SUMMARY

SAFETY STUDY ON TRAFFIC CONTROL DEVIATIONS IN KOUVOLA, FINLAND

On 21 August 2008, the Accident Investigation Board decided to start a safety study on traffic control safety deviations observed in Kouvola, Finland. The basis for the study was a VR Group Ltd letter sent to the Accident Investigation Board, dated 17 June 2008, in which VR Group expressed its concern about the possible route automation and safety system malfunctions observed in Kouvola Centralised Traffic Control.

Initially, the investigation commission was tasked with investigating two safety deviations that had been observed before the initiation of the study. However a third incident occurred during the early stages of the study, and the decision was made to include it within the scope of the study.

The first deviation occurred on 25 April 2008 at Järvelä station on the Lahti–Riihimäki section of line. During shunting, a route automation memory function generated an unexpected train route setting leading to the turning of the turnouts in front of the shunting unit's intended route.

The second deviation occurred on 23 May 2008 on the Lahti–Riihimäki section of line, between the Hakosilta junction and Lahti station. A commuter train that had departed from Lahti station toward Riihimäki was issued with the number and train route of another commuter train that was awaiting its departure time at the station.

The third deviation was observed on 6 September 2008 on the Kerava–Lahti directr line on the southern side of the Hakosilta junction. Two trains were proceeding toward Lahti with only one block section between them. At the boundary between two interlocking areas on the southern side of the junction, the number of the train travelling first was replaced in the traffic control system with the number of the latter train.

The investigation revealed that the deviations involved software in all of the cases. The system manufacturers have also confirmed these observations. In connection with the investigation of these cases the investigation commission also reviewed the deviation management procedures for handling this kind of deviations and the role of different parties in the information system management. The conclusion was that the deviation management process was inadequate.

The investigation commission issued the following two recommendations:

- The organisations responsible for the ownership, use, and maintenance of traffic control and safety equipment systems should improve and clarify the procedures for deviation management.

The experts using traffic control systems on a daily basis should participate in the specifications, inspections, and start-up activities of these systems and also take part in the system administration during the life-cycle of the system.