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The INIS Thesaurus: historical perspective



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Introduction

The INIS Thesaurus is a controlled terminological knowledge base that has been developed over the years through the contribution of INIS Member States in all areas of peaceful applications of nuclear science and technology, which is also the subject scope of the INIS Collection. The thesaurus is primarily used for subject indexing of input into the INIS system and for retrieval of information from the database. Thanks to the vital support of INIS Member States, the thesaurus has been translated into eight languages (i.e. all IAEA official languages plus German and Japanese) and is available on-line to assist our global users as a tool for retrieval and for general reference. It is a dynamic information resource that is continually updated to cater to new developments of terminologies in nuclear science and technology.

Since its inception in the 1960's, it was decided that the subject analysis for INIS input preparation be based on its own subject categories, which also determines its scope, and keyword indexing using a thesaurus. This article briefly describes the development of the INIS Thesaurus from a historical perspective.

Report of the INIS Study Team (1968) as the basis of the INIS Thesaurus

The Agency established a team of experts with the task of developing a detailed description of a nuclear information system and then produced a report by the *INIS Study Team*, Vienna, 4 March–28 June, 1968.

The team had to select an optimal method of content description and retrieval tools that could be used by all Member States in a standardised manner.

The team narrowed down their options to three methods, namely:

- Universal Decimal Classification (U.D.C.);
- Subject Headings (with a modifier line) as used by National Science Abstracts (NSA);
- Keywords, for example as in the ENDS system of EURATOM.

Indexing using keywords was chosen as the preferred method and this decision entails the adoption or development, and ultimately the continued maintenance, of a controlled vocabulary thesaurus.

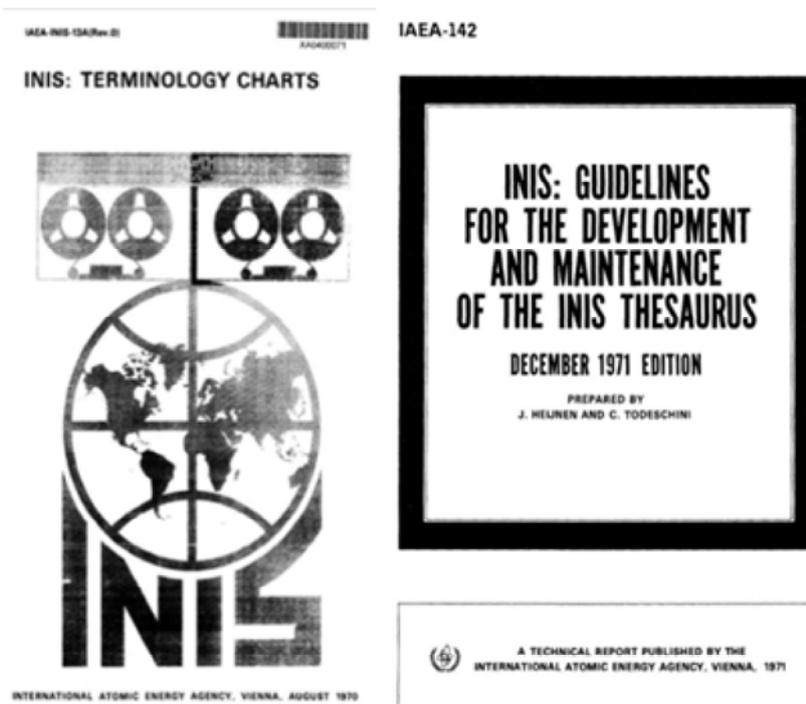


FIG. 1. INIS: Thesaurus and INIS: Terminology Charts.

The EUROATOM Thesaurus as the foundation of the INIS Thesaurus

The IAEA Board of Governors, at their meeting on 26 February 1969, approved the International Nuclear Information System (INIS) on an operational basis as early as possible in 1970, and also recommended that the Agency, as far as possible, take maximum advantage of the work of other effective systems to collect information, including the EURATOM system. Special emphasis was given to the need for cooperation with EURATOM so as to avoid duplication, and to draw benefits from the developmental work that they had already done, particularly in the creation of a thesaurus of nuclear terminology.

Accordingly, a contract between the IAEA and EURATOM was signed in November 1969 to adopt the EUROATOM terminology to the INIS Thesaurus. This involved stationing an INIS staff member in Luxembourg for the duration of the contract (November 1969 to June 1970) to work closely with the EURATOM staff on the adaptation of the thesaurus for the needs of INIS and to act as liaison between the two organizations. The project produced:

The first draft INIS Thesaurus consisting of two parts: the first part being an alphabetic listing of the terms, each of which had certain other terms associated with it; while the second part consisted of 'Terminology Charts', which were a mixture of text and graphic displays of the text prepared to illustrate the interrelationships between terms.

The first version of the INIS indexing manual: while in Luxembourg, the INIS staff member also wrote this manual, to be used by indexers at national INIS Centres to select indexing terms from the new INIS Thesaurus.

The thesaurus, in its two parts, and the software for its maintenance and updating: by June 1970, when the INIS staff member stationed in Luxembourg returned to Vienna, an informal meeting between the IAEA and EURATOM staff took place in Vienna, at which these were officially handed over to the IAEA.

Adoption of Standards and the full revision of the INIS Thesaurus

Based on the recommendations of the *Panel on Improvements or Alterations in the General Development Pattern of INIS*, Vienna, November 1970, draft guidelines for the development and maintenance of the INIS Thesaurus were drawn up. The draft was based on *Guidelines for the Establishment and Development of Monolingual Scientific and Technical Thesauri for Information*

Retrieval prepared by UNESCO, Paris, July 1970. On the basis of the guideline, participating centres reviewed each term in the EURATOM Thesaurus as adopted by INIS, removed errors and inconsistencies, ensuring a univocal representation of every concept by one and only one descriptor in the thesaurus and, above all, linked each term to other thesaurus terms that had a logical and/or semantic association with the term in question. With the development of a structured terminology, there was no longer a need for the Terminology Charts, which were used to depict the relationship of the terms. The final version of the new INIS Thesaurus was produced in Vienna and presented to the *Working Group on Thesaurus and Related Technical Questions* in November 1971. The *INIS: Guidelines for the Development and Maintenance of the INIS Thesaurus*, used by all participants in the study as the basis for the revision and restructuring of the terminology of the thesaurus, was published by the Agency in December 1971.

Development of the INIS Multilingual Thesaurus

Since the inception of INIS, much effort has gone into the development and maintenance of the INIS Thesaurus, first in English, and later in additional languages as various INIS national centres undertook the translation of the terminology in their respective languages.

At the *Third Consultative Meeting of INIS Liaison Officers* held in Varna, Bulgaria in October 1974, delegates from the USSR and the Fed. Rep. of Germany announced that their centres had started preparing the total translation of the INIS Thesaurus into Russian and German, respectively.

During the *Seventh Consultative Meeting* in Karlsruhe, Germany in May 1979, due to the upcoming publication of the Russian version of the INIS Thesaurus later that year, the possibility of creating a Multilingual Dictionary, in English, French, German and Russian, was discussed.

In 1983, the first edition of the *INIS Multilingual Dictionary* (English, French, German, Russian) was completed and published. The Spanish translation, though much advanced, was not yet finished at this time and was completed in 1988.

The first multilingual INIS Thesaurus was published in 1995 in English, French, German, Russian and Spanish as *INIS Reference Series IAEA-INIS-20 (Rev. 1)*. In 2005, the INIS Secretariat acquired a thesaurus management system that supported Unicode and, during the same year, versions in Chinese and Arabic were completed by the INIS Centres of China and Syria respectively.

History of the INIS/ ETDE Joint Thesaurus

In January 1987, a number of International Energy Agency (IEA) Member States of the OECD, signed an 'Implementing Agreement' to operate a new system referred to as the Energy Technology Data Exchange (ETDE). ETDE would create a database very much in parallel with what INIS was doing, with the significant difference that it would not be limited to the peaceful applications of nuclear energy but would cover the world's literature on all types of energy sources. Interestingly, all member states of ETDE were already members of INIS. ETDE planned to use the full INIS input as the input to their database in the area of nuclear energy.

Following much work on the part of both INIS and ETDE staff on the reconciliation of the INIS and the ETDE thesauri, the first draft of the reconciled INIS-ETDE Thesaurus in electronic format was distributed at the Liaison Officers' Meeting in Karlsruhe, Germany in June 2000.

One of the significant outcomes discussed at the *6th INIS/ETDE Joint Technical Committee Meeting*, held in Vienna in 2000, was the completion of the joint INIS/ETDE Thesaurus, which was later published in 2001. This thesaurus became part of a new *Joint Reference Series* published in collaboration with ETDE.

However, in March 2015, after more than 27 years of cooperation, the INIS/ETDE Joint Thesaurus became the INIS Thesaurus, due to the official end of the ETDE in June 2014.

Present status of the INIS Thesaurus

The INIS Thesaurus continues to be updated on a regular basis, giving users the opportunity to consult the latest version in a single document on the INIS website. The up-to-date thesaurus is also integrated into FIBRE+ (input preparation software), Computer Assisted Indexing (CAI) software, INIS Record Processing Software (IRPS) and the on-line INIS Collection Search (ICS).

The English Thesaurus is updated on a monthly basis and is available in PDF from the Publications section of the INIS website. Those who have access to the Member's Area on the INIS website can download both the full (all levels of narrow terms) and short (1 level of narrow terms) versions of the English Thesaurus in XML-format.

The Multilingual Thesaurus, in addition to English, includes 7 languages — Arabic, Chinese, French, German, Japanese, Russian and Spanish. As agreed at the 37th ILOM in October 2014, both the monolingual thesauri and the bi-lingual thesauri are updated twice a year – in January and in July.

Publication	No.
INIS/ETDE Thesaurus ar de fr en es ja ru zh	IAEA-INIS-01 (2015/03)
INIS/ETDE Thesaurus Supplement	IAEA-INIS/ETDE-01 (2014/12.Supp)
Interactive Multilingual INIS/ETDE Thesaurus with navigation capabilities	Online version (May 2013)
Multilingual dictionary without thesaurus hierarchy	
ar-en de-en fr-en es-en ja-en ru-en zh-en en-ar en-de en-fr en-es en-ja en-ru en-zh	

Regarding implementation, the INIS Secretariat continues to solicit translation lists from the respective national INIS centres to be imported into the INIS Thesaurus.

The first quarter of 2015 resulted in 4 monolingual (and 8 bi-lingual) thesauri updates, including Chinese, Japanese, German and French. All of them are available in PDF on the INIS website.

The publication section of the INIS website provides a simplified overview and easy access to a multitude of documents. Along with all language versions, the Thesaurus Supplement, the Interactive Multilingual INIS Thesaurus with navigation capabilities, and the multilingual dictionaries without thesaurus hierarchy continue to be updated.

Publication	English Thesaurus	No.
INIS/ETDE Thesaurus ar de fr en es ja ru zh	7 monolingual thesauri (+ English)	IAEA-INIS-01 (2015/03)
INIS/ETDE Thesaurus Supplement		IAEA-INIS/ETDE-01 (2014/12.Supp)
Interactive Multilingual INIS/ETDE Thesaurus with navigation capabilities		Online version (May 2013)
Multilingual dictionary without thesaurus hierarchy		
ar-en de-en fr-en es-en ja-en ru-en zh-en en-ar en-de en-fr en-es en-ja en-ru en-zh	bi-lingual thesauri	

The INIS on-line Thesaurus Advisory Group, created to evaluate proposals for new descriptors and other thesaurus related topics, continues to deliberate on newly proposed terms and other thesaurus matters. These discussions facilitate the increase of the thesaurus: during the debates new terms and wordblocks are created and improved, and old/out-of-date word blocks and scope notes are revised.

It also provides a good opportunity to stay in touch with subject specialists, not only within INIS and the IAEA, but also within Member States. In order to become a member of this group, one

needs to be introduced and recommended by his/her Liaison Officer.

As of March 2015, the English INIS Thesaurus contained 30 866 descriptors, 22 155 of which are valid descriptors and 8711 of which are forbidden terms.