

### Networking Knowledge Organization Systems to Support Regulatory Activities

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**Navigators in a Sea of Data** 



The opinions expressed are solely mine and do not reflect those of the US Environmental Protection Agency or any of its employees.

## Regulated **Facilities**

# Information Systems

Data El



Services

ganisms

# Dataset Descriptions

**EPA Semantic Resources from System of Registries** (www.epa.gov/sor)

### **Regulatory Information Challenges**

- Information builds on previous information
- Numerous activities and documents in the regulatory workflow
- Change is hard to anticipate
- Regulations may be rescinded or superseded
- Minor changes can have major impacts
- Some regulations are by industry, others by process, chemicals or emission levels
- Regulatory ecosystem involves multiple levels of government



### Laws and Regulations Services (LRS)

- Provide authoritative content to support businesses in identifying EPA regulations and the programs which affect them
- Currently no system that systematically connects laws, regulations and EPA programs
- Create efficiencies for regulated entities
- Provide useful access to information for EPA partners
- An initiative of EPA's Office of Information Management
- Content built using Synaptica KMS

### LRS Objects Span KOS Spectrum

Environmental Laws

Environmental Regulations

EPA Controlled Vocabulary

Keywords

EPA Programs

**EPA Offices** 

Substance Lists (chemical, biological, etc.)

North American Industrial Classification System

Purple = Simple List; Red = Simple Hierarchy; Black = Simple Hierarchy with extensive metadata; Blue = Classification Scheme; Orange = Thesaurus

### LRS CONCEPTUAL MODEL

#### Law - U.S.C. Record

- USC Publication Title
- Short Title (of law)
- Citations
- Parent/Child Records

#### **EPA Program**

- EPA Program
- Program website URL
- Acronym

#### **EPA Office**

- EPA Office Name
- Acronym
- Parent/Child EPA
   Office

#### Regulation - CFR Record

- CFR Publication Title
- Federal Register
   Citations
- U.S. Code Citations
- GPO PDF URL
- EPA Program
- Keywords
- NAICS Codes
- Substance Lists
- Parent/Child Records

#### **Substance List**

- List Name
- List Acronym
- List Number

#### **Controlled Vocabulary**

- Descriptor
- Definitions
- Thesaurus Relationships

#### **Keywords**

- Descriptor
- Definitions

#### **NAICS Codes**

- NAICS Code
- NAICS Title
- Definition
- Code Levels

### LRS EXAMPLE

Law

42 U.S.C 11023

#### **EPA Program**

Toxics Release Inventory Program (TRI)

#### **EPA Office**

Office of Information Analysis and Access (OIAA)

**Regulation** 

40 CFR Part 372

**Substance List** 

**EPCRA 313** 

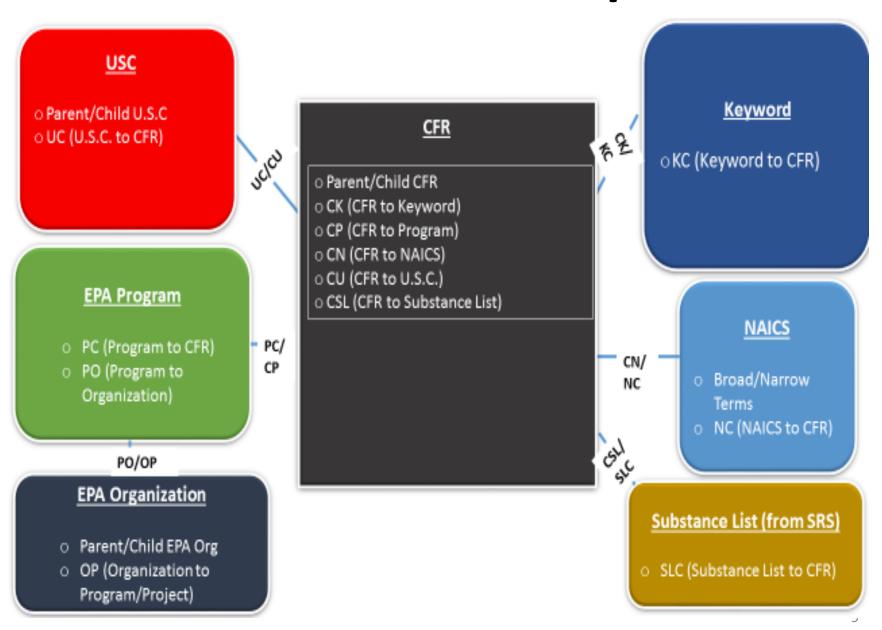
#### **Keywords**

Coal Extraction
Disposal
Manufacture
Toxic Chemical
Waste Fixation

#### **NAICS Codes**

211112 Natural Gas Liquid Extraction
212234 Copper Ore and Nickel Ore Mining
311340 Nonchocolate Confectionery Man.
321114 Wood Preservation

### **KOS** Relationships



### **Networking the KOSs**

- Terms in KOSs linked with special relationship types
- In an application, most content is accessed through web services or API calls
- Increased flexibility and ease of adding information (internal and external)
  - GPO URLs for full text of a regulation;
  - GPO's Federal Register APIs for historic and new FR notices;
  - EPA's Substance Registry web service for all chemicals on a list

### **Status**

- LRS used in Reg Finder pilot developed as one of EPA's E-Enterprise projects
- Aimed at small to mid-sized chemical manufacturers
- Provides access to U.S.C. and CFR citations, popular names for laws, and chemical names and CAS numbers
- Pilot is still under internal evaluation
- From the content standpoint, continue to enhance LRS:
  - Adding more NAICS-CFR relationships
  - Relating process keywords to NAICS

### **Extended Applicability**

- Potential model for other regulatory information
- Use of Terminology Management System to link different KOS types
- Does not rely on an interface to bring the information together
- Networked resource to support multiple applications and different interfaces for different user communities



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