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Biodiversity Informatics

Interoperability, networking and the international context



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Networking and Interoperability

- Data capture – computerise data
- **Networking** –making data from several similar independent sources available on a shared computer network
- **Interoperability** – integrate data from several independent sources
- Analysis – turn data into information

Interoperability – a technical definition

“Interoperability is the ability of a system or a product to work with other systems or products without special effort on the part of the customer.”

[WhatIs.com]

Interoperability – a fundamental attitude!

To be **interoperable**, one should actively be engaged in the ongoing process of ensuring that the **systems, procedures and culture** of an organisation are managed in such a way as to **maximise opportunities for exchange and re-use** of information, whether internally or externally.

[Paul Miller 2000: Interoperability. Ariadne 24]



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Key issues in interoperability

- Technical interoperability
- Semantic interoperability
- Political / human interoperability
(IPR, credit, control, staff processes, user interface)
- Inter-community interoperability
(e.g. Museums – Libraries – Archives - Individuals)
- International interoperability
(differing work practices, technical approaches, and organisation)

Based on: UK Office for Library and Information Networking (UKOLN)



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Technical interoperability

- Communication & transport standards
e.g. Z39.50, HTTP
- Storage and representation standards
e.g. XML
- Agreed syntax notation (data format)
- Data access protocol
 - Query syntax
 - Record set syntax
 - Session management



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Semantic interoperability

- Integration of terminology used to denote concepts in different systems
- Definition of concepts
- Definition of rules relating to concepts (e.g. data quality standards or data-dependent integrity rules)
- Use of thesauri for data content and for the description of data collections

Multimedia publishing: INGE

