

Scenarios

Scenarios form the building blocks of VisionAI platform. These scenarios are organized into `Suites`. Below we talk about different suites and the scenarios that are part of them.

- All scenarios are available as pick-n-choose scenarios. You can pick the scenarios you want based on your business needs. Each scenario is independently tested.
- Events provided by these scenarios are given below. Events are sent to Redis & Azure EventHub pubsub systems for [further integration](#).
- There are a few common events supported by all scenarios (daily summary, weekly summary etc.)
- Currently supported scenarios are highlighted by a . Roadmap scenarios are highlighted by a .
- Each of the scenarios can be quickly tested through `visionai run <scenario-name>` command. For example:

```
visionai run smoke-and-fire-detection
```



New scenario request

This section lists down all the scenarios that are supported by the VisionAI platform. There are more scenarios added daily - please [send a request](#) to us about any additional scenarios you need.

Privacy Suite

For a majority of organizations - employee privacy is a top concern. Along with employee privacy, the organization needs to make sure that any data does not leave the premises. Any faces detected through Vision AI system need to be blurred, along with text, signage, computer screens and other sensitive information.

Before any other scenarios are run, or before we store or process the images - the images are pre-processed through this privacy suite. As such, privacy suite is treated differently from other scenarios. Below examples provide a high-level overview of the privacy suite.

Status	Scenario name	Details	Additional considerations
✓	face-blurring	Blur any faces detected	More details
✓	text-blurring	Blue any text detected (paper, computer screens etc)	More details
✓	license-plate-blurring	Blur any license plates detected	More details
!	signs-blurring	Blur any signs detected	More details
!	obstructed-camera	If camera feed is obstructed, send an alert	More details

Hazard Warnings Suite

Following scenarios provide hazard warning examples supported by VisionAI suite. Currently supported scenarios are highlighted by a ✓. You can run these through VisionAI CLI, for example, you can run the following command for smoke-and-fire-detection. Once the scenario has started - you can use a lighter or a match to generate the events. The events can be viewed on CLI window.

```
visionai run smoke-and-fire-detection
```

⚠️ TODO

- TODO: For scenarios requiring IR camera and/or IoT Sensor, point to the exact device this has been tested with.

Status	Scenario name	Supported Events	Additional considerations

Status	Scenario name	Supported Events	Additional considerations
✓	smoke-and-fire-detection	Smoke event detected Fire event detected Sparks detected Open flames detection	More details
✓	no-smoking-zone	Smoking event detected Vaping event detected	More details
!	spills-and-leak-detection	Water puddle detected Water leak from equipment detected Spill event detected Slippery sign detected	
!	gas-leak-detection	Gas leak event detected	IR Camera Required
!	missing-fire-extinguisher	Fire extinguisher missing	
!	blocked-exit-monitoring	Blocked exit detected	
✓	slip-and-fall-detection	Person fall event detected Path block detected	More details
!	equipment-temperature-ir-camera	Temperature exceeds limit Temperature subceeds limit	IR Camera Required
✓	rust-and-corrosion-detection	Rust or corrosion event detected	More details

Worker Health & Safety Suite

Following scenarios provide Worker Health and Safety examples supported by VisionAI suite. (Also referred to as Personnel Health and Safety).

Workplace Personnel Health & Safety is important because it ensures that employees are safe and healthy in their work environment. This includes providing a safe and healthy work environment, proper safety training, and regular safety inspections. Additionally, it also includes enforcing safety policies to ensure that all employees are aware of and follow safety procedures, as well as encouraging a culture of safety within the workplace.

Currently supported scenarios are highlighted by a . You can run these through VisionAI CLI, for example:

```
visionai run ppe-detection
```

You can see real-time events generated as soon as person is detected without PPE (helmets, gloves, safety boots etc.). There are options to configure what PPE's are required for your scenario. This can be done through the VisionAI web-application which can be accessed on through <http://localhost:3001>.

Status	Scenario name	Supported Events	Additional considerations
	ppe-detection	Person detected without helmet Person detected without gloves Person detected without safety boots Person detected without safety goggles Person detected without face mask Person detected without vest Person detected without full-body suit Person detected without PFAS Person detected without ear protection	More details

Status	Scenario name	Supported Events	Additional considerations
✓	working-at-heights	Person detected without PFAS Steps detected without railings Person detected at height without parapets Ladder detected not in compliance	More details
✓	fall-and-accident-detection	Person slip & fall detected Potential collision/accident detected Wet floor detected Debris detected on floor Wet/slippery sign detected	
✓	worker-fatigue-detection	Drowsy worker detected	Straight camera angle
✓	posture-and-ergonomics	Bend count per individual	Straight camera angle More details
✓	confined-spaces-monitoring	Person detected Person left Person dwell time exceeds limit Person detected without motion Person fall detected	More details
17	empty-pallets-detection	Empty pallets detected Partially empty pallets detected	

Status	Scenario name	Supported Events	Additional considerations
	spills-and-leaks-detection	Water puddle detected Water leak from equipment detected Wet floor detected Spill event detected Slippery sign detected	
	hand-wash-compliance	Missed hand wash	
	environment-monitoring	CO out of range CO2 out of range CH4 out of range VOCs out of range Temperature out of range Pressure out of range Humidity out of range	
	person-temperature-monitoring	Person temperature exceeds threshold	IR Camera required

Occupancy Policies

Occupancy Policies relate to counting and tracking employees and/or other personnel in the room. These could include people-counting and enforcing max-occupancy policies, or tracking people's dwell time in a confined space.

Currently supported scenarios are highlighted by a . You can run these through VisionAI CLI, for example:

```
visionai run max-occupancy
```



Occupancy Metrics

- Occupancy metrics is similar in structure to max-occupancy, or restricted areas scenarios.
- However it sends out a summary event is structured like this. This will give a granular summary event at the end of the day.
- Users can start with occupancy-metrics and then move to max-occupancy or restricted areas if they need to enforce policies.

```
{  
    "date": "2023-02-23",  
    "stations": [  
        {"id": "station_1",  
         "hours": [  
            {  
                "start_time": "2023-02-23T14:00:01",  
                "end_time": "2023-02-23T15:00:00",  
                "occupancy_cnt": 14  
            }  
            ...  
        ]  
    }...]  
}
```

Also need to specify that the camera needs to be configured to have a good view of the stations where occupancy metrics need to be checked.

Status	Scenario name	Supported Events	Additional considerations
	max-occupancy	Person count exceeds max limit	More details
	restricted-areas	Person detected in restricted area Movement detected in restricted area Person detected after hours Movement detected after hours	More details

Status	Scenario name	Supported Events	Additional considerations
✓	dwell-time	Person detected Person left Person dwell time exceeds limit Person detected without motion Person fall detected	More details
📅	social-distancing	Person detected Person left Person distance event	
✓	desk-occupancy	Daily summary event	More details
✓	station-occupancy	Daily summary event	More details
📅	occupancy-metrics	Daily summary event	
📅	no-children-pets-visitors	Children detected Pets detected Visitors detected	
📅	authorized-personnel-only	Unauthorized person detected	

Company Policies

Company policies include specific scenarios that are relevant to your company. These could include scenarios like no-smoking/no-vaping zones, no food or drinks in certain areas, or no cell phones/pictures in certain areas. Some of these scenarios overlap with [occupancy policies](#), but they are still useful to have here as separate scenarios.

Status	Scenario name	Supported Events	Additional considerations

Status	Scenario name	Supported Events	Additional considerations
	max-occupancy	Person count exceeds max limit	More details
	restricted-areas	Person detected in restricted area Movement detected in restricted area Person detected after hours Movement detected after hours	More details
	dwell-time	Person detected Person left Person dwell time exceeds limit Person detected without motion Person fall detected	More details
	social-distancing	Person detected Person left Person distance event	
	desk-occupancy	Daily summary event	More details
	station-occupancy	Daily summary event	More details
	occupancy-metrics	Daily summary event	More details
	no-children-pets-visitors	Children detected Pets detected Visitors detected	
	authorized-personnel-only	Unauthorized person detected	

Status	Scenario name	Supported Events	Additional considerations
	no-food-or-drinks-allowed	Person with food detected Person with drinks detected Spill event detected	
	no-phone-text-pictures	Cellphone usage detected Person detected taking pictures	More details
	no-smoking-or-vaping	Smoking event detected Vaping event detected	More details
	no-children-pets-visitors	Children detected Pets detected Visitors detected	More details
	authorized-personnel-only	Person without uniform detected Person without badge detected	
	waste-management	Spill event detected Waste bin full Debris detected in Field of View	
	energy-conservation	Occupancy pattern daily summary Light usage daily summary	

Status	Scenario name	Supported Events	Additional considerations
	restricted-areas	Person detected in restricted area Movement detected in restricted area Person detected after hours Movement detected after hours	
	badge-tailgating	Multi-entry (tailgating) event detected Unauthorized entry event detected	More details
	perimeter-control	Person detected near fence/perimeter Movement detected near fence/perimeter	IR camera required More details

Equipment Monitoring

Equipment policies include specific scenarios that are relevant monitoring heavy machinaries. These could be through monitoring the temperature of the equipment, or through IoT sensors that are attached to the equipment that allow to monitor vibration, noise, or other parameters for the equipment.

Status	Scenario name	Supported Events	Additional considerations
	equipment-temperature	Equipment temperature exceeds limit Equipment temperature subsceeds limit	
	rust-and-corrosion-detection	Rust or corrosion event detected	More details

Status	Scenario name	Supported Events	Additional considerations
 17	equipment-vibration	Equipment vibration exceeds limit	2
 17	equipment-noise	Equipment noise exceeds limit	3
 17	reading-analog-dials	Analog meter reading event	
 17	tools-check-in-check-out	Person left without checkout	
 17	equipment-water-leak-puddle	Water leak detected from equipment	

Environment Monitoring

Monitoring the environment like current temperature, humidity, or air quality is important to ensure that the workplace is safe and comfortable for employees. These scenarios are implemented through IoT sensors that are completely integrated into Vision AI suite.

Status	Scenario name	Supported Events	Additional considerations
 17	temperature-monitoring	Temperature exceeds limit Temperature subsceeds limit	More details
 17	humidity-monitoring	Humidity exceeds limit Humidity subsceeds limit	More details

Status	Scenario name	Supported Events	Additional considerations
	pressure-monitoring	Pressure exceeds limit Pressure subsceeds limit	More details
	air-quality	CO exceeds limit CO2 exceeds limit NO2 Exceeds limit SO2 exceeds limit VOCs exceeds limit Excessive dust detected Excessive dust detected	More details
	light-sensor-monitoring	Light intensity exceeds limit Light intensity subsceeds limit	More details
	noise-level-monitoring	Noise level exceeds limit Noise level subsceeds limit	More details
	energy-usage-monitoring	Energy usage hourly summary	More details
	water-management	TODO	More details
	waste-management	TODO	More details
	radiation-monitoring	Radiation level exceeds limit Radiation level subsceeds limit	More details

Suspicious Activity detection

Suspicious activity detection suite relies on a combination of activity detection models and object detection models. These models are trained to detect suspicious activity in a variety of scenarios.

Status	Scenario name	Supported Events	Additional considerations
 17	loitering-detection	Person detected in closed space Person detected during off hours Person dwell time exceeds limit	More details
 17	suspicious-package-detection	Suspicious package detected Package abandoned	More details
 17	bullying-fighting-aggressive-behavior	Bullying/fighting/aggressive event detected	More details
 17	vandalism-graffiti-company-property-destruction	Motion detected in area (gross event) People detected in area (more granular event) Non-uniformed personnel detected in area Non badged personnel detected in area Vandalism detected in area (before & after) Paint/graffiti detected in area (before & after changes) Behavior analysis event showing company property destruction.	More details

Status	Scenario name	Supported Events	Additional considerations
	firearms-knives-detection	Person brandishing firearm Person brandishing knives	More details
	solicitation-detection	Potential solicitation event detected	More details
	theft-and-or-shoplifting	Potential theft detected Potential shoplifting activity detected	More details
	shipping-activity-detection	Shipping activity detected during after-hours Shipping activity detected from non-designated areas	More details
	intrusion-detection	Intrusion event detected	More details

Vehicle Activity

The below scenarios are designed to detect vehicle activity in and around the factory.

Status	Scenario name	Supported Events	Additional considerations

Status	Scenario name	Supported Events	Additional considerations
	vehicle-policies	Vehicle activity detected in non-designated areas Vehicle activity detected during after-hours Collision event detected Near collision event detected	More details
	vehicle-usage	Daily summary event of vehicle usage Path-map of vehicle usage	More details
	forklift-zone-breach	Forklift observed outside of configured zone Pedestrian observed in forklift zone	More details
	vehicle-license-plate-detection	Vehicle detected with license plate number	More details
	vehicle-speed-monitoring	Vehicle speed exceeds limit	More details
	vehicle-cargo-volume-limit	Vehicle cargo volume exceeds limit	More details

Next Steps

Now that you have a better understanding of the scenarios that are available, you can start to think about how you can organize these scenarios into a solution that meets your needs. You can also go to the individual scenario page to learn more.

about it. We can customize each of these models for your use-cases and provide you with a solution that is tailored to your needs. You can contact us through [this page](#)

1. This works by detecting a person's uniform and comparing it to a list of authorized personnel.
This is a more advanced scenario and requires a custom model to be trained for your specific use-case. [←](#)
2. Vibration sensor needed to implement this scenario. [←](#)
3. Noise sensor needed to implement this scenario. [←](#)