AI Vision on the Frontline – Real-World Safety

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WOMEN empowering HDD by DCA

Spring Talks, on the 28th of May 2026

IA & SAFETY –
What is your expectation?

HDI – WHO ARE WE ?

HDI within VINCI Group

- HDI is part of **VINCI**, one of the world's largest construction and concessions groups
- Operations in **100+ countries** with **tens of thousands of employees**
- Today's journey reflects not only HDI's experience, but a model that can scale across **VINCI sites and the wider industry**

HDI's core activity

- Specialized in **Horizontal Directional Drilling (HDD)**
- Enables delivery of **highly complex trenchless construction projects**

Operational environment

- Entry platforms of approximately **2,500 m²**
- Installation of **over 1 km of underground ducts** per project

- High concentration of :
  - Heavy machinery
  - Multiple contractors
  - Tight delivery schedules
  - All operating on a single platform

Safety context

- Safety has always been a **core commitment**
- High-risk, dense work environments require constant vigilance

Why we went further

- Traditional safety approaches alone were no longer sufficient
- Decision to explore **additional, innovative ways** to enhance safety
- Objective: **better protect our teams and manage risk proactively**

– WHO ARE WE ?

Key Figures worldwide

+40 years of experience

Projects in over **40** countries

More than **2,000** HDD crossings

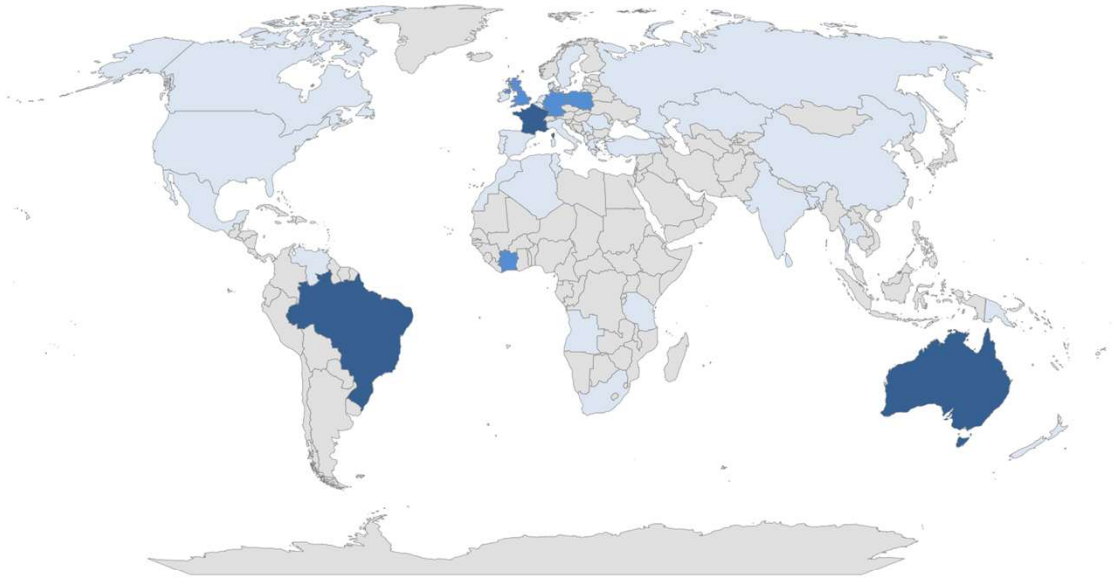
2000 km installed with HDD

+ 230 crossings for Electricity

+ 90 Landfalls

+ 500 projects for Oil & Gas

+ 150 projects for Water & Sanitation



HDI Location
HDI Headquarters – Nanterre, France
HDI Warehouse – Dunkerque, France

Sister companies
INTECH – Brazil
HDI Lucas – Australia

Branches

HDI UK Branch
HDI Poland Branch
HDI Ivory Coast–Ivory Coast
HDI German Branch

SAFETY ONSITE

CURRENT PROCESS

Traditional safety approach

- Manual observation: site walks, spot checks, O&I systems, management walkthroughs
- Useful, but provides only isolated snapshots, not continuous visibility

HDI safety culture

- Experienced workforce
- Strong commitment to safety
- High level of transparency

Industry reality

- Most near-misses occur between audits
- If not reported, they effectively go unnoticed and unlearned from

Key VINCI insight

- 1 in 3 incidents linked to man–machine interactions

Why was change needed ?

- Traditional methods did not fully reveal risk exposure
- Existing practices were sometimes insufficient

Strategic question :

- How do we eliminate blind spots?
- How do we move from reactive safety to proactive prevention

REMINDER OF THE CONTEXT

Reality

- Monitoring is done visually by the QHSE and on-site operatives.
- The reporting of information is done based on digital forms (O&I).

Objective

- Improve the current process for monitoring hazardous situations.
- Improve the safety of field operatives and ensure maximum prevention.
- Reduce of accidentology.

Solution

- Implementation of a site monitoring solution using smart cameras to improve security.
- Delivered AI vision capabilities enabling real-time visibility, site-specific adaptation, and proactive incident prevention.

HOW WE DID?

1 Project
INELFE ONSHORE

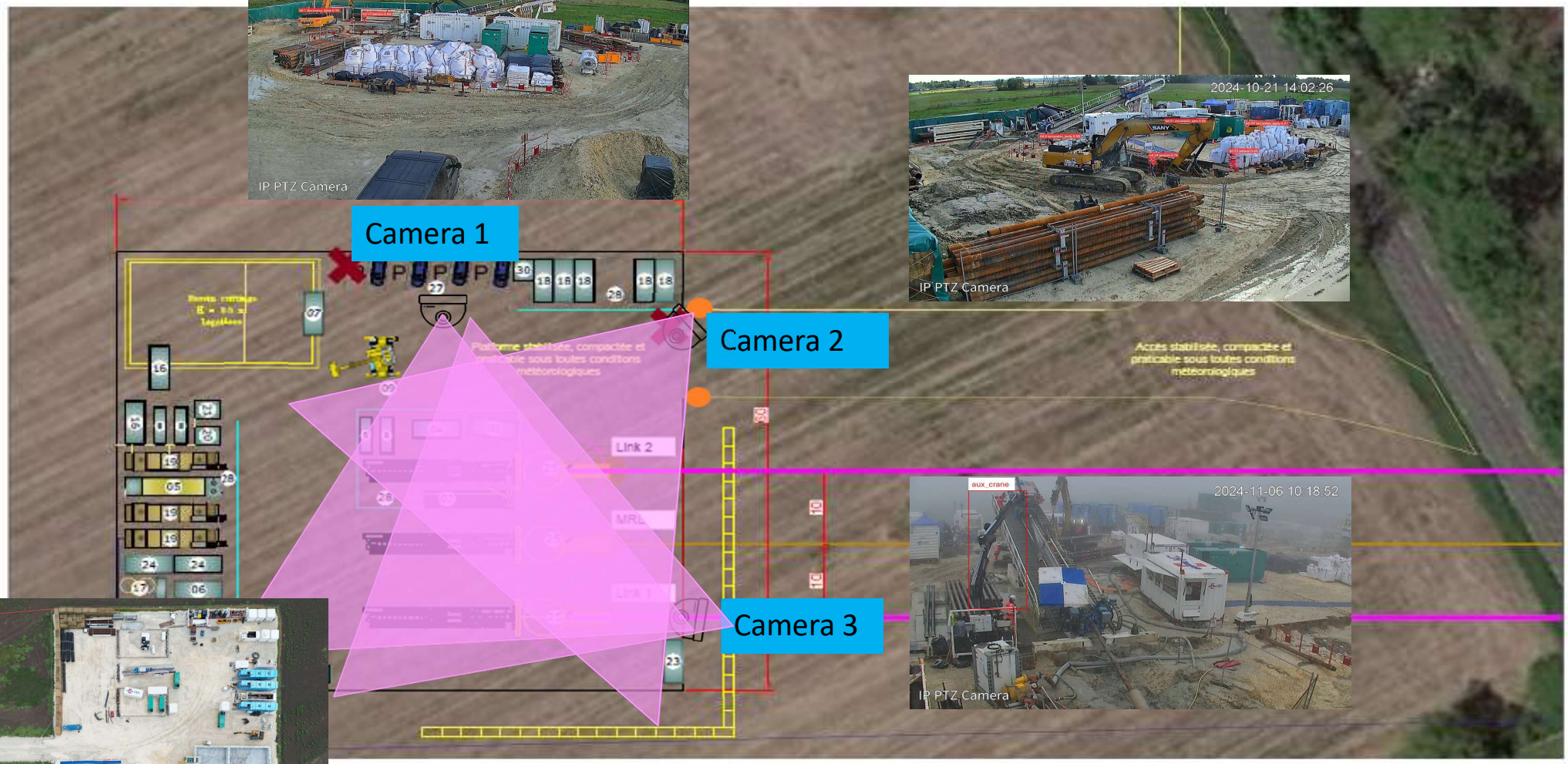
2
Teams involved

2
use cases

1 City
Bordeaux

1 POC
for an expanded deployment to the group

HOW WE DID?


2024-10-18 18:01:07
IP PTZ Camera
Camera 1
2024-10-21 14:02:26
IP PTZ Camera
Camera 2
Accès stabilisée, compactée et praticable sous toutes conditions météorologiques
Link 2
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Link 1
aux_crane
2024-11-06 10:18:52
IP PTZ Camera
Camera 3


14 juil. 2025 18:17:30
Route du Bec
Ambès, Gironde 33810
France


24 juil. 2025 08:58:00
D10
Ambès, Gironde 33810
France

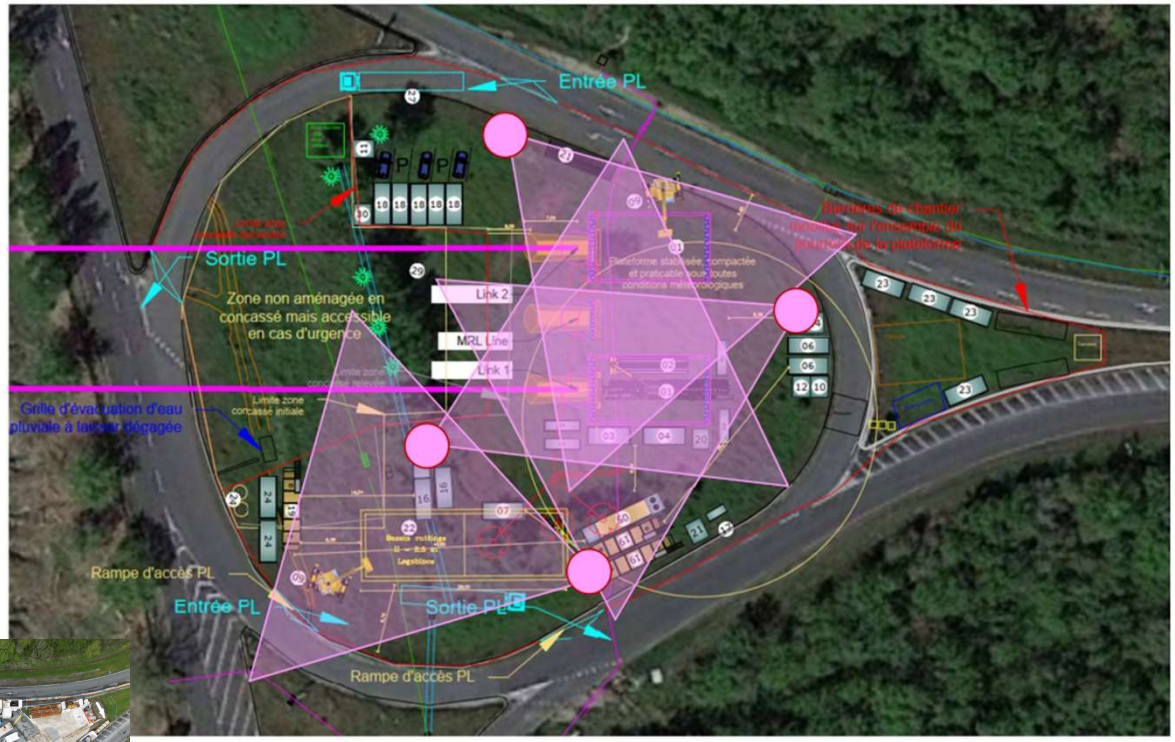
HOW WE DID?

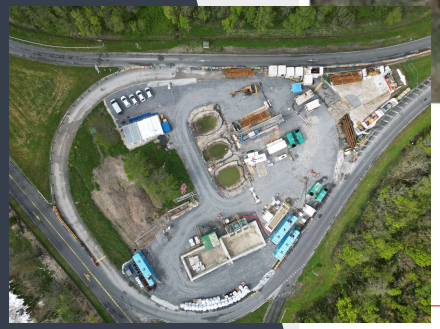

excavator_arm 0.66
2025-07-03 15:34:38
SANY
excavator_body 0.65
person 0.71
person 0.75
IP PTZ Camera


2025-08-05 00:51:33
excavator_body 0.67
person 0.87
IP PTZ Camera


SANY
excavator_body 0.66
person 0.79
person 0.92
IP PTZ Camera

HOW WE DID?





WEATHER

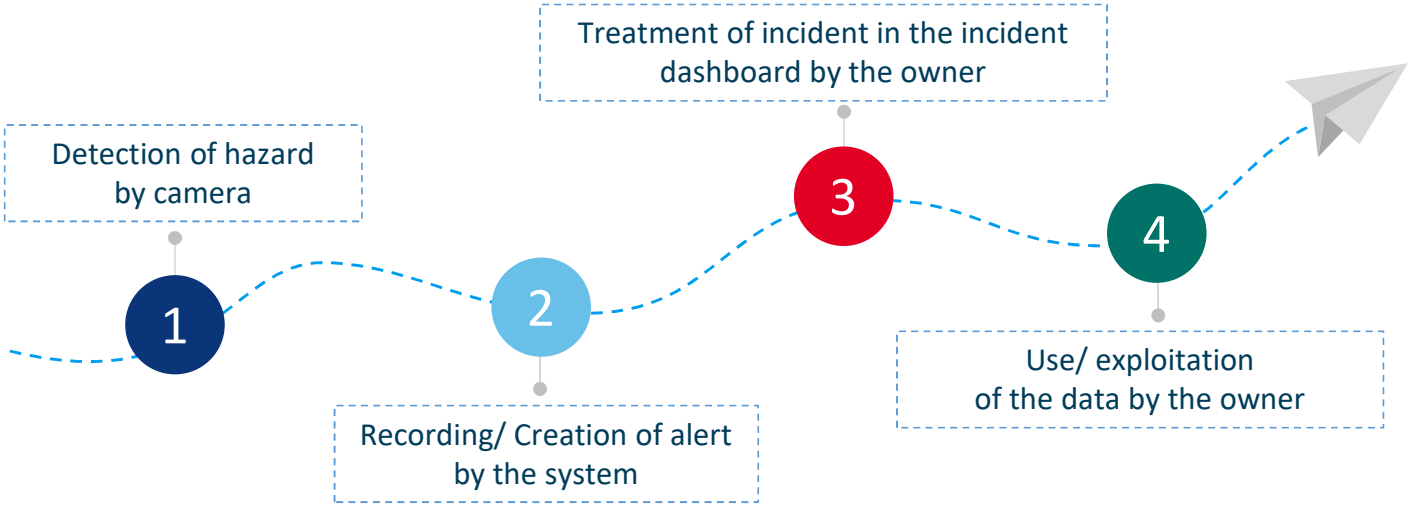
- 3 use cases stabilized :
  a. Interaction between person & equipment
  b. Person under load
  c. Monitoring of the drilling area
- 2 new use cases requested :
  a. Detect people not wearing PPE
  b. Detect the clutter on site
     - Large bags

TARGET REMINDER

- 2 use cases stabilized from 12 months :
  a. Interaction between person & equipment
  b. Person under load
- 2 additional use cases once the first two are stabilized

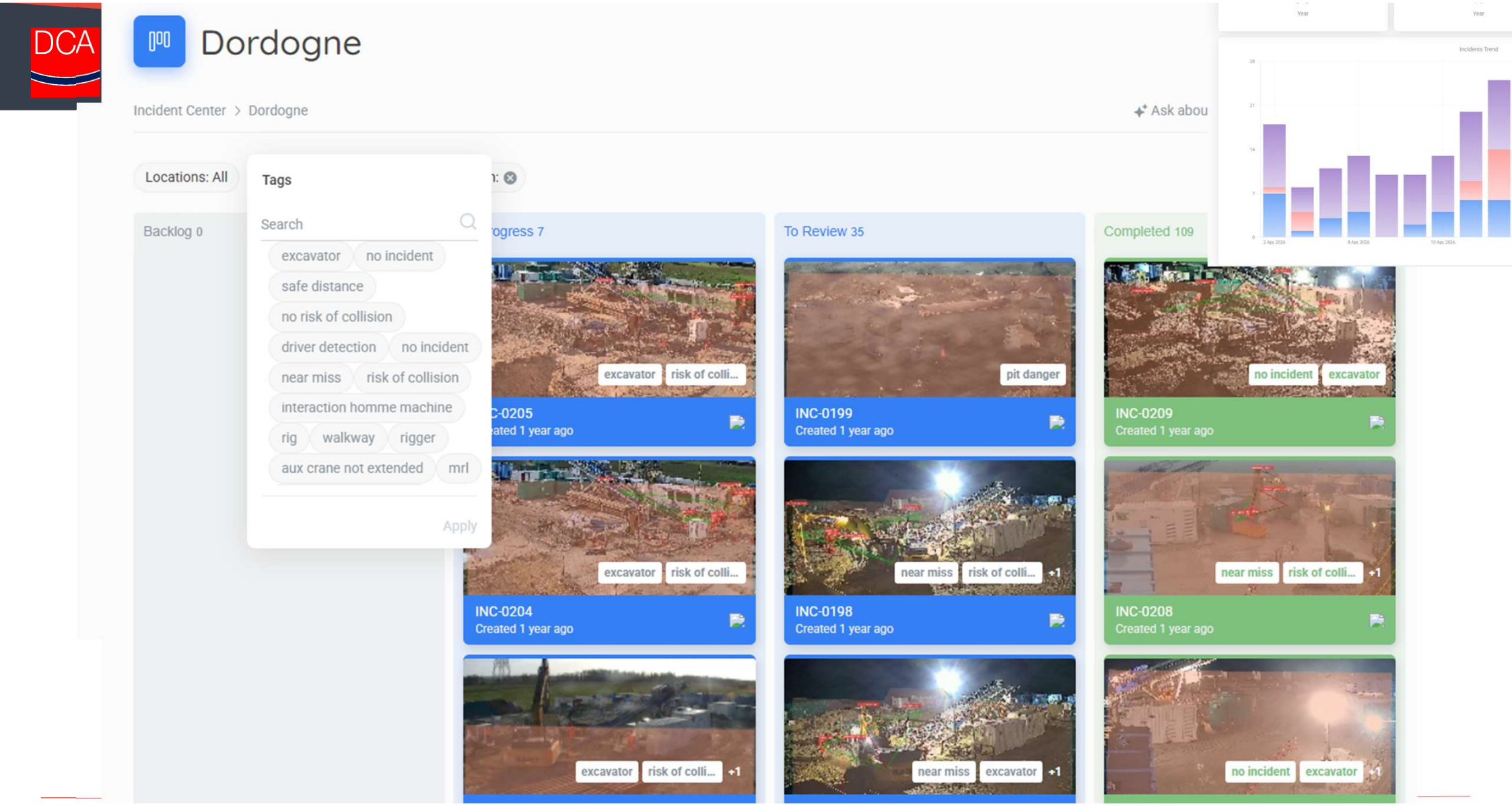
OVERVIEW OF HOW THE SYSTEM WORKS

Step of work



Steps	Action
1	AI Camera detects hazard related to the use cases defined in the system.
2	The computer vision system records an incident and sends an alert.
3	The safety manager accesses the incident center dashboard within the platform and processes the alert (status :high, medium, low… comments, tags..)
4	The Safety Manager oversees the dashboard by reviewing closed incidents and is able to produce safety flashes and analytical reports using external tools.

- ✓ Live prevention
- ✓ Capturing alerts
- ✓ Reduction of accidentology
- ✓ Control of the effective deployment of golden rules
- ✓ Time saving: Limits the double-entry
- ✓ Securing information
- ✓ More modern image
- ✓ Limit of site stops
- ✓ Saving money


Dordogne
Incident Center > Dordogne
Ask abou
Locations: All
Tags
Search
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no incident
safe distance
no risk of collision
driver detection
no incident
near miss
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To Review 35
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INC-0198
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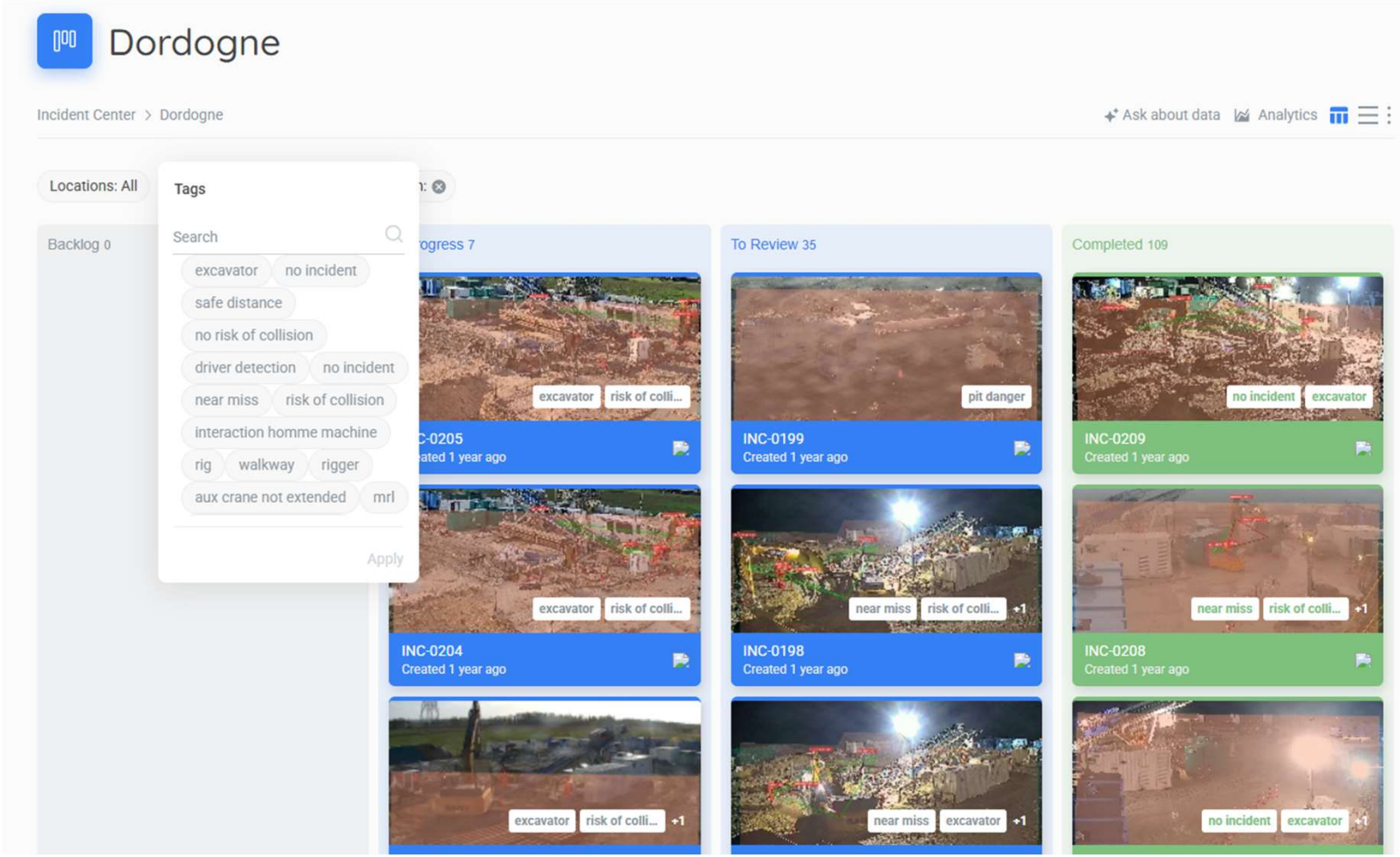
Incidents Trend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+1
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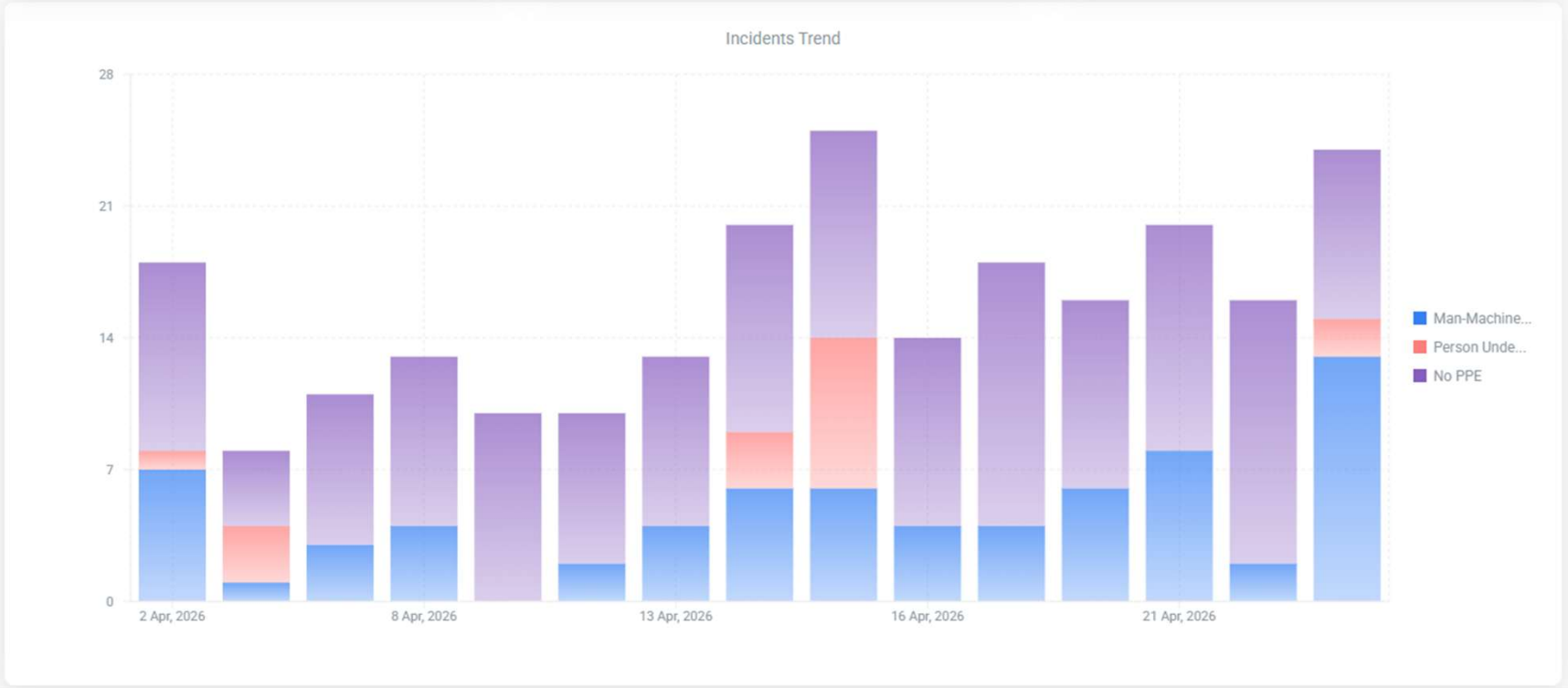
INC-0208
Created 1 year ago

Man-Machine Incidents	Person Under Load Incidents	PPE Incidents
70	17	149
Year	Year	Year



POTENTIAL ISSUES & CHANGE-MANAGEMENT ACTIONS

POTENTIAL RISKS

- **Limited adoption:** fear of substitution or complexification of tasks.
- **Adaptation of processes:** need to review some workflows.
- **Insufficient skills:** need support for the use of AI.
- **Data governance:** increased rules and transparency requirements.

KEY ACTIONS FOR A SUCCESSFUL TRANSITION

1. Clear communication: explain the objectives and benefits.
2. Targeted training: support teams with adapted supports.
3. Pilot phase: test on a reduced scope before global deployment.
4. Involvement of stakeholders: involve key teams from the start.
5. Change champions/ Network of ambassadors: rely on referents to promote adoption.

THANK YOU !