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## How Can RFID Help to Prevent Train Accidents?

Is there any way that a train operator could be informed of a problem involving, for example, faulty equipment?

-Name withheld

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*That's an interesting question.*

Bombardier Transportation, the rail-equipment division of Bombardier Inc., planned to demonstrate an RFID-enabled rail-worker safety solution this year in Atlanta, in partnership with the Metropolitan Atlanta Rapid Transit Authority (see Atlanta's Transit Authority to Test Bombardier's Rail-Worker Safety System). But I am unaware of the technology being used specifically to prevent accidents.

One of the main causes of train accidents is improper maintenance. RFID can help in this area, by ensuring that tracks, switches and other equipment are inspected regularly and properly. This can be accomplished by tagging equipment that needs to be inspected, so that an inspector would have to read each tag, enter information on a handheld reader and then write data to that tag, thereby preventing him or her from filling out forms without ever having visually inspected the equipment in question.

Another cause of train accidents is the failure of mechanical parts. Liikennevirasto, the Finnish Transport Agency, has installed a radio frequency identification solution designed to improve the safety and efficiency of trains throughout Finland. The system employs RFID sensors that detect the overheating of train axles, which could be a sign that ball bearings are wearing out and require replacement (see Finnish Transport Agency to Track Railcar Health Via RFID).

It is also possible to create a smart track system in which RFID transponders are mounted on railroad ties, with readers mounted under the trains. By collecting data regarding which trains roll over which tags, management software could then provide a view of trains moving in a specific direction and at a particular speed (speed could be calculated by measuring the

amount of time between tag reads). This approach is being utilized by Hamburger Hochbahn , the operator of Hamburg's commuter rail system (see Hamburg's Rail Operator Continues to Roll Out RFID). The system could be set up to override switches in the event that two trains heading toward each other are attempting to use the same track, though I don't think they currently do this in Hamburg.

-Mark Roberti, Founder and Editor, RFID Journal



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