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A pair of hands is shown holding a glowing, translucent blue sphere. Inside the sphere, a metallic padlock is visible, with a keyhole in the center. The sphere is illuminated from within, creating a bright, golden-yellow glow that radiates outwards. The background is dark, with some blurred lights and a blueish tint, suggesting a digital or technological environment.

**Unlocking growth  
and prosperity with  
norm engineering**

JANUARY 2025, University of Amsterdam



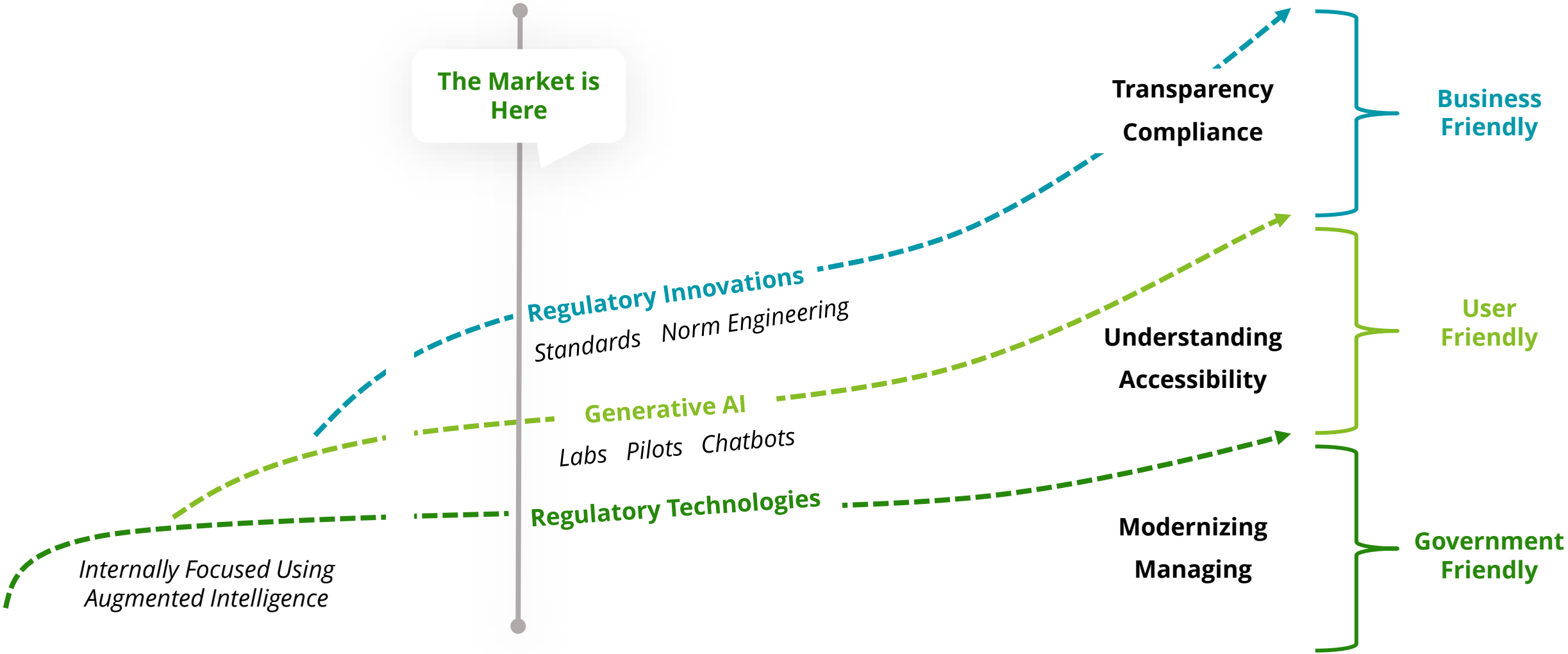
**OPPORTUNITY**

**There's so much  
government red-  
tape.....**

**It's all written in  
legalese.....**

**Why do I need an  
army of  
lawyers.....**

# The Evolution of Regulatory Technologies



# The Definitions of Norm Engineering

## Norm Engineering

Norm Engineering creates an official plain language (and machine readable) version of regulatory documents by presenting it in terms and structures that can be more readily understood by the non-legal community.

## FLINT Framework

FLINT (Formal Language for the INterpretation of Normative Sources) is a framework and standard representing a source of norms supporting Norm Engineering and structures regulations into their **Acts, Facts, and Duties (FLINT Frames)**.

# An example of Norm Engineering in Action Today

The screenshot shows the 'Environmental counter' website. At the top left is the logo, a green circle with an orange dot, followed by the text 'Environmental counter'. At the top right is a 'Login' link. Below the header is a navigation menu with links for 'Home', 'Permit check', 'To request', 'Rules on the map', and 'Customised measures'. On the right side of the navigation is a user profile icon and the text 'My Environment Desk'. The main content area features a large background image of a Dutch landscape with a windmill and a canal. Overlaid on this image is a white box with the heading 'Welcome to the Environmental Desk' and a paragraph: 'Apply for a permit or report, for example for a new dormer, a new business premises or an activity on or near a dike. This can be done with the new Omgevingsloket.' Below this is a section titled 'Most chosen activities' containing six icons in circular frames: 1. A house with a plus sign and a smaller house icon, labeled 'Add an extension or shed'. 2. A demolition crane with a minus sign, labeled 'Demolition work'. 3. A house with a plus sign and a dormer window icon, labeled 'Installing a dormer window'. 4. A house with a plus sign and a window icon, labeled 'Change window or facade'. 5. A tree with a minus sign, labeled 'Tree felling or pruning'. 6. A circle with a plus sign, labeled 'Other activities'. To the right of these icons is a section titled 'Check if you need a permit' with the text: 'Do you want to change something about your house, garden or business?' and 'Complete the permit check here to see whether you need a permit or whether you need to submit a notification.' Below this text is a button labeled 'Permit check >'.

# The World's First Regulatory Transformer For Norm Engineering

**Deloitte.**

Owens regulatory intelligence assets like **RegExplorer** capable of ingesting complex government regulations and effectively normalizing data, making it machine readable, and applying AI and analytics

 **nVIDIA**

Possesses resources to support scaling the conversion of regulations using the power of AI, enabling high-speed processing of regulations, and enhancing models and platforms.

 *be informed*

Manages a rigorous **FLINT** methodology and supporting software to facilitate development of the **FLINT Frames** capable of accurately processing regulations and enhancing regulation transparency

# Designed for Policy Experts and People





Browser address bar: dcaic.deloitte.com/naveansari/nvnorm/

Browser tabs: DeloitteNet, DTE, My People Hub, KX | Knowledge Exc..., Platforms, NLS ContextEdge, RegExplorer, Thought L, CfG TAP PLATFORM, Personal, Entertainment, CortexAI, CortexAI for Govern..., GSA EMAIL, Jupiter, GSA

**NVIDIA Deloitte.**

**Options**

Choose Use Case

Flint Output

**Dataset Type**

- Ohio
- Ohio
- EPA
- EU

**Regulation Information Retrieval**

Download FLINT as JSON

**Regulations**

**Flint Output**

**ACT Frame:**

Property	Description
Act	Apply for a barber shop license
Action	Apply
Actor	Applicant
Object	Barber shop license
Recipient	State Cosmetology and Barber Board
Precondition	Payment of license fee, meeting requirements (1)-(4), Desires to obtain a barber shop license On forms provided by the board
Creating	Determine that the applicant has paid the fee and meets the requirements

Please enter prompt for Ohio & Use only Regulation Id for EU & EPA

# Regulation Information Retrieval

Download FLINT as JSON

## Regulations

**\*\*Corresponding Regulation for the Query: show me 40\_CFR\_82\_82.124\*\***

(a) Warning statement-(1) Absence or presence of warning statement. (i) Applicable May 15, 1993, except as indicated in paragraph (a)(5) of this section, no container or product identified in § 82.102(a) may be introduced into interstate commerce unless it bears a warning statement that complies with the requirements of § 82.106(a) of this subpart, unless such labeling is not required under § 82.102(c), § 82.106(b), § 82.112 (c) or (d), § 82.116(a), § 82.118(a), or temporarily exempted pursuant to § 82.120. (ii) On January 1, 2015, or any time between May 15, 1993 and January 1, 2015 that the Administrator determines for a particular product manufactured with or containing a class II substance that there are substitute products or manufacturing processes for such product that do not rely on the use of a class I or class II substance, that reduce the overall risk to human health and the environment, and that are currently or potentially available, no product identified in § 82.102(b) may be introduced into interstate commerce unless it bears a warning statement that complies with the requirements of § 82.108 of this subpart, unless such labeling is not required under § 82.106(b), § 82.112 (c) or (d), § 82.116(a) or § 82.118(a).

## Flint Output

**\*\*FLINT FRAMES output for the query:\*\***

40\_CFR\_82\_82.124

### Act Frame

Property	Description
Act	Introduce a container or product into interstate commerce
Action	Introduce
Actor	Manufacturer or distributor
Object	Container or product
Recipient	Consumer
Precondition	Warning statement that complies with the requirements of § 82.106(a) or § 82.108

Enter your query...



# Regulation Information Retrieval

Download FLINT as JSON

## Regulations

**\*\*Corresponding Regulation for the Query: show me 40\_CFR\_82\_82.124\*\***

(a) Warning statement-(1) Absence or presence of warning statement. (i) Applicable May 15, 1993, except as indicated in paragraph (a)(5) of this section, no container or product identified in § 82.102(a) may be introduced into interstate commerce unless it bears a warning statement that complies with the requirements of § 82.106(a) of this subpart, unless such labeling is not required under § 82.102(c), § 82.106(b), § 82.112 (c) or (d), § 82.116(a), § 82.118(a), or temporarily exempted pursuant to § 82.120. (ii) On January 1, 2015, or any time between May 15, 1993 and January 1, 2015 that the Administrator determines for a particular product manufactured with or containing a class II substance that there are substitute products or manufacturing processes for such product that do not rely on the use of a class I or class II substance, that reduce the overall risk to human health and the environment, and that are currently or potentially available, no product identified in § 82.102(b) may be introduced into interstate commerce unless it bears a warning statement that complies with the requirements of § 82.108 of this subpart, unless such labeling is not required under § 82.106(b), § 82.112 (c) or (d), § 82.116(a) or § 82.118(a).

## Flint Output

### Fact Frames

Property	Description
Function	Has a warning statement that complies with the requirements of § 82.106(a)
References to sources	40 CFR 82.124

Property	Description
Function	Has a warning statement that complies with the requirements of § 82.108
References to sources	40 CFR 82.124

Property	Description
Function	Is a product identified in § 82.102(a) or § 82.102(b)
References to sources	40 CFR 82.124

Enter your query...



# Regulation Information Retrieval

Download FLINT as JSON

## Regulations

**\*\*Corresponding Regulation for the Query: show me 40\_CFR\_82\_82.124\*\***  
(a) Warning statement-(1) Absence or presence of warning statement. (i) Applicable May 15, 1993, except as indicated in paragraph (a)(5) of this section, no container or product identified in § 82.102(a) may be introduced into interstate commerce unless it bears a warning statement that complies with the requirements of § 82.106(a) of this subpart, unless such labeling is not required under § 82.102(c), § 82.106(b), § 82.112 (c) or (d), § 82.116(a), § 82.118(a), or temporarily exempted pursuant to § 82.120. (ii) On January 1, 2015, or any time between May 15, 1993 and January 1, 2015 that the Administrator determines for a particular product manufactured with or containing a class II substance that there are substitute products or manufacturing processes for such product that do not rely on the use of a class I or class II substance, that reduce the overall risk to human health and the environment, and that are currently or potentially available, no product identified in § 82.102(b) may be introduced into interstate commerce unless it bears a warning statement that complies with the requirements of § 82.108 of this subpart, unless such labeling is not required under § 82.106(b), § 82.112 (c) or (d), § 82.116(a) or § 82.118(a).

## Flint Output

### Duty Frame

Property	Description
Duty	Provide a warning statement that complies with the requirements of § 82.106(a) or § 82.108
Duty holder	Manufacturer or distributor
Claimant	Consumer
Creating institutional act	Introducing a container or product into interstate commerce
Enforcing institutional act	Inspection by the Administrator
Terminating institutional act	Non-compliance with warning statement requirements
References to sources	40 CFR 82.124

Enter your query... ➤



# **Regulatory Reengineering**

# Regulatory Reengineering

## 1. Extract Exact Language

 Official Journal  
of the European Union

EN  
L series

2024/1620 19.6.2024

**REGULATION (EU) 2024/1620 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL**  
**of 31 May 2024**  
**establishing the Authority for Anti-Money Laundering and Countering the Financing of Terrorism and amending Regulations (EU) No 1093/2010, (EU) No 1094/2010 and (EU) No 1095/2010**  
**(Text with EEA relevance)**

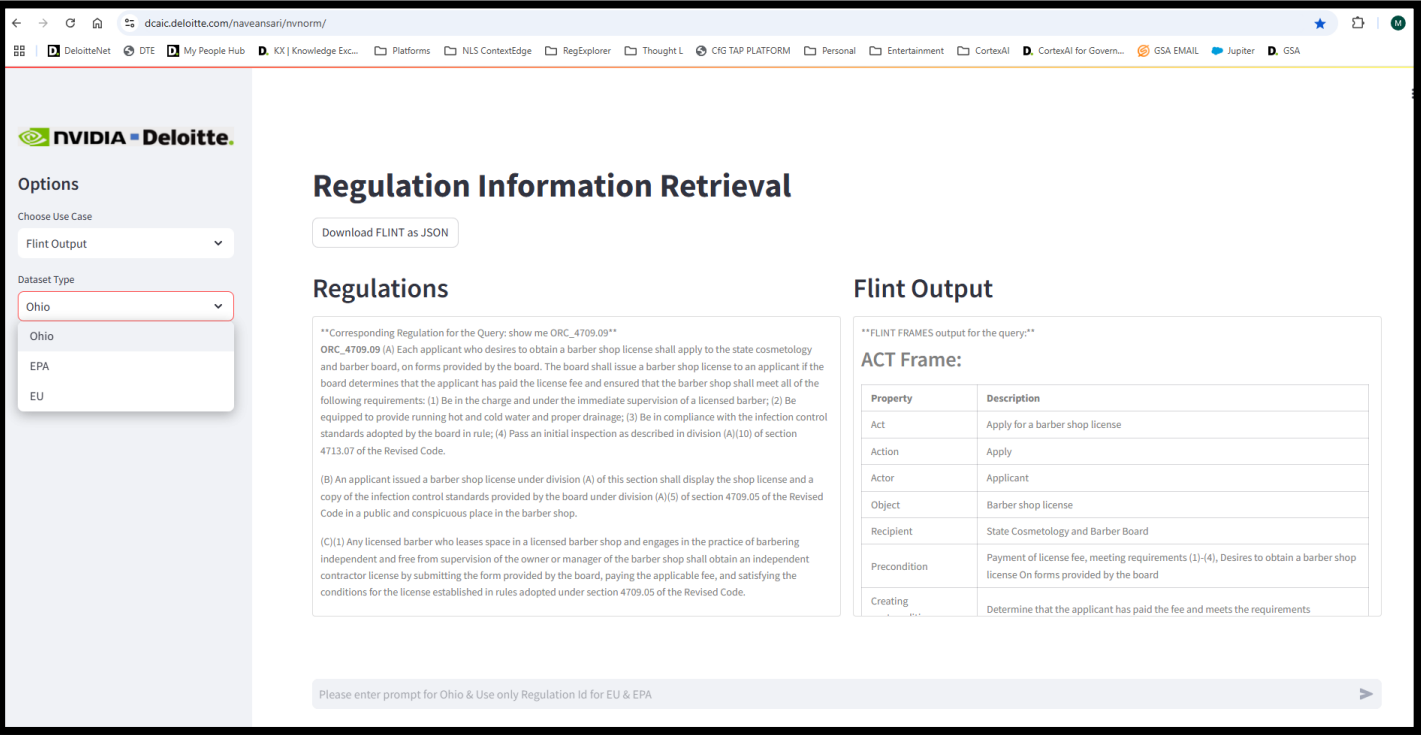
THE EUROPEAN PARLIAMENT AND THE COUNCIL OF THE EUROPEAN UNION,  
Having regard to the Treaty on the Functioning of the European Union, and in particular Article 114 thereof,  
Having regard to the proposal from the European Commission,  
After transmission of the draft legislative act to the national parliaments,  
Having regard to the opinion of the European Economic and Social Committee <sup>(1)</sup>,  
Acting in accordance with the ordinary legislative procedure <sup>(2)</sup>,

Whereas:

- (1) Experience with the current anti-money laundering and countering the financing of terrorism (AML/CFT) framework, which relies heavily on the national implementation of AML/CFT measures, has disclosed weaknesses not only with regard to the efficient functioning of that framework of the Union but also with regard to integrating international recommendations. Those weaknesses have led to the emergence of new obstacles to the proper functioning of the internal market, both due to risks within the internal market as well as external threats facing it.
- (2) The cross-border nature of crime and criminal proceeds endangers the efforts of the Union financial system with regard to the prevention of money laundering and financing of terrorism. It is necessary to enhance those efforts at Union level through the creation of an authority responsible for contributing to the implementation of harmonised rules in that domain. In addition, such an authority should pursue a harmonised approach to strengthen the Union's existing preventive AML/CFT framework and specifically AML/CFT supervision and cooperation between Financial Intelligence Units (FIUs). That approach is intended to reduce divergences in national legislation and supervisory practices and introduce structures that benefit the smooth functioning of the internal market in a determined manner and should, consequently, be based on Article 114 of the Treaty on the Functioning of the European Union (TFEU).
- (3) Therefore, a Union authority for anti-money laundering and countering the financing of terrorism ('the Authority') should be established. The creation of the Authority is crucial for ensuring the efficient and adequate supervision of obliged entities that pose a high risk with regard to money laundering/terrorist financing ('ML/TF'), strengthening common supervisory approaches for all

# Regulatory Reengineering

## 1. Extract Exact Language



## 2. Regulation Information Retrieval

# Regulatory Reengineering

- 1. Extract Exact Language
- 2. Regulation Information Retrieval



# 3. Human in the Loop

The screenshot shows the Workbench interface for analyzing a legal document. The document title is "Act of 23 November 2000 on the complete revision of the Aliens Act (Aliens Act 2000)". The interface features a table of contents on the left, a central text area with highlighted sections, and a right-hand sidebar with a "Workbench assistant" section.

**Table of contents:**

- Chapter 1 Introductory Provisions
  - Article 1
  - Article 2
- Chapter 2 Access
  - Article 3
  - Article 4
  - Article 5
  - Article 6
  - Article 7
- Chapter 3 Stay
  - Section 1 Lawful residence
    - Article 8
    - Article 9
    - Article 10
    - Article 11
    - Article 12
  - Section 2 The residence permit
    - Article 13
  - Section 3 The regular residence permit
    - Paragraph 1 The temporary residence permit
      - Article 14
      - Article 15
      - Article 16
      - Article 17
      - Article 18

**Workbench assistant Summary:**

The Vreemdelingenwet 2000 governs immigration and asylum in the Netherlands. It regulates the entry, residence, and expulsion of foreigners, including asylum procedures, residence permits, and deportation processes. Key reforms focus on accelerating asylum decisions and simplifying the appeal system. It applies to all non-Dutch nationals, specifying their rights and obligations while staying in the country.

**Assistant Statistics:**

Category	Value
LLM suggestions	10
Total annotations	80
<b>Details</b>	
Pages	45
Words	5000
Characters	32,187
Annotations	25
<b>Validations</b>	
Total number of frames	73
Approved frames	23
Frames in review	10
Frames in progress	40
Frames in error	0



# Regulatory Reengineering

- 1. Extract Exact Language
- 2. Regulation Information Retrieval
- 3. Human in the Loop

## 4. Machine Readable

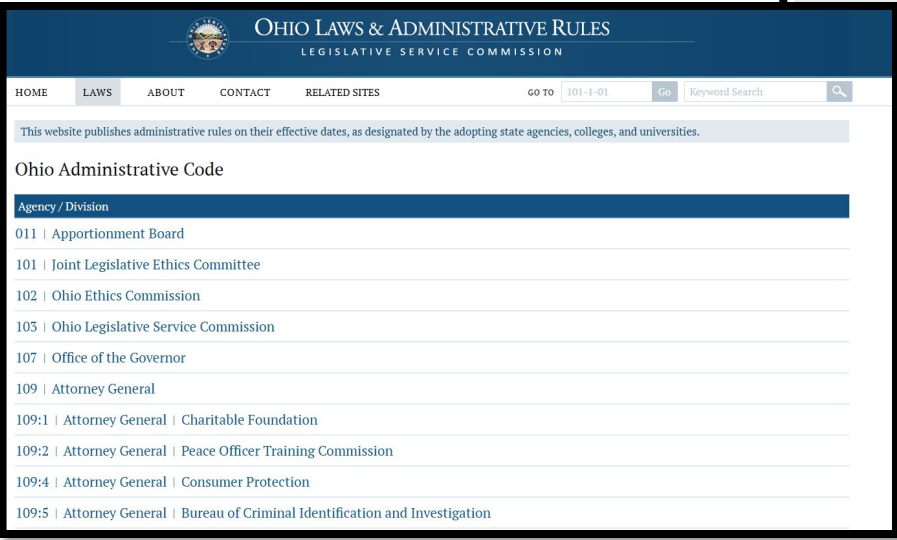
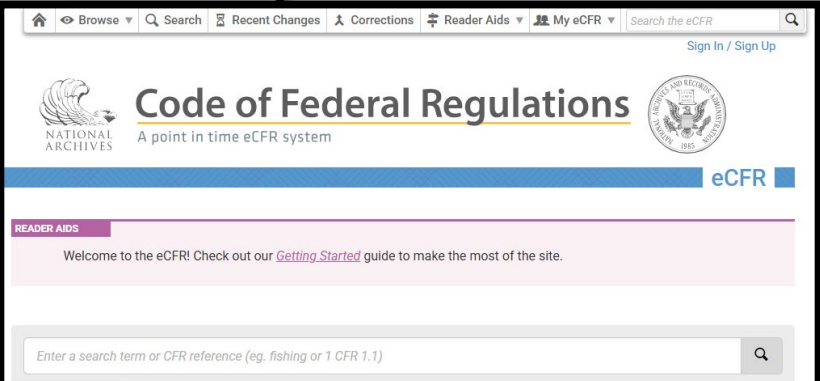
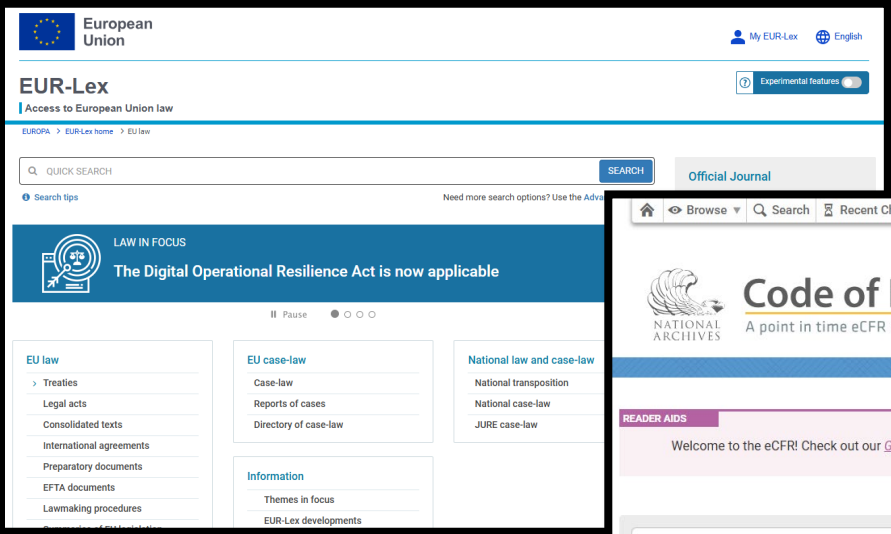
### Flint Output

```
JSON Output

{
  "ACT": {
    "action": "Introduce a container or product into interstate commerce",
    "actor": "Manufacturer or distributor",
    "object": "Container or product",
    "recipient": "Consumer",
    "precondition": "Warning statement that complies with the requirements of §",
    "creating_postcondition": "Product is introduced into interstate commerce",
    "terminating_postcondition": "Non-compliance with warning statement require",
    "references_to_sources": "40 CFR 82.124"
  },
  "FACT": [
    {
      "label": "Has a warning statement that complies with the requirements of",
      "references_to_sources": "40 CFR 82.124"
    }
  ]
}
```

# Regulatory Reengineering

- 1. Extract Exact Language
- 2. Regulation Information Retrieval
- 3. Human in the Loop
- 4. Machine Readable

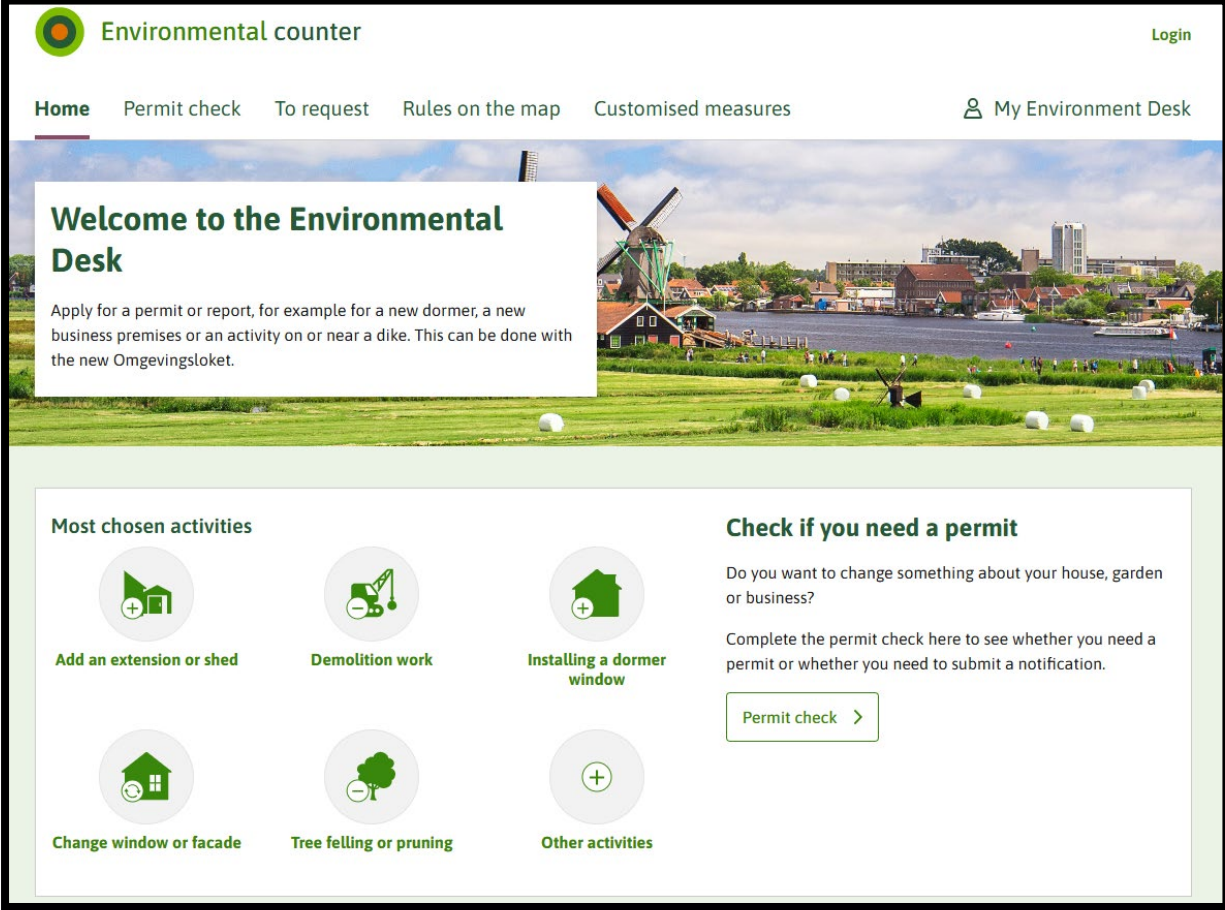


	Last Amended	Recent Changes
General Provisions	Dec 29, 2022	
Federal Financial Assistance	Jan 03, 2025	<a href="#">view changes</a>
President	Mar 17, 2015	
Accounts	Jul 18, 2024	
Administrative Personnel	Jan 21, 2025	<a href="#">view changes</a>
Domestic Security	Jan 14, 2025	<a href="#">view changes</a>
Agriculture	Jan 22, 2025	<a href="#">view changes</a>

# 5. Use Cases

# Regulatory Reengineering

- 1. Extract Exact Language
- 2. Regulation Information Retrieval
- 3. Human in the Loop
- 4. Machine Readable
- 5. Use Cases



# 6. Reengineered Experiences

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**Regulatory Reengineering**

