

# Border Surveillance System

## INTRODUCTION

Border Surveillance System has been developed to carry out all weather surveillance & to monitor the border area. It consists of Battle Field Surveillance Radar (BFSR) & EO payload (consists of day camera, eye-safe LRF & MWIR TI, DMC & GPS) mounted on the pan-tilt unit kept at the observation tower. It is equipped with hybrid energy source. It transmits the real-time video & data at a distance 20 km to control station through Wireless & Fiber optic link.

IRDE has designed and developed Border Surveillance System for High Altitude Border Area.

### SPECIFICATIONS

**Range Performance:**

(Detection Range)

**BFSR-XR:** 10 Km (Light Vehicle); 08Km (Gp of Person)

**Day Camera:** 12 Km (Light Vehicle); 10Km (Gp of Person)

**Thermal Camera:** 10 Km (Light Vehicle); 08Km (Gp of Person)

**Data & Video Transmission Capability**

Up to 20 Km over Optical Fiber transmission Cable and Wireless (LOS)

**Environmental:**

Storage Temperature: - 40° to +55° C

Operating Temperature: - 30°C to + 55°C Applicable JSS 5855-11:2009 (in conjunction with JSS 55555)

### FEATURES

**Image Processing modules:** Image Enhancement, Video Mosaicing, Automatic change detection, Map overlay & Target Profile generation Activity log, MMI Control & external interface

**On-Site recording:** 14 days

**Modes of Operation:** Radar only, EO only, Radar & EO mode

**Integrated De-icing and De-fogging module & Security camera**

## TECHNOLOGIES INVOLVED

The development of Border Surveillance System involved the development of following technologies:

- Development of EO payload consisting of thermal & day camera, LRF, GPS and DMC
- Development of change detection unit with HMI such as image enhancement for improved detection & recognition, video mosaicing (Panoramic view), automatic change detection, Map overlay & target profile, Activity log
- Development of Hybrid renewable power source for Border Surveillance System Unit
- Development of Control unit for monitoring station
- Integration of EO Payload with radar

*All the above technologies were successfully developed at IRDE (DRDO) Dehradun.*

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