

USECS®: the world entities reference

Creator: Azamat Sh. Abdoullaev
EIS Encyclopedic Intelligence Systems LTD
<http://www.eis.com.cy>
abdoul@cytanet.com.cy

Introduction

A single global classification system, USECS® is the acronym of "Universal Standard Entity Classification System". The knowledge product is virtually the world entities reference system serving as an all-entity classification, the world directory of entities and relationships, or a standard code of basic meanings and definitions supported by a firm ontological foundation. The product line may be also distributed under the trade names: World Stock List; World Knowledge Directory (Tree); Universal Scheme of Things; World (Universal) Directory of Meanings; Meaning Searcher, the Sense Finder; Human Knowledge Digest, or the Global Nomenclature. To meet the unrelenting human thirst for encyclopedic knowledge and intelligence, the project is particularly committed to digesting, systematizing, and encapsulating the human knowledge into a summary scheme retaining the most essential things, so that the frame of human learning can be integrated in the human minds or knowledge bases of computing applications systems.

The USECS is designed as a lattice-ordered structure of entities limited by the universal upper bound Entity, Thing, or Being and the universal lower bound, Nonentity, Nothing, or Nonbeing. All the world entities are arranged into two distinguishing levels, generic classes of things (substance, state, change, and relation taken in general, as mass nouns) and specific classes of things (objects, properties, events, and specific connections, as count nouns). The user can navigate it like as a distributive lattice of things of the finite length n by ascending from the bottom element of Nothing (or some specific term) to the top generalization in several steps; or vice versa, by descending from general things to special domain meanings.

The USECS also suggests the meaningful Web search by explaining the senses of search words or topics, namely, what sort of entity they represent and how the terms are featured in the common classification of semantic classes. Representing the comprehensive hierarchy of entities and relationships, it identifies the basic words in natural language with their major meanings, semantic lines of descent, and offspring. Equipped with the meaning of the search word or the structure of the search subject or topic, the user can perform intelligent online quest for data, facts, or knowledge. Important point, unlike most comprehensive dictionaries and encyclopedias, all the meanings of terms in the USECS follow the standard formula of defining having a rigid pattern of definition.

The first edition, the USECS 1.0, is published as a downloadable Adobe Acrobat 7.0 Document, with the memory size of 14.7 MB and the number of words about a million. As the universal schema and integrated hierarchy of world entities, it underpins the knowledge references, classifications, and ontologies as Britannica's subjects, Webster's Dictionary, the Great Ideas, Web Directories, the UN classifications of industry and products, Wikipedia's categories as well as the International Press Telecommunications Council Subject Reference System. Thus the USECS, as the base ontology, suggests the guidelines for constructing specific ontologies, models, schemas, vocabularies, terminologies, and catalogs in any domain of knowledge or practice or business.

A single hierarchy of things of every kind and sort

Implicitly or explicitly, the assumption of a single hierarchy underlies all profound reference works: encyclopedias (as Encyclopedia Britannica, the Outline of Knowledge), thesauri (as Roget's thesaurus), large lexical databases (as the Princeton WordNet 2.1), and general taxonomies (from Yahoo hierarchy to upper ontologies and web ontology languages). For example, the largest human knowledge reference, Encyclopedia Britannica, tends to organize the world's collective knowledge as a single universe of discourse following the natural order of particular things: substance (matter and energy, from atoms to the universe), Earth (Globe), life, human life, human society, and culture (art, technology, religion, the history of mankind, and the branches of knowledge). The WWW classification schemas involve the subject categories such as Arts & Humanities & Literature, Business & Economy, Computers & Internet, Games,

Health, Home, Kids & Teens, News & Media, Recreation & Sports, Reference, Regional, Science, Shopping, Society, and World. Roget's thesaurus splits up all English lexicon into several classes of words as expressing the hierarchy of basic categories: abstract relations (existence or being or entity, relation, quantity, order, number, time, change, and causation); space; matter; the intellectual faculties; the voluntary powers; the sentiment and moral powers. Discarding the principle of multiple hierarchies, the on-line lexical database WordNet 2.1 also puts entity first in the hierarchy of words (nouns) having as its heterogeneous subordinates:

- the realms of physical entity (thing, object, causal agent, substance or matter, and physical process);
- the realms of abstract entity or abstraction (psychological feature, attribute, group, relation, communication, quantity, otherworld, and set).

Still the above classifications reflect a habitual prejudice to divide everything into concrete entities (physical objects, agents, or processes, completed sometimes with groups, collections of concrete things) and abstractions (classes, states, qualities, quantities, and relations) or simply organizing things by pragmatic topics. Such widely practiced supposals have been the principal obstacles in describing the universe of learning as a whole totality.

The rationale for the all-thing catalog

In the enterprise of knowing and learning, one of the hardest tasks has been to determine the body of words in terms of which the language can effectively represent reality, express the mental experiences, and communicate information. Having such an all-embracing system of words to which one can refer for standard definitions of significant terms has always been considered as the most sought-after resource. But the main barrier to achieve the encyclopedic inventory of senses consisted in the assumption to view the entire macrocosm of knowledge as a single universe of discourse. That is, the whole undertaking demanded the universal schema capable to represent everything in a single hierarchical order of things, from fundamental, domain-independent classes to domain-specific, particular individuals, as in:

**Thing, Entity, or Being (Everything, the World, or the Universe) > Anything >
> Something > Nothing (Nonentity, Nonexistence, Nonbeing)**

So to benefit the uniform catalog of things is possible only if our accounting of reality affords an exhaustive categorization of things, in every area of the universe, in all spheres of existence, at every grade and level of being. As a great reward, within the unifying scheme of world entities, the major knowledge and language resources (encyclopedias, lexical taxonomies, semantic thesauri, web directories, search engine subject indices, upper ontologies, domain terminologies, languages, and nomenclatures) will become integrated in a single consistent system of terms. In order to approach the ideal, the encyclopedic source of meanings should be constructed as addressing all significant information about natural, mental, social, cultural, and virtual domains. To meet this heavy requirement, the universal directory of all the basic names of world things is created in the form of the world knowledge wordbook. In its substance, such a general nomenclature, terminology, or language of things is nothing but the digest (epitome, compendium, outline, abstract, or synopsis) of human learning covering all key domains of reality, subject areas, and fields of study.

Giving the systematized description of general entities, with kinds and instances, by defining their language, terms, names, and expressions, the USECS appears as an essential tool in transforming the World Wide Web into the Meaningful Web of words and constructions, an embodiment of human knowledge. Besides, providing the common language of things, it can be viewed as a complement to the ISO international standards supplying the common reference frame and technological language for particular things: materials, products, technologies, processes, and services.

Being drawn on the unified model of reality and aimed toward unity of standards, the entire content is divided into two parts:

1. the world catalogue of general classes of things such as Substance (substances and objects), State (states, conditions, qualities, quantities), Change (changes, events, and processes), and Relationship (relationships, connections, associations) with the standard formulas of defining their child classes, kinds, varieties, and instances.

2. the encyclopedic knowledge reference designed as a source of essential knowledge covering the main points of any significant subject area, domain of interest, or field.

USECS and the World Wide Intelligent Web

There is now an urgent necessity to rationalize both the web keyword search and the web directories browsing. The World Wide Web or the Web is an information space of software agents (servers, search engines, spiders, browsers, proxies, multimedia players) and resources (documents, graphics, sounds or audios, and videos or animation) identified by URI's (Uniform Resource Identifiers) and interconnected by hypertext links via the Internet protocols (as the HTTP - Hypertext Transfer Protocol). There are two ways to navigate the information space of internet sites providing textual documents, images, animation and sound: either by browsing the Web Directories organizing the Web content as a tree-like hierarchy of subjects or topics and subtopics or by means of the Search Engines (software programs) entering keywords or key phrases or a piece of text. As a result, the keyword searches, basic or advanced, retrieve all the occurrences of the keyword in the Web pages which are listed in the search engine index.

Despite such sophisticated tricks of trade as relevancy rankings, using statistics and heuristics, refined search, Boolean operators, and indexing metatags, both the subject-based queries and the keyword search engine enquiries are often ended up with a multitude of irrelevant information by bringing a jumble of useless URLs.

Considering this, the World Directory of Things as the Meaning Finder suggests the meaningful Web search by explaining the senses of search words or topics; namely, what sort of entity they represent and how the terms are featured in the common classification of semantic classes. Representing the comprehensive hierarchy of entities and relationships, the Universal Directory of Meanings identifies all the basic words in natural language with their major meanings, semantic lines of descent, and offspring. Equipped with the meaning of the search word or the structure of the search subject or topic, the user will be capable to perform more relevant and coherent online quest for data, facts, or knowledge. Unlike most basic dictionaries and encyclopedias, using different ways and techniques of definitions for various sorts of words, the Universal Directory follows a single standard uniform formula for defining key words in a language, so that a primary meaning is enlarged and extended by such a variety of special meanings where the basic sense stays as the determining content and underlying element.

What the user can get from USECS

Nowadays there are many special services and applications offered at one's fingertips, from banks to funny AI agents. But hardly ever someone has been proposed to have the solid and integral content which affords:

WHAT CLASSES OF THINGS CAN BE IN THE WORLD AND WHAT KINDS OF RELATIONSHIPS THE THINGS MAY HAVE TO EACH OTHER;

ALL-EMBRACING HIERARCHICAL FRAMEWORK OF TERMS AND MEANINGS;

DISCOVERING WHAT IS BEHIND AND BEYOND ANY SIGNIFICANT WORDS and NOTIONS;

DEEPENING THE CONSCIOUSNESS (AWARENESS, KNOWINGNESS, COGNIZANCE, or UNDERSTANDING) OF REALITIES WITH THEIR CONNECTIONS;

THE OUTLINES OF HUMAN KNOWLEDGE ABOUT THE WORLD, COVERING VIRTUALLY ALL SUBJECT AREAS AND DOMAINS;

ONE OF THE RICHEST VOCABULARIES AND WIDEST LEXICONS OF REAL WORLD ITEMS;

THE SENSE FINDER AND MEANING SEARCHER COMPLEMENT FOR MEANINGFUL WEB SEARCH

How to use the world entities reference

To browse the World Directory content of entities or relationships covering the references and meanings of key words in a language and navigate through the search results, the user can apply either the Find Dialog Box or the Search PDF Window. Pressing Ctrl + F (Windows) or Command + F (Mac OS) opens the Find toolbar. Pressing Shift + Ctrl + F or Shift + Command + F (Mac OS) opens the Search PDF Window (for more details, see Adobe Essentials, search for words in a PDF document). The whole procedure asks for the following simple steps. Click the button Search; set a search preference, basic search options or advanced search options while looking for central senses and primary meanings employ a case-sensitive and whole words only options. CAPITALIZE your search, write in capital letters, in case you are looking for general things and classes such as ENTITY, PROCESS, SUBSTANCE, OBJECT, CHANGE, ACTION, RELATION, MATTER, MATERIAL, CAUSE, BEING, EVENT, LIFE, ANIMAL, HUMAN, PERSON; or Science, Mathematics, Language, etc.

While searching on a topic or subject, the user gets as the results list the outlines or summary of the subject: its central meaning, basic concepts and principles, classification, content, and relationships with other subjects.

When looking for key words, the user will get their basic senses, semantic relatives and family lines traced as deep as from the universal term of entity, like

DATABASE < INFORMATION < MESSAGE < COMMUNICATION < SOCIAL RELATION < RELATION < ENTITY; or

SEARCH ENGINE < COMPUTER PROGRAMM < SOFTWARE PROGRAM < COMPUTER CODE < CODING SYSTEM < WRITING < WRITTEN COMMUNICATION < COMMUNICATION < RELATION < ENTITY.

Under the headword DATABASE, its offspring or special types are enumerated in boldface or italic (list, listing; electronic, on-line, computer database; subdata base), all with their issues as well. Having constructed the most general meanings and senses, the user can proceed with searching the Internet putting into service the search engines such as Ask Jeeves, Yahoo, and Google or the web directories as Open Directory Project, Yahoo Directory, or Google Directory, which are inbuilt features of the World Directory. Additionally, for Encyclopedia Britannica's on-line subscribers, there is the opportunity to browse the rich electronic content by Britannica's categories and subjects.

Having the universal knowledge product (summary), one can create domain classifications in any field of knowledge, kind of activity, or sort of practice. There are use cases how to put up generic ontologies and schemas in the fields of Medicine, Business (Commerce), and the World Countries

Audience

As the world knowledge digest and language resource, the USECS is addressing people of every status and rank, social position and role: students and scientists, programmers and engineers, intellectuals and laymen, politicians and artists, presidents and housewives, managers and workers, technologists and theoreticians. Its audience includes all who desire to understand the world and its worlds of words from a single outlook of reality, in one standard comprehensive way, within the unifying schema of things. While having at his fingertips the universal directory of meanings and definitions, the user can perform a meaningful searching for specific information on requested words, phrases, subjects or topics, occurring in the wider context of web pages. The existing possibility of enlarging the basic content and meaning of entity terms with specific facts and information makes the USECS one of the core instruments in building the meaning-based knowledge Web.

USECS 1.0 (Universal Standard Entity Classification Systems) <http://www.eis.com.cy>

Contents

The Language of the World of Things

The Content of Definitions

THE CATALOG OF THE WORLD

- THE WORLD CATALOGUE OF SUBSTANCES
- THE WORLD CATALOGUE OF STATES
- THE WORLD CATALOGUE OF CHANGES
- THE WORLD CATALOGUE OF RELATIONS

THE ENCYCLOPEDIA KNOWLEDGE REFERENCE (Templets)

File Attachments:

The Web Directories and Catalogues:

Open Directory Project <http://dmoz.org/>

Yahoo! Directory <http://dir.yahoo.com/>

Google Directory <http://directory.google.com/>

Britannica Categories and Subjects <http://www.britannica.com/eb/subject>

International Standard Industrial Classification of All Economic Activities (ISIC)
<http://unstats.un.org/unsd/cr/family2.asp?Cl=17>

Central Product Classification (CPC) <http://unstats.un.org/unsd/cr/family2.asp?Cl=16>

The United Nations Standard Products and Services Code[®] (UNSPSC[®])
<http://www.unspsc.org/>

UK Standard Industrial Classification of Economic Activities (UK SIC)
http://www.statistics.gov.uk/methods_quality/sic/default.asp

Wikipedia <http://wikipedia.org/>

International Press Telecommunication Council Subject Reference System
http://www.iptc.org/NewsCodes/0.0/documentation/SRS-doc-Guidelines_3.pdf

