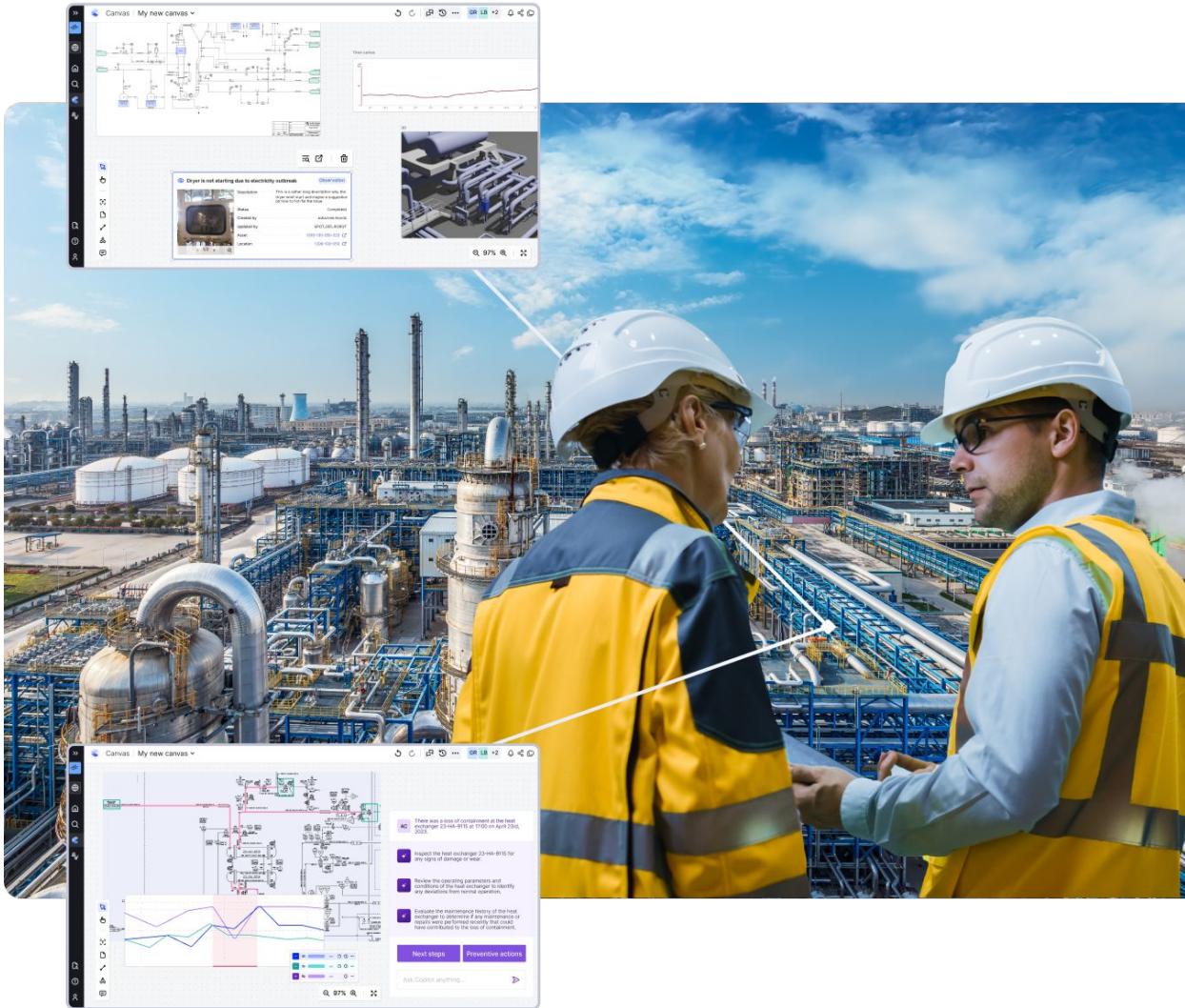




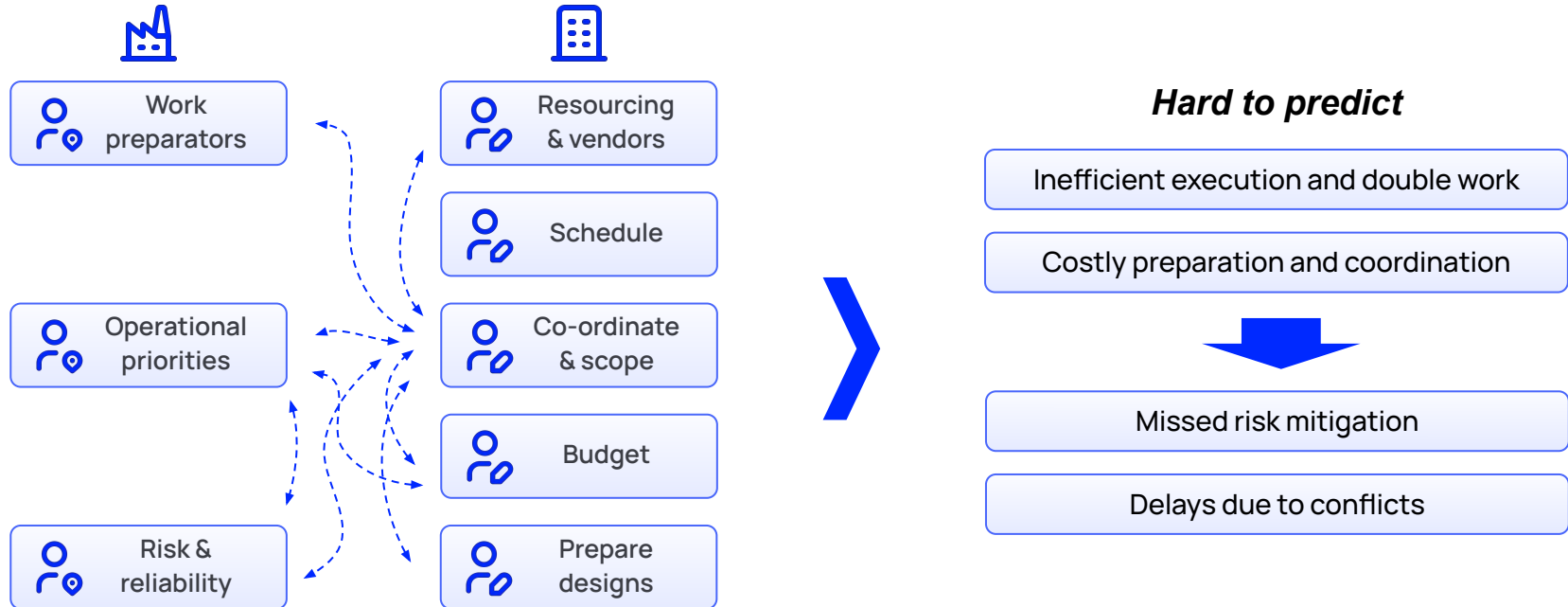
## Reducing contractor expense with smarter maintenance & reliability workstreams

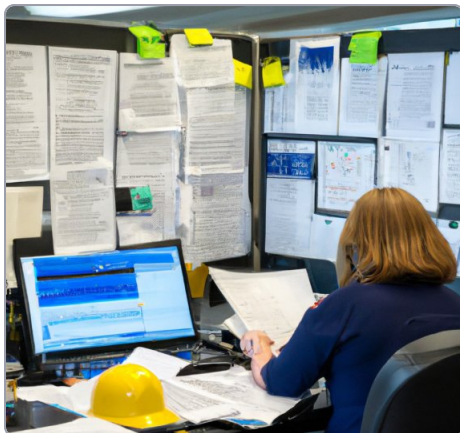
*Tom Chumat, Principal, Gulf Coast Energy Advisors*

*Jose Noguera, Oil and Gas Tech Sales, Cognite*



# Refinery turnaround and maintenance workflows are *complex*





## What we're hearing...

“ Right now when operations steps through a schedule, it's just a table, so they can't see any conflicts. It's just in their head.

— Scheduler

“ We work functionally. We have 15 to 20 planners... they're **completely siloed** almost until the [integrated planner] holds it together. And then we keep our **fingers crossed that we're not horrified**.

— Turnaround and Services Manager

“ Because the **last thing you wanna do is go in and have a clash**... can't fit the piece of kit down and that just delays everything ...any delay to this **extends the duration of turnaround**.

— Topside Planning Manager

“ You try to find the pain point ... there's no recipe, but there's a **lot of insights when you start to look at the whole process**. Where is the thing that is blocking you to have good usage of your resources?

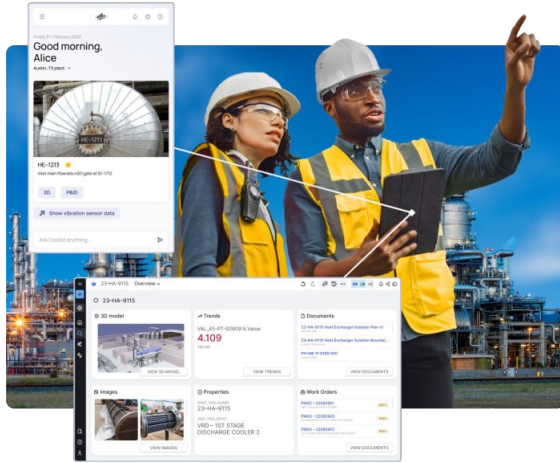
— Former TAR Planner

“ Last turnaround we assembled and disassembled scaffolding three times in the same location. We struggle to identify these inefficiencies during planning.

— Reliability and Maintenance Lead

# Many costs are baked into variable contractor labor

## Big opportunity to improve work processes



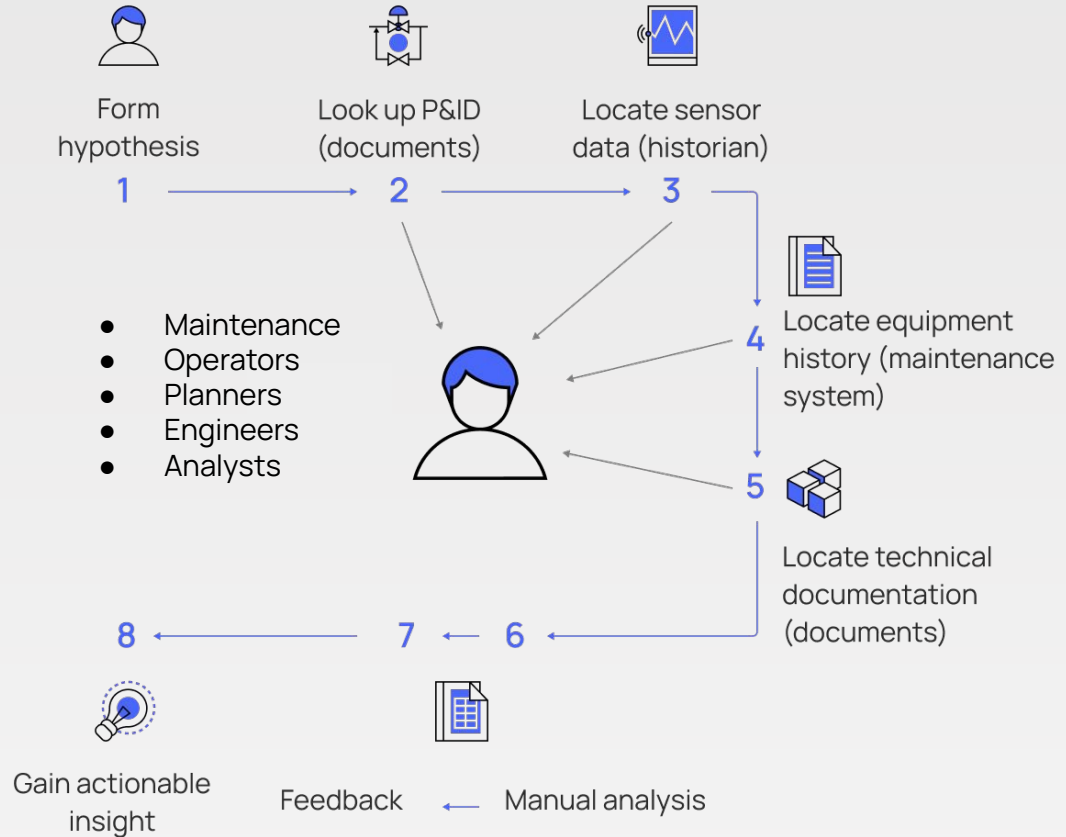
Contractors must **learn the sites' work processes** for gathering the necessary information to build work packages e.g. Procedures, Plot Plans, Unit Boundary designations, Engineering and Maintenance Documents, etc.

Contractors need to **manage a large volume of documents** needed to plan and execute the work and navigate the various company document management systems that could be paper bases, electronic, or typically a combination of both

Contractors **have to orient themselves** with the site, location for each job and, “walk down” each job to plan the specific steps needed to execute the work

Contractors can spend **hours every day** on finding the data and insights they need to perform tasks and resolve issues

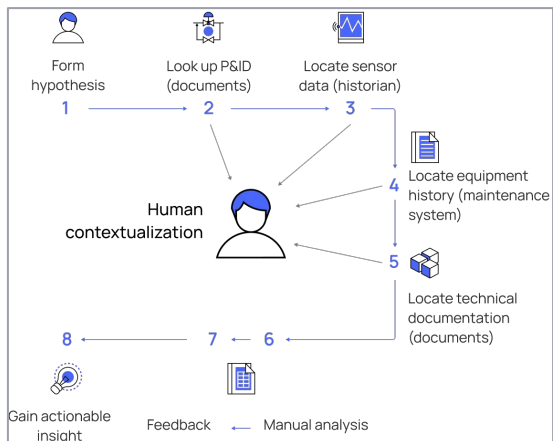
## Typical workflows and data are siloed/ manual



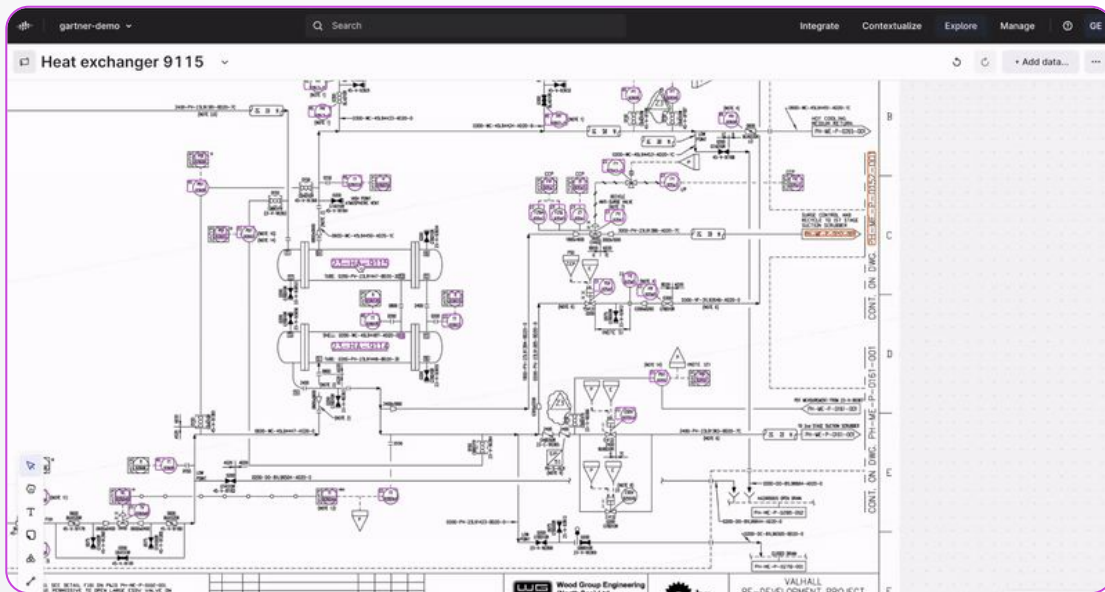


## Example: Building a work package

- What am I working on?
- Where is it?
- Is it Replacement in kind? An Upgrade?
- Is it elevated?
- How much does it weigh?
- Do I need staging/Crane?
- How congested is the work area?
- How do I isolate it?



## Answer all of these questions and more from a single, collaborative workspace, powered by AI



### Explore

Access and add any type of data in one compostable environment + Copilot powered research.

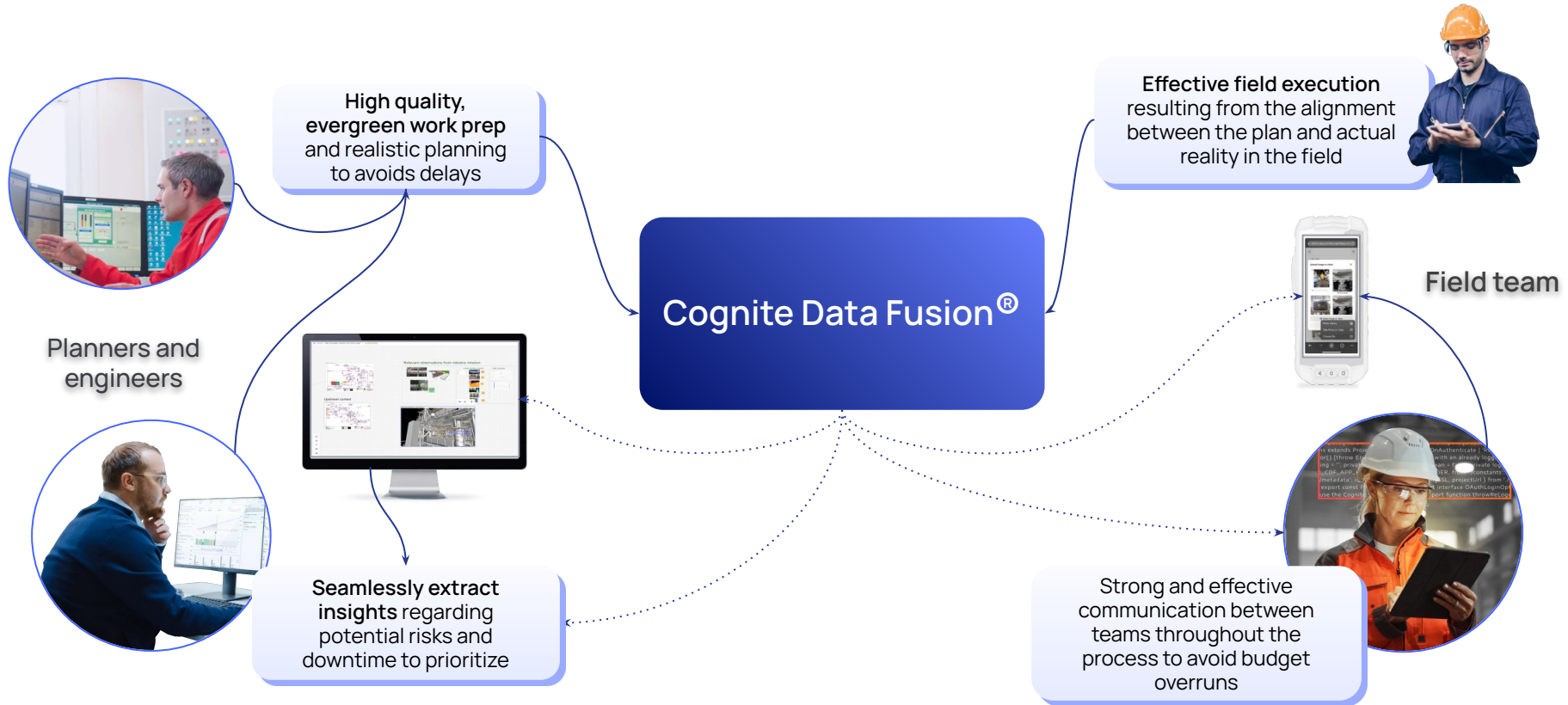
### Collaborate

Annotate, tag users, share insights with seamless integration into no-code analytics.

### Create

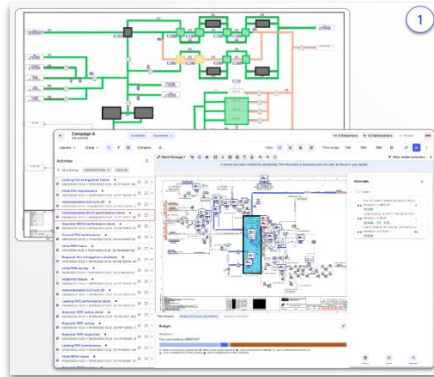
Summarize documents and write complex queries using natural language.

# Improving contractor efficiency starts by **bringing the field and back office together** with instant access to data & insights

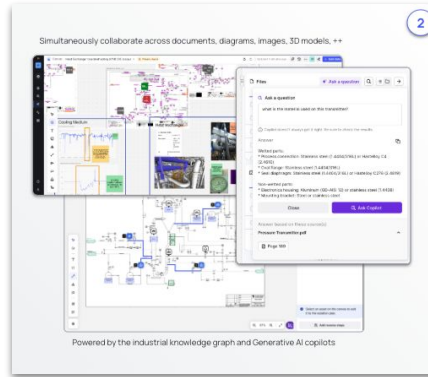


# Let's show how instant access to data & Insights improves key processes:

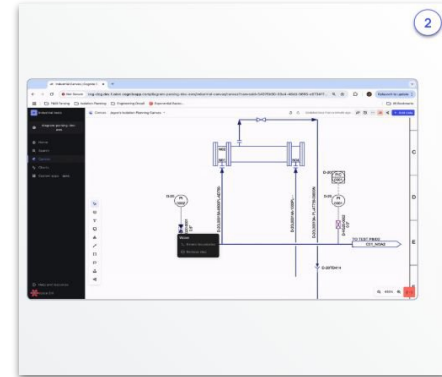
## Optimizing Work Priorities



## Collaborating on Work Packages



## Automating P&ID Boundary Markups





# Identify Priorities

## Optimize turnaround priorities

Uncover hidden opportunities in asset health and operational data to refine scope decisions and drive more effective turnarounds:

### Dynamic Risk Monitoring

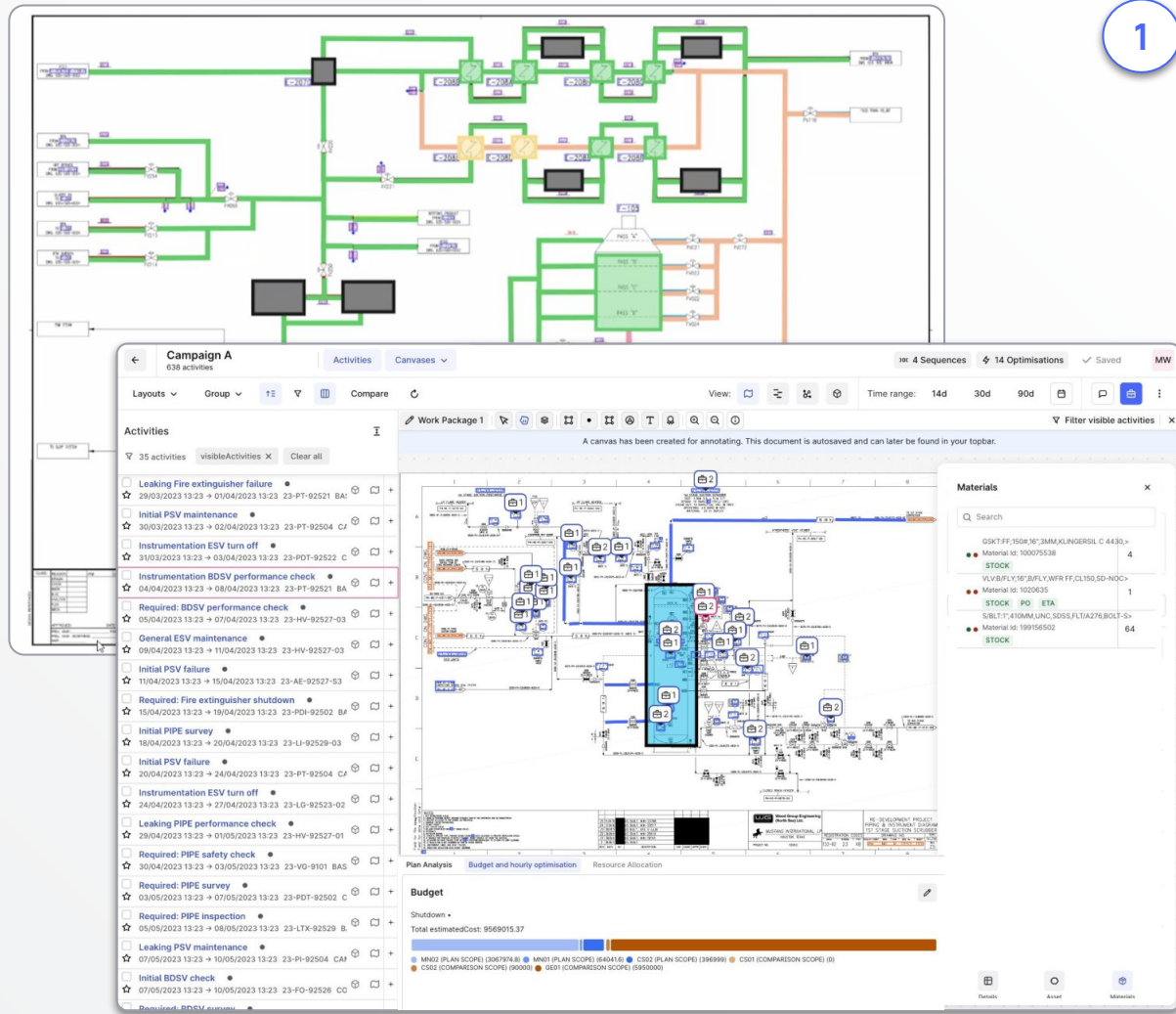
Map work orders, risks and operational data such as isolation boundaries on 2D diagrams and 3D models to identify missed opportunity scope

### Advanced Filtering and Grouping

Filter, group, and sort on attributes of the maintenance backlog to uncover bundling opportunities based on planned work

### Plan analysis & calculations

See live material status from ERP system and on potential scope opportunities and asset budget impact of scoping decision in real time



# Work Preparation

## Collaborate to prepare work packages

**Collaboratively build digital work packages and conduct efficient virtual line walks:**

### Intuitive Search with AI

Leverage contextualized data and AI-powered tools to quickly find and organize information.

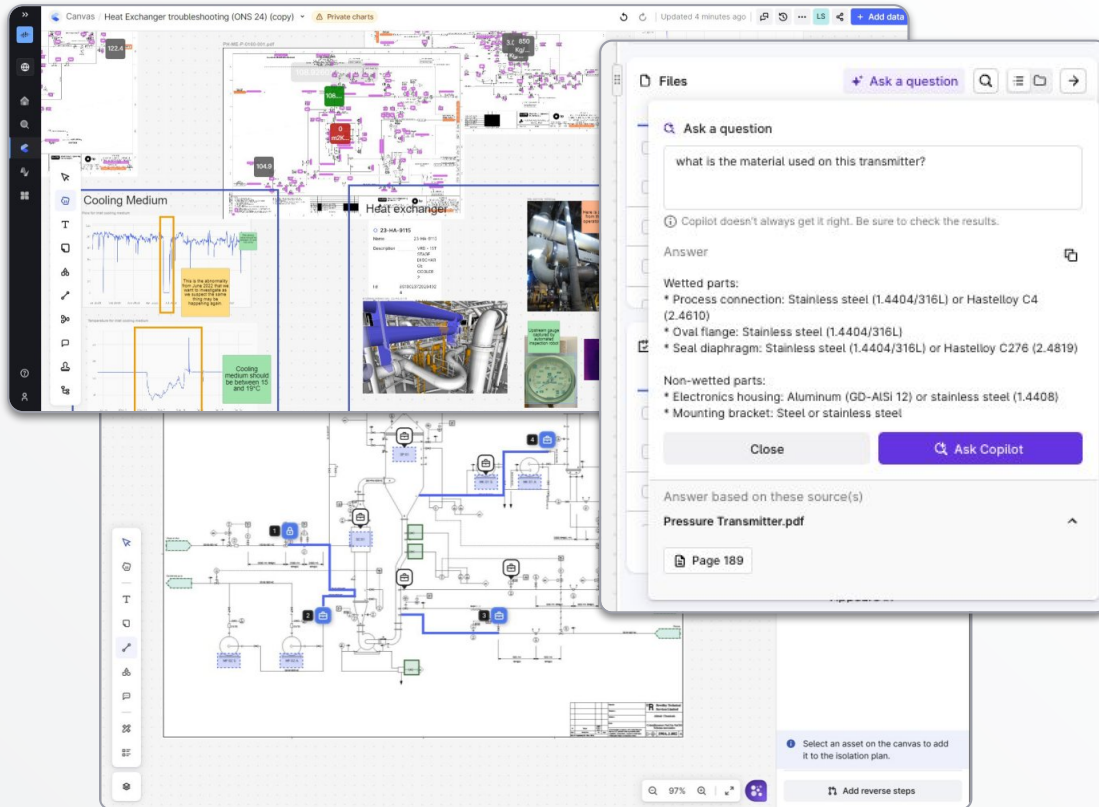
### Interactive Markup Tools

Highlight and annotate engineering diagrams, imagery, and 3D for better clarity and collaboration.

### Field Input Notifications

Notify field teams and request input during virtual line walks to ensure high-quality feedback and alignment.

Simultaneously collaborate across documents, diagrams, images, 3D models, ++



Powered by the industrial knowledge graph and Generative AI copilots

## Work Preparation

# Automated P&ID boundary mark-up

**Capture the real-time status of work as it is performed and receive instant insights workflows:**

### Automated P&ID Collection

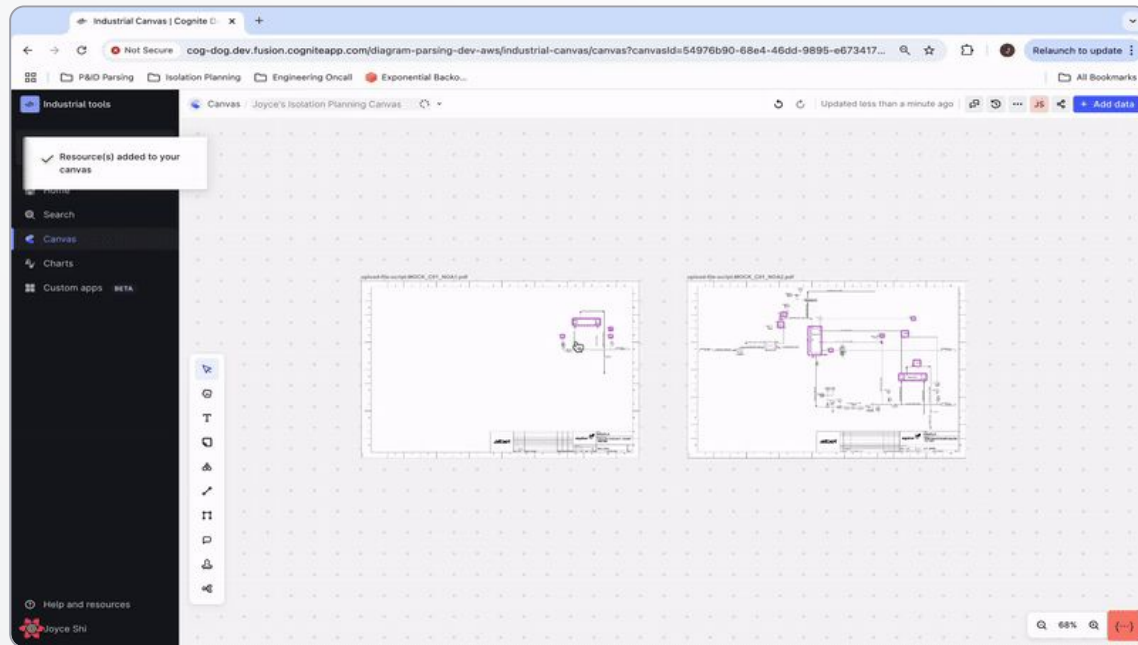
Effortlessly locate relevant P&IDs based on work orders within the turnaround scope.

### Automated Boundary Mark-up

One-click mark-up of boundaries, automatically linking to the nearest valve across P&IDs.

### Collaborative Mark-ups and Comments

Enhance automated mark-ups with collaborative comments and additional annotations using advanced mark-up tools.



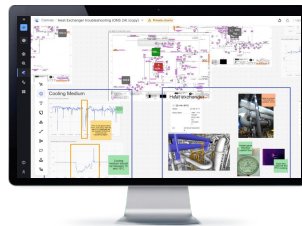
# Key Capabilities powered by **Cognite Data Fusion**®

## Market-Leading Data & AI Software Built Specifically for Industry

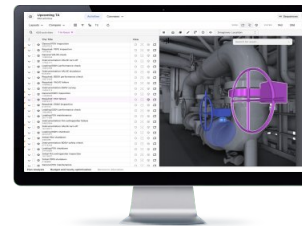
Efficient capture and sharing of data between the office and the field



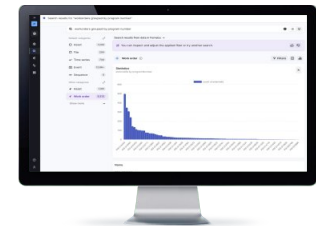
Advanced visual planning tools for solid work package preparations



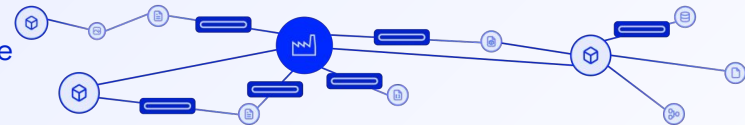
Identify priorities, risks and conflicts on real-time contextualized data



Seamless re-adjust your plans to reality in the field as you execute



All your data, contextualized in a knowledge graph, available for any field application, scalable across your enterprise



Sharepoint/Excel

CMMS (SAP/ Maximo)

Documents

Control of work

Risk management data

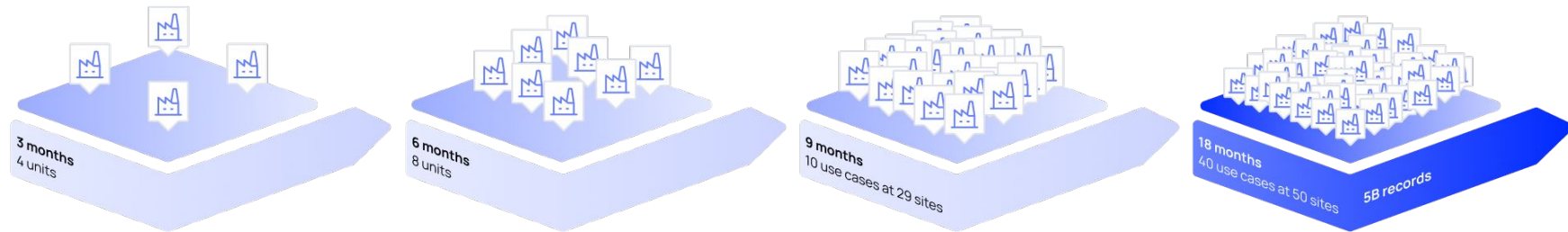
3D Tools

Teams/Emails

P6/Prometheus

# The Only Industrial Data & AI Platform Built for Scaling

with a repeatable formula for AI transformation in industrial settings



## Rapid Data Onboarding Program

**Start quickly and pave the way for AI with a prescriptive data onboarding and exploration program.**

Build a unified industrial information workspace in weeks—not months—delivering a single source of truth, instantly boosting SME capacity by 5%, and paving the way for expanded AI solutions.



## Templatized Wins

**Get quick value from pre-built solutions and AI Agents for the operational use cases that matter most.**

### Data-drive Turnarounds

Reduce planned downtime by 15-30%

### Advanced Troubleshoot

Increase production uptime by 6-8%

### Transformative Field Operations

Increase throughput by 10-30%



## Straightforward Scaling of Value

**Scale AI-driven solutions across assets, sites, and the enterprise 10x faster**

Unleash your AI-Powered workforce by scaling your priority operational use cases and AI agents to maximize value and adapt to evolving needs, supercharging efficiencies worth tens of millions.





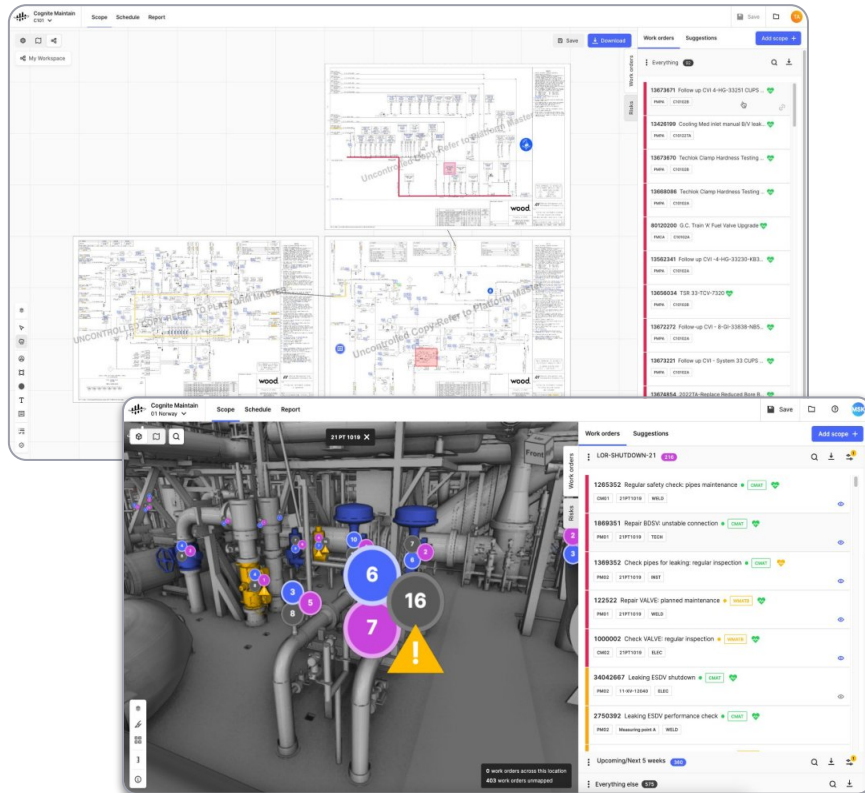
# Improving Turnaround Processes for North American Top Five Petrochemical Company

(TAR) planning for a facility of ~150k BOE/D)

**Problem:** No efficient way of gathering all relevant data. Too much time finding and contextualizing data from numerous, disjointed sources and systems.

**Solution:** In just two months, Cognite provided a 3-phased solution:

- a fully digital boundary isolation mark-up workspace
- fully contextualized planning data such as P&IDs, work orders, asset hierarchy, 3D models,
- and 3D Digital Twin.



**\$4.6m**

*Estimated savings*



**2 days**

Took to scale TAR solution scenario at another asset



**100s hours**

Reduced time on finding, cleaning and integrating the data

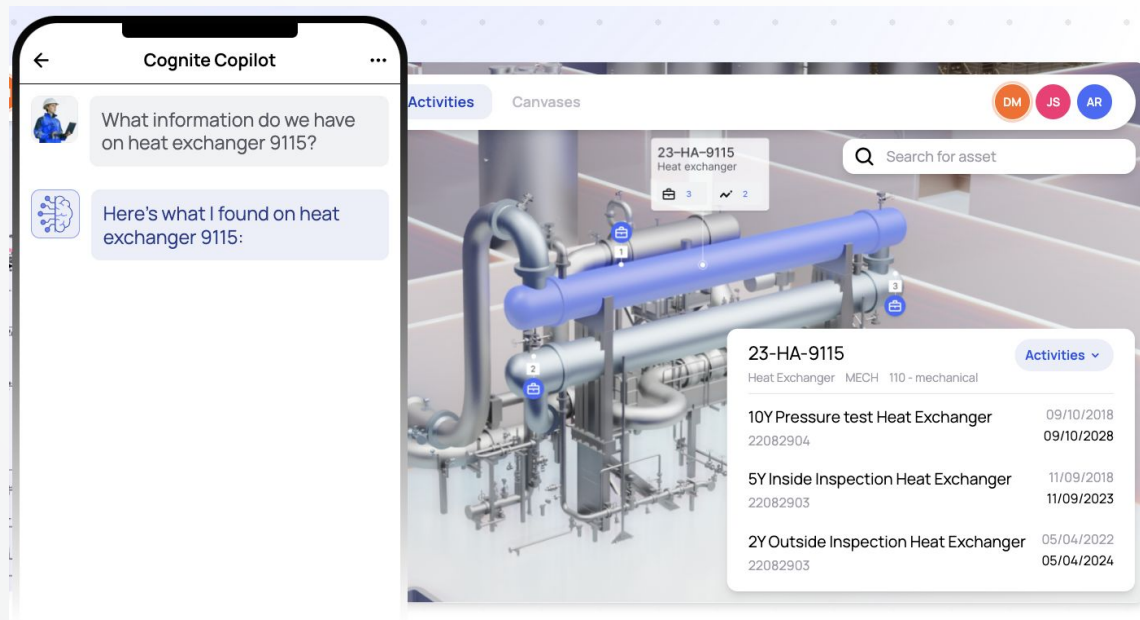


**150K docs**

single source of truth managing thousands engineering docs

# Summary

1. TAR & Maintenance workflows are inherently complex and inefficient
2. There's big value in improving contractor productivity w/ data
3. Cognite software can help you get there faster and help you scale



**Get started quickly with our prescriptive data-onboarding program & tools**

Data Integrations

Data Searchability

Integrated Charting

Collaborative  
Workspace

Troubleshooting  
Features

Connected  
worker-ready