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INFORMAL ADVISORY COMMITTEE ON THE
BIOSAFETY CLEARING-HOUSE
Second meeting
Geneva, 23-24 November 2006
Item 3 of the provisional agenda*

INTEROPERABILITY ISSSUES

Note by the Executive Secretary

I. INTRODUCTION

1. At its second meeting, the Informal Advisory Committee has been invited to provide advice on a number of items identified as relevant to the technical development and implementation of the Biosafety Clearing-House (BCH).

2. The present note contains background information particularly relevant to issues of interoperability, including a short overview of the Biosafety Clearing-House (section II); an examination of the common formats used in version 3.0 of the Biosafety Clearing-House (and their corresponding XML schemas), the new concept of relationship between documents introduced with this new version of the common formats, and exchange of controlled vocabularies (section III); support for XML signatures (section IV); Biosafety Clearing-House common formats and Web Service Support Life Policy (section V).

II. OVERVIEW OF THE BIOSAFETY CLEARING-HOUSE

3. Since its pilot phase was first launched in 2001, the Biosafety Clearing-House has proved to be a very flexible and evolving system, able to adapt itself to a number of different needs identified by the Parties. However, it has consequently become a fairly complex system which needs to be maintained.

4. In addition to the Central Portal used by most users to browse records: the Biosafety Clearing-House also encompasses a number of additional tools such as the Management Centre, the Biosafety Clearing-House Web Service, the Biosafety Clearing-House Crawler, learning tools like new Biosafety Clearing-House Web Service Test Utility, and interactions with the interoperable partners who provide information to, and access information from, the Biosafety Clearing-House databases.

5. In order to best use the financial and technological resources available to the Secretariat to maintain the various elements of the Biosafety Clearing-House in the most efficient manner, a short review of some current tools is provided below. Members of the Informal Advisory Committee are

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invited to consider ways to best maximize the use of existing resources, with a view to future needs for ongoing development and maintenance.

III. REVIEW OF COMMON FORMATS AND EXCHANGE OF CONTROLLED VOCABULARIES

6. Version 3.0 of the Biosafety Clearing-House released in March 2006 by the Secretariat introduced the concept of relationship between documents. This new concept not only simplifies the data entry and update processes, but more importantly improves searching ability by interlinking related documents. For example, recording the relationship between different records in the BCH allows multiple decisions to be linked to a single applicant record. This means that if a change must be introduced to the applicant, the updated information is automatically provided to each linked decision document, without the need to update every single decision.

7. The BCH Controlled Vocabulary uses the 'preferred' terms from the BCH Thesaurus to classify records in the BCH, which allows users to consistently register and search for information in the databases in multiple languages. Further information about the BCH Controlled Vocabulary and Thesaurus is available on the BCH at http://bch.biodiv.org/thesaurus/default.shtml.

8. Version 2.0 of the BCH was basically a monolingual system with provision for encoding information in other languages. The version 3.0 of the BCH is truly multilingual and natively implements support of each language the same way through use of globally unique identifiers (GUID) to describe each term included in the controlled vocabulary. This not only has a positive impact on implementation of interoperability, but also improves the ease of updating and translation of the controlled vocabulary.

9. Proposed changes in XML Schemas make even more important the need for an efficient exchange mechanism for controlled vocabularies. Members of the Informal Advisory Committee are invited to consider the two mechanisms below.

10. XML versions of the controlled vocabularies can be programmatically obtained through the version 3.0 of the BCH Web Service. The way the controlled vocabularies are represented in XML is strictly defined through XML schemas.

11. In order to facilitate their exchange, the Secretariat also make available the controlled vocabularies has SQL scripts which are compatible with most relational databases such as Microsoft SQL Server, Microsoft Access, Oracle, MySQL and PostgreSQL. These scripts are automatically updated daily.

12. Members of the Informal Advisory Committee are invited to consider the new version of the XML Schemas that reflects the changes to the common formats and the relationship between them, the support for multilingual documents and the improvements to the controlled vocabularies.

IV. XML SIGNATURES

13. The Central Portal of the Clearing-House offers two options for the transfer of XML documents.

- The Biosafety Clearing-House Web Service is used by interoperable partners to programmatically push their XML documents to the Biosafety Clearing-House through a set of defined SOAP-formatted XML messages.
- The Biosafety Clearing-House Crawler is a application developed by the Secretariat which crawls national websites, gathering all Biosafety Clearing-House-related XML documents.

14. Since version 1.1, the Biosafety Clearing-House has supported XML-signed documents. XML signatures ensure integrity of the information and authentication of sender. However, this feature has never been used by any of our interoperable partners. In fact, the Biosafety Clearing-House already provides alternative mechanisms that are used to ensure integrity of the information and authentication of sender. These mechanisms such as user authentication, transaction logging, etc. not only apply to the Biosafety Clearing-House Web Service but also to the Management Centre of the Biosafety Clearing-House.

15. An inconvenience of providing support of XML signatures is that this prevents the Biosafety Clearing-House from altering any document, preventing actions such as:

- Migration of existing data to newer XML schemas (common formats)
- Changes to controlled vocabularies (merges, splits, etc.)
- Sharing of simplified documents (e.g. English only documents)

16. Committee members are invited to consider the implications of phasing out support for XML signatures.

V. COMMON FORMATS AND WEB SERVICE – SUPPORT LIFE POLICY

17. As the Biosafety Clearing-House is in constant evolution, the Secretariat has released a number of versions of the Web Service used for interoperability through the years. Developing distinct versions of the Web Service ensures backward compatibility while allowing access to new functionalities through newer versions. While necessary, providing ongoing support of previous versions of the Web Service requires a lot of resources and does not encourage interoperable partners to move to the newer versions.

18. The Committee is invited to consider the implications of phasing out support for older versions of the Web Service and common formats after a defined time period, such as 24 months after the release of a new version, in order to best use the financial and technological resources available to the Secretariat and interoperable partners to migrate to newer versions.

19. The Committee is also invited to consider the implications of establishing a “Support Life Policy” for Biosafety Clearing-House Web Service and Common Formats which can establish the phasing out policies, procedures and guidelines.
