What is NIEM – an electronic data interchange standard.

https://en.wikipedia.org/wiki/Electronic_data_interchange

Ways to implement NIEM

- Adopt the NIEM Reference Data Model as your data model
- Use the NIEM agreed vocabular and definitions as your method for sending and receiving data
    - Negotiate with data providers to send the data in the information exchange format you develop
        - Create ETL process for managing the received data
    - Provide data in the information exchange format for others to ingest
    -

Specific implementation within your application will be based on your Software Architecture and Design ref: https://docs.microsoft.com/en-us/previous-versions/msp-n-p/ee658093(v=pandp.10)

NIEM lives at the data layer - https://docs.microsoft.com/en-us/previous-versions/msp-n-p/ee658127(v=pandp.10)

Connecting databases and systems to share data

Who: Web and Application developers

How: Programming in data exchange standards such as XML, JSON

Pre-requisit – knowledge and experience in application development.

APIs – application programming interface. APIs are a common way to request and interface with data.

In the Get Request you will get back data in a common format such as XML or JSON. When data is sent in the response, it's sent as a string, or text. In order to work with the data , you want to convert it into the type of object your system is using. This process of converting the string to an object is referred to as parsing.

An IEPD is like an API. It provides the documentation that tells the developers how to get the data and in what format the data will be sent.

Once the data is received then you decide what to do with the data – ETL

https://en.wikipedia.org/wiki/Extract,_transform,_load

What if the you have an existing database that is not "NIEMafied"?

Map

SOA slides https://www.slideshare.net/phanleson/soa-in-practice-chapter10me-ps?from_action=save

Common alerting protocol - http://docs.oasis-open.org/emergency/cap/v1.2/CAP-v1.2-os.html

https://www.fema.gov/emergency-managers/practitioners/integrated-public-alert-warning-system/technology-developers/common-alerting-protocol

http://niem.github.io/reference/artifacts/messages/iepd/lifecycle/publish-and-implement/

IEPD Implementation

There are many ways to implement NIEM. Two common implementation examples include the following:

Message Queue	An organization can store NIEM-conformant XML instances within a message queue during its response to a stakeholder's information request service.
Web Services	An organization can embed a NIEM conformant schema into a new or existing Web Service and perform an electronic transfer with one or more exchange partners potentially through a Service Oriented Architecture (SOA) environment.

Security and Privacy Considerations

NIEM does not dictate how you handle security and privacy issues. You must use your organization's standards.

You can tag data with security and privacy, however, other technologies are required upon exchange implementation to enforce security and privacy rules.

You also may use metadata to describe specific requirements in regard to information security and the handling of sensitive, privacy-protected information. The metadata allows systems that implement NIEM to automatically enforce rules that govern the use, protection, dissemination, and access controls for data being shared.

http://www.acf.hhs.gov/sites/default/files/assets