FUNCTIONAL TEST FORMAT

OF EVENT LOGGING

FOR

KAVACH (The Indian Railway ATP System)

(FRS)

SPECIFICATION No. RDSO/SPN/196/2020

Version 4.0

Issued by

SIGNAL AND TELECOM DIRECTORATE
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MANAK NAGAR
LUCKNOW – 226 011

Prepared by:		**Approved by:**
Manish Kumar Gupta	SSE/S&T/SC	Shri Suresh Kumar, PED/S&T/RDSO
R N Singh	AIE/S&T/SC	
M.M. Srivastava	Dir/Sig-IV	
G. Pavan Kumar	Exe Director /Tele-II	

Revision History

Amdt.	Brief description of changes made
1.0	Initial issue

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Test ID	Test Scenario	Input Specification	Expected output/values	Observed Output (Pass/Fail)
1.	KAVACH_SYS_26	Test cases for Event logging		
1.1.	Create a signal passing at danger scenario. **SRS-21.3 (a)**	1. Keep Onboard KAVACH in OS/FS mode 2. Ensure Sufficient Movement Authority 3. Putback the signal to danger 4. On board KAVACH should apply EB and stop the train after passing the signal at Danger	1. The event logger of Onboard KAVACH shall log this incident with date, time, Stationary KAVACH ID, Type of Signal and location stamp. (Ref. RFID, distance from the Ref. RFID at zero speed).	
			2. The event logger of Stationary KAVACH shall log this incident with date, time, Onboard KAVACH ID, Signal name and location stamp. (Ref. RFID, distance from the Ref. RFID at zero speed).	
1.2.	Create a Head On collision scenario in Non-Communication mandatory zone. **SRS-21.3 (b)**	1. Keep On Board KAVACH L1 in OS/FS mode 2. Keep Onboard KAVACH L2 in SR mode with Position report	1. The event logger of Onboard KAVACH L1 shall log this incident with date, time, Stationary KAVACH ID, and location stamp (Ref. RFID, distance from the Ref. RFID at zero speed).	

Test ID	Test Scenario	Input Specification	Expected output/values	Observed Output (Pass/Fail)
		3. Ensure L1 & L2 on same TIN and approaching in opposite direct ion 4. Head On collision are should be generated in both L1 and L2	2. The event logger of Onboard KAVACH L2 shall log this incident with date, time, Stationary KAVACH ID, and location stamp. (Ref. RFID, distance from the Ref. RFID at zero speed).	
1.3.	Create a Head On collision scenario in Communication mandatory zone **SRS-21.3 (b)**	1. Keep On Board KAVACH L1 in OS/FS mode 2. Keep Onboard KAVACH L2 in SR mode with Position report 3. Ensure L1 & L2 on same TIN and approaching in opposite direct ion 4. Head On collision are should be generated in both L1 and L2.	1. The event logger of Onboard KAVACH L1 shall log this incident with date, time, Stationary KAVACH ID, and location stamp. (Ref. RFID, distance from the Ref. RFID at zero speed).	
			2. The event logger of Onboard KAVACH L2 shall log this incident with date, time, Stationary KAVACH ID, and location stamp. (Ref. RFID, distance from the Ref. RFID at zero speed).	

Test ID	Test Scenario	Input Specification	Expected output/values	Observed Output (Pass/Fail)
			3. The event logger of Stationary KAVACH shall log this incident with date, time, Onboard KAVACH ID L1, Onboard KAVACH ID L2 and location stamp. (Ref. RFID, distance from the Ref. RFID at zero speed).	
1.4.	Create a Rear End collision scenario in Non-Communication mandatory zone **SRS-21.3 (c)**	1. Keep On Board KAVACH L1 in OS mode. 2. Keep Onboard KAVACH L2 in FS mode. 3. Ensure L1 & L2 on same TIN and Travelling in same direct ion. 4. Rear End collision are should be generated in L1	1. The event logger of Onboard KAVACH L1 shall log this incident with date, time, Onboard KAVACH ID L2, and location stamp. (Ref. RFID, distance from the Ref. RFID at zero speed).	
			2. The event logger of Onboard KAVACH L2 shall not log this incident.	

Test ID	Test Scenario	Input Specification	Expected output/values	Observed Output (Pass/Fail)
1.5.	Create a Rear End collision scenario in Communication mandatory zone **SRS-21.3 (c)**	1. Keep On Board KAVACH L1 in OS mode 2. Keep Onboard KAVACH L2 in FS mode 3. Ensure L1 & L2 on same TIN and Travelling in same direct ion 4. Rear End collision are should be generated in L1	1 The event logger of Onboard KAVACH L1 shall log this incident with date, time, Onboard KAVACH ID L2, and location stamp (Ref. RFID, distance from the Ref. RFID at zero speed).	
			2 The event logger of Onboard KAVACH L2 shall not log this incident.	
			3 The event logger of Stationary KAVACH shall log this incident with date, time, Onboard KAVACH ID L1, Onboard KAVACH ID L2, distance between L1&L2 and location stamp (Ref. RFID, distance from the Ref. RFID at zero speed).	

Test ID	Test Scenario	Input Specification	Expected output/values	Observed Output (Pass/Fail)
1.6.	Generate a manual SOS from Onboard KAVACH L1 in non-communication mandatory zone **SRS-21.3 (d)**	1. Ensure multiple Onboard KAVACH units (say 3) with position report in proximity 2. Generate manual SOS from L1 3. L2 & L3 should receive the SOS message 4. L2 & L3 should come to stop	1 The event logger of Onboard KAVACH L1 shall log this incident with date, time, Onboard KAVACH L1, and location stamp (Ref. RFID, distance from the Ref. RFID at zero speed).	
			2 The event logger of Onboard KAVACH L2 shall log this incident with date, time, Onboard KAVACH L1, and location stamp (Ref. RFID, distance from the Ref. RFID at zero speed).	
			3 The event logger of Onboard KAVACH L3 shall log this incident with date, time, Onboard KAVACH L1, and location stamp (Ref. RFID, distance from the Ref. RFID at zero speed).	

Test ID	Test Scenario	Input Specification	Expected output/values	Observed Output (Pass/Fail)
1.7.	Generate a manual SOS from Onboard KAVACH L1 in Communication mandatory zone **SRS-21.3 (d)**	1. Ensure multiple Onboard KAVACH units (say 3) with position report in proximity 2. Generate manual SOS from L1 3. L2 & L3 should receive the SOS message L2 & L3 should come to stop	1. The event logger of Onboard KAVACH L1 shall log this incident with date, time, Onboard KAVACH L1, and location stamp (Ref. RFID, distance from the Ref. RFID at zero speed).	
			2. The event logger of Onboard KAVACH L2 shall log this incident with date, time, Onboard KAVACH L1, and location stamp (Ref. RFID, distance from the Ref. RFID at zero speed).	
			3. The event logger of Onboard KAVACH L3 shall log this incident with date, time, Onboard KAVACH L1, and location stamp (Ref. RFID, distance from the Ref. RFID at zero speed).	

Test ID	Test Scenario	Input Specification	Expected output/values	Observed Output (Pass/Fail)
			4. The event logger of Stationary KAVACH shall log this incident with date, time, Onboard KAVACH L1, and location stamp (Ref. RFID, distance from the Ref. RFID at zero speed).	
1.8.	Cancellation of manual SOS from on-board KAVACH in Communication mandatory zone. **SRS-21.3 (d)**	1. Ensure multiple Onboard KAVACH units (say 3) with position report in proximity. 2. Cancellation of manual SOS from on board KAVACH from L-1. 3. L2 & L3 should receive the SOS cancellation message.	1. The event logger of Onboard KAVACH L1, L2 & L3 shall log this cancellation message with date, time, and location stamp. 2. The event logger of stationary KAVACH shall log this cancellation message with date, time.	
1.9.	Cancellation of manual SOS from on-board KAVACH in Non-Communication mandatory zone. **SRS-21.3 (d)**	1. Ensure multiple Onboard KAVACH units (say 3) with position report in proximity. 2. Cancellation of manual SOS from on board KAVACH from L-1. 3. L2 should receive the SOS cancellation message.	1. The event logger of Onboard KAVACH L1, L2 shall log this cancellation message with date, time, and location stamp.	

Test ID	Test Scenario	Input Specification	Expected output/values	Observed Output (Pass/Fail)
1.10.	Generate a manual SOS from Stationary KAVACH in Communication mandatory zone **SRS-21.3 (d)**	1. Ensure multiple Onboard KAVACH units (say 3) with position report in proximity 2. Generate manual SOS from stationary KAVACH. 3. L1, L2 are approaching station & L3 is departing from station should receive the SOS message. 4. L1, L2 & L3 should come to stop which are within 3000 meters of stationary KAVACH.	1. The event logger of Onboard KAVACH L1 shall log this incident with date, time, and location stamp. (Ref. RFID, distance from the Ref. RFID at zero speed).	
			2. The event logger of Onboard KAVACH L2 shall log this incident with date, time, and location stamp. (Ref. RFID, distance from the Ref. RFID at zero speed).	
			3. The event logger of Onboard KAVACH L3 shall log this incident with date, time, and location stamp (Ref. RFID, distance from the Ref. RFID at zero speed).	
			4. The event logger of stationary KAVACH shall log this incident with date, time.	

Test ID	Test Scenario	Input Specification	Expected output/values	Observed Output (Pass/Fail)
1.11.	Cancellation of manual SOS from Stationary KAVACH in Communication mandatory zone **SRS-21.3 (d)**	1. Ensure multiple Onboard KAVACH units (say 3) with position report in proximity. 2. Cancellation of manual SOS from stationary KAVACH. 3. L1, L2 are approaching station & L3 is departing from station should receive the SOS cancellation message.	1. The event logger of Onboard KAVACH L1, L2 & L3 shall log this cancellation message with date, time, and location stamp. 2. The event logger of stationary KAVACH shall log this cancellation message with date, time.	
1.12.	Generate onboard specific SOS (Foreign RFID Tag) from Stationary KAVACH in Communication mandatory zone **SRS-21.3 (d)**	1. Ensure multiple Onboard KAVACH units (say 3) with position report in proximity 2. Generate onboard specific SOS (Foreign RFID Tag) from stationary KAVACH for L1. 3. L1 onboard should receive the SOS message from stationary KAVACH and shall log in event logger.	1. The event logger of Onboard KAVACH L1 shall log this as (Foreign RFID Tag) incident with date, time, and location stamp.	
			2. The event logger of stationary KAVACH shall log this incident (Foreign RFID Tag) with date, time.	

Test ID	Test Scenario	Input Specification	Expected output/values	Observed Output (Pass/Fail)
1.13.	Generate onboard specific SOS (Odo error) from Stationary KAVACH in Communication mandatory zone **SRS-21.3 (d)**	4. Ensure multiple Onboard KAVACH units (say 3) with position report in proximity 5. Generate onboard specific SOS (Odo error) from stationary KAVACH for L1. L1 onboard should receive the SOS message from stationary KAVACH and shall log in event logger.	1. The event logger of Onboard KAVACH L1 shall log this as (Odo error) incident with date, time, and location stamp.	
			2. The event logger of stationary KAVACH shall log this incident (Odo error) with date, time.	
1.14.	Generate onboard specific SOS (Violation of shunt limit) from Stationary KAVACH in Communication mandatory zone **SRS-21.3 (d)**	1. Ensure multiple Onboard KAVACH units (say 3) with position report in proximity 2. Generate onboard specific SOS (Violation of shunt limit) from stationary KAVACH for L1. 3. L1 onboard should receive the SOS message from stationary KAVACH and shall log in event logger.	1. The event logger of Onboard KAVACH L1 shall log this as (Violation of shunt limit) incident with date, time, and location stamp.	
			2. The event logger of stationary KAVACH shall log this incident (Violation of shunt limit) with date, time.	

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1.15.	Create a train trip scenario	1 Ensure Onboard Kavach is in OS or FS mode 2 Let it pass at a Signal at danger.	1. The event logger of Onboard KAVACH L1 shall log this as (Train trip) incident with date, time, and location stamp.	
			2. The event logger of stationary KAVACH shall log this incident (Train Trip) with date, time.	
1.16.	Create an unusual stoppage scenario in Block Section with non-communication mandatory Zone	1. Ensure Onboard Kavach in OS or FS mode with sufficient MA 2. Stop the train in the block section.	1. The event logger of Onboard KAVACH L1 shall log this as (Unusual stoppage in Block Section) incident with date, time, and location stamp.	
		3. Let LP acknowledge the unusual stoppage by pressing ACK Button on DMI.	2. The event logger of Onboard KAVACH L1 shall log this as (Unusual stoppage in Block Section release) incident with date, time, and location stamp.	

Test ID	Test Scenario	Input Specification	Expected output/values	Observed Output (Pass/Fail)
1.17.	Create an unusual stoppage scenario in Block Section with non-communication mandatory Zone Create an unusual stoppage scenario in Block Section with non-communication mandatory Zone	1. Ensure Onboard Kavach in OS or FS mode with sufficient MA 2. Stop the train in the block section.	1. The event logger of Onboard KAVACH L1 shall log this as (Unusual stoppage in Block Section) incident with date, time, and location stamp.	
		3. Let the train start	2. The event logger of Onboard KAVACH L1 shall log this as (Unusual stoppage in Block Section release) incident with date, time, and location stamp.	
1.18.	Create an unusual stoppage scenario in Block Section with communication mandatory Zone	1. Ensure Onboard Kavach in OS or FS mode with sufficient MA Stop the train in the block section.	1. The event logger of Onboard KAVACH L1 shall log this as (Unusual stoppage in Block Section) incident with date, time, and location stamp.	

Test ID	Test Scenario	Input Specification	Expected output/values	Observed Output (Pass/Fail)
			2. The event logger of Stationary KAVACH shall log this as (Unusual stoppage in Block Section) incident with date, time, and location stamp.	
		4. Let LP acknowledge the unusual stoppage by pressing ACK Button on DMI.	3. The event logger of Onboard KAVACH L1 shall log this as (Unusual stoppage in Block Section release) incident with date, time, and location stamp.	
			4. The event logger of Stationary KAVACH shall log this as (Unusual stoppage in Block Section release) incident with date, time, and location stamp.	

Test ID	Test Scenario	Input Specification	Expected output/values	Observed Output (Pass/Fail)
1.19.	Create an unusual stoppage scenario in Block Section with communication mandatory Zone	1. Ensure Onboard Kavach in OS or FS mode with sufficient MA	1. The event logger of Onboard KAVACH L1 shall log this as (Unusual stoppage in Block Section) incident with date, time, and location stamp.	
		2. Stop the train in the block section.	2. The event logger of Stationary KAVACH shall log this as (Unusual stoppage in Block Section) incident with date, time, and location stamp.	
		3. Let LP acknowledge the unusual stoppage by pressing ACK Button on DMI.	3. The event logger of Onboard KAVACH L1 shall log this as (Unusual stoppage in Block Section release) incident with date, time, and location stamp.	

Test ID	Test Scenario	Input Specification	Expected output/values	Observed Output (Pass/Fail)
			4. The event logger of Stationary KAVACH shall log this as (Unusual stoppage in Block Section release) incident with date, time, and location stamp.	
1.20.	Create scenarios to display LP alert messages-1	1. SOS-Self Loco (manual)	1. The scenario should be displayed on DMI and the same shall be Logged incident with date, time, and location stamp.	
1.21.	Create scenarios to display LP alert messages-2	2. SOS-Self Loco (Stopped in Block Section)	2. The scenario should be displayed on DMI and the same shall be Logged incident with date, time, and location stamp.	
1.22.	Create scenarios to display LP alert messages-3	3. SOS-Self Loco (Train Parted)	3. The scenario should be displayed on DMI and the same shall be Logged incident with date, time, and location stamp.	
1.23.	Create scenarios to display LP alert messages-4	4. SOS-From Loco XXXXX (Manual)	5. The scenario should be displayed on DMI and the same shall be Logged incident with date, time, and location stamp.	

Test ID	Test Scenario	Input Specification	Expected output/values	Observed Output (Pass/Fail)
1.24.	Create scenarios to display LP alert messages-5	5. SOS-From Loco XXXXX (Stopped in Block Section)	5. The scenario should be displayed on DMI and the same shall be Logged incident with date, time, and location stamp.	
1.25.	Create scenarios to display LP alert messages-6	6. SOS-From Loco XXXXX (Train Parted)	6. The scenario should be displayed on DMI and the same shall be Logged incident with date, time, and location stamp.	
1.26.	Create scenarios to display LP alert messages-7	7. SOS-From Station XXXXX (SOS to all LOCOS)	7. The scenario should be displayed on DMI and the same shall be Logged incident with date, time, and location stamp.	
1.27.	Create scenarios to display LP alert messages-8	8. SOS-From Station XXXXX (SOS to this LOCO)	8. The scenario should be displayed on DMI and the same shall be Logged incident with date, time, and location stamp.	
1.28.	Create scenarios to display LP alert messages-9	9. Over Speed, Please Reduce Speed	9. The scenario should be displayed on DMI and the same shall be Logged incident with date, time, and location stamp.	
1.29.	Create scenarios to display LP alert messages-10	10. Brake Applied; Speed Limit Exceed.	10. The scenario should be displayed on DMI and the same shall be Logged incident with date, time, and location stamp.	

Test ID	Test Scenario	Input Specification	Expected output/values	Observed Output (Pass/Fail)
1.30.	Create scenarios to display LP alert messages-11	11. FSB Will applied in YYYS	11. The scenario should be displayed on DMI and the same shall be Logged incident with date, time, and location stamp.	
1.31.	Create scenarios to display LP alert messages-12	12. EB Will applied in YYYS	12. The scenario should be displayed on DMI and the same shall be Logged incident with date, time, and location stamp.	
1.32.	Create scenarios to display LP alert messages-13	13. BIU Isolated	13. The scenario should be displayed on DMI and the same shall be Logged incident with date, time, and location stamp.	
1.33.	Create scenarios to display LP alert messages-14	14. XXXXXXX Train Type Selected	14. The scenario should be displayed on DMI and the same shall be Logged incident with date, time, and location stamp.	
1.34.	Create scenarios to display LP alert messages-15	15. System Fault, Isolate or Restart Kavach.	15. The scenario should be displayed on DMI and the same shall be Logged incident with date, time, and location stamp.	

Test ID	Test Scenario	Input Specification	Expected output/values	Observed Output (Pass/Fail)
1.35.	Create scenarios to display LP alert messages-16	16. Ack Block Stop, SOS Generates in XX s	16. The scenario should be displayed on DMI and the same shall be Logged incident with date, time, and location stamp.	
1.36.	Create scenarios to display LP alert messages-17	17. EB Bypassed (EB cock closed), No Traction.	17. The scenario should be displayed on DMI and the same shall be Logged incident with date, time, and location stamp.	
1.37.	Create scenarios to display LP alert messages-18	18. Train Tripped, Select P_Trip	18. The scenario should be displayed on DMI and the same shall be Logged incident with date, time, and location stamp.	
1.38.	Create scenarios to display LP alert messages-19	19. Brake Applied, Dead End Detected.	19. The scenario should be displayed on DMI and the same shall be Logged incident with date, time, and location stamp.	
1.39.	Create scenarios to display LP alert messages-20	20. Stand still Protection, Brake applied.	20. The scenario should be displayed on DMI and the same shall be Logged incident with date, time, and location stamp.	

Test ID	Test Scenario	Input Specification	Expected output/values	Observed Output (Pass/Fail)
1.40.	Create scenarios to display LP alert messages-21	21. Roll Back Protection, Brake Applied.	21. The scenario should be displayed on DMI and the same shall be Logged incident with date, time, and location stamp.	
1.41.	Create scenarios to display LP alert messages-22	22. REV Movement Not Allowed, Use REV mode	22. The scenario should be displayed on DMI and the same shall be Logged incident with date, time, and location stamp.	
1.42.	Create scenarios to display LP alert messages-23	23. Stand By mode- CAB input is not Active	23. The scenario should be displayed on DMI and the same shall be Logged incident with date, time, and location stamp.	
1.43.	Create scenarios to display LP alert messages-24	24. Ack SR mode, KAVACH Territory Exit	24. The scenario should be displayed on DMI and the same shall be Logged incident with date, time, and location stamp.	
1.44.	Create scenarios to display LP alert messages-25	25. Ack SR mode, Station Radio Comm Fail	25. The scenario should be displayed on DMI and the same shall be Logged incident with date, time, and location stamp.	

Test ID	Test Scenario	Input Specification	Expected output/values	Observed Output (Pass/Fail)
1.45.	Create scenarios to display LP alert messages-26	26. Ack SR Mode, No Track Profile Info	26. The scenario should be displayed on DMI and the same shall be Logged incident with date, time, and location stamp.	
1.46.	Create scenarios to display LP alert messages-27	27. Ack SR mode, Tags missing	27. The scenario should be displayed on DMI and the same shall be Logged incident with date, time, and location stamp.	
1.47.	Create scenarios to display LP alert messages-28	28. Ack SR mode, Direction Unknown	28. The scenario should be displayed on DMI and the same shall be Logged incident with date, time, and location stamp.	
1.48.	Create scenarios to display LP alert messages-29	29. Ack SR mode, GPS Fail	29. The scenario should be displayed on DMI and the same shall be Logged incident with date, time, and location stamp.	
1.49.	Create scenarios to display LP alert messages-30	30. Ack LS mode, Station Radio Comm Fail	30. The scenario should be displayed on DMI and the same shall be Logged incident with date, time, and location stamp.	

Test ID	Test Scenario	Input Specification	Expected output/values	Observed Output (Pass/Fail)
1.50.	Create scenarios to display LP alert messages-31	31. Ack SR mode, TSR Link Fail	31. The scenario should be displayed on DMI and the same shall be Logged incident with date, time, and location stamp.	
1.51.	Create scenarios to display LP alert messages-32	32. Head On Collision with Loco XXXXX in YYYY m	32. The scenario should be displayed on DMI and the same shall be Logged incident with date, time, and location stamp.	
1.52.	Create scenarios to display LP alert messages-33	33. Rear On Collision with Loco XXXXX in YYYY m	33. The scenario should be displayed on DMI and the same shall be Logged incident with date, time, and location stamp.	
1.53.	Create scenarios to display LP alert messages-34	34. Override selected, Pass Signal in XXXs	34. The scenario should be displayed on DMI and the same shall be Logged incident with date, time, and location stamp.	
1.54.	Create scenarios to display LP alert messages-35	35. Reverse Mode Expires in XXXX m or YYYs	35. The scenario should be displayed on DMI and the same shall be Logged incident with date, time, and location stamp.	

Test ID	Test Scenario	Input Specification	Expected output/values	Observed Output (Pass/Fail)
1.55.	Create scenarios to display LP alert messages-36	36. Manned LC Gate XXXX in YYYY m	36. The scenario should be displayed on DMI and the same shall be Logged incident with date, time, and location stamp.	
1.56.	Create scenarios to display LP alert messages-37	37. UN-Manned LC Gate XXXX in YYYY m	37. The scenario should be displayed on DMI and the same shall be Logged incident with date, time, and location stamp.	
1.57.	Create scenarios to display LP alert messages-38	38. LS mode Waiting for Station Radio Communication.	38. The scenario should be displayed on DMI and the same shall be Logged incident with date, time, and location stamp.	
1.58.	Create scenarios to display LP alert messages-39	39. Both Leading & Non-leading Inputs are Active	39. The scenario should be displayed on DMI and the same shall be Logged incident with date, time, and location stamp.	
1.59.	Create scenarios to display LP alert messages-40	40. Train Length Computation in Progress	40. The scenario should be displayed on DMI and the same shall be Logged incident with date, time, and location stamp.	

Test ID	Test Scenario	Input Specification	Expected output/values	Observed Output (Pass/Fail)
1.60.	Create scenarios to display LP alert messages-41	41. Train Length Computation Success (XXXX m)	41. The scenario should be displayed on DMI and the same shall be Logged incident with date, time, and location stamp.	
1.61.	Create scenarios to display LP alert messages-42	42. Train Length Computation Fail (XXXX m)	42. The scenario should be displayed on DMI and the same shall be Logged incident with date, time, and location stamp.	
1.62.	Create scenarios to display LP alert messages-43	43. Train Length Computation Aborted	43. The scenario should be displayed on DMI and the same shall be Logged incident with date, time, and location stamp.	
1.63.	Create scenarios to display LP alert messages-44	44. Turnout in XXXX m with Speed Limit YYY kmph	44. The scenario should be displayed on DMI and the same shall be Logged incident with date, time, and location stamp.	
1.64.	Create scenarios to display LP alert messages-45	45. TSR in XXXX m with Speed Limit YYY kmph	45. The scenario should be displayed on DMI and the same shall be Logged incident with date, time, and location stamp.	

Test ID	Test Scenario	Input Specification	Expected output/values	Observed Output (Pass/Fail)
1.65.	Create scenarios to display LP alert messages-46	46. PSR in XXXX m with Speed Limit YYY kmph	46. The scenario should be displayed on DMI and the same shall be Logged incident with date, time, and location stamp.	
1.66.	Create scenarios to display LP alert messages-47	47. End of Authority in XXXX m	47. The scenario should be displayed on DMI and the same shall be Logged incident with date, time, and location stamp.	
1.67.	Create scenarios to display LP alert messages-48	48. KAVACH Territory Entry	48. The scenario should be displayed on DMI and the same shall be Logged incident with date, time, and location stamp.	
1.68.	Create scenarios to display LP alert messages-49	49. System Self-Test in Progress	49. The scenario should be displayed on DMI and the same shall be Logged incident with date, time, and location stamp.	
1.69.	Create scenarios to display LP alert messages-50	50. System Self-Test Success	50. The scenario should be displayed on DMI and the same shall be Logged incident with date, time, and location stamp.	

Test ID	Test Scenario	Input Specification	Expected output/values	Observed Output (Pass/Fail)
1.70.	Create scenarios to display LP alert messages-51	51. System Self Test Fail – XXXX	51. The scenario should be displayed on DMI and the same shall be Logged incident with date, time, and location stamp.	
1.71.	Create scenarios to display LP alert messages-52	52. Brakes Test Waiting for MR X. YY (X.YY) Kg/cm²	52. The scenario should be displayed on DMI and the same shall be Logged incident with date, time, and location stamp.	
1.72.	Create scenarios to display LP alert messages-53	53. Brakes Test Waiting for BP X. YY (X. YY) Kg/cm²	53. The scenario should be displayed on DMI and the same shall be Logged incident with date, time, and location stamp.	
1.73.	Create scenarios to display LP alert messages-54	54. Brakes Test NSB Applied, BP-X.YY Kg/cm²	54. The scenario should be displayed on DMI and the same shall be Logged incident with date, time, and location stamp.	
1.74.	Create scenarios to display LP alert messages-55	55. Brakes Test FSB Applied, BP-X.YY Kg/cm²	55. The scenario should be displayed on DMI and the same shall be Logged incident with date, time, and location stamp.	

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1.75.	Create scenarios to display LP alert messages-56	56. Brakes Test EB Applied, BP-X.YY Kg/cm²	56. The scenario should be displayed on DMI and the same shall be Logged incident with date, time, and location stamp.	
1.76.	Create scenarios to display LP alert messages-57	57. Brakes Test LEB Applied, BC-X. YY Kg/cm²	57. The scenario should be displayed on DMI and the same shall be Logged incident with date, time, and location stamp.	
1.77.	Create scenarios to display LP alert messages-58	58. Brakes Testing Success	58. The scenario should be displayed on DMI and the same shall be Logged incident with date, time, and location stamp.	
1.78.	Create scenarios to display LP alert messages-59	59. Brakes Testing Success	59. The scenario should be displayed on DMI and the same shall be Logged incident with date, time, and location stamp.	
1.79.	Create scenarios to display LP alert messages-60	60. Brakes Testing Fail (NSB, FSB, EB)	60. The scenario should be displayed on DMI and the same shall be Logged incident with date, time, and location stamp.	

Test ID	Test Scenario	Input Specification	Expected output/values	Observed Output (Pass/Fail)
1.80.	Create scenarios to display LP alert messages-61	61. Brakes Test Fail, Press ACK for Retesting	61. The scenario should be displayed on DMI and the same shall be Logged incident with date, time, and location stamp.	
1.81.	Create scenarios to display LP alert messages-62	62. Select Train Config, Press 'CONFIG' Button	62. The scenario should be displayed on DMI and the same shall be Logged incident with date, time, and location stamp.	
1.82.	Create scenarios to display LP alert messages-63	63. Select Staff Responsible or Shunt mode	63. The scenario should be displayed on DMI and the same shall be Logged incident with date, time, and location stamp.	
1.83.	Create scenarios to display LP alert messages-64	64. Approaching Radio Hole in XXXX m	64. The scenario should be displayed on DMI and the same shall be Logged incident with date, time, and location stamp.	
1.84.	Create scenarios to display LP alert messages-65	65. ACK OS Mode	65. The scenario should be displayed on DMI and the same shall be Logged incident with date, time, and location stamp.	

Test ID	Test Scenario	Input Specification	Expected output/values	Observed Output (Pass/Fail)
1.85.	Create scenarios to display LP alert messages-66	66. Waiting for Traction Command	66. The scenario should be displayed on DMI and the same shall be Logged incident with date, time, and location stamp.	
1.86.	Create scenarios to display LP alert messages-67	67. Traction cut-off Command fail	67. The scenario should be displayed on DMI and the same shall be Logged incident with date, time, and location stamp.	
1.87.	Create scenarios to display LP alert messages-68	68. Fouling Mark Entry	68. The scenario should be displayed on DMI and the same shall be Logged incident with date, time, and location stamp.	
1.88.	Create scenarios to display LP alert messages-69	69. Neutral Section approaching in XXX m	69. The scenario should be displayed on DMI and the same shall be Logged incident with date, time, and location stamp.	
1.89.	Create scenarios to display LP alert messages-70	70. Braking system malfunction	70. The scenario should be displayed on DMI and the same shall be Logged incident with date, time, and location stamp.	

Test ID	Test Scenario	Input Specification	Expected output/values	Observed Output (Pass/Fail)
1.90.	Create scenarios to display LP alert messages-71	71. No Forward Dir in REV mode	71. The scenario should be displayed on DMI and the same shall be Logged incident with date, time, and location stamp.	
1.91.	Create scenarios to display LP alert messages-72	72. ACK SR Mode - SR Authorization Received	72. The scenario should be displayed on DMI and the same shall be Logged incident with date, time, and location stamp.	
1.92.	Create scenarios to display LP alert messages-73	73. ACK SR Mode - Slip/Skid Detected	73. The scenario should be displayed on DMI and the same shall be Logged incident with date, time, and location stamp.	
1.93.	Create scenarios to display LP alert messages-74	74. ACK SR mode- Foreign Tag Detected	74. The scenario should be displayed on DMI and the same shall be Logged incident with date, time, and location stamp.	
1.94.	Create scenarios to display LP alert messages-75	75. Ack for SR mode - Odo Error detected	75. The scenario should be displayed on DMI and the same shall be Logged incident with date, time, and location stamp.	

Test ID	Test Scenario	Input Specification	Expected output/values	Observed Output (Pass/Fail)
1.95.	Create scenarios to display LP alert messages-76	76. Brake Applied- Shunting limits exceeded	76. The scenario should be displayed on DMI and the same shall be Logged incident with date, time, and location stamp.	
1.96.	Create scenarios to display LP alert messages-77	77. Brake Applied- Station General SoS	77. The scenario should be displayed on DMI and the same shall be Logged incident with date, time, and location stamp.	
1.97.	Create scenarios to display LP alert messages-78	78. Brake Applied-SPAD detected	78. The scenario should be displayed on DMI and the same shall be Logged incident with date, time, and location stamp.	
1.98.	Create a scenario of onboard KAVACH communication failure.	1. Ensure onboard kavach L1 is registered with the stationary Kavach, 2. Disconnect antenna in onboard kavach 3. Onboard Kavach should degrade its mode.	1. The event logger of Onboard KAVACH L1 shall log this as (Communication Failure) incident with date, time, and location stamp.	
			2. The event logger of Stationary KAVACH shall log this as (Communication Failure) incident with date, time, and location stamp	

Test ID	Test Scenario	Input Specification	Expected output/values	Observed Output (Pass/Fail)
1.99.	Create a scenario of onboard KAVACH communication failure recovery.	1. Ensure onboard kavach L1 is registered with the stationary Kavach, 2. Disconnect antenna in onboard kavach 3. Onboard Kavach should degrade its mode. 4. Re-connect the onboard antenna 5. Onboard kavach should upgrade its mode.	The event logger of Onboard KAVACH L1 shall log this as (Communication Failure Recovery) incident with date, time, and location stamp.	
			The event logger of Stationary KAVACH shall log this as (Communication Failure Recovery) incident with date, time, and location stamp	
1.100.	Create a scenario of adjacent stationary KAVACH communication failure.	1. Ensure proper communication between adjacent stationary Kavach S1 and S2. 2. Disconnect the Primary channel communication with OFC. 3. After recover of primary channel, disconnect the Secondary communication with OFC. 4. Remove both the channel and check for log.	The event logger of stationary Kavach S1 shall log this as (adjacent stationary KAVACH ID XXXXX Communication Failure for primary & secondary) incident with date and time stamp.	Primary ☐ secondary ☐ Both ☐
			The event logger of Stationary KAVACH S2 shall log this as (adjacent stationary KAVACH ID XXXXX Communication Failure) incident with date and time stamp	Primary ☐ secondary ☐ Both ☐

Test ID	Test Scenario	Input Specification	Expected output/values	Observed Output (Pass/Fail)
1.101.	Create a scenario of adjacent stationary KAVACH communication failure recovery.	1. Ensure proper adjacent stationary KAVACH S1 and S2. 2. Re-connect the Primary channel communication with OFC. 3. After recovery of primary channel, reconnect the Secondary communication with OFC. 4. Reconnect both the channel and check for log.	The event logger of stationary Kavach S1 shall log this as (adjacent stationary KAVACH ID XXXXX Communication Failure recovery) incident with date and time stamp.	Primary ☐ secondary ☐ Both ☐
			The event logger of Stationary KAVACH S2 shall log this as (adjacent stationary KAVACH ID XXXXX Communication Failure recovery) incident with date, time, and location stamp	Primary ☐ secondary ☐ Both ☐
1.102.	Create a scenario of communication failure stationary KAVACH with TSRMS.	1. Ensure proper communication between stationary KAVACH S1 and TSRMS. 2. Disconnect the Primary channel communication with OFC. 3. After recover of primary channel, disconnect the Secondary communication with OFC. 4. Remove both the channel and check for log.	The event logger of stationary Kavach S1 shall log this as (TSRMS Communication Failure) incident with date and time stamp.	Primary ☐ secondary ☐ both ☐
			The event logger of TSRMS shall log this as (stationary KAVACH ID XXXXX Communication Failure) incident with date and time stamp	Primary ☐ secondary ☐ both ☐

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Test ID	Test Scenario	Input Specification	Expected output/values	Observed Output (Pass/Fail)
1.103.	Create a scenario of communication failure recovery of stationary KAVACH with TSRMS.	1. Ensure proper communication between stationary Kavach S1 and TSRMS. 2. Disconnect the communication with OFC. 3. Reconnect the Primary channel communication with OFC. 4. After recovery of primary channel, disconnect the Secondary communication with OFC. 5. Reconnect the secondary channel communication with OFC. 6. Reconnect both the channel and check for log.	The event logger of stationary Kavach S1 shall log this as (TSRMS Communication Failure recovery) incident with date and time stamp.	Primary ☐ secondary ☐ both ☐
			The event logger of TSRMS shall log this as (stationary KAVACH ID XXXXX Communication Failure recovery) incident with date, time, and location stamp	Primary ☐ secondary ☐ both ☐
1.104.	Create a scenario of communication failure stationary KAVACH with Electronic Interlocking.	1. Ensure proper communication between stationary KAVACH S1 and Electronic Interlocking.	The event logger of stationary KAVACH S1 shall log this as (Electronic Interlocking Communication Failure) incident with date and time stamp.	Primary ☐ secondary ☐ both ☐

Test ID	Test Scenario	Input Specification	Expected output/values	Observed Output (Pass/Fail)
		2. Disconnect the Primary channel communication with OFC. 3. After recover of primary channel, disconnect the Secondary communication with OFC. 4. Remove both the channel and check for log.	The event logger of Electronic Interlocking shall log this as (stationary KAVACH ID XXXXX Communication Failure) incident with date and time stamp	Primary ☐ secondary ☐ both ☐
1.105.	Create a scenario of communication failure recovery stationary KAVACH with Electronic Interlocking.	1. Ensure proper communication between Stationary KAVACH S1 and Electronic Interlocking. 2. Disconnect the communication with OFC. 3. Disconnect the Primary communication with OFC	The event logger of stationary Kavach S1 shall log this as (Electronic Interlocking Communication Failure recovery) incident with date and time stamp.	
			The event logger of Electronic Interlocking shall log this as (stationary KAVACH ID XXXXX Communication Failure recovery) incident with date and time stamp	

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