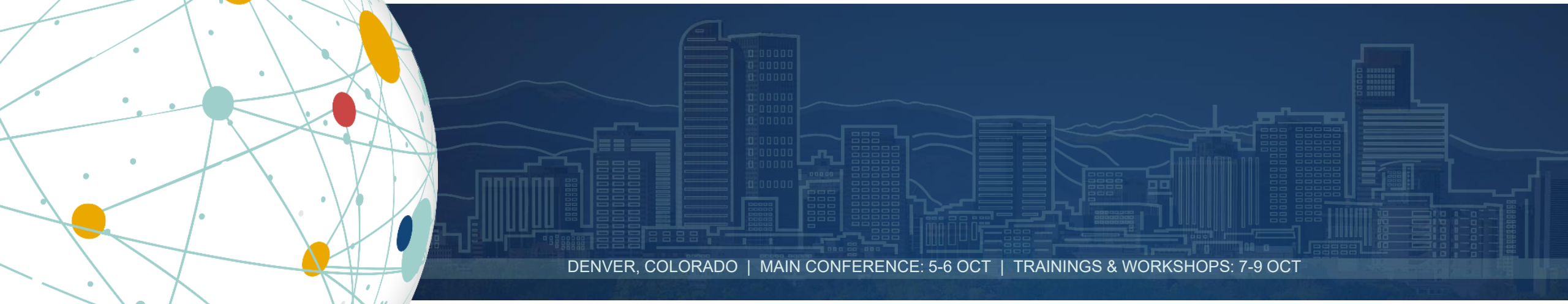


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2026 US Interchange

THE FUTURE IS CONNECTED: STANDARDS AND AI POWERING DIGITAL TRANSFORMATION



NGSI-LD as a Context Management Layer for CDISC 360i

Linking standards without replacing them

Bo Lora, Founder, Scientix.ai Inc

Speaker



Bo Lora
Founder
Scientix.ai Inc

For decades humans have been made to conform to computers, especially in highly regulated industries such as healthcare and life sciences. I've spent years at Amazon Web Services modernizing these industries, and years inside them, working with sponsors, clinicians, scientists, regulators, patients.

We believe this is backwards, computers should conform to humans, and Scientix.ai exists to make that true.

What did we know about Participant 204 when Protocol v3.0 was implemented at Site 123?

What did we know about Participant 204 when Protocol v3.0 was implemented at Site 123?

- Re-consent
- Delegation & training
- Specimen collection
- Shipping and cold chain
- Lab work
- EDC / SDV





Meet the person asking the question.

Dr. Evelyn Adesina PhD

Clinical Safety Toxicologist

Assigned to CVRM-118, a phase 3 study

ExampleBiotech

This is a fictitious persona

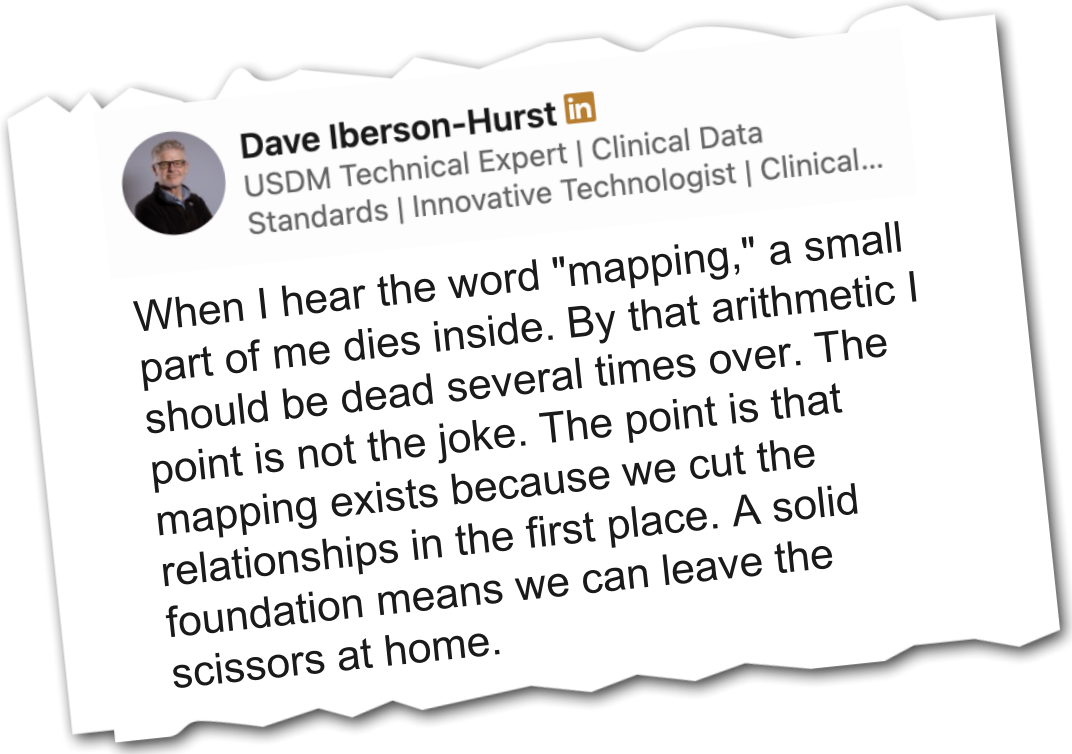
ExampleBiotech has done everything right. Protocol v3.0 was authored in USDM, propagated to all 140 sites, the CRFs generated and tested from it.

"There is no screen I can open that answers this. I get a report from the EDC, not the data. I ask a data manager, who may not have it. I chase the CRA. By Thursday I'm calling Site 123 myself."



ExampleBiotech

Why is this happening Dr. Evelyn? The gap is known.



Dave Iberson-Hurst
USDM Technical Expert | Clinical Data Standards | Innovative Technologist | Clinical...

When I hear the word "mapping," a small part of me dies inside. By that arithmetic I should be dead several times over. The point is not the joke. The point is that mapping exists because we cut the relationships in the first place. A solid foundation means we can leave the scissors at home.



Chris Decker • 1st
Transforming clinical research sta...

Dave - Great summary… I have been preaching for the need to reinstate 'context' for 20 years. The problem is that data collection has a stranglehold on how we collect data and by the time we see the data, we have lost the context and then have to put it back together (like Humpty Dumpty).

Why is this happening Dr. Evelyn? The gap is known. It's also known in working groups…

The observation is that we're siloing. We are creating silos and we're not **telling** each other what's going on.

I think we try to avoid silos. And yeah, we have a big, big opportunity to break them all. … We need a ***central*** *file.*

the data seems to be made a bit in silos and so we might have different domains, but they don't all **interrelate** the way we would expect them to

one thing I'm noticing, all these models, they're all the single source of truth and they can't all be.

the presentations were siloed … SDTM focus, ADaM focus, define XML focus … finally people in industry are thinking horizontally rather than vertically, meaning that they see those standards **connecting** to each other.

SDTM alignment: Lack of clear **linkage** b/w Lab v2.0 and SDTM which will need to be bridged by the BC implementation layer.

though we have standards, silos remain to exist. I see this in my daily practice and discussions.

Tools will need to start collaborating, moving from spot solutions to contributing to a continuum of **data linked** to it's context.

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Why is this happening Dr. Evelyn? The gap is known. **It's also known in working groups…**

this is becoming we're getting very, **very fragmented.**

why we have one group creating a data model that doesn't have visibility of the app and another group building the app that doesn't own the data model. It just seems **weirdly disconnected.**

biomedical concept layer is the linkage between USDM schedule of activities and our DDA model. … **how do we plug in those missing links**

some of the other tracks are not thinking this generic thing here. They're thinking the primary use case thinking. … There will suddenly be a bit of **weird gap here**.

we need to have clear linkage from these things to the concept that they implement

Architecture risk: The relationship between USDM, Lab v2.0, Biomedical Concepts implementation layer and combination of DTA/DTS content is **not yet resolved.**

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So let's talk about "linked data"…

Linked Data is a way of publishing **structured, machine-readable information** on the web so that individual facts can point to related facts in other datasets.

Source: W3C Wiki

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Linked Data is a way of publishing **structured, machine-readable information** on the web so that individual facts can point to related facts in other datasets.

Source: W3C Wiki

Linked data?
Structured?
Machine-readable?


```
{
  "id": "BiomedicalConcept_7",
  "name": "Systolic Blood Pressure",
  "synonyms": ["SYSBP"],
  "reference": "/mdr/bc/biomedicalconcepts/
C25298",
  "extensionAttributes": [
    {
      "url": "http://www.cdisc.org/usdm/
extensions/specializations/sdtm",
      "valueString": "/mdr/specializations/
sdtm/datasetspecializations/SYSBP"
    }
  ],
  "code": {
    "standardCode": {
      "code": "C25298",
      "codeSystem": "http://www.cdisc.org",
      "codeSystemVersion": "2025-12-16",
      "decode": "Systolic Blood Pressure"
    }
  },
  "properties": [
    {
      "name": "VSORRES",
      "datatype": "decimal",
      "code": {
        "standardCode": {
          "code": "C70856",
          "codeSystem": "http://
www.cdisc.org",
          "decode": "Observation Result"
        }
      }
    },
    "..."
  ],
  "instanceType": "BiomedicalConcept"
}
```


(USDM 4.0, NCT01797120 synthetic, SOA Workbench June 2026)

Core principles of linked data

1. Use Uniform Resource Identifiers (URIs) as names for things
2. Use HTTP URIs so that **people** can look up those names.
3. When someone looks up a URI, provide useful information.
4. Include links to other URIs, so that they can discover more things.

Source: W3C Wiki

Core principles of linked data

machine-readable information?

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Source: W3C Wiki

Do people and machines read information the same way?

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So how does a machine look for the meaning of this data?

id: Identity is local to the file. The same concept is a different number in the next study's file.

Who named it that? With what convention? Where is this decision recorded?

reference: This is not a public URI any machine can look up. It's a relative path owned by another siloed system?

code/codeSystem: A bare NCIt C-code next to a system URI, and the system named is cdisc.org, not the thesaurus the code belongs to. How does the machine read and search this url?


```
{
  "id": "BiomedicalConcept_7",
  "name": "Systolic Blood Pressure",
  "synonyms": ["SYSBP"],
  "reference": "/mdr/bc/biomedicalconcepts/
C25298",
  "extensionAttributes": [
    {
      "url": "http://www.cdisc.org/usdm/
extensions/specializations/sdtm",
      "valueString": "/mdr/specializations/
sdtm/datasetspecializations/SYSBP"
    }
  ],
  "code": {
    "standardCode": {
      "code": "C25298",
      "codeSystem": "http://www.cdisc.org",
      "codeSystemVersion": "2025-12-16",
      "decode": "Systolic Blood Pressure"
    }
  },
  "properties": [
    {
      "name": "VSORRES",
      "datatype": "decimal",
      "code": {
        "standardCode": {
          "code": "C70856",
          "codeSystem": "http://
www.cdisc.org",
          "decode": "Observation Result"
        }
      }
    },
    "..."
  ],
  "instanceType": "BiomedicalConcept"
}
```


(USDM 4.0, NCT01797120 synthetic, SOA Workbench June 2026)

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C25298

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Home / Search

Search

No result found.

Where the machine looks, **no result.**
Where the machine guesses, **three answers.**

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Captured September 16, 2026

C25298

AI Mode All Shopping Images Videos Short videos Forums More Tools

AI Overview

C25298 is an identifier that matches several different context-dependent classifications.

Here are the most common meanings for this code:

1. Medical Code (NCI Thesaurus)

In clinical and medical data management, **C25298** is the unique concept code for **Systolic Blood Pressure** in the National Cancer Institute (NCI) Thesaurus. It defines the maximum pressure exerted into the systemic arterial circulation during the contraction of the heart's left ventricle. National Cancer Institu... +1

2. Hexadecimal Color Code

In web design and digital art, **#C25298** represents a vibrant, medium-dark shade of **magenta-pink** (often referred to as a "Sparkling Blueberry Lemonade" tone). Its technical properties include:

- **RGB:** 194, 82, 152 (76.1% red, 32.2% green, 59.6% blue)
- **CMYK:** 0% cyan, 58% magenta, 22% yellow, 24% black
- **More Info:** You can view its full color palette on ColorHexa.

3. Equipment Hardware & Keys

If you are looking for office furniture or file cabinet parts, **C25298** is a standard lock/key code used by manufacturers like **Yamaha**.

- You can find custom-cut replacement keys matching this specific code via specialized lock hardware retailers like EasyKeys.

ExampleBiotech has structural amnesia.

It did everything right.
It cannot remember what it never wrote down.

The links.

The machine cannot follow that string to its meaning, so a person does.

Her name is Evelyn.

She is the human API.



ExampleBiotech

How do we get Dr. Evelyn out of the human API business?

1. Every thing has a name any system can resolve: the visit, the tube, the protocol version, the site, the person who drew the blood, etc.
2. Every link between things is data, not a join someone writes later
3. Every link and every value carries who asserted it, when, and on what basis
4. Every fact carries when it was true, and you can ask "as of August 3"
5. The eight systems stay where they are; the question travels to them
6. It is an open standard nobody owns, that anyone can implement today

Which standard in this room was designed to do all six?



Not one.

And that is not a criticism.

The standards were asked to say what things are. They did.

Now we ask these standards to run clinical trials.

That's a different craft.

Think of a clinical trial as a city.

Many buildings, many citizens, no two systems wired the same way, many vendors, many rules, many secrets to keep.

It is a **living organism** with complex relationships between humans, objects, machines, processes, locations, and time.

*And that's just a dumb city. How do we make one a smart city? How do we make a **smart clinical trial?***



Smart cities use a standard called NGSI-LD

So, what is NGSI-LD?

Smart cities use a standard called NGSI-LD

So, what is NGSI-LD?

Next Generation Service Interfaces, Linked Data

Smart cities use a standard called NGSI-LD

So, what is NGSI-LD?

Next Generation Service Interfaces, Linked Data

Built on W3C JSON-LD, so every entity is RDF, and the W3C stack (OWL, SHACL, PROV-O) applies. Nothing here is invented.

JSON-LD (Linked Data) points to the context and never loses it.

id: BiomedicalConcept_7 now resolves to the study's own namespace instead of being local to the file.

reference: the two code strings gain **ncit**, which the context expands to the **machine-readable** OBO purl for the NCI Thesaurus concept.

code/codeSystem: points to a real **machine-readable** thesaurus.

instanceType: becomes a **@type** and with **@vocab** it expands to **https://w3id.org/cdisc/usdm/v4/BiomedicalConcept**

(Kerstin Forsberg's RDF/OWL mechanically generated from cdisc-org/DDF-RA)



What NGSI-LD adds. What it needs.

NGSI-LD adds three things JSON-LD does not have:

1. Links that carry who, when, and how sure, on the link itself
2. A clock on every fact, and "as of" as a query
3. Federation in the standard: the question travels, the record stays

What NGSI-LD still needs:

A second clock.
Not only what was true, but what we knew, and when we knew it.

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Quick demo

What you just saw:

The **ScientixAI Community Edition** of our evidence infrastructure product.

Apache 2.0. Version 0.1
Run it on your laptop, air-gapped, nothing goes out.
The engine is ours, open.

The Ontology Project (TOP) provides the types and we welcome you to explore this Apache 2.0 open project as well.

Questions? Come find me after this session.

scientix.ai
Architecting the future of healthcare.

ScientixAI Community Edition

The Ontology Project (T.O.P.)

“Linking standards without replacing them”

Thank You

Bo Lora

scientix.ai

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