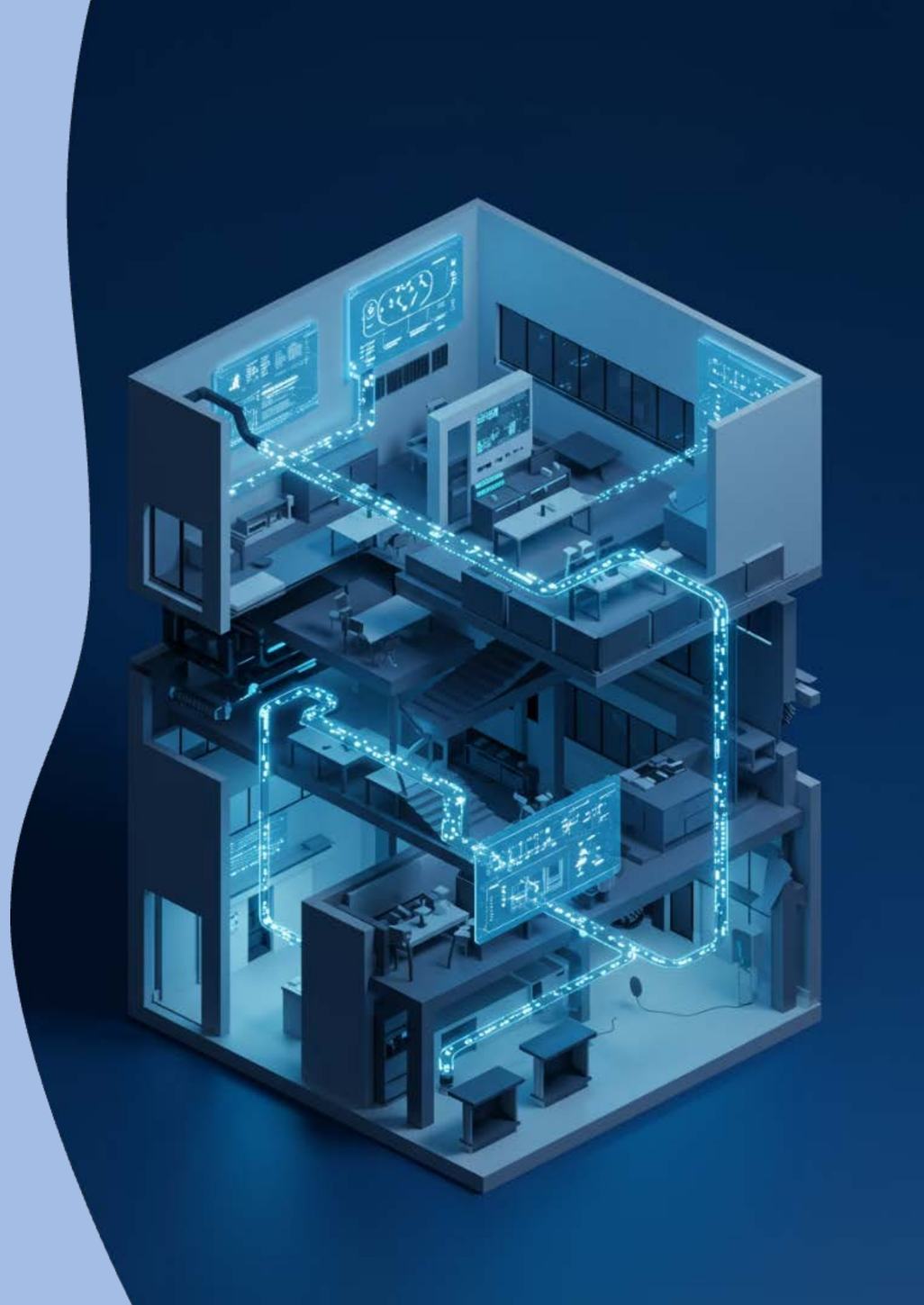
Revolutionize Equipment Tracking with Intelligent Identification

A unified approach to equipment identification across the building lifecycle.

West Mountain Maximo Users Group
June 25, 2025



Dean Stanberry, SFP, CFM

Past-Chair, IFMA Global Board of Directors

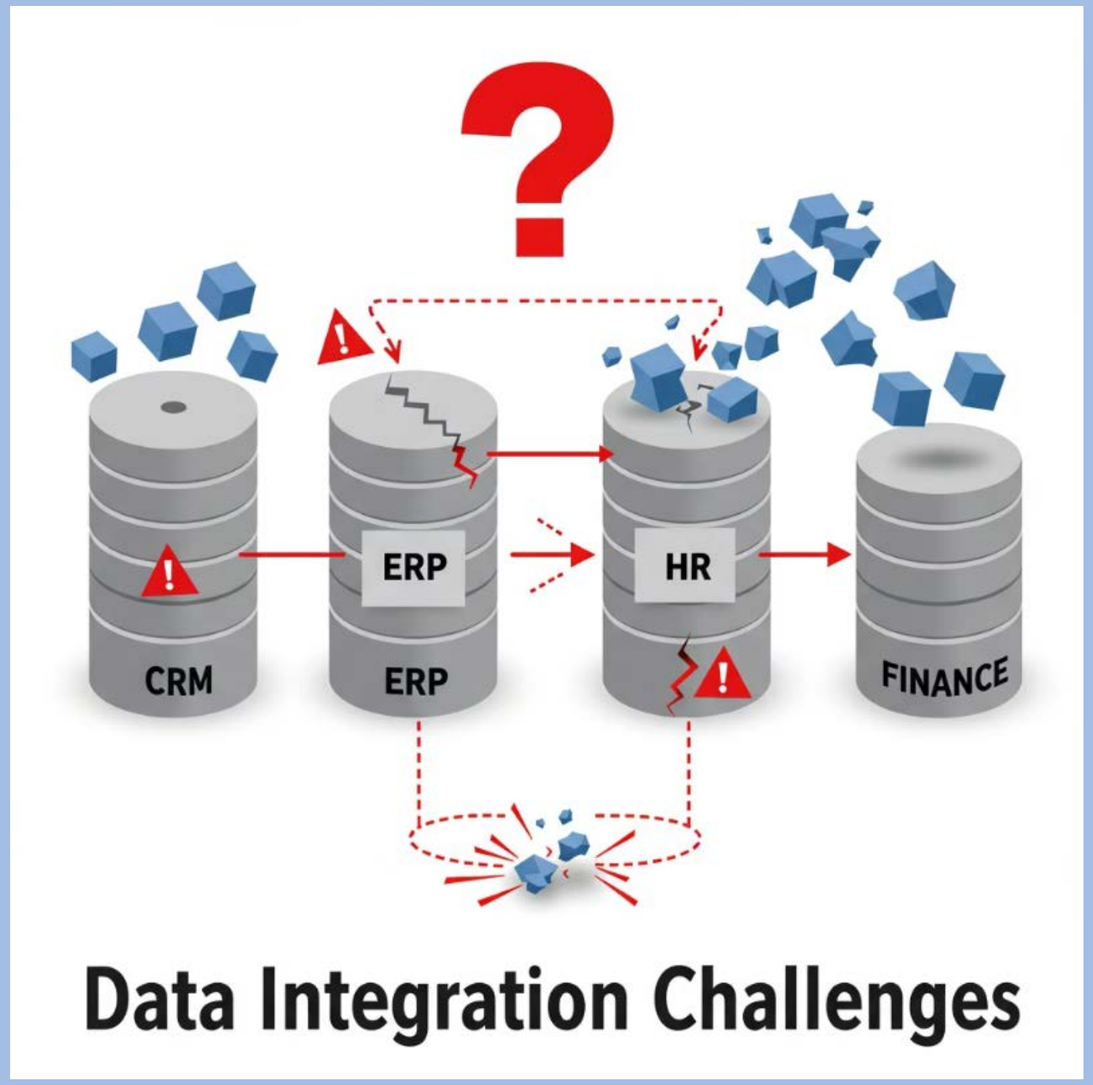
Dean has more than 25 years of broad-based experience in facility management, real estate portfolio management, process and quality improvement, procurement, workplace services, program and project management, space and occupancy planning, sustainability, information systems implementation, and critical environment operations.

He is an active industry advocate, serving on the IFMA Foundation Board of Trustees, and is past chair of the Sustainability Community, and Government Affairs Committee. Dean is a Past Chair of IFMA’s Global Board of Directors.

The Problem: Fragmented Equipment Data

Current Challenges

- BIM tools allow free-text asset identifiers with no validation
- Equipment IDs lost or redefined between systems
- Results in "Handover Hell" with duplicated effort
- Creates data silos and reduces trust in digital records



A rooftop unit receives different IDs at each stage without consistency.

Lifecycle Interoperability: What's Missing Today

Design

Designers create equipment names in BIM

Construction

Contractors assign different IDs

Operations

Facility managers create new naming systems

Maintenance

Equipment identity lost across systems

Proof of Concept: Introducing the Canonical Token

Globally Unique

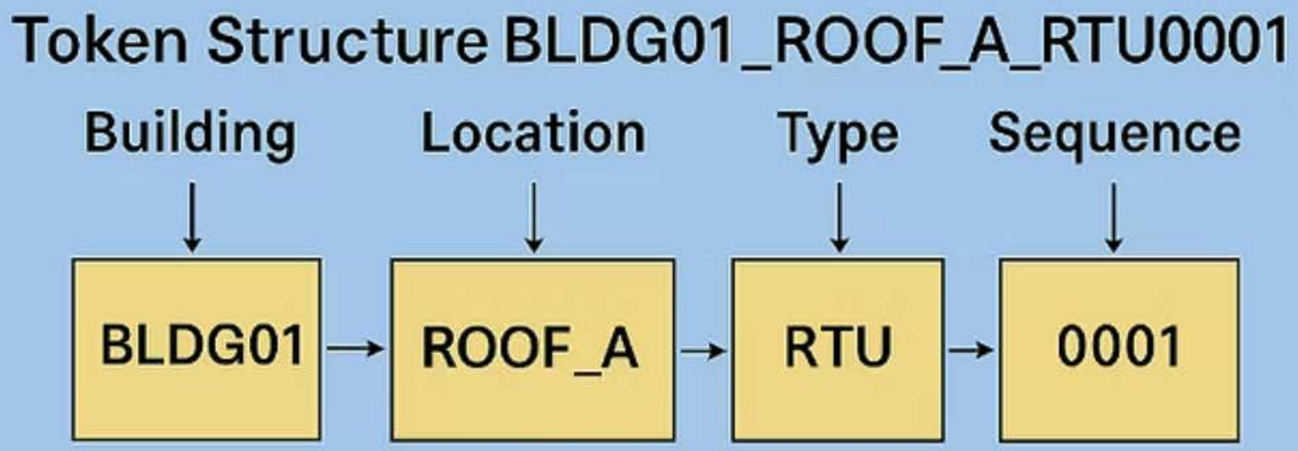
Like a VIN or ISBN, this identifier persists across the lifecycle

Human-Readable

Technicians can quickly interpret location and equipment type

Machine-Resolvable

Compatible with digital systems and semantic graphs



Canonical Token Structure: Why It Works

Character Safety

Letters, digits, underscores only - compatible with all systems

Human Legibility

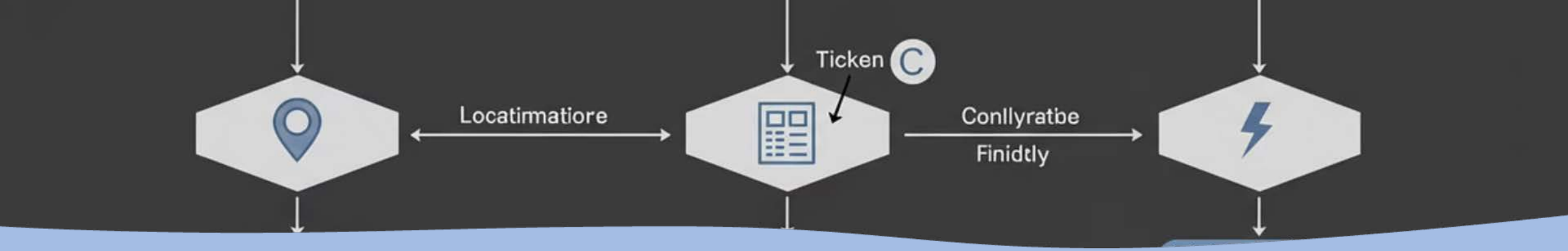
Technicians can quickly interpret location and type

URI Compatible

No restricted characters, allowing direct use in URIs

No Transformation

All systems store and export the token as-is



Mapping to Open Standards

IFC

Populated in Pset_AssetIdentification.AssetIdentifier

COBie

Included in Component.Name and Component.BarCode

Brick Schema

Used as part of the IRI for equipment and points

Project Haystack

Used as the id tag for tagging and discovery

Implementation in BIM Authoring Tools

Define Shared Parameter

Create AssetTag parameter in Revit and bind to Mechanical Equipment

Populate During Modeling

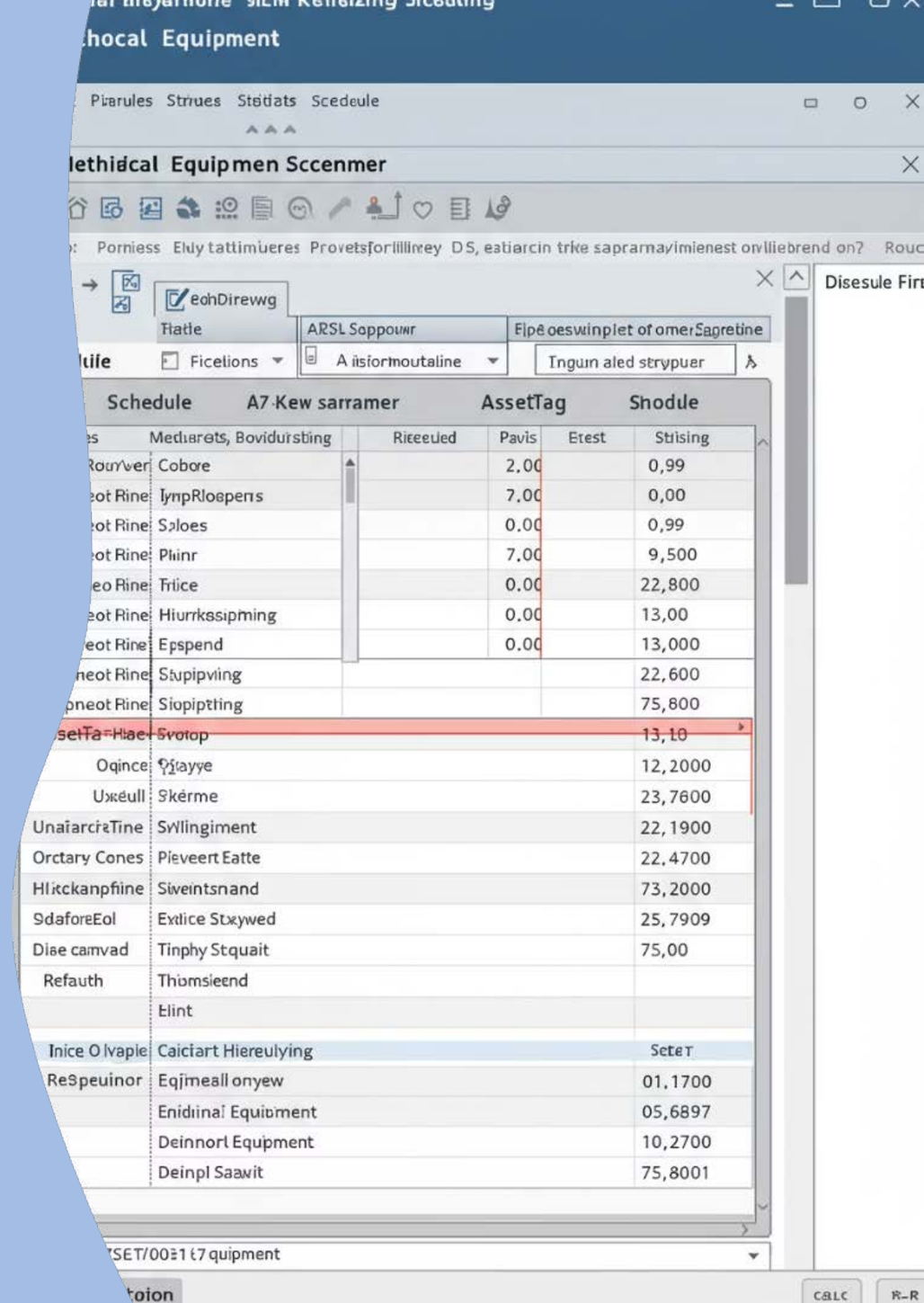
Add canonical token to equipment in BIM

Export to Standards

Token appears in schedules, IFC exports, and COBie data

Physical Labeling

Generate barcode or QR code labels with the same token



Transportable to:
CMMS, BMS, FDD & Digital Twins

BIM

Source of canonical token
BLDG01_ROOF_A_RTU0001

Digital Twin

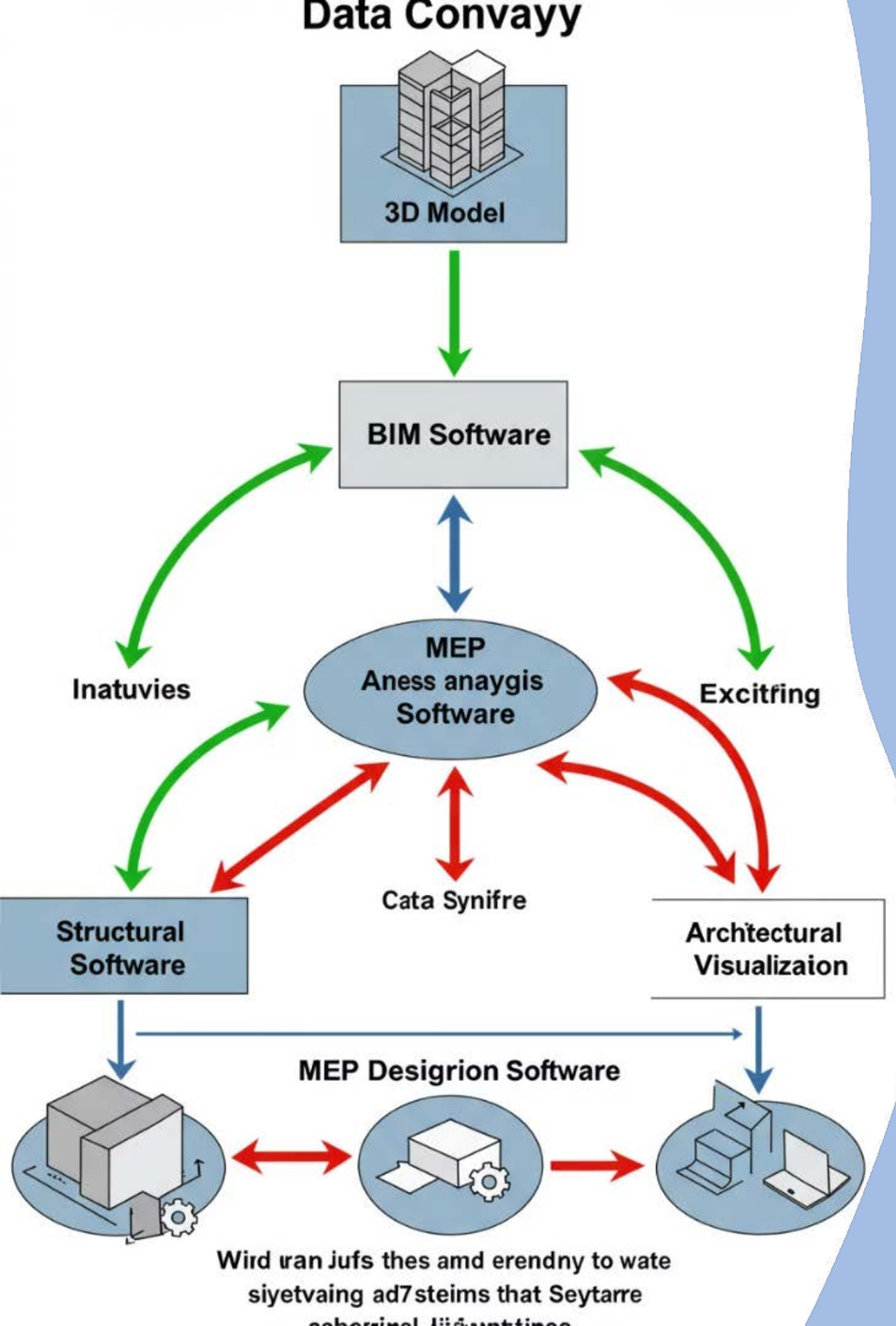
Links sensor data using consistent token

CMMS

Receives token through COBie import

BAS/FDD

Consumes Brick/Haystack graphs with embedded IDs



Change Control: Keeping the Token Stable

BIM as System of Record

All changes must start in the Revit model

Downstream Refreshes

Other systems must update from this authoritative source

Prevent Token Drift

Avoid duplicate entries and broken links

Version Control

Maintain traceability documentation for lifecycle governance

What is a URI?

Uniform Resource Identifier

Allows digital resources to be uniquely referenced and accessed

Prefixing the canonical token creates:

- urn:blm:BLDG01_ROOF_A_RTU0001
- https://id.blm.org/BLDG01_ROOF_A_RTU0001

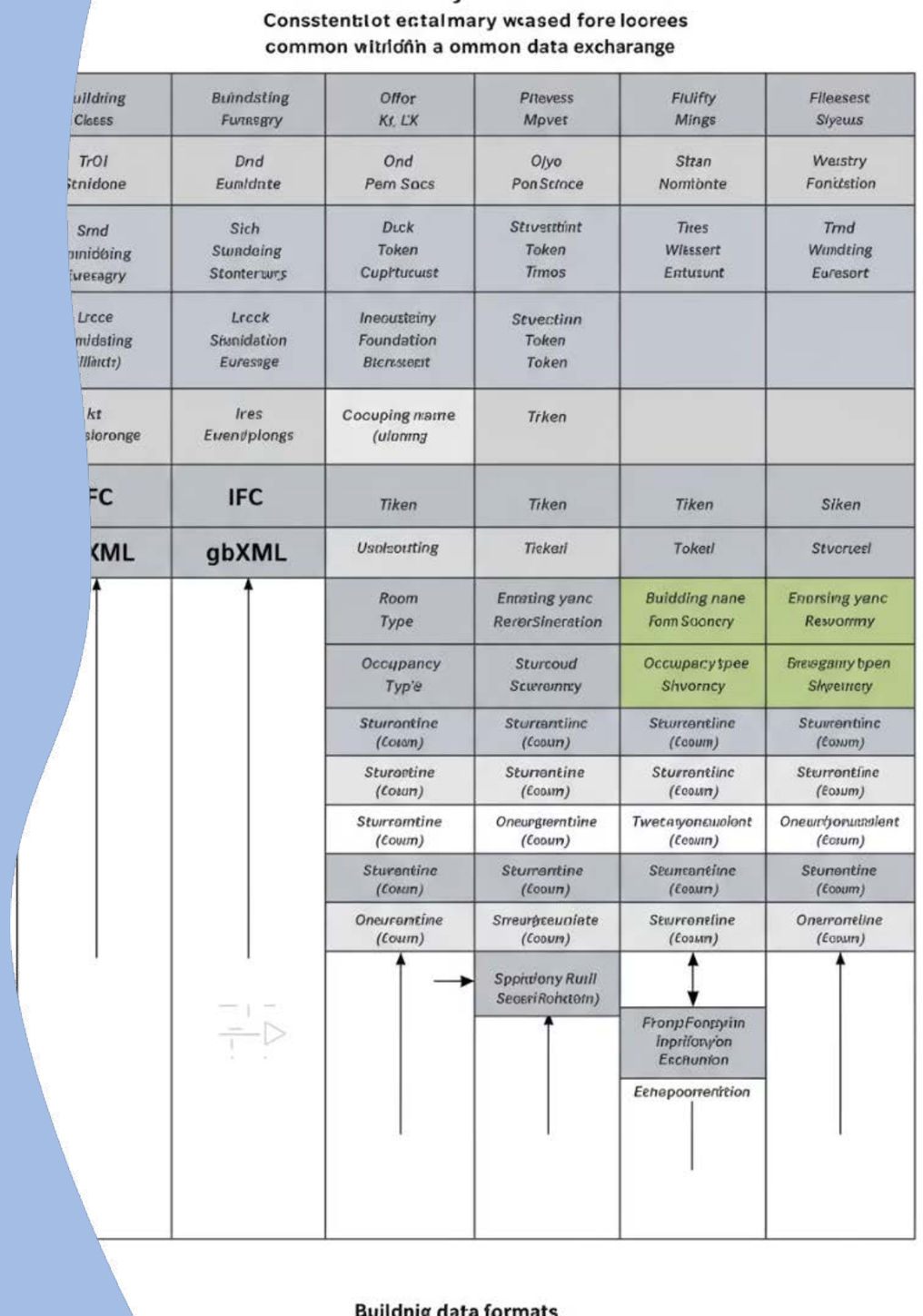
Benefits

- Programmatic access across systems
- Semantic web tool compatibility
- API integration
- QR code scan resolution

Each equipment item can be queried without ambiguity

Transportable Formats for Lifecycle Use

Format	Implementation	Example
IFC 4.3	IfcUnitaryEquipment with ROOFTOPUNIT type	AssetIdentifier = BLDG01_ROOF_A_RTU0001
COBie	Component sheet with supporting data	Component.Name = BLDG01_ROOF_A_RTU0001
Brick Schema	RDF triples with isPointOf, feeds relationships	URI includes BLDG01_ROOF_A_RTU0001
Haystack	Sensors using token as ID root	id: BLDG01_ROOF_A_RTU0001_SAT



AI-Assist: Automating the Mapping Workflow

Token Generator

Creates IDs from make, model, and location

Classifier

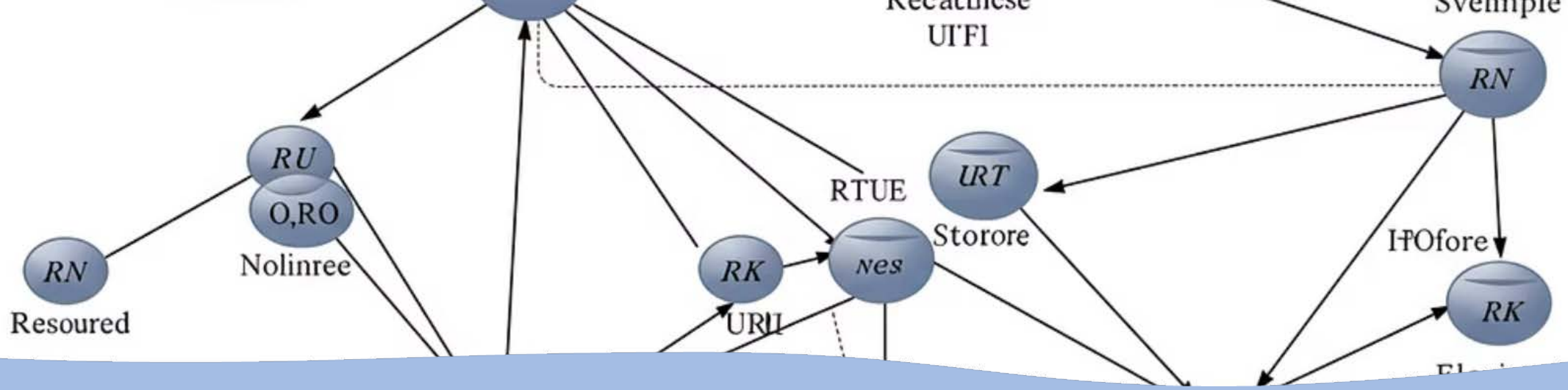
Suggests OmniClass, MasterFormat codes

Extractor

Pulls data from O&M manuals

Job Planner

Builds maintenance plans from manufacturer guidance



Semantic Model Compliance: ASHRAE 233P

Globally Unique URIs

Example: urn:blm:BLDG01_ROOF_A_RTU0001#SAT

Ontology References

From Brick and Haystack

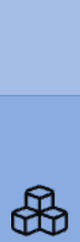
Units and Datatypes

°F, boolean, in. w.g.

Explicit RDF Triples

isPointOf, feeds, and measures relationships

From Static Asset to Digital Twin



Static BIM Model

Design-intent information with canonical token

Real-time Data

Sensors stream data tagged with meaningful URIs

Analytics Engine

FDD performs logic on known relationships

Digital Twin

Coherent view of real-time and reference data

Extracting Manufacturer Maintenance Plans with AI

$2,615

Annual Cost

Total maintenance using RSMeans labor rates

12

Monthly Tasks

Regular preventive maintenance items

4

Seasonal Checks

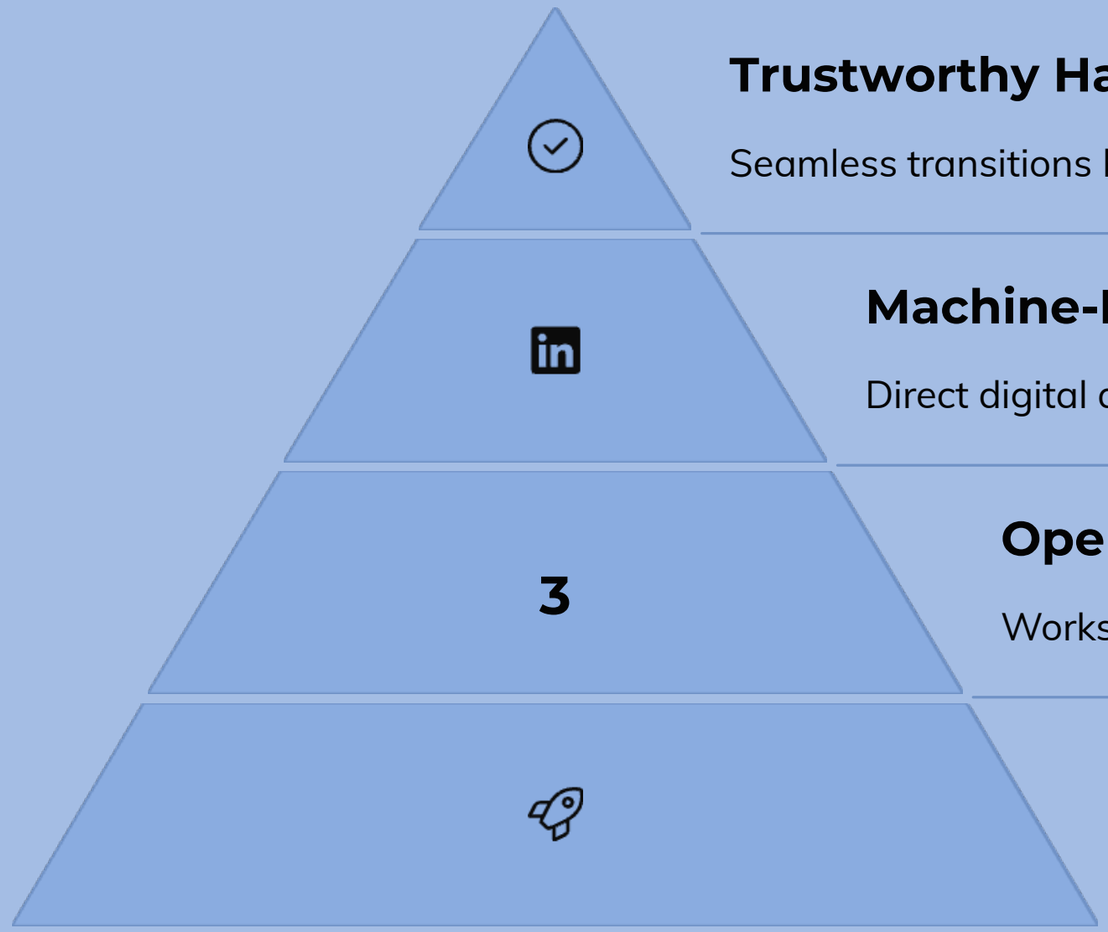
Quarterly specialized inspections

2

Safety Standards

NFPA 70E and ASHRAE 180 integration

Summary: Your Equipment's Digital Passport



Trustworthy Handovers

Seamless transitions between project phases

Machine-Resolvable URIs

Direct digital access to equipment data

Open Standard Compatibility

Works with IFC, COBie, Brick, Haystack, ASHRAE 233P

Canonical Token at Source

Embed in BIM and propagate unchanged

Building Lifecycle Management Initative

Co-founded by IFMA and Autodesk, the Building Lifecycle Management Initiative (BLMI) is a transformative industry effort designed to unify stakeholders across the commercial real estate sector, promoting integrated lifecycle thinking from design and construction through operations and deconstruction.

By championing collaboration, data-driven decision-making, and sustainable practices, BLMI empowers organizations to enhance efficiency, reduce costs, and significantly improve long-term asset performance.

Through collective action, BLMI positions the industry to create smarter, more resilient buildings that deliver enduring value.

To learn more:

Website: https://BLMI.org

Email: info@BLMI.org

LinkedIn: BLM-Initiative

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Resources

- Establishing Globally-Unique Equipment Identifiers
- Establishing GUID Identifiers - RTU Example