BRIEF ON INDIGENOUS DEVELOPMENT OF SHIP BASED RUKMANI TERMINALS

1. **Background**. Indian Navy has been utilizing indigenous 'GSAT-7' satellite to meet satellite communication requirements for Naval platforms. The platform based SATCOM terminals (Rukmani system) have been sourced from M/s Orbit, Israel since 2008 and are being maintained under CAMC with M/s BEL (Gad) post expiry of OEM warranty in Dec 16. Multiple issues pertaining to product support and obsolescence have been reported by the field units view system obsolescence and end of Electronic life and a case for indigenous development of ship based Rukmani Terminals (C & Ku band) has been taken up under Make II category. The technical requirements and acceptance criteria of the indigenous product have been enumerated in succeeding paragraphs.

2. **Technical Requirements**. The major technical requirements for indigenous development of SATCOM terminals have been tabulated below :-

Ser	Parameter	Terminal 1	Terminal 2
(a)	Frequency of Operation (Tx)	C band	Ku band
(b)	Frequency of Operation (Rx)		
(c)	Data Rate (Tx)	512 Kbps	512 Kbps
(d)	Data Rate (Rx)	2.5 Mbps	2.5 Mbps
(e)	RF Power O/p	20W/ 30 W	50 W Cont Wave
(f)	Data Rate	02 Mbps Max	06 Mbps Max
(g)	Polarity	Linear H/V or Circular L/R	
(h)	Type of Pedestal	Four axes – Az, El , Polarization & Cross elevation	
(j)	Temp - Operation	-20 degs c to +55 deg	
(k)	Climate/ Dynamic Test	As per JSS 55555	

3. **Prototype Acceptance Criteria**. The prototype development and acceptance will be based on approved Quality Assurance Plan (QAP) by Naval Headquarters. The QAP will lay down detailed requirements of QA activities and the methodology for acceptance of item/ equipment against the particular order including Environmental Test (ET) & EMI/EMC qualification tests, material testing and Environmental Stress Screening (ESS) through any NABL/Govt approved labs. The prototype development acceptance criteria will include following steps :-

(a) Requirement Document Finalization
(b) Prototype Unit Development
(c) Functional testing
(d) Critical Design Review

(e) Qualification Tests (QT) Unit Development
(f) Conduct of QT
(g) Manufacturing of Units and ESS testing
(h) Product Delivery

4. **Potential Developers**. The details of potential developers who have already been contacted/ are likely to be potential developers are tabulated below :-