

<p>Project title: Development of tracking system for controlling illegal mining and coal transportation in North Eastern Coalfields</p> <p>Project No.: GAP/ME/MCIT/99/2013-14</p>	<p>Executive Summary: CSIR-Central Institute of Mining and Fuel Research (CSIR-CIMFR), Dhanbad has implemented the S&T project titled “Development of Tracking System for Controlling Illegal Mining and Coal Transportation in North East Region of India”, which has been sponsored by Ministry of Electronics and Information Technology (MeitY), Government of India. Under this S&T project a “Mine transport surveillance system” has been developed using advance vehicle tracking and surveillance technologies.</p> <p>Mine transport surveillance system has been designed aiming at checking overloading of minerals on trucks or dumpers and their efficient disposal from a mine site, and at the same time stopping of illegal transportation of minerals through unauthorized routes. The system consists of different modules, namely weighbridge automation module for manless checking of overloading of minerals on trucks or dumpers; vehicle tracking and production monitoring module for keeping continuous watch on the vehicles on transportation routes, and monitoring of production as well as providing advice on optimum use of shovels, dumpers and other auxiliary equipment by minimizing their idling time; close circuit television cameras for keeping their surrounding under constant vigilance, particularly to watch vehicles carrying minerals; periphery surveillance module for detecting intrusion of vehicles with the intention of illegal transportation of minerals through unauthorized routes; and centralized monitoring station for overseeing all the activities of transport surveillance as well as production monitoring from a central location. This system would definitely be proved to be a boon to mining industry as it is quite effective in averting financial loss due to illegal mineral transportation and at the same time improving the efficiency of smooth dispatch of minerals by optimum use of shovels and dumpers.</p> <p>Development of mine transport surveillance system is a step forward in checking overloading of minerals on truck/dumper and their efficient disposal from a mine site and at the same time stopping of illicit mineral transportation through unauthorized routes. The system also provides efficient production management process that helps mine authorities to improve safety and productivity in opencast mines.</p> <p>Field trial of the developed system has been carried out in Tirap Opencast Coal Mine of North Eastern Coalfields, Margherita Area, Assam. A patent has been filed for the</p>
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developed technology: Chaulya, S.K. and Prasad, G.M. (2015) "Mine transport surveillance system", with patent application No. 2107/DEL/2015. The patented technology has been transferred to M/s Dadhwal Weighing Instruments, Dhanbad for commercialization. The developed system is being implemented at opencast mines and pellet plant of M/s National Mineral Development Corporation Limited.

One book has been written on the subject by S.K. Chaulya and G.M. Prasad, entitled "*Sensing and monitoring technologies for mines and hazardous areas*", which has been published by Elsevier, USA in 2016. Publications have also been made in the journals from the project output. Further, 6 manpower have been trained under the project and 1 Ph. D. degree is in progress. Project works of 8 B. Tech. and M. Tech. students have been completed during implementation of the project.