Monitoring construction cranes in Mexico

Challenge

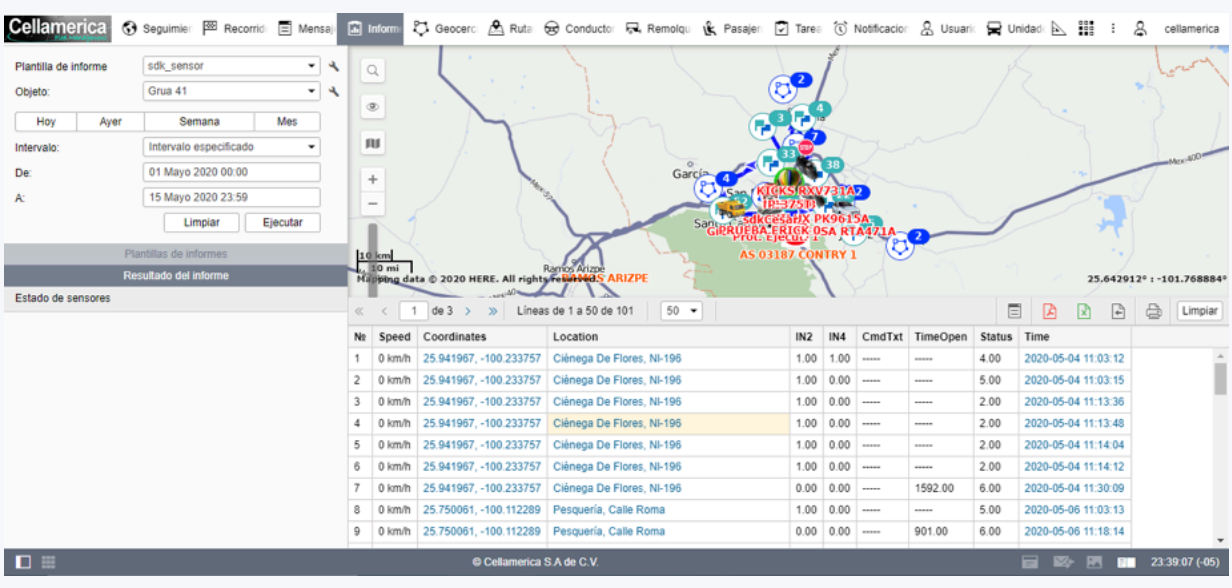
A company producing concrete masonry units used in construction across the country turned to telematics to solve an issue. The company's problem settled in the crane operators' reluctance to disable the machinery after the work shift or when the manipulator needed to be relocated.

They moved the vehicle keeping the crane open to save time or just out of irresponsibility. As a result, the cranes damaged other machinery nearby and even happened to pull down power lines. Each incident cost a lot to the company. So, the client wanted to find a solution that will eliminate such incidents.

Solution

Cellamerica, the Wialon partner in Mexico, designed and implemented a construction telematics solution for solving the issue. After testing several different options, they brought together a GPS tracker, sensors for wheels and crane control, and a telematics and IoT platform.

- Since the solution required additional device reprogramming, Callamerica's specialists used BCE IOTM devices.
- A magnetic sensor for wheels control was used to detect the vehicle movements. Thus the machinery could be instantly shut down through necessary commands. The idea to use a magnetic sensor came after tests with an accelerometer and GPRS speed sensor, which couldn't provide exact data on whether the vehicle was moving on the site.
- The encapsulated sensor was sending data to Wialon on opening or closing the crane.
- The supervisor received alert notification on attempts to move when the crane is open. Wialon was also used to generate reports on each connected vehicle operation.



№	Speed	Coordinates	Location	IN2	IN4	CmdTxt	TimeOpen	Status	Time
1	0 km/h	25.941967, -100.233757	Ciénega De Flores, NI-196	1.00	1.00	-----	-----	4.00	2020-05-04 11:03:12
2	0 km/h	25.941967, -100.233757	Ciénega De Flores, NI-196	1.00	0.00	-----	-----	5.00	2020-05-04 11:03:15
3	0 km/h	25.941967, -100.233757	Ciénega De Flores, NI-196	1.00	0.00	-----	-----	2.00	2020-05-04 11:13:36
4	0 km/h	25.941967, -100.233757	Ciénega De Flores, NI-196	1.00	0.00	-----	-----	2.00	2020-05-04 11:13:48
5	0 km/h	25.941967, -100.233757	Ciénega De Flores, NI-196	1.00	0.00	-----	-----	2.00	2020-05-04 11:14:04
6	0 km/h	25.941967, -100.233757	Ciénega De Flores, NI-196	1.00	0.00	-----	-----	2.00	2020-05-04 11:14:12
7	0 km/h	25.941967, -100.233757	Ciénega De Flores, NI-196	0.00	0.00	-----	1592.00	6.00	2020-05-04 11:30:09
8	0 km/h	25.750061, -100.112289	Pesquería, Calle Roma	1.00	0.00	-----	-----	5.00	2020-05-06 11:03:13
9	0 km/h	25.750061, -100.112289	Pesquería, Calle Roma	0.00	0.00	-----	901.00	6.00	2020-05-06 11:18:14

Wialon lets the supervisor see the exact time of the crane opening

Results

As a result, crane usage violations didn't happen because the system for construction GPS tracking turned the engine off on each violation attempt. Also, the combination of sensors and Wialon provided the company with reports on the usage of the machinery. Despite the crane operators' resistance, the solution worked to solve the issue of incorrect crane usage.

Live monitoring

The supervisors are notified immediately of the possibility of the incident and can prevent it.

Safety

The company rests assured that vehicles, power lines, and people remain safe thanks to accurate crane manipulating.

Prevented expenses

The money that otherwise would be spent on repairs and payments to the affected party can now be used for the company's needs.

Company profile

IoT project of the year nomination: Construction and demolition

Country: Mexico

Industry: Construction

Solutions

Wialon

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