

SCG Logistics is using an active RFID solution to track the weight of trucks before and after they load up with coal at a port facility in Thailand.

By Claire Swedberg

Mar. 11, 2010—[SCG Logistics Management Co.](#), a logistics and transportation firm based in Thailand's Ayuthaya province, has deployed an RFID system at its coal import operations, to track the amount of coal being loaded onto trucks. After using the system for one year, the company has found that wait times are reduced and billing is more accurate, based on automating what was previously a labor-intensive system of tracking the weights of trucks and the coal loaded within them. To date, SCG reports, the system has reduced the operation time of weighbridge employees by 30 to 40 percent.

The company sells imported coal to third-party firms. These firms send trucks to SCG's depot, located at the port at which the coal arrives from Indonesia and China, which load up on coal and then deliver the cargo to their own locations throughout the country. Weighing trucks is an essential part of a coal importer's business, which bases the billing of those who purchase its coal on the weight of that product as it leaves the facility. To obtain a record of the amount of coal being retrieved, each arriving truck parks on a weighbridge to measure its tare (the empty truck's weight prior to its being loaded with coal).



*Wirote
Ngamsukkasamesri,
general manager of
Identify RFID*

Without an RFID system, the driver shows the scale operators a form known as a loading document, and the weigh station's employees record the weight and the truck license plate number for their own records, by keying the numbers into a PC. The truck then enters the facility, is loaded with coal and returns to the weighbridge for a post-load measurement. The weigh station's staff again manually keys the truck's plate number into the weighing program in the company's back-end system. The workers then print out paperwork indicating that weight on a loading document, which is provided to the driver. The weight data is also stored in the company's back-end system.

The manual system's greatest shortcoming, the company reports, is the labor required: Workers must examine plates and rekey truck plate numbers every time a vehicle enters or exits the facility. What's more, if the incorrect license plate number is provided to the staff, at the time that the truck either arrives or leaves, billing is thus inaccurate—or, in some cases, if the data is fraudulent (for example, if the truck's license plate number is invalid), billing is not even possible. Failing to properly identify the trucks can result in the inability "to ensure that the truck that arrives for pre- and post-load is the same one," says Wirote Ngamsukkasamesri, the general manager of [Identify RFID](#), a Thai systems integrator that provided the RFID solution. SCG Logistics did not respond to requests for comment.

Other technology solutions offered limited value. CCTV cameras at the scale, for instance, could

capture plate numbers, but relying on video coverage would also be time-consuming for staff members who must review the tape each day. On the other hand, RFID promised to increase both efficiency and accuracy. "When a truck with a tag permanently attached to it arrives at the weighbridge, its plate number will automatically show on the program," Ngamsukkasamesri explains.

For each truck that enters its facility, SCG Logistics issues a [TagMaster](#) active 2.45 GHz RFID tag that attaches to the vehicle's windshield. The tag's unique ID number is linked to data entered into SCG Logistics' back-end system, such as the license plate number. When the truck parks on one of the company's three weighbridges for its pre-load (truck weight), TagMaster RFID readers at the gate capture the tag ID number at a distance of up to 10 meters (33 feet), and sends that information, via a cabled connection, to the Web-based server hosted by Identify RFID, which integrates with the company's [SAP](#) system. Weighbridge workers then see the license number and other data on their PC screen. The truck driver hands the weighbridge staff the loading document, which the employees can compare against information on the PC. The scale measures the weight, which is linked with the RFID number and associated vehicle data in the back-end system.

When the truck returns to the weighbridge for post-load measurement, its plate number again shows up on the weighing program automatically. Weight station workers use a keypad to enter the post-load weight into the Identify RFID software, and then print out the loading document.

Approximately 200 weighing transactions take place daily per weighbridge (600 transactions facility-wide). With the RFID solution, the time needed to process operations on these weighbridges has been reduced by 50 percent, the company indicates, because its staff need not repeat the keying of the truck plate number. The system also eliminates the need to perform data entry at the end of the day—inputting details of each scale transaction such as the truck identification, hauling company and weights. Because the system reduces the time required for each truck entry and departure transaction, queues are shorter and vehicle's move through more efficiently.

Identify RFID is now working with a weighbridge manufacturer to integrate the RFID solution with scale hardware, in order to develop a hands-free weighing system—that is, one that would not require employees to manually enter the weight. In this way, the weight could be measured and linked to the ID number on the vehicle's RFID tag, and all of that data could automatically be sent to the back-end server. "We aim to reduce the number of staff working at the weighbridge station," Ngamsukkasamesri states. "With the new system, we can ensure that the truck driver will be able to do the weighing by himself, with less monitoring."