



## Agricultural machinery/ Tractors, harvesters, Uzbekistan



**Customer:** [redacted]



**Vehicles:** tractors and harvesters



**Task:** fuel consumption monitoring of agricultural vehicles



**Solution:** differential DFM D fuel flow meters



**Result:** 30% reduction of fuel consumption

### CUSTOMER

The joint Uzbek-British venture is one of the largest agricultural producers in the country. The company specializes in growing of grain cultures and cotton. Partner company owns the largest complex of hydroponic greenhouses for growing tomatoes and other vegetables in Uzbekistan. A research center is being created in the company, and shortly, own factory focused on production of cotton fabric will be launched.



**5000** employees



**35 000** hectares of arable land



**300+** units of machinery

### VEHICLES



Main agricultural machinery fleet includes:

- 120 units of NewHolland universal tractors – power 110 hp, fuel tank 250 l, fuel consumption 26 l/h;
- 36 units of cotton-growing tractors TTZ – power 99 hp, fuel tank 115 l, fuel consumption 22 l/h;
- 21 units of Kirovets general-purpose tractors – power 300 hp, fuel tank 640 l, fuel consumption 49 l/h;
- 46 units of Case cotton combine and thresher harvesters – power 270-300 hp, fuel tank 570-750 l.

According to standards, fuel consumption of tractors is 28-30 l / ha, of combine harvesters – 32 l / ha. On average, one unit of machinery cultivates from 20 to 30 hectares per day. So, daily from 140,000 to 200,000 liters of diesel fuel are written off for vehicles (at a price of \$ 0.55 per liter, total fuel costs amount to \$ 75,000 – \$ 110,000 per day).

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## TASK

The enterprise had to solve three urgent tasks.



**1. Monitoring machinery operation in field** – precise definition of cultivated area, volume of daily work, route of movement from parking areas to a field and back. These data provide an accurate calculation of machinery efficiency, reduction of inappropriate mileage, and also allows tying driver's/operator's wages to the results of their work.

**2. Fuel consumption monitoring** – measurement of real hour consumption of each unit of machinery, fuel consumption per day. Previously, when the fuel was accounted according to quotas, the economic efficiency of production was determined with a large inaccuracy. Over and above, management of the enterprise had suspicions, that some workers were draining fuel from vehicles and machines.

**3. Machine running time tracking** – total engine operating time and by the modes (Idle, Optimal, Overload). Analysis of data on engine operating time allows:

- reducing operating time in non-optimal modes and thereby increase engine's life cycle;
- carrying out maintenance not according to "same for all" standards, but to actual engine operating time.