Development of Mobile Broadband Laser Communication System for Railways

Shingo NAKAGAWA Hiroshi MATSUBARA Kazuki NAKAMURA
Daisuke TATSUI Shinichiro HARUYAMA Fumio TERAOKA

We attempted to develop a more high-speed internet connecting system applicable to railways, to improve customer service and efficiency of operator's telecommunication between the ground facilities and trains under operations. We manufactured a mobile communication system, capable of recording the transfer rate of 1Gbps in theory by applying the laser beam communication technology. We carried out a field test using trains in active service, and obtained the result of the transfer rate of approximately 700Mbps on the TCP layer between the ground and the train running at a speed of approximately 130km/h.