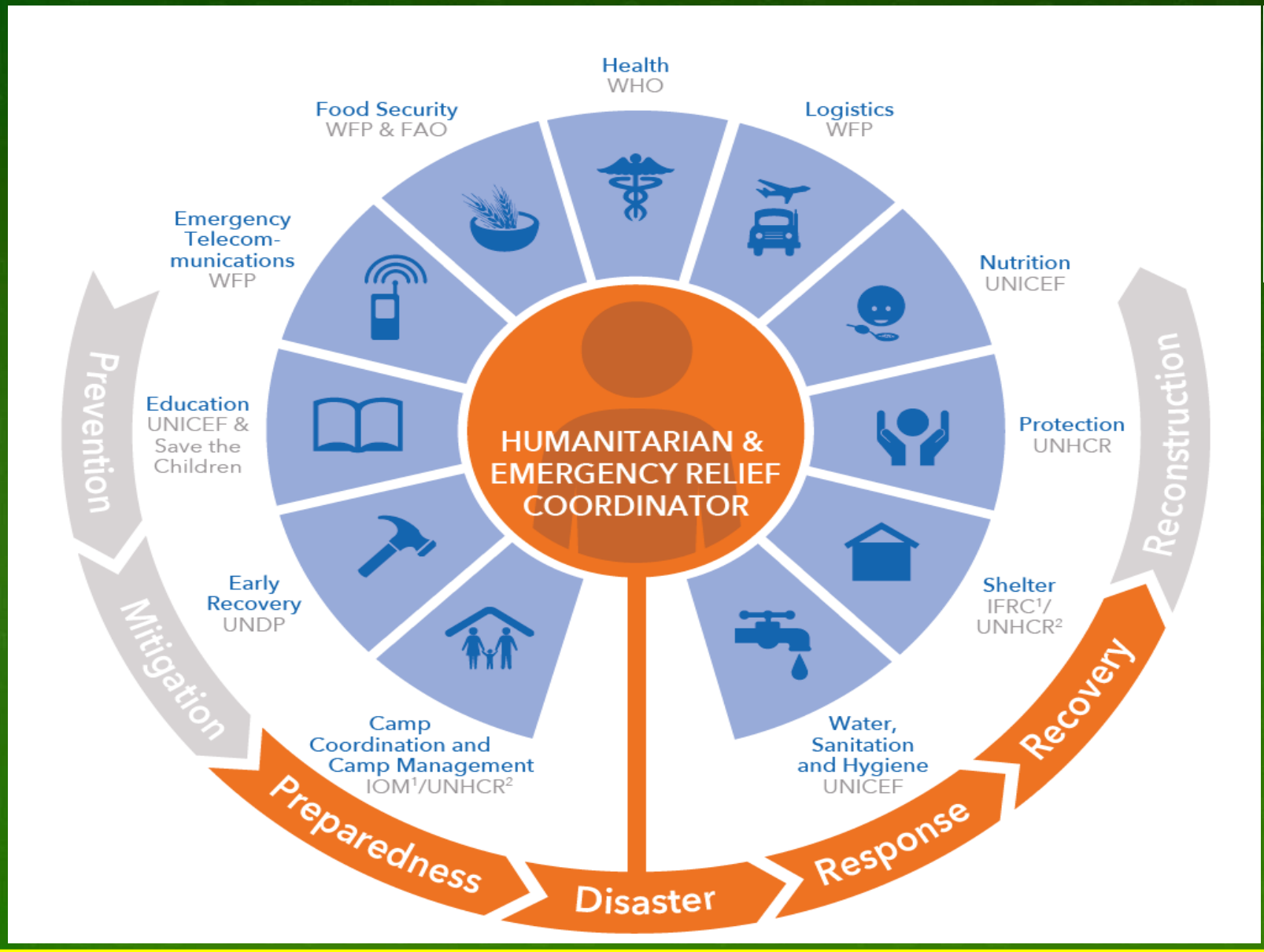


OCHA
United Nations
Office for the Coordination
of Humanitarian Affairs

https://www.unocha.org/we-coordinate

Horst Kremers (Berlin), RIMMA CoE

By Sarah Telford

Share

In 2023, the demand for humanitarian data reached a record level as the world contended with the effects of war, climate shocks, food insecurity, displacement and disease in crises ranging from Gaza to Sudan. At the same time, data availability across priority humanitarian operations remained steady.

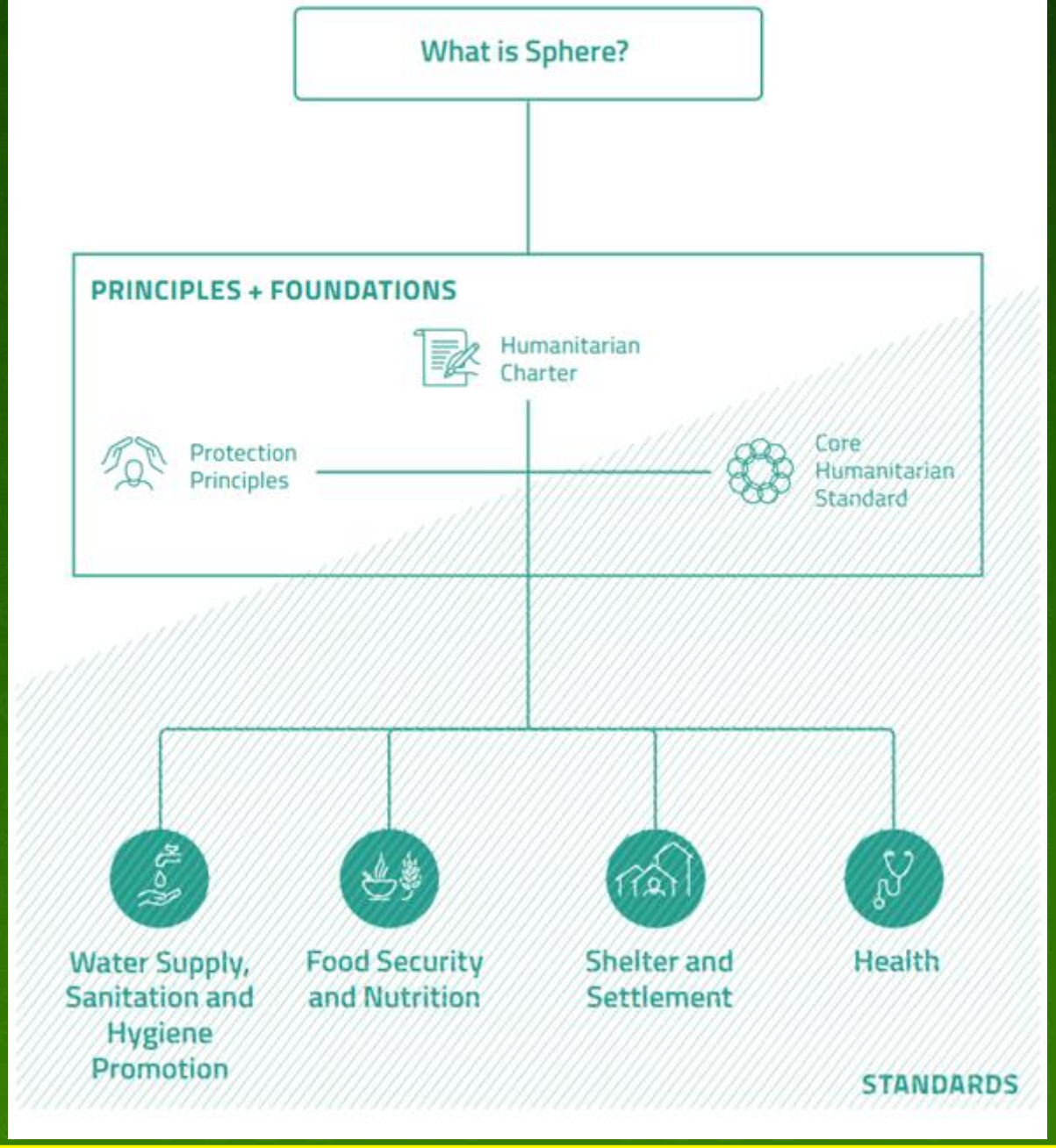
Our insights into data availability and use come from managing the Humanitarian Data Exchange (HDX), an open platform for finding and sharing data across crises and organizations. At the start of 2024, we estimate that 70 percent of relevant, complete crisis data is available across 23 humanitarian operations, based on the analysis of the HDX Data Grids.

The Sphere Handbook

Humanitarian Charter and Minimum Standards in Humanitarian Response

Sphere

2018 Edition



available resources

- Determine the capacity of the MoH of the country affected by the crisis.
- Determine the status of national health facilities, including total number by type of care provided, degree of infrastructure damage, and access.
- Determine the numbers and skills of available healthcare staff.
- Determine the available health budgets and financing mechanism.
- Determine the capacity and functional status of existing public health programmes such as Extended Programme on Immunisation.
- Determine the availability of standardised protocols, essential medicines, medical devices and equipment, and logistics systems.
- Determine the status of existing referral systems.
- Determine the level of.
- Determine the status of the existing health information system.

data from other relevant sectors

- Nutritional status.
- Environmental and WASH conditions.
- Food basket and food security.
- Shelter – quality of shelter.
- Education – health and hygiene education.

The Sphere Handbook, *https://spherestandards.org/handbook/ © Sphere Association, Geneva 2018, p.350*

IPC 9191-1999

General Guidelines for Implementation of Statistical Process Control (SPC)

WHO - Basic IPC and primary care https://www.who.int/teams/integrated-health-services/infection-prevention-control/basic-ipc-and-primary-care

Article 13 Supply chain and logistics

1. The "Global Supply Chain and Logistics Network" (hereinafter the "GSCL Network") is hereby established to enhance, facilitate, and work to remove barriers and ensure equitable, timely, rapid, safe, and affordable access to pandemic-related health products for countries in need during public health emergencies of international concern, including pandemic emergencies, and for prevention of such emergencies. The GSCL Network shall be developed, coordinated and convened by the World Health Organization in full consultation with the Parties, World Health Organization Member States that are not Parties, and in partnership with relevant stakeholders, under the oversight of the Conference of the Parties. The Parties shall prioritize, as appropriate, sharing pandemic-related health products through the GSCL Network for equitable allocation based on public health risk and need, in particular during pandemic emergencies.

2. The Conference of the Parties shall, at its first meeting, define the structure, functions and modalities of the GSCL Network, with the aim of ensuring the following:

(a) collaboration among the Parties and other relevant stakeholders during and between pandemic emergencies;

(b) the functions of the GSCL Network are discharged by the organizations best placed to perform them;

(c) consideration of the needs of persons in vulnerable situations, including those in fragile and humanitarian settings, and the needs of developing countries;

(d) the equitable and timely allocation of pandemic-related health products, based on public health risk and need, including through procurement from the facilities referenced under Article 10; and

(e) accountability, transparency, and inclusiveness in the functioning and governance of the GSCL Network allowing for equitable representation of the World Health Organization Regions.

WHO Pandemic Agreement, May 2025,
Article 13 Supply chain and logistics,
https://apps.who.int/gb/ebwha/pdf_files/WHA78/A78_R1-en.pdf#page=23

WHO Pandemic Agreement, May 2025,

Article 13 Supply chain and logistics,

https://apps.who.int/gb/ebwha/pdf_files/WHA78/A78_R1-en.pdf#page=24

3. The functions of the GSCL Network shall include, inter alia, subject to further decision-making by the Conference of the Parties with respect to further tasks that may be assigned to the GSCL Network:

(a) identification of pandemic-related health products and relevant raw material sources;

(b) identification of barriers to their access;

(c) estimation of their supply and demand;

(d) facilitation of procurement of pandemic-related health products and relevant raw materials, including from facilities referenced under Article 10, during public health emergencies of international concern, including pandemic emergencies;

(e) coordination of relevant procurement agencies within the GSCL Network and pre-pandemic preparatory work;

(f) promotion of transparency across the value chain;

(g) collaboration on stockpiling both during pandemic emergencies and inter-pandemic periods to, inter alia, promote the establishment of international and regional emergency stockpiles, strengthen existing stockpiles, facilitate effective and efficient stockpiling operations and increase equitable and timely access to pandemic-related health products;

(h) initiation and facilitation of the rapid release from international stockpiles of relevant health products in the event of outbreaks, especially to developing countries, to prevent outbreaks from progressing into public health emergencies of international concern, including pandemic emergencies; and

(i) facilitation of, and working to remove barriers to, timely and equitable access to pandemic-related health products, through allocation, distribution, delivery, and assistance with utilization, including for products provided to the PABS System, during public health emergencies of international concern, including pandemic emergencies, with special regard to needs in humanitarian settings.

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selected Challenges

- Big data, IoT, process models, AI, decision support, alternatives, documentation
- From facts to situations
- From the visualization of complexity to the implementation of complexity
- Implementation of complexity on the basis of standards, scalability, traceability, granting technical and administrative coherence (with regard to regulations, rules, guidelines)
- Analysis of documented complexity (e.g. parliamentary committee of inquiry into the Ahr flood disaster)
- Data infrastructures for just-in-time support in the most general sense (overcoming the research-practitioners gaps)
- National/European/global status of development, objectives, governance structures
- Human resources / education / curricula
- Dynamic Legal Framework
- Creating the **Common European RISK Information Space**

Common European Data Spaces 202?

current Rollout of Common European Data Spaces
https://digital-strategy.ec.europa.eu/en/policies/data-spaces

Agriculture	AgriDataSpace, Divine, CrackSense, ScaleAgData, AgDataValue, 4Growth, Dig4Live
Cultural Heritage	Europeana pro, Eureka3D, 5Dculture, DE-BIAS, AI4Europeana
Energy	IntNET, OMEGA-X, EDDIE, Enershare, Synergies, Data cellar
Finance	Procurement under the Digital Europe programme (under development)
Green deal	GREAT, AD4GD, B-Cubed, FAIRiCUBE, USAGE, **Smart cities and communities** DS4SSCC DS4SSCC-DEP (under development)
Health	**European Health Data Space:** MyHealth@EU HealthData@EU Pilot Joint Action Towards the European Health Data Space – TEHDAS **Cancer images: EUCAIM** **Genomics: GDI**
Language	European language data space

Manufacturing	Data Space 4.0 SM4RTENANCE UNDERPIN (under development)
Media	TEMS
Mobility	PrepDSpace4Mobility deployEMDS
Public administration	Legal (under development) OOTS - Once Only Technical System Public procurement: PPDS
RISK	Information Space for Safety & Security (Proposal)
Research and Innovation	The European Open Science Cloud (EOSC), Skills4EOSC, EOSC Focus, FAIR-IMPACT, RDA TIGER, FAIRCORE4EOSC, AI4EOSC, EuroScienceGateway, FAIR-EASE, RAISE, SciLake, EOSC4Cancer, GraspOS, CRAFT-OA, AquaINFRA, Blue-Cloud 2026, OSCARS, EVERSE, OSTrails, EOSC Beyond, EOSC-ENTRUST, SIESTA, TITAN
Skills	DS4Skills EDGE-Skills (under development)
Tourism	DATES DFST

EU Regulations on Information Interoperability and Data Spaces

European Data Act

Regulation (EU) 2023/2854 of the European Parliament and of the Council of 13 December 2023 on harmonised rules on fair access to and use of data

https://eur-lex.europa.eu/eli/reg/2023/2854

Interoperable Europe Act

Regulation (EU) 2024/903 of the European Parliament and of the Council of 13 March 2024 laying down measures for a high level of public sector interoperability across the Union

https://eur-lex.europa.eu/eli/reg/2024/903

European Commission Staff Working Document on Common European Data Spaces

https://ec.europa.eu/newsroom/dae/redirection/document/101623

Data Spaces Blueprint

The Blueprint is a consistent and comprehensive set of guidelines to support the development cycle of data spaces. In the blueprint, you can find the conceptual model of data space, data space building blocks, and the recommended selection of standards, specifications and reference implementations identified in the data spaces standards and technologies landscape.

https://dssc.eu/space/BPE/179175433/Data+Spaces+Blueprint+%7C+Version+0.5+%7C+September+2023

Directive (EU) 2020/1828 (Data Act)
entered into force on 11 January 2024 and into application on 12 September 2025
https://op.europa.eu/en/publication-detail/-/publication/ef51c6ab-c06c-11ee-b164-01aa75ed71a1/language-en

(63) In situations of exceptional need, it may be necessary for public sector bodies, the Commission, the European Central Bank or Union bodies to use in the performance of their statutory duties in the public interest existing data, including, where relevant, accompanying metadata, to respond to public emergencies or in other exceptional cases. Exceptional needs are circumstances which are unforeseeable and limited in time, in contrast to other circumstances which might be planned, scheduled, periodic or frequent. While the notion of 'data holder' does not, generally, include public sector bodies, it may include public undertakings. Research-performing organisations and research-funding organisations could also be organised as public sector bodies or bodies governed by public law. To limit the burden on businesses, microenterprises and small enterprises should only be under the obligation to provide data to public sector bodies, the Commission, the European Central Bank or Union bodies in situations of exceptional need where such data is required to respond to a public emergency and the public sector body, the Commission, the European Central Bank or the Union body is unable to obtain such data by alternative means in a timely and effective manner under equivalent conditions.

(64) In the case of public emergencies, such as public health emergencies, emergencies resulting from natural disasters including those aggravated by climate change and environmental degradation, as well as human-induced major disasters, such as major cybersecurity incidents, the public interest resulting from the use of the data will outweigh the interests of the data holders to dispose freely of the data they hold. In such a case, data holders should be placed under an obligation to make the data available to public sector bodies, the Commission, the European Central Bank or Union bodies upon their request. The existence of a public emergency should be determined or declared in accordance with Union or national law and based on the relevant procedures, including those of the relevant international organisations. In such cases, the public sector body should demonstrate that the data in scope of the request could not otherwise be obtained in a timely and effective manner and under equivalent conditions, for instance by way of the voluntary provision of data by another enterprise or the consultation of a public database.

(65) An exceptional need may also arise from non-emergency situations. In such cases, a public sector body, the Commission, the European Central Bank or a Union body should be allowed to request only non-personal data. The public sector body should demonstrate that the data are necessary for the fulfilment of a specific task carried out in the public interest that has been explicitly provided for by law, such as the production of official statistics or the mitigation of or recovery from a public emergency. In addition, such a request can be made only when the public sector body, the Commission, the European Central Bank or a Union body has identified specific data that could not otherwise be obtained in a timely and effective manner and under equivalent conditions and only if it has exhausted all other means at its disposal to obtain such data, such as obtaining the data through voluntary agreements, including purchasing of non-personal data on the market by offering market rates, or by relying on existing obligations to make data available or the adoption of new legislative measures which could guarantee the timely availability of data. The conditions and principles governing requests, such as those related to purpose limitation, proportionality, transparency and time limitation, should also apply. In cases of requests for data necessary for the production of official statistics, the requesting public sector body should also demonstrate whether the national law allows it to purchase non-personal data on the market.

Towards a Comprehensive and Structured Approach

1. Creating a cross-sector governance structure
2. Understanding / Modeling complex dependencies, resilience and vulnerabilities
3. Cross-Organizational common understanding of deficits, synergies, risks, resilience and vulnerabilities
4. Negotiate resilience goals that can be implemented and achieved
5. Prioritize measures across the entire life cycle of Critical Infrastructure and beyond
6. Ensuring accountability and monitoring the implementation of resilience measures
7. Consider the cross-border dimension of information infrastructure systems

Our Common Goals:

- Digital Innovation and Information Management
- Increasing and ensuring Efficiency
- Establishing Cross-Organizational Coherence
- Granting just-in-time Information Availability and Use
- in line with Professional and Societal Expectations
- Saving Lives and Reducing Suffering

Thank You for Your Interest !

For further details, information, communication and cooperation please contact:

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