

# MEET OUR DIGITAL TIPPING SOLUTIONS



# TO AVOID COMMON TIPPING DANGERS...

## Lack of stability

- Uneven ground
- Load capacity
- Load distribution

## Human errors

- Tiredness
- Distraction
- Wrong Decision

## Maintenance issues

- Cylinder state
- Bush state

# CREATE HAZARDOUS TIPPING SITUATIONS



# IMPACTING YOUR OPERATIONS AND YOUR FINANCES

## BUCKLING



## TOPPLING



- **Requirements by law for the Mine to report all mining accidents– within 15 minutes of when the operator knew or should have known about the accident.**

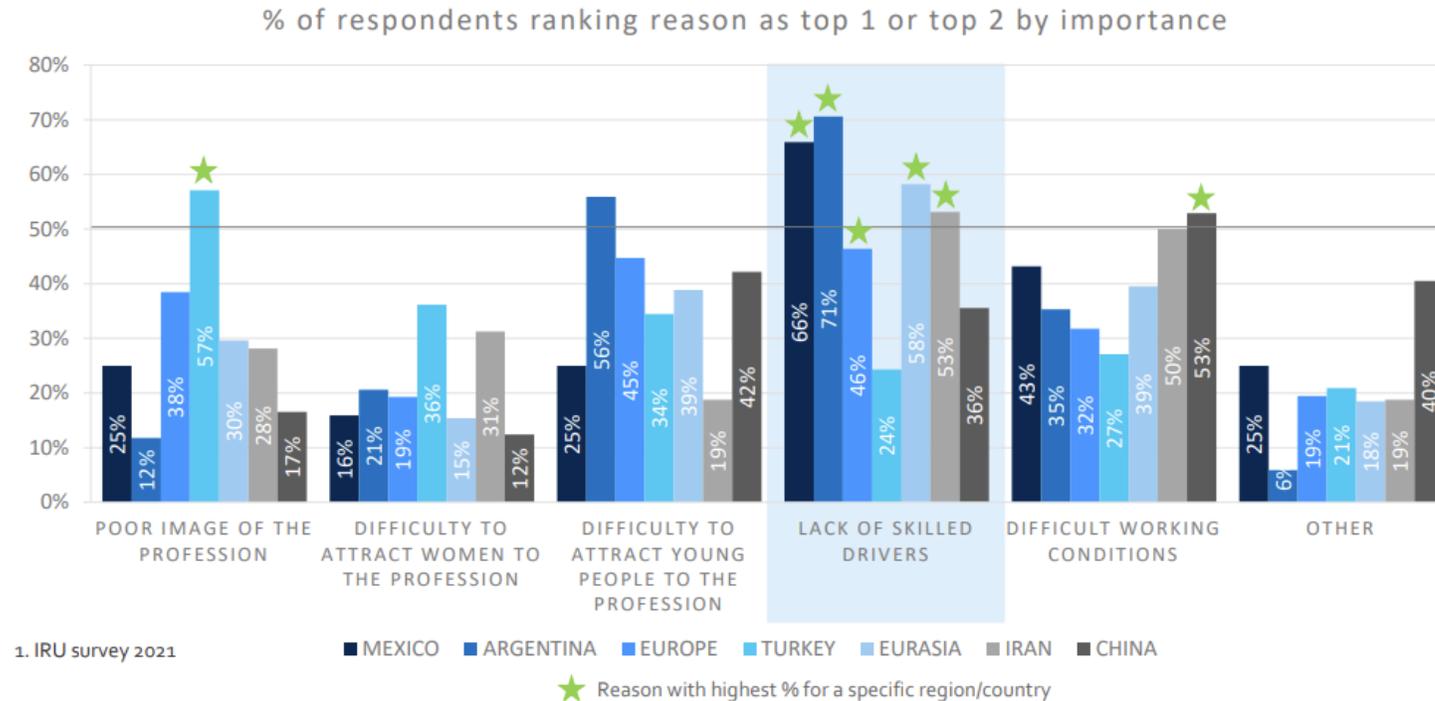
*(Mine Safety and Health Administration, US)*

- ***Operations at the mines or a part of the mine can be halted if an inspector has reason to believe that a practice at the mine may endanger the safety of any person at the mine.***

*(Mine Health and Safety Standard, ZA)*

# TO ADDRESS DRIVERS' SHORTAGE

Main reasons explaining truck driver shortage (according to operators surveyed)<sup>1</sup>



Source: IRU Global Shortage Report 2022

# MEET OUR REAL TIME DRIVER ASSISTANCE

## Key Features



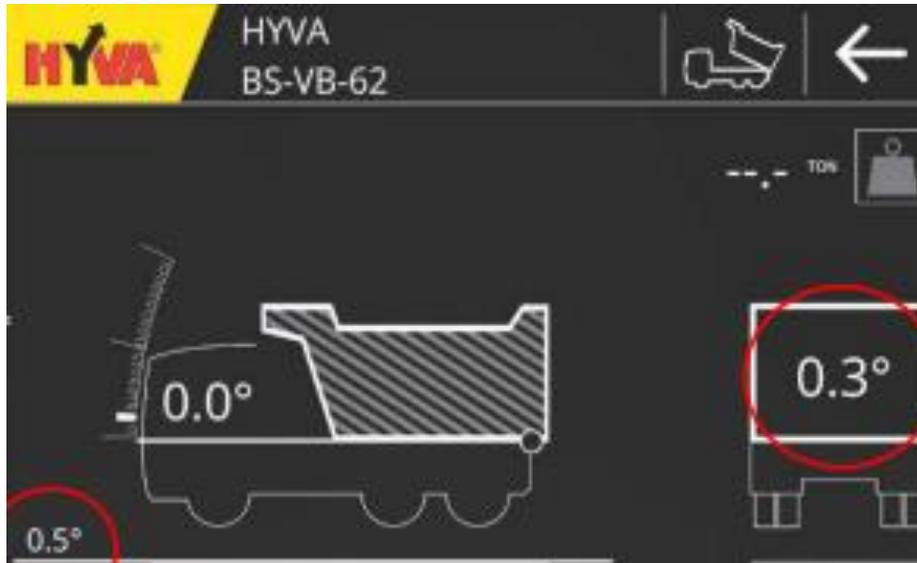
### This is an All-in-One real-time assistance:

- On-board Weighing system
- Slope detector
- Telematics
- Body height indicator

**It aims to impact drivers' behaviors.**

FEATURES	BENEFITS
<b>Body angle indication</b>	Better control of tipping operations based on loaded material
<b>Side angle indication</b>	Warn the driver to relocate the tipper.
<b>Payload indication</b>	Optimization of the load
<b>Body height Indication</b>	Warn drivers to check if there is an obstacle
<b>Body empty indication</b>	Ensure Tipping has been fully completed: no remaining load
<b>Safety warnings</b>	Warn the driver in case of overload, high pressure of the cylinder, risk of toppling over

# ZOOM ON REAL TIME TIPPING ASSISTANCE: SAFETY WARNINGS



**Normal tipping behavior when the body is at rest.**  
You can see the vehicle angle and the side angle.



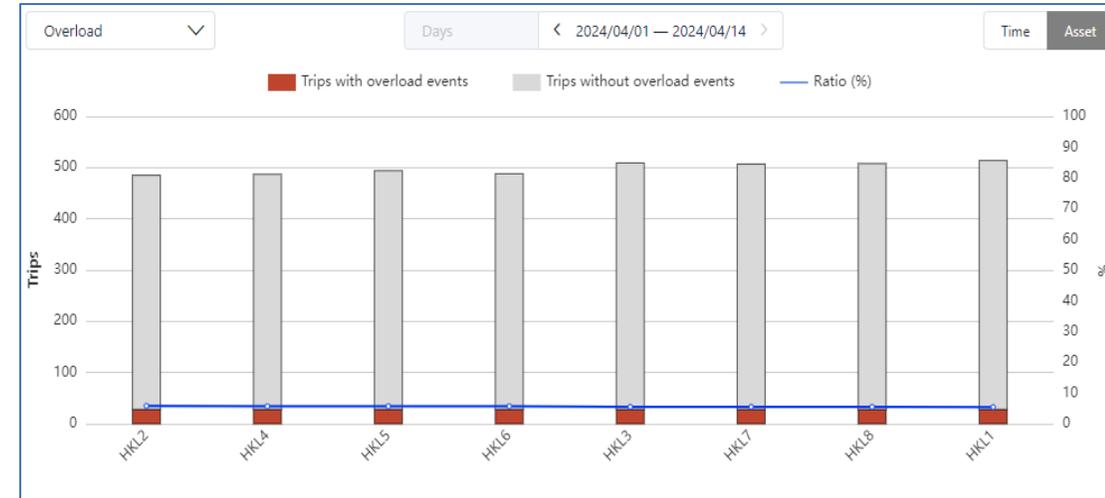
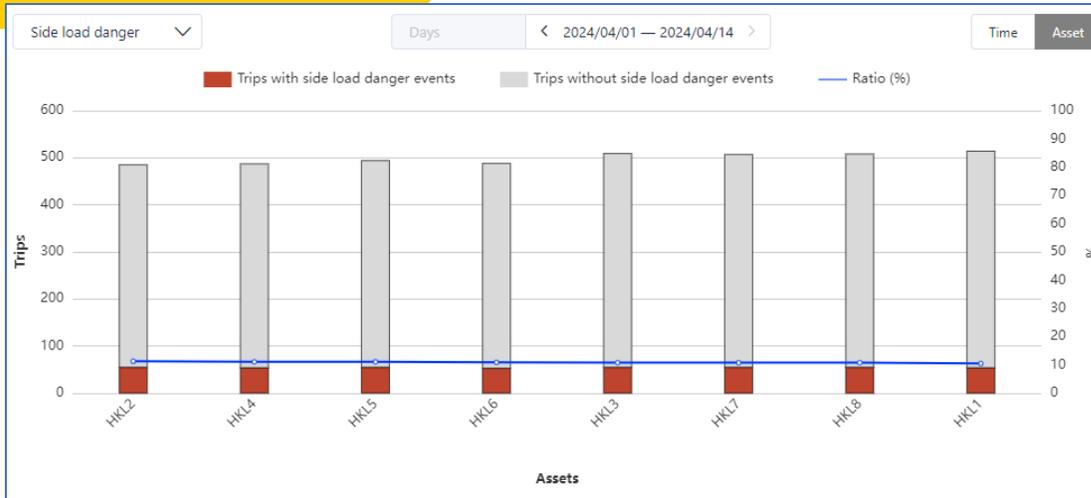
**Side load warning**  
Warns you there is a risk of toppling over.  
Tipper becomes orange.



**Buckling warnings**  
Warns you the pressure exceeds threshold for the cylinder.



# ZOOM ON ASSISTANCE TO FLEET MANAGER (CLOUD)- SAFETY FEATURES



Trip LIVE

Tipping Vehicles Organization Input keyword to search HKL3 +7 Last 7 days < 2024/04/08 — 2024/04/14 > Column

Generate Report

Summary	Driving	Tipping	Standing Still	Sideloading Warning	Sideloading Danger Warning	Overload Warning	Buckling Warning	Mileage
	15s	5s	10s	true	false	false	false	16.56 km
	15s	5s	10s	false	true	false	false	16.47 km
	15s	5s	10s	false	false	false	false	16.44 km
	15s	5s	10s	true	true	false	false	24.51 km
	15s	5s	10s	false	false	false	false	16.78 km

# ZOOM ON REAL TIPPING ASSISTANCE: PAYLOAD INDICATIONS



## Weighing zone.

Starts when the body angle is between 3 and 4 degrees.



## Overload indication

Body becomes red.



## Residual load indication

Weight recalculated in the weighing zone.

Data from the field confirms the following accuracy: **3% (multiple cycles)**

Under the conditions described in the Mounting Instruction manual in particular:

- **Calibration:**

It needs to respect a similar level of loading to the actual use

- **Load distribution:**

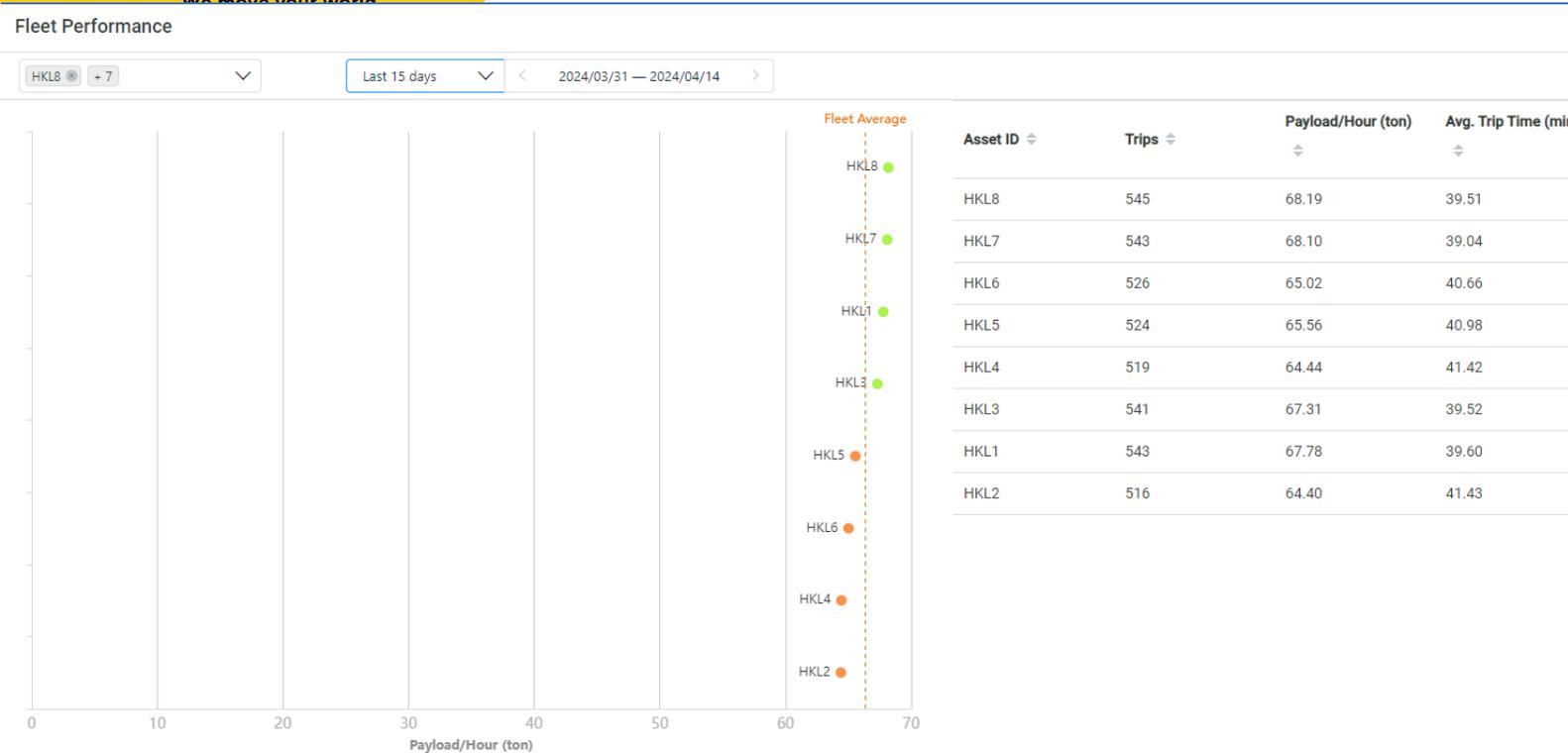
The more the load is evenly distributed, the better the measurement will be.



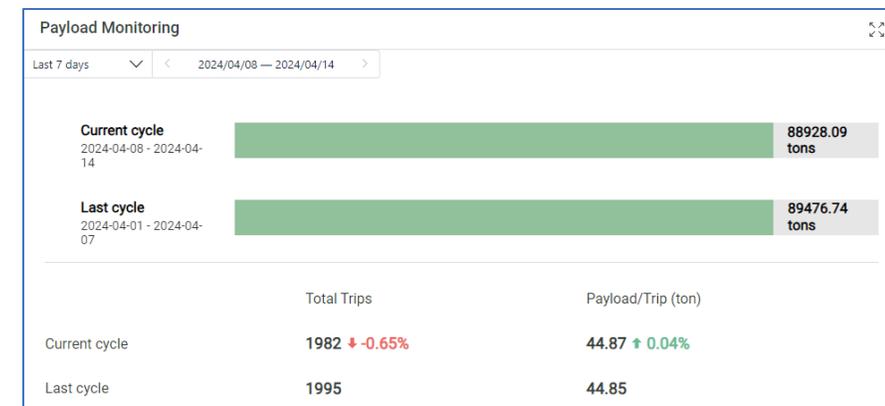
Body payload calibration:  
Body fully loaded on weighing bridge minus empty body



# ZOOM ON ASSISTANCE TO FLEET MANAGER (CLOUD)- PERFORMANCE FEATURES



The fleet performance widget allows for benchmarking asset performance (tons of material moved per hour)



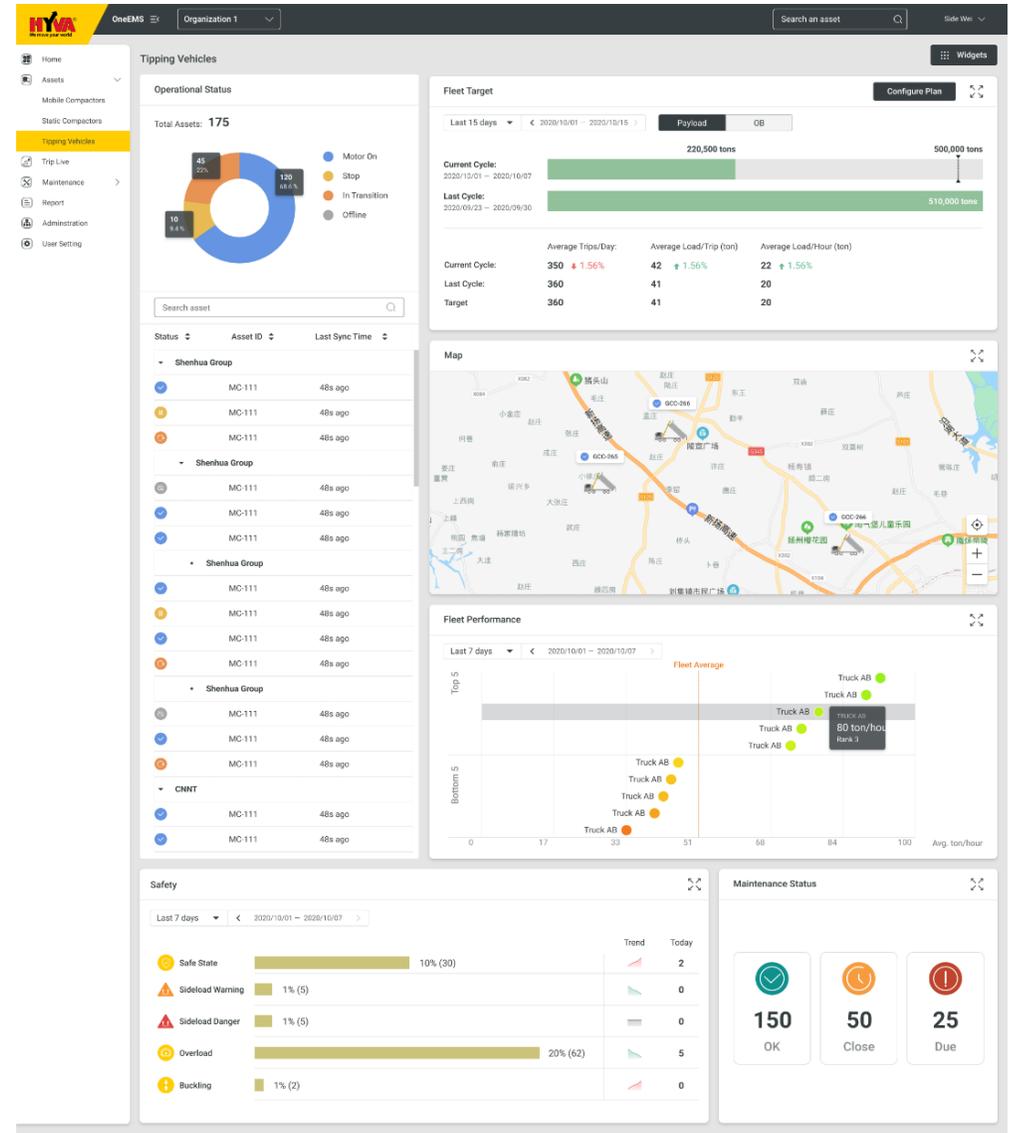
# **DTS GUIDE CLOUD APPLICATION EXTRA FEATURES**

A unified cloud application serves all categories of HYVA customers, including OEMs, Bodybuilders, Dealers, and End Customers.

Additionally, HYVA support personnel can access this same application.

# FLEET OVERVIEW

Fleet Overview: Gain a consolidated perspective of your fleet's performance, safety compliance, empowering informed decision-making and operational excellence.



# TRIP TRACKING

Experience the power of real-time trip monitoring with our live tracking feature. Stay informed about the latest journeys of your tipper trucks effortlessly.

- ✓ Dive deeper into trip details with trip summaries that provide insights on body angles and cylinder pressure. Stay ahead with comprehensive real-time data at your fingertips.
- ✓ With the ability to playback the entire route taken by the vehicle, including safety breaches, you'll have complete visibility and control.

The screenshot displays the HYVA OneEMS Trip LIVE interface. At the top, there's a navigation bar with 'Organization 1' and a search bar. A sidebar on the left lists menu items: Home, Assets, Trip LIVE (highlighted), Maintenance, Safety, Report, Analytics, Administration, and User Setting.

The main area shows a table of trip data for asset GCC265. The table has columns for Asset ID, Organization, Trip Status, Start Position, End Position, Underway, Completed, Trip start, Trip End, Trip Time, Payload (ton), Summary, and Trip Mileage. A legend indicates 'Standing still' (blue), 'Driving' (grey), and 'Tipping' (green).

Below the table, a detailed view for Asset ID: GCC265 is shown. It includes 'Trip start: 2021/05/11 10:05:33', 'Trip Time: 23 mins', and 'Payload: 25 tons'. A map below this view shows the vehicle's route in a city area, with a timeline at the top of the map showing the trip progress from 10:05 to 10:12. The map includes various landmarks and a 'Hyva Running Park' marker.

# EVENT ALERTS

DTS Guide is programmed to detect specific events or incidents that have a significant impact on vehicle safety, performance, or compliance.

- ✓ Notifications are dispatched to users on the cloud portal and displayed as events, informing them of these specific events related to all trucks within their fleet, allowing them to take the necessary actions accordingly.

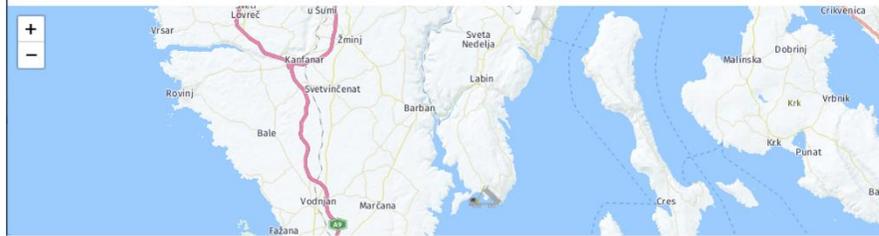
**Side load warning.**



Asset ID: [redacted]  
 Organization: [redacted]  
 Location: [redacted]  
 Timestamp: 2023/09/22 12:14:07

**Description:**  
 Vehicle was at risk of toppling over. The warning recorded is -6.7894998 degrees

Map



Event Level	Asset ID	Organization	Timestamp	Event Type	Event Name	Event De
Information	[redacted]	Koromacno	2023/09/22 1:	Operation	Tipping Summ	Tipping c
Alarm	[redacted]	Koromacno	2023/09/22 1:	Safety	Side load warr	Vehicle v
Alarm	[redacted]	Koromacno	2023/09/22 1:	Safety	Side load warr	Vehicle v
Alarm	[redacted]	Koromacno	2023/09/22 1:	Safety	Side load danč	Vehicle v
Alarm	[redacted]	Koromacno	2023/09/22 1:	Safety	Vehicle was at risk of toppling over. The side load warning recorded is -6.759	Vehicle v
Alarm	[redacted]	Koromacno	2023/09/22 1:	Safety	Side load warr	Vehicle v
Information	[redacted]	Holcim CZ	2023/09/22 1:	Operation	Tipping Summ	Tipping c
Alarm	[redacted]	Holcim CZ	2023/09/22 1:	Safety	Vehicle is over	Vehicle i
Alarm	[redacted]	Holcim CZ	2023/09/22 1:	Safety	Vehicle is over	Vehicle i
Information	[redacted]	Holcim CZ	2023/09/22 1:	Operation	Tipping Summ	Tipping c

# ASSET HEALTH

✓ **The user stays** updated on diverse aspects of asset well-being, such as the latest communication with the cloud, current operational status, software versioning and updates, and a comprehensive log of all events generated by the digital tipper.

**Asset Information** | KPIs | Maintenance | Specifications

**Basic Information**

Asset ID: SC-11 | Organization: [Organization Name]

Assigned Date: 2021/01/01 | GPSFix: Good

Time Zone: UTC+5:30 | Last Communication Time: 2021/01/21 09:32:54

Product Model: TV-Series 20 | Service Status: Due

Gateway Telematic ID: 09:10:37:01:34 | Operational Status: Active

Controller Telematic ID: 09:10:37:01:34 | HMI Application Version: 1.1.2

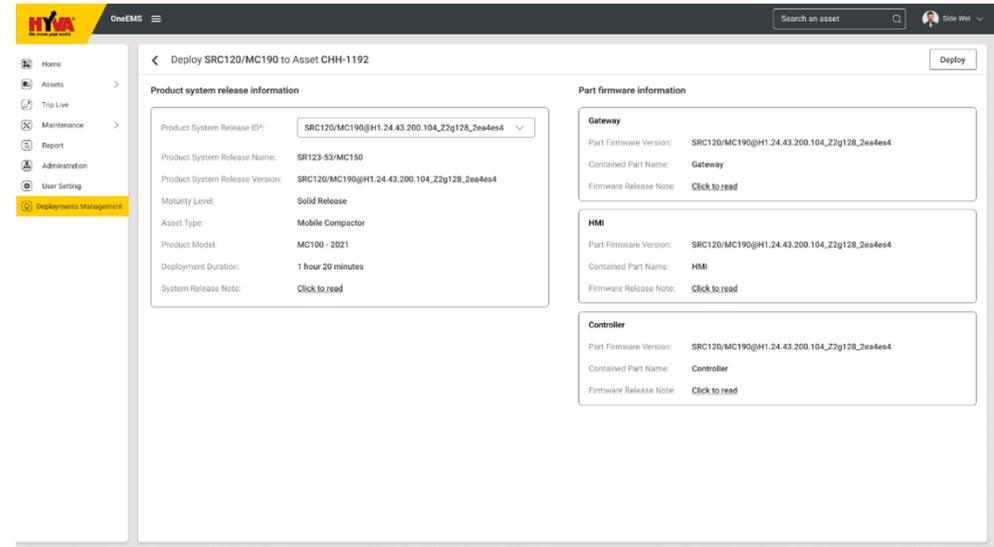
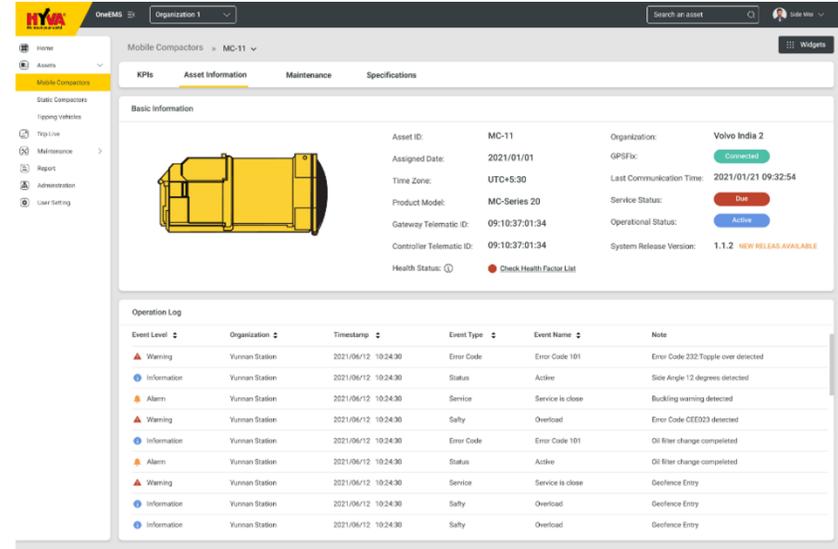
Health Status: ⚠ [Check Health Factor List](#) | Controller Firmware Version: 1.1.2

**Operation Log**

Event Level	Timestamp	Event Type	Event Name	Event Description
Warning	2021/06/12 10:24:30	Error Code	Error Code 101	Error Code 232:Topple over detected
Information	2021/06/12 10:24:30	Status	Active	Side Angle 12 degrees detected
Alarm	2021/06/12 10:24:30	Service	Service is close	Buckling warning detected
Warning	2021/06/12 10:24:30	Safety	Overload	Error Code CEE023 detected
Information	2021/06/12 10:24:30	Error Code	Error Code 101	Oil filter change completed
Alarm	2021/06/12 10:24:30	Status	Active	Oil filter change completed
Warning	2021/06/12 10:24:30	Service	Service is close	Geofence Entry
Information	2021/06/12 10:24:30	Safety	Overload	Geofence Entry
Information	2021/06/12 10:24:30	Safety	Overload	Geofence Entry

# REMOTE SOFTWARE UPDATES

Remote software updates are crucial for maintaining the security, functionality, and competitiveness of digital tipping systems. They ensure that the system remains up to date, compliant with regulations, and capable of providing an optimal user experience.



# DTS GUIDE BENEFITS IN A NUTSHELL

## Driver

- Reduces the chance of accidents
- Assisting new drivers
- Enables optimal Load capacity per trip

## Fleet manager

- Provides Operator behaviour insights
- Provides Insight in truck utilisation
- Provides Automatic trip recording
- Firmware Over The Air: Real time update for new features releases
- Black box feature: keep analytical data when an accident is detected
- Extensive Aftersales and Application Engineering network





# THANK YOU!

For more information like specification sheets, brochures, movies, and more the Hyva DTS web page here:

<https://www.hyva.com/en/solutions/tipping-systems/smart-tipping/>

