Solid State Block Proving by Digital Axle Counter (SSBPAC) is a solid state system used for controlling the coordinated movement of the train in the block section, working on Absolute Block Working Principles. The system has been developed as per RDSO / SPN / 175 / 2005 both for single line and double line.

**Operational Benefits:**
- Fit for Both RE and Non-RE areas.
- Automatic TOL – block failure due to premature TOL operation eliminated.
- Automatic Line Close – Elimination of operator involvement results in time saving and immediate block closure.
- Block closing provision after push back operation, avoids block failure for next train.
- Stress free and Easy operation by push buttons.
- Audio-visual alarms on section occupancy and clearance.
- In the present system LSS Signal Flying Back due to FVT / ASTPR bobbing results in PLCT. This problem can be recovered by cancellation in SSBPAC (D) without need of PLCT.
- There is no block length limitation as equipment supports OFC.

**Safety:**
- 2 out of 3 Architecture ensures safety as well as availability.
- Inclusion of watch dog and mine fields for controlled software flow.
- Bi- state and de-bounce validations for inputs.
- Independent 2 out of 3 Architectural Voter card for placing validated outputs.
- Critical Power Control module using twin relays for assisting safe shutdown.
- Latching nature of TGTR and TCFR QL1 Type relays is tested for its every operation.

**Maintenance Benefits:**
- No periodic over hauling as there are no mechanical parts.
- Less number of relays used – improved reliability.
- Instrument can work on both OFC and Quad media – no changes need be done to block equipment when medium is changed.
- Better troubleshooting with event logging and user terminal.
- Error code displayed numerically for ease of understanding.
- Status of all relays indicated by LED – reduces MTTR.
- Diagnostic LED indications provided on the PCB facia makes troubleshooting easy.
- Sufficient space provided in the equipment rack for keeping spares to reduce MTTR.

**Additional Benefits:**
- Block instrument clock is synchronized with GPS.
- Extra Modem is provided for communication between data logger and SSBPAC (D).
- Industrial grade, components provided to ensure reliability.
- Communication lines and power supply lines are protected with SPDs.
- Burn-in and temperature cycle tests in the manufacturing process ensures zero fault production.
- Each processor card is provided with independent power supply system – ensures reliability.
SSBPAC ARCHITECTURE

INSTALLATIONS

DOUBLE LINE

SINGLE LINE