

Cmde Brijendra Singh Rawat |Technology|Naval Systems|Machine Learning

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Career Summary

- 26 years of work experience in various leadership roles in project management, system design and architecture of complex federated cyber systems.
- Good functional understanding of:
 - Requirement analysis, Design elaboration, Formulation of project implementation plans, Execution, Validation, Acceptance and Lifecycle support.
 - Simulation studies, Algorithm design, validation and testing.
 - Machine learning, Data Analytics and visualisation.
- Good knowledge of Python, C++, RTC, SVN, MATLAB, Distributed Data System(Open Splice/ RTI).
- Led team size of more than 100+ including Project Managers, System Architects, UI Designers, Developers, QA, Testers, Deployment and lifecycle support teams.
- Key Strengths – Passionate about technology and innovation mindset with ability to drive digital transformation. Strategic vision to align with business goals. Leadership skills to inspire and guide technology teams. Strong organisation and planning skills to manage complex projects. Proven ability to mitigate risks, solve problems, and ensure successful program outcomes.

Core Competence & Skills

System Design and Architecture | Project Management | Strategic Planning | Contract Formulation and Negotiations | Technical Management | Leadership Roles | Team Management | AI/ML Enthusiast

Education Qualifications

- 1996 Bachelor of Technology (Electrical Engg.) from Jawaharlal Nehru University, New Delhi
- 2005 Masters of Engg. (Electronic & Telecommunication) from University of Pune, Pune
- 2015 Post Graduate Diploma in Management Studies from Jamnalal Bajaj Institute of Management Studies, Mumbai University
- 2017 Higher Command Course from Naval War College, INS Mandovi Goa.
- 2023 Certificate course in Global Supply Chain Management, IIFT, New Delhi (ongoing).
- 2023 Pursuing MS in Artificial Intelligence and Machine Learning, Deakins University, Australia (ongoing).

Experience Highlights

- Led the *design, development, and implementation* of complex *combat management systems*, leveraging expertise in product line system engineering to deliver mission-critical solutions for Indian Navy.
- Led initiatives in formulation of *Machine Learning algorithms* for developing advanced decision support tools, to enhance situational awareness, improve decision-making capabilities, and optimize mission outcomes.
- Steered design and implementation of seamless *human-system integration* solutions that optimize performance/ user experience through implementation of *agile practices and DevOps methodologies*.
- Steered Real Time complex and federated systems development with *layered architecture*, utilizing *DDS middle ware* standard for data centric *publish-subscribe* communication model.
- Designed and developed state-of-the-art *combat system simulator* for submarines, to provide realistic training environments for operators and improve the effectiveness of Command team in achieving of mission objectives.
- Experienced in setting up development and cross functional teams for *agile methodologies* and promoted adoption of *DevOps culture* for project development.
- Skilled in *contract formulation and negotiations*, Technical management experience of more than 10 years in spearheading *maintenance & repairs, standards & policy* formulation for induction, lifecycle management including modernization, and disposal strategies for electrical & weapon systems.

Professional Key Achievements (Last 20 years)

ADDITIONAL DIRECTOR GENERAL, COMBAT MANAGEMENT SYSTEM, *WEAPONS AND ELECTRONICS SYSTEM ENGINEERING ESTABLISHMENT*, NEW DELHI, JUN 21- TILL DATE

- As Head of Department of Combat Management Systems (C4I systems) steered design, development, and implementation methodology for the Next Generation Combat Management System (CMS 24-29).
- Formulated development strategy in line with Product Line System Engineering approach for a data centric design and architecture based on Data Distribution Service (Opensplice and RTI) implementations.
- Steered development for Real time Systems and federated systems with layered architecture, focussing on reliability, high availability, enhance scalability and promote modular development.
- Leveraged industry best practices to design and integrate real-time communication protocols, ensuring efficient data exchange and synchronization.
- Led 100 + cross-functional teams to deliver high-quality software solutions that met stringent performance and availability requirements. Encouraged and setup environment for creative excellence and innovations.
- Established development and cross functional teams for agile methodologies and adoption of DevOPs culture for CMS 24-29.
- Set up Human Integration Center for design of interface frameworks, with user in loop concept, through rapid prototyping to improve ergonomics, user experience and enhance command team performance.
- Steered design and development framework for deeper integration of weapons and sensors into combat management systems utilizing MVC design pattern in QT(QML).
- Implemented Capability Maturity Model level 2.0 integration practices on legacy as well as ongoing projects.
- Steered and constituted team for deployment, commissioning, platform integration and Sea Trials of more than 10 CMS onboard Warships.

DIRECTOR, DIRECTORATE OF ELECTRICAL ENGINEERING, *IHQ MOD(N)*, NEW DELHI - JUL 16 – JUN 21

- As Director Electrical Engineering led efforts for life-cycle management for electrical systems (womb to tomb concepts) for ships and submarines.
- Led study group on evaluation of Li-ion battery technology for adoption in high rate of exploitation applications.
- Steered indigenous development activity and induction of critical Navigation Aids for both ships and submarines through DRDO, DPSUs and MSMEs.
- Developed alternate vendors for supply of High-Capacity Batteries for submarines.
- Formulated requirements and negotiated contracts for procurement of critical spares and equipment for IN warships.
- Staff analysis and implementation of mitigation measures for effective deployment of technical resources and erection of repair facility for critical electrical equipment onboard ships and submarines.

DEPUTY GENERAL MANGER(PLANNING), *NAVAL DOCKYARD*, VISAKHAPATNAM - JUL 14 – JUL 16

- As DGM planning, steered efforts for timely execution of overhaul and refit packages for ships and submarines.
- Concluded approximately 50+ repair contracts, Annual Maintenance Contracts (AMC) and Rate Contracts (RC) worth \$15 M through Indian and foreign shipyards & OEMs.
- Successfully planned, budgeted, expended, monitored, and estimated financial resources worth \$30 M.
- Responsible for issuance of RFP, technical evaluation, price comparison and award of contract through e-Procurement module to facilitate repairs and refits of Indian Naval Warships and marine equipment.
- Provided oversight to offloaded refits in Defence as well as Pvt Shipyards.

CHIEF ELECTRICAL OFFICER, *CGS SAMUDRA PRAHARI*, MUMBAI – APR 13 TO MAR 14

- Headed the Technical Department of the Coast Guard Ship Samudraprahari on deputation duties.
- Directed operations, maintenance, and repair of complex electrical systems, ensuring maximum readiness and availability of critical equipment in high-pressure environments.

- Effectively led and motivated the 50+ personnel with emphasis on conflict resolution, redressal of personal and interpersonal grievances.

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SENIOR NAVAL OVERSEER ELECTRICAL, *SUBMARINE OVERSEEING TEAM*, SEVERODVINSK, RUSSIA - JUL 10 TO JAN 13

- Deputed as Senior Electrical Overseer for monitoring Modernisation package of Electrical and Weapon systems.
- Steered formulation of scope of work, cost negotiation and finalisation of contract with foreign shipyard/ OEMs.
- Monitoring of scope creep, additional requirements, budget and resource allocation.
- Lead teams for acceptance and validations of equipment performance trials at shipyard and OEM premises.

SENIOR SYSTEMS MANAGER, *WEAPONS AND ELECTRONICS SYSTEM ENGINEERING ESTABLISHMENT*, NEW DELHI – AUG 07 TO JUN 10

- Led agile team for development of combat system simulator for realistic command team training.
- Steered software development lifecycle including requirement analysis, design, implementation, commissioning, change management and life cycle management process in 18 months of delivery time.
- Leveraged expertise in team formulation for software development, leveraging strong leadership, communication, and interpersonal skills.
- Constituted and managed cross-functional teams to deliver innovative solutions on time and within budget.
- Steered development of algorithms for emulation of weapon systems logic through detailed MATLAB simulations.
- Steered development in .NET framework, leveraged C# for visualisation and with optimisation of Win XP platform.
- Implemented effective configuration management through Rational Team Concert, ensuring seamless collaboration and streamlined development processes.

ELECTRICAL OFFICER, *INDIAN NAVY SUBMARINE*, MUMBAI - JUN 05 TO JUL 07

- As the Electrical officer onboard submarine led a team of highly motivated officers and sailors for ensuring high availability and reliability of electrical and weapon systems.
- Technical Advisor to the Commanding Officer of submarine on all technical matters to meet operational and mission commitments.

Selected Research Publications

- Bearings only Target Motion Analysis using Extended Kalman and Particle Filter*, Periscope Magazine, Submarine HQ publication 2007.
- Internet of Things: It's Potential to Change the way we design ships for Operations and Maintenance*, Naval War College Goa Publication, 2018
- Challenges and Way Ahead for realising Human Machine Teaming*, Joint Indo-US Working Group, Human Machine Teaming, 2022.
- Product Line System Engineering approach for design and development of C4I systems*, Rozi Light, Technical journal, INS Valsura Publication, 2022

Awards

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| 1995 | Best Cadet Award | <i>Sword of Damascus</i> |
| 2001 | Flag Officer C-in-C Commendation | <i>Devotion to Duty</i> |
| 2005 | Chief of Naval Staff Commendation | <i>Bravery</i> |
| 2005 | Sir JC Bose Award | <i>1st in order of merit M Engg</i> |
| 2014 | Director General Coast Guard Commendation | <i>Bravery</i> |