Preface

Purpose of this Documentation

The UMLS® Reference Manual describes the UMLS Knowledge Sources and related tools that are produced and distributed by the National Library of Medicine, a part of the National Institutes of Health in the U.S. Department of Health and Human Services. This documentation explains the following procedures and concepts:

- The purpose, content, and file structure of the three UMLS Knowledge Sources: the Metathesaurus®, the Semantic Network, and the SPECIALIST Lexicon
- The way to use associated UMLS programs:
  - MetamorphoSys, the installation program for the three UMLS Knowledge Sources. MetamorphoSys is also the customization program for the Metathesaurus, providing several output options, including Rich Release and Original Release Formats, and a choice of preferred character sets to produce custom subsets of the Metathesaurus.
  - Lexical Programs, which help to deal with inflectional variation (e.g., treat, treats, treating, treatment) in the English language, convert American English to British English and vice versa, and map text to concepts in the Metathesaurus
- The way to access the UMLS resources using the UMLS Terminology Services, i.e., download, application programming interface (API), or Web browser
- The DVD distribution format for the UMLS Knowledge Sources and associated UMLS programs. The DVD was discontinued as of the 2012AB UMLS release.

Release Schedule

The UMLS is updated biannually in May (AA release) and November (AB release).

Audience

This documentation and the UMLS resources it describes are intended for system developers, informatics researchers, librarians, and other information professionals. The documentation assumes that you are familiar with database concepts and the Internet. If you intend to use the UMLS Knowledge Sources in software applications, it assumes that you have experience with building and using complex databases. If you intend to use any of the UMLS programs, it assumes basic familiarity with Java.

Neither the UMLS resources nor this documentation are intended for end users such as individual health professionals or members of the general public, unless they are also software developers.

A more general overview of the UMLS can be found on the UMLS Basics Web-based Tutorial.

Using this Documentation

Experienced UMLS Users

If you have done substantive work with preceding versions of the UMLS resources, go directly to UMLS Release Notes and Bugs page, which describes any changes in the documentation and in the UMLS resources. This page will direct you to the parts of the documentation that describe any changes to data files, content, or format introduced in the current release.

Novice UMLS Users

If you are new to the UMLS, you should read the rest of the Preface and all of Chapter 1 before moving on to other parts of this documentation. The following brief overview describes what you will find in each chapter of the documentation.

Chapter 1. Introduction to the UMLS

This chapter explains the purpose of the UMLS, the conditions under which you may use the different UMLS components, and how these conditions relate to Open Access/Open Source principles. It also briefly describes each of the UMLS components and the relationships between them, suggests ways to build your understanding of UMLS features and capabilities, and provides a list of additional UMLS reference materials.

Chapters 2-4. Metathesaurus

These chapters describe the content and structure of the Metathesaurus, a large concept-oriented database that incorporates numerous biomedical and health-related vocabularies, classifications, and coding systems. The Metathesaurus categorizes these concepts by assigned basic Semantic Types and makes all information from these terminologies accessible in common, fully-specified file formats. The Metathesaurus includes coding sets and terminologies designated by law and regulation as U.S. standards for electronic exchange of clinical and administrative health data.

Chapter 5. Semantic Network

This chapter describes the content and structure of the Semantic Network, a small database that includes information about the set of basic Semantic Types, or categories, to which Metathesaurus concepts may be assigned. The Semantic Network defines the relationships that may hold between these Semantic Types and between broad groupings of Semantic Types, such as all types that denote disorders (Disease or Syndrome, Acquired Abnormality, Neoplastic Process, etc.).

Chapter 6. SPECIALIST Lexicon and Lexical Tools

This chapter describes the content and structure of the following programs:

- The SPECIALIST Lexicon, a database of syntactic, morphological and orthographic information for commonly occurring English language words and biomedical vocabulary. The SPECIALIST Lexicon is useful for natural language processing applications.
- The Lexical Tools, which detect and abstract away from the inflectional, case, and word order variations encountered in natural language. One of these programs, MetaMap Transfer (MMTx), is specifically designed to map arbitrary terms to concepts in the Metathesaurus, or, equivalently, to discover Metathesaurus concepts within free text.

Chapter 7. UMLS Terminology Services

This chapter describes how to access the UMLS resources from the UMLS Terminology Services via download, application programming interface, and interactive Web browser.

Chapter 8. MetamorphoSys

This chapter describes MetamorphoSys, the installation program for all the UMLS Knowledge Sources and the customization program for the Metathesaurus. You *must* use MetamorphoSys to install the Knowledge Sources. MetamorphoSys allows you to output data in either the 7-bit ASCII (the default) or Unicode UTF-8 character set. MetamorphoSys also provides two file format options (Rich Release Format or Original Release Format) for the Metathesaurus, and provides a number of other customization options.

Chapter 9. UMLS DVD

This chapter gives technical specifications for the UMLS DVD, an alternative method for distributing UMLS content. The DVD was discontinued as of the 2012AB UMLS release.

Chapter 10. Current UMLS Release Information

This chapter briefly describes the UMLS release schedule and provides a link to the current UMLS release information.