

Important Achievement of Signal Directorate during Last Five Years

S N	Financial Year	Broad Area of Achievement	Title of Achievement	Description of Achievement	Likely Benefits	Current Status of Implementation
1.	1997-98	Reliability	LED Signals	For better visibility	Improvement in reliability	Implemented
2.	2005-06	Safety	220mm Electric Point Machine & Clamp Point Lock	For thick web switches	Improvement in safety	Implemented
3.	2005-06	Reliability	Integrated Power Supply (IPS)	SMPS based technology	Improvement in reliability	Implemented
4.	2006-07	Efficiency	Data Logger	Useful in predictive maintenance	Improvement in efficiency	Implemented
5.	2007-08	Safety	Indigenous development of Electronic Interlocking	Electronic Interlocking	Improvement in safety	Under Implementation
6.	2008-09	Safety	Specification No.RDSO/SPN/196/2009	Train Collision Avoidance System (TCAS)	Improvement in safety	Implementation
7.	2010-11	Efficiency	Development of Electronics Interlocking for Big yards	Electronics Interlocking for Big yards	Improvement in efficiency	Under implementation
8.	2010-11	Reliability	Development of BPAC using UFSBI/ MUX Combiner	BPAC using UFSBI/ MUX Combiner	Improvement in reliability	Implemented
9.	2010-11	Reliability	Integrated for main LED Signal (with integrated)	Integrated for main LED Signal (with integrated)	Improvement in reliability	Under implementation
10.	2010-11	Reliability	Development of DC-DC Converter for track circuit application	DC-DC Converter for track circuit application	Improvement in reliability	Implemented
11.	2010-11	Reliability	Development of Universal Fail Safe Block Interface (UFSBI)	UFSBI	Improvement in reliability	Implemented
12.	2011-12	Safety	Specification No. RDSO/SPN/196/2012 Ver.3.1.1m	Train Collision Avoidance System (TCAS)	Improvement in safety	Implemented
13.	2012-13	Safety	Specification No. RDSO/SPN/183/2012 Ver 3.0	Train Protection & Warning system	Improvement in safety	Implemented

14.	2012-13	Safety	Development of Train Protection & Warning system	Train Protection & Warning system	Improvement in safety	Under implementation
15.	2012-13	Safety	Indigenous development multi Section Digital Axle Counter (MSDAC)	Multi Section Digital Axle Counter (MSDAC)	Improvement in safety	Under Implementation
16.	2012-13	Reliability	Revised Specification RDSO/SPN/165/2012	Integrated Power Supply	Improvement in reliability	Implemented
17.	2012-13	Reliability	LED Signal Lamps	LED Signal	Improvement in Reliability	Implemented
18.	2012-13	Safety	Block Proving by Digital Axle Counter (BPAC) using UFSBI	Block Proving by Digital Axle Counter (BPAC) using UFSBI	Improvement in safety	Implementation
19.	2013-14	Reliability & Safety	Modelling and validation of interlocking for railway signalling systems	Modelling and validation of interlocking for railway signalling systems	Improvement in Reliability & Safety	Under implementation
20.	2013-14	Safety	Anti-Collision Device	Anti-Collision Device	Improvement in safety	Implemented
21.	2013-14	Safety	LED based Flashing Hand Signal Lamp	LED based Flashing Hand Signal Lamp	Improvement in safety	Implemented
22.	2013-14	Safety	LED Tail Lamps for Guard	LED Tail Lamps for Guard	Improvement in safety	Implemented
23.	2013-14	Safety	Indigenous development of Audio Frequency Track Circuit (AFTC)	Audio Frequency Track Circuit (AFTC)	Improvement in safety	Under implementation
24.	2013-14	Safety	Indigenous development of Train Collision Avoidance System (TCAS)	Train Collision Avoidance System (TCAS)	Improvement in safety	Under implementation