



**IPLOCA**

**INTERNATIONAL PIPE LINE & OFFSHORE CONTRACTORS ASSOCIATION**

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**IPLOCA Health & Safety Award**

**ENTRY FORM**

**Cat® Vision System with Personnel Detection**

**Caterpillar Inc.  
Global Pipeline Division**

## **Business profile:**

With 2021 sales and revenues of \$51.0 billion, Caterpillar Inc. is the world's leading manufacturer of construction and mining equipment, off-highway diesel and natural gas engines, industrial gas turbines and diesel-electric locomotives.

For nearly 100 years, we've been helping customers build a better, more sustainable world and are committed and contributing to a reduced-carbon future. Our innovative products and services, backed by our global dealer network, provide exceptional value that helps customers succeed.

Caterpillar does business on every continent, principally operating through three primary segments – Construction Industries, Resource Industries and Energy & Transportation – and providing financing and related services through our Financial Products segment.

## **Findings:**

Caterpillar is providing not only “the piece of iron” but the whole solution to meet the construction companies needs including the high technology. One of the issue Caterpillar is focused on is the job site safety. Most of the job sites have many machines operating in a concise space with a large number of people working around them. Specifically to the pipeline construction projects these people may belong to different departments of one company or to completely different companies (welding operation, pipe laying, transportation, etc.). It creates a high risk of incidents with heavy injuries or deaths. Besides it increases the operator alert fatigue reducing the efficiency and therefore jobsite performance.

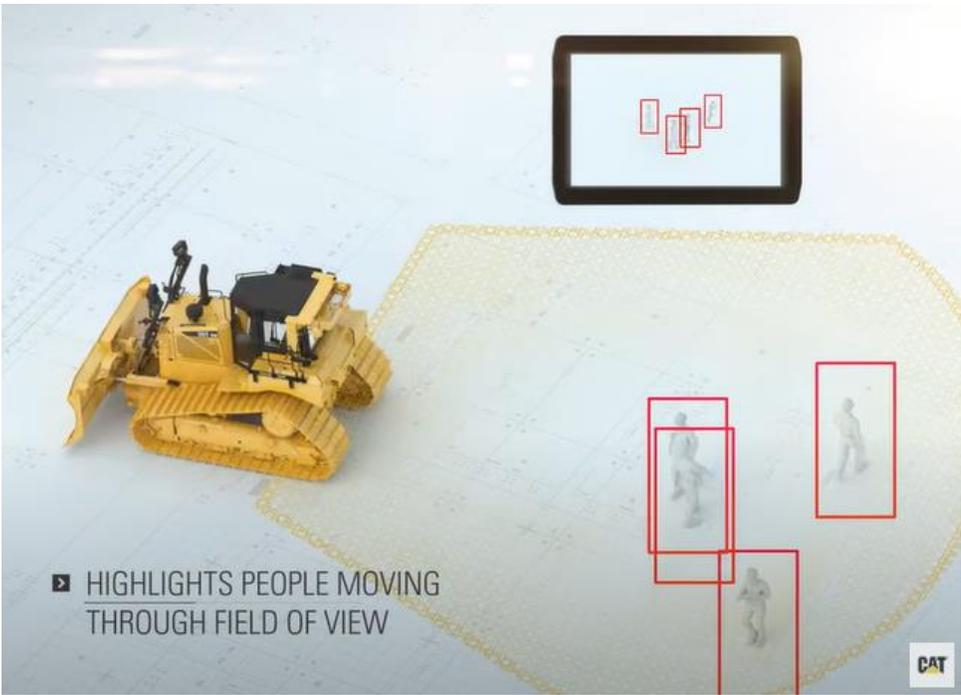


## **Solutions:**

- Developing a system helping an operator to track all the personnel around the machine
- Make it available on any machine in the pipeline company regardless of the brand (mixed fleet)

The initial Cat Detect system was based on the special detectors attached to the safety vests of the workers and a detector in the machine allowing an operator to see a person wearing such a safety vest. The system has got a great feedback from the customers. However that system requires a special preparation of all safety vests and does not work if a person from another company happen to be on the job site.

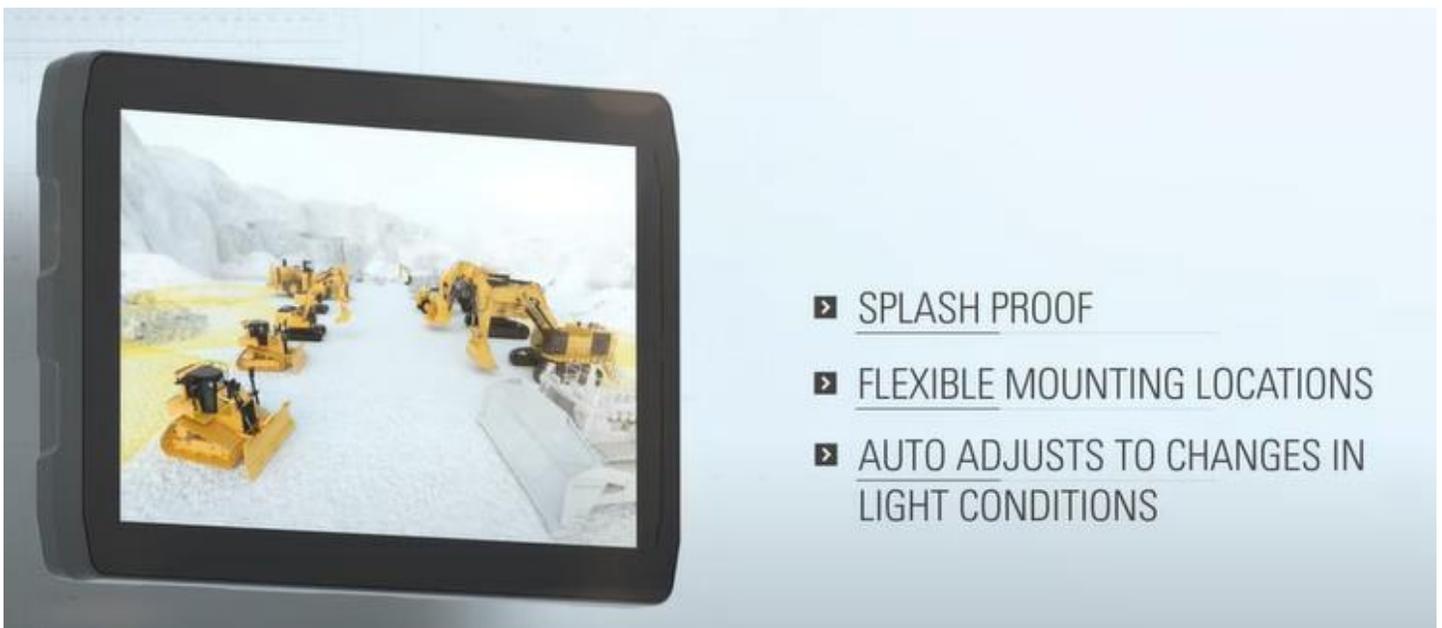
To address this concern Caterpillar has developed a new unique system called Cat® Vision System with Personnel Detection. The system uses a smart camera installed on the machine. The smart camera monitors people as they move behind the machine and alerts the operator regarding ever changing site conditions.



Caterpillar spent lots of hours on extensive testing of the camera to withstand any hard conditions on the jobsites, such as vibration, high pressure washing, etc.



When a person is detected, the system triggers a visual and audible alert based on proximity to the machine. The system utilizes 10 inch high definition display.



The system is easy to install not only on a Cat branded by any machine in the pipeline construction company. In around six hours' time, Personnel Detection can be added to any machine with a 12 or 24V system and a closed cab. The system includes:

- Smart camera with personnel detection algorithm
- High definition, touchscreen display
- Harnessing to connect the components

## **Implementation:**

The previous Cat Detect system with sensors in safety vests has been implemented on a large number of construction machines and have got the great feedback from the customers. The new Cat® Vision System with Personnel Detection has just been introduced. The R&D has been funded by Caterpillar. This is the unique system in the industry so far.

The video is available on Cat Youtube channel at [Cat Vision with Personnel Detection](#)

The information is available for the customers on the <https://bit.ly/31fvxb>