

No carriages on wrong track with TrailTrac onboard

For Kemira Kemi AB engines from Green Cargo pull 99 railway tanker-carriages to customers in Europe, waiting for their ordered chemicals. It is not unlikely that they must wait longer than expected, Green Cargo logistic is far from perfect.

– Carriages can stand idle for days on a railway-terminal somewhere in Sweden without our knowledge, says Alex Svärd at Kemira Kemi AB in Helsingborg.

Now the Swedish engineering enterprise FYM AB has invented TrailTrac, a tracking system that will help Kemira to supervise the wagons. FYM constructed the hardware, B&M Systemutveckling AB the software to TrailTrac, which Kemira uses on their tankers. TrailTrac is



the first cost-effective tracking system for railway-carriages, containers and trailers without own power.

– The problem was to find a solution for such carriers, lacking own power, says Sven Bergqvist, CEO FYM AB. Together with the French company SAFT we developed a battery, that can indicate up to 9 000 positions without being replaced. With one indication in 24 hours it gives 6-8 years running time, which is unique. The indications can come closer, perhaps once every tenth minute, but in that case the battery has to be replaced more often.

A rugged little box

The hardware from FYM is a rugged little box, enduring cold and hot weather and the enormous G-forces it will be exposed to, when attached to a moving railwaywagon.

The box is fixed to the carrier with tape or with four screws.



The installation takes less than five minutes.

– We hate installations, declares Sven Bergqvist, they can take a lot of time and be costly.

In the box there is a GPS-receiver, keeping track on where the carrier is. There is also a built-in GSM-modem, which is sending wireless information to the office. Further there is a censor ensuring that information is being transmitted only when the carriage is on the move. That saves battery and costs.

The investment is quite reasonable, TrailTrac hardware does not cost more than 3 000-4 000 SEK and a lithium-battery 1 000 SEK. That goes also for the transmission-costs, GSM is a cheap medium. RFID was a more expensive alternative, while RFID needs its own infrastructure.

Kemira AB has its head office and factory in Helsingborg with 500 employees. Owner is the Finnish chemical-concern Kemira with 7 000 employees and a turnover of two million EURO. The Swedish subsidiary makes products for different industrial branches,

such as paper and pulp, detergent and pharmaceuticals. Among products, being transported from Helsingborg to customers in Sweden and other countries, are aluminium sulphate, calcium sulphate, sodium percarbonat, polyaluminium clorid, hydro clorid, sulphur dioxide, sulphuric acid and hydrogen peroxide.

Kemira has no railway-carriages of its own, they are all leased from different providers. In Sweden they are pulled by Green Cargo.



Costly delays

– What happens is that trains are delayed. That a transport takes a few days is acceptable, but not that wagons are standing idly around, outside our control. That is not only awkward to explain to our customers, but it is also costly, while we have to pay rent for the wagons also when they are standing. The delays are so frequent that we have to lease 20-40 percent more wagons than we should need. That means large, unnecessary expenses; it costs 280-350 SEK a day to rent a



wagon. The only ones making money on the delays are the leasers.

Alex Svärd had been searching a long time for anyone who could solve his problem.

– At last I found FYM to be the only one being able to make a tracking system for carriers without own power-supply.

– We estimate a 2-3 years running time for the batteries, which should mean, that we could replace them when the regular service is being made on the wagons. So we avoid still stands just for changing the batteries.

Alex Svärd is awaiting another possible use of TrailTrac.

– It can now register the movements in real time, but I would also need the information backwards, covering a whole transport chain. That is actually more important, than knowing for each minute where a wagon is. Could we without any doubt show, that a train unmotivated has been standing at a terminal somewhere, loaded or unloaded, we could demand compensation from Green Cargo. Our contract gives us that possibility.

– We have practically solved that problem, assures Per Bergström at B&M. We have changed to a WPS-service, WEB Positioning Service, which makes it possible to account for a transport even backwards. Now we can register that a transport takes a certain time, but not when and why a delay was created.

Also for intermodal traffic

Kemira has also products transported in containers on rail or on trucks.

– We hope that TrailTrac also will be used, not only on tanker-carr



riages, but also in intermodal transports, says Alex Svärd.

Per Bergström sees no difficulties there.

– Our equipment is easily adapted to all transport-modes.

Sven Bergqvist is summing up the advantages with TrailTrac:

– The transport quality increases while the whole chain can be documented, which in its turn simplifies the logistic planning. The utilization of the carriers are higher, and the expensive overcapacity is not needed. As the movement of the transport is followed all the time, theft of cargo is obstructed, and if cargo should be stolen it is more likely that it is recovered. The higher security could also lower the insurance fees and it is furthermore in accordance with the demand from UN that transports of dangerous cargo should be supervised.

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