



Data Management Practices – Regulated Materials Surveys in Power Plants

USWAG May 20-21, 2025

May 21, 2025

TRCCOMPANIES.COM



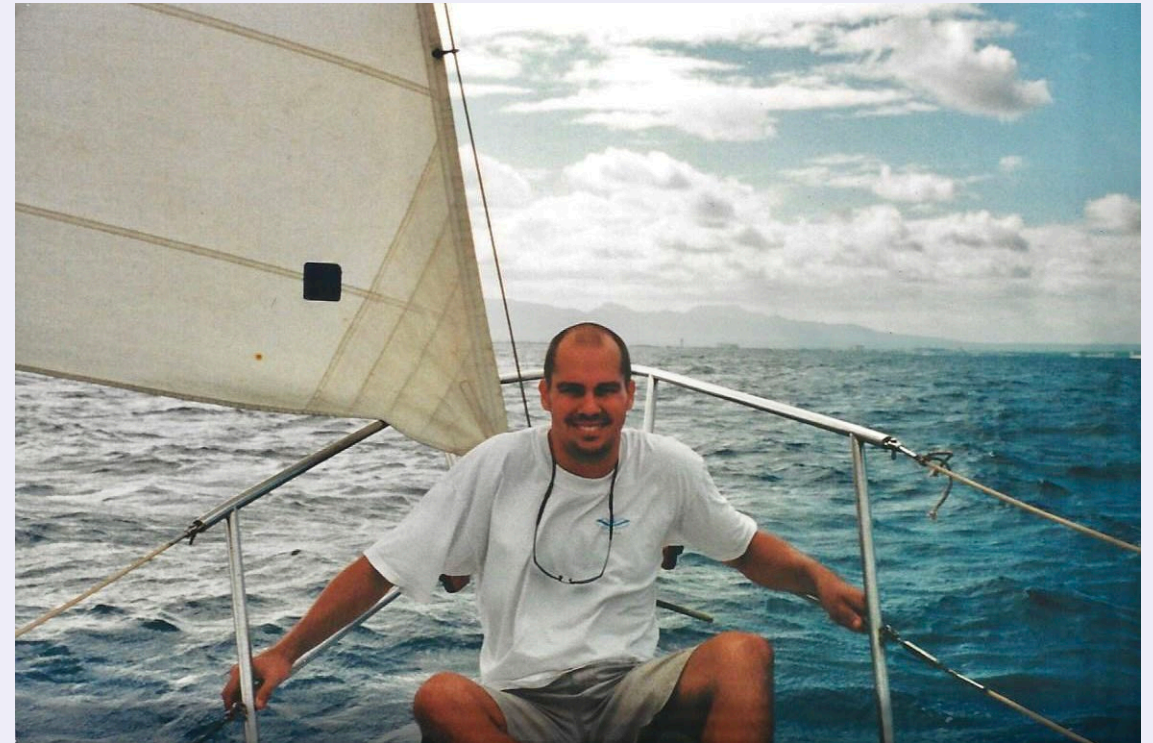


Heath Howard, CIH, CSP

Vice President

National Service Leader – Industrial Hygiene and Digital Enablement

Heath leads TRC's Mobile Data Solutions program and functions as a technical lead in field operations and consulting efforts. He is a Certified Industrial Hygienist and Certified Safety Professional with a broad range of experience including large- and small-scale asbestos inspections; project design; project supervision for private, public, commercial, and governmental agencies; air monitoring; and compliance certification. Heath is an asbestos project designer, AHERA inspector, and project monitor. He has been with TRC since 2007.



Goals



Presentation Goals



- How can re-thinking how we handle data related to Regulated Materials Surveys benefit project stakeholders?
- Prevent collected data related to regulated materials from being locked away.
- How people digest data is not always the best way to present and store data.



Presentation Goals



- Start Evaluating Potential Vendors Workflows
 - Do they have digital field data collection tools?
 - Are they able to provide a data package with deliverable report?
- **Look at the perspective of the field inspector.**
- Why do we do what we do?
- What do we ask from vendors?

Asbestos
Inspection

Location: Building 1

Sample ID: A1-003

Material Type: Floor T

Condition: Good



Asbestos
Inspection

Location: Building 1

Sample ID: A1-003

Material Type: Floor
Tile

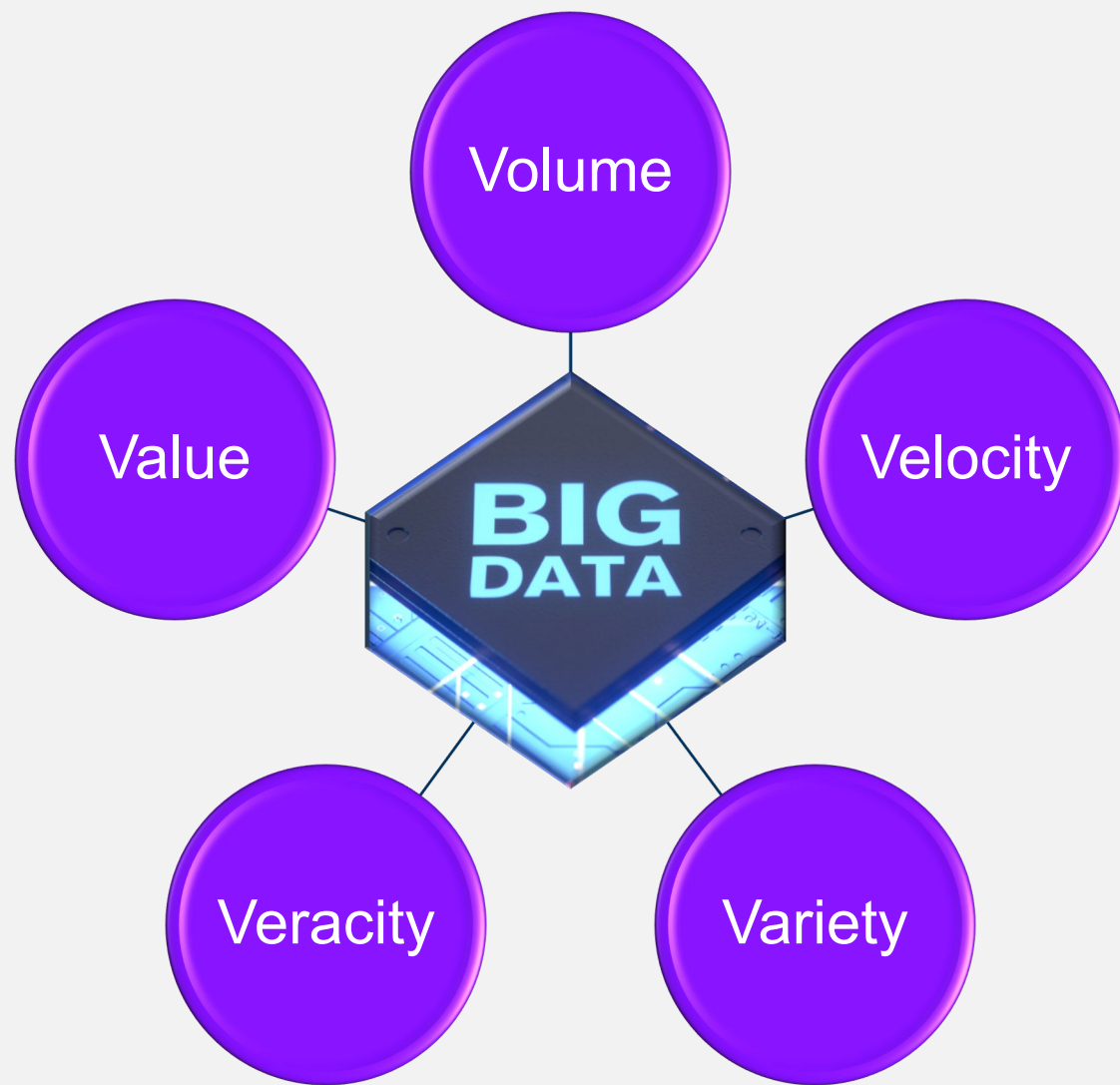
Condition: Good



What is Actionable Data?

“**Actionable data** refers to information that is **timely, relevant, and specific enough** to support decision-making or prompt a clear next step. It goes beyond raw data by being processed, organized, and contextualized so that users can **take informed, effective action** based on it.”





AIHA Technical Framework – Big Data (2020)

5 V's of Big Data

- Technological Advancements
- Rapid Data Generation and Collection
- Efficient Processing
- Data Driven Decisions

Why so difficult?



Data Management Challenges

- Data Accuracy and Completeness
- Difficult to Design and Maintain Appropriate File Management Systems
- Geolocation and Spatial Mapping
- Regulatory Compliance
- Standardization
- Chain of Custody and Sample Tracking
- Multimedia Data
- **Scalability and Portability**
- Reporting

**Actionable Data
This Way**



TRC Environmental Corporation Field Notes

Job Name: *Medical Bld.*

Job #: *128456*

Job Location:

Client:

City/State/Zip:

Technician: *H. Howard*

Date: *11/11/15*

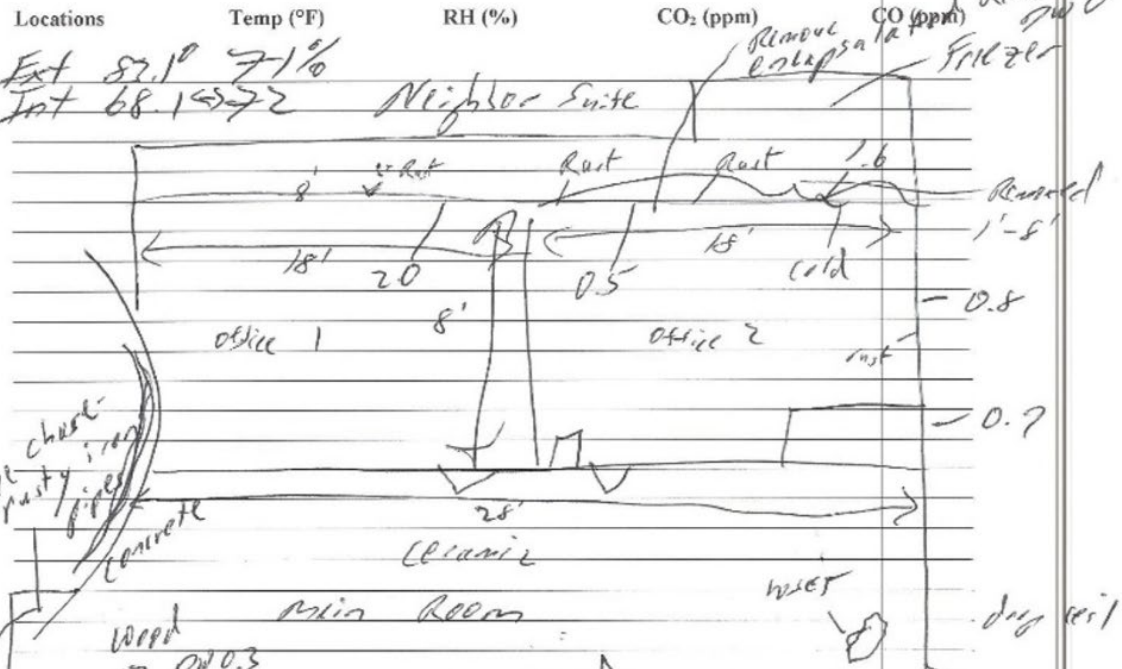
Job Description:

(i.e.: mold survey, mold clearance, etc.)

Weather Info:

Overall: ☒ sunny ☐ overcast ☐ rain ☐ other
Wind: ☐ windy ☒ breezy ☐ calm

Current exterior conditions:



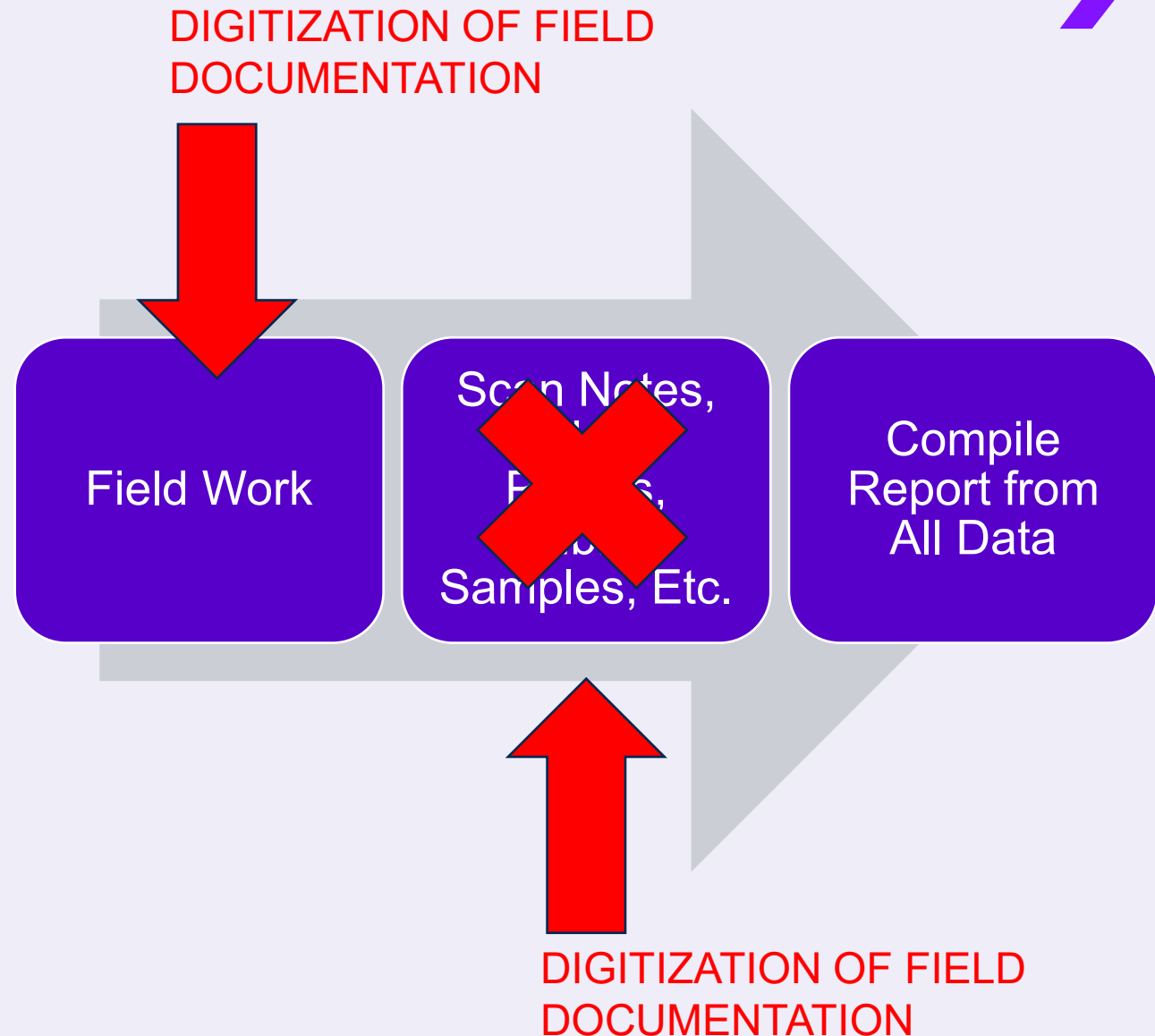
Traditional Approach – Documentation Challenges

- Asbestos and Lead Project Documentation
- Outdated Systems, Excel Sheets, PDF Reports
- **Actionable Field Data**
- Reduce Data Entry Requirements
- Digitize Data at the Source / In the Field



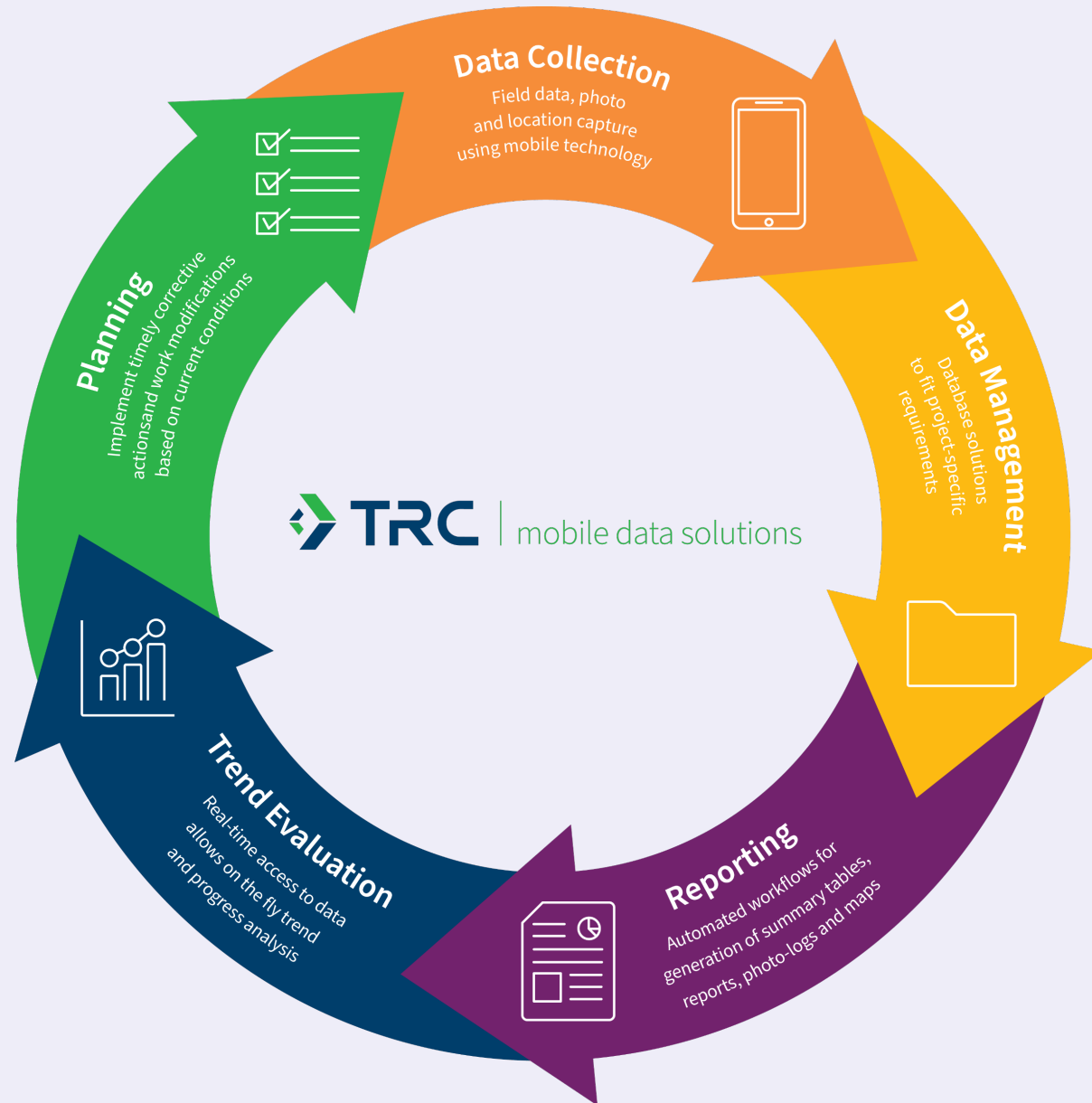
Well Designed Data Collection

- Digital Field Data Collection
- Develop Clear Structure for Collected Data
- Reduce Administrative Tasks (Data Transcription)
- Improve Multimedia Data Management (Photos / Videos / 360 Images)



Data Management Benefits





Benefits of Well-Designed Data Collecting and Management

- Improved Data Quality
- Efficiency and Time Savings
- Better Decision Making
- Enhanced Compliance
- Improved Collaboration
- **Scalability and Integration**
- Cost Savings



Cloud Based Data Management



Project Summary IAQ/WI ▾ HAZMAT Survey ▾ Abatement Oversight ▾ General Field Observations

Asbestos Bulk Sampling Results

Material Description ▴	Accessible Material ▴	Positive For Asbestos ▾	Friability ▴	Homogeneous Area ▴	Total Approximate Quantity ▴
	<input type="text"/>	<input type="text"/>			
▼ Example 6 (6 items)					
Acoustic Ceiling Finish	Accessible	Trace	Friable	places, other places	30 SF
Cement Pipe	Accessible	Positive	Friable	Floor 1 Mechanical Area	400 SF
Ceiling Tile,2' x 2'	Accessible	Positive	Friable	Floor 1 Offices, Floor 2 Offices	3200 SF
Caulking	Accessible	Negative	Non-Friable	Throughout Windows, Floor 2 Windows	440 LF
Cove Base,with Adhesive	Accessible	Negative		Basement Walls	450 LF
Adhesive	Inaccessible		Friable	throughout	12 SF
▼ Example 4 (4 items)					
Cement Pipe	Accessible	Positive	Friable	Floor 1 Mechanical Area	400 SF
Ceiling Tile,2' x 2'	Accessible	Positive	Friable	Floor 1 Offices, Floor 2 Offices	3200 SF



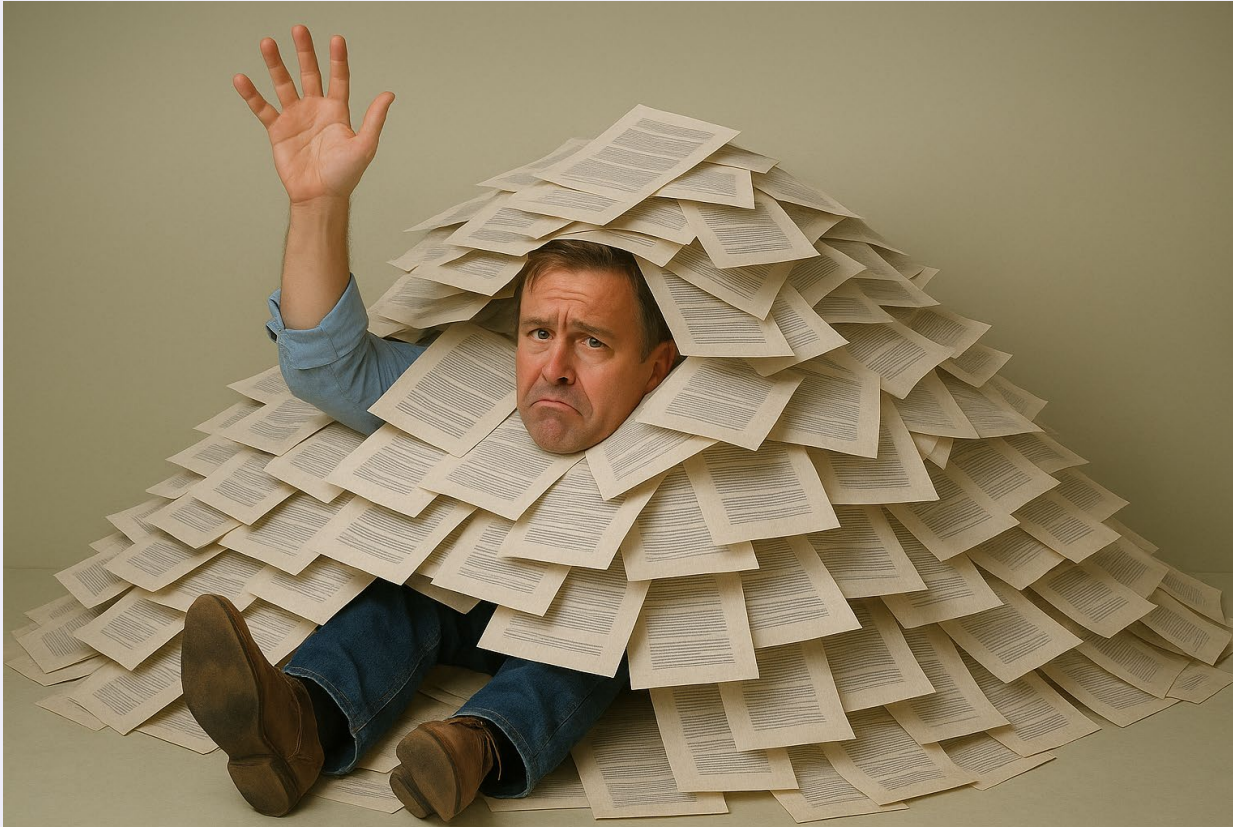


RMS Data Structure

- Push vendors to supply raw data along with final reports.
- What format should be used for RAW data?
- How should the data be structured? Per building?
- The asbestos example:
 - Representative photos
 - Result
 - Material Description
 - Material Color
 - Accessibility
 - Samples collected (date, location)
 - Areas material observed and quantities
 - Material Type
 - **Laboratory Report ID!**



The PDF Paradigm



- Where is the deliverable report?
- How much did we spend on this report?
- Wait, where did we put the report?
- We must have the report!
- This report doesn't make any sense.

Expensive Data Locked Away

AI?

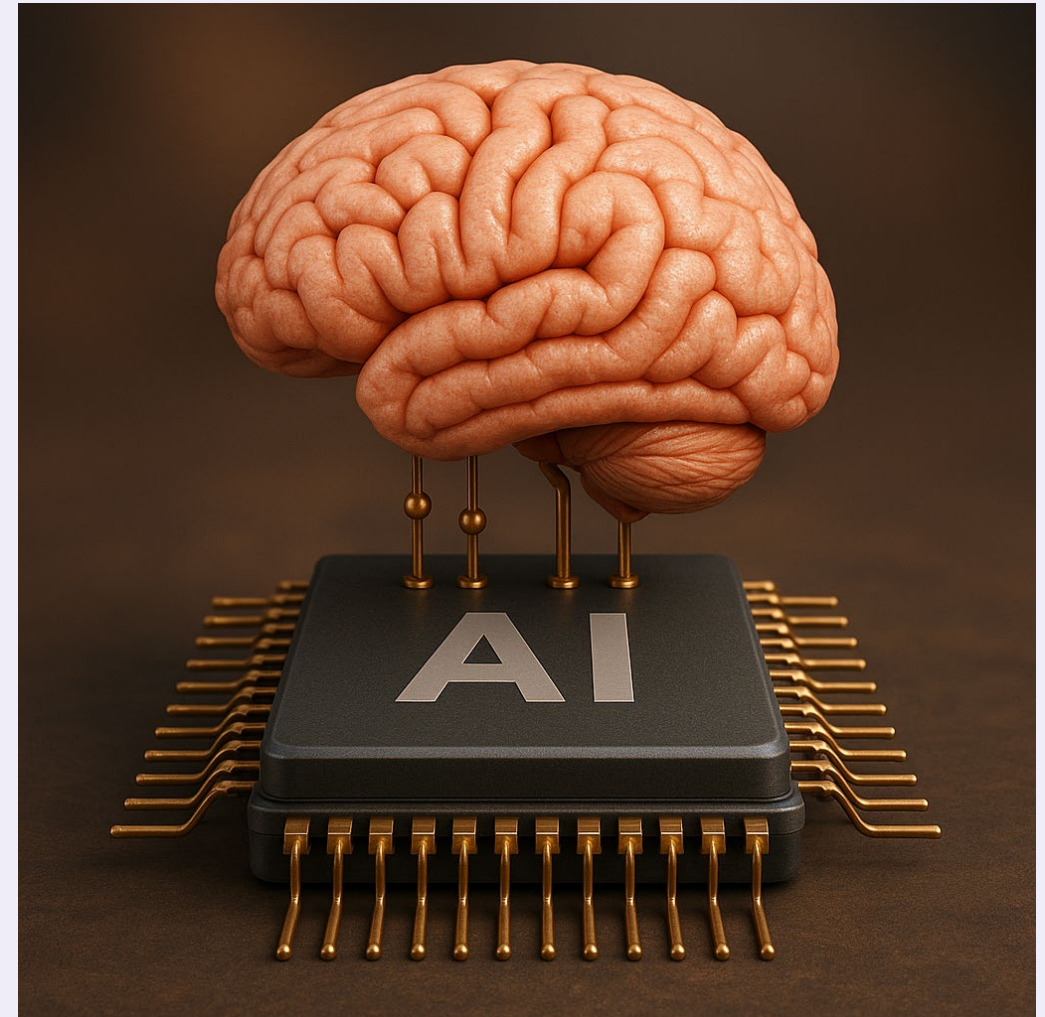




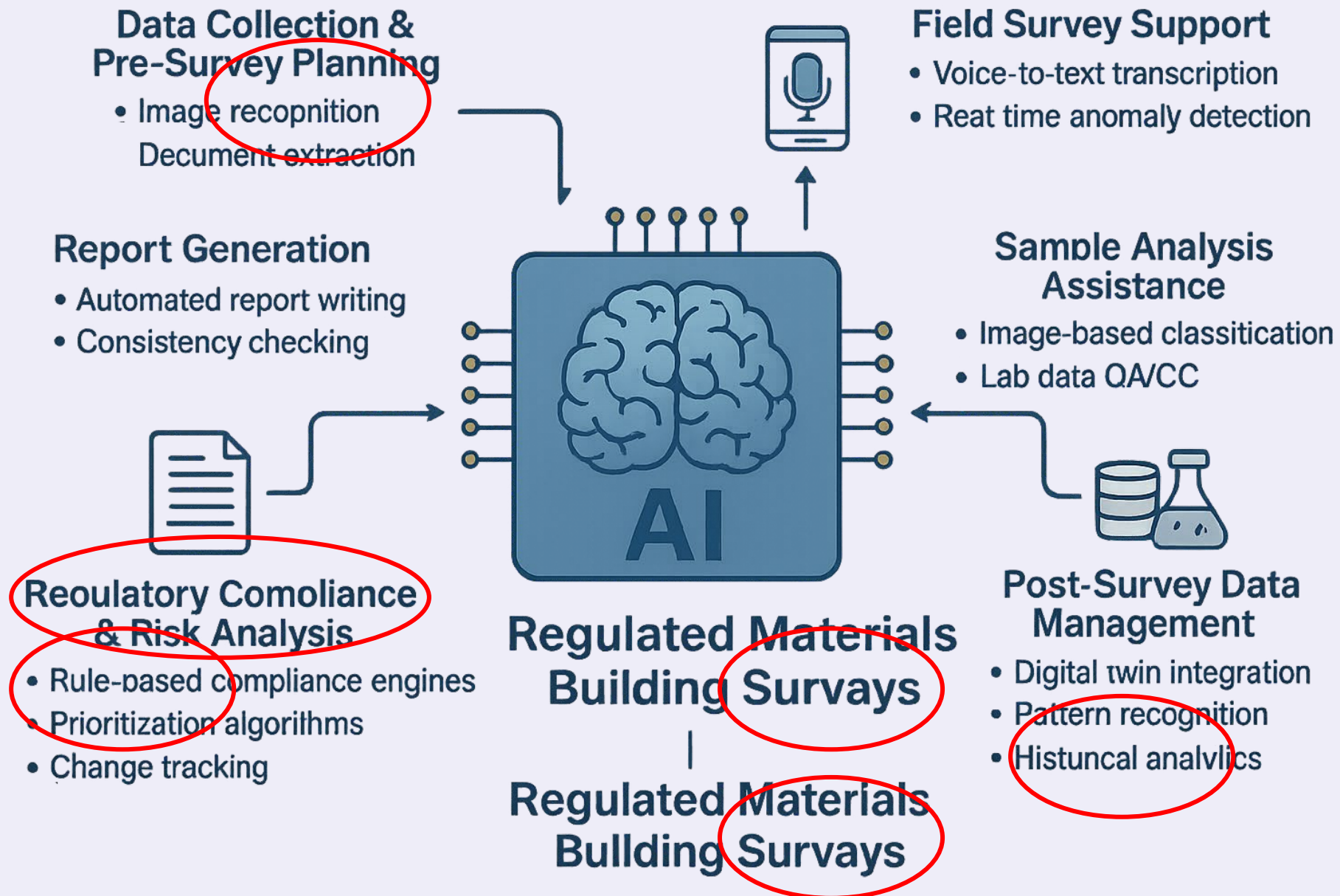
Artificial Intelligence?

Over Hype?

- What are the types of AI everyone is talking about?
 - Narrow AI – Performs specific tasks (e.g., facial recognition, chatbots). Most AI today is narrow.
 - General AI – Hypothetical AI with human-level intelligence across a wide range of tasks.
 - Superintelligent AI – A theoretical AI that surpasses human intelligence in all areas.
- How do we use these models / systems?
 - Need actionable data for use.
 - Unlock previously collected data.
 - Make predictions.
- Are we there yet?



What Can AI Realistically Do (in my career)?



Takeaways



- Start looking forward at what RMS data can do.
- Start looking at requiring RAW data submission with project deliverables.
- Evaluate work process if potential vendors.
- Better data delivery to increase the value of projects today.

Prepare Now

Benefits of Better Data Management

Regulatory Materials Surveys



Improved Compliance



Increased Efficiency



Better Decision-Making

Thanks!



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