

DRDO releases the Indian Radio Software Architecture standard 1.0 to enable interoperability in Military Communication

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Defence Research and Development Organisation (DRDO), in collaboration with the Integrated Defence Staff (IDS) and the Tri-Services, formally released Indian Radio Software Architecture (IRSA) standard 1.0 to enable interoperability in Military Communication, during the National workshop organised on Oct 06, 2025 at DRDO Bhawan, New Delhi. IRSA is a comprehensive software specification for Software Defined Radios (SDR), defining standardized interfaces, APIs, execution environments, and waveform portability mechanisms. IRSA is designed to ensure waveform portability, SDR Interoperability, Certification and Conformance.

The launch of IRSA represents a defining step in India's journey toward self-reliance in defence communication technologies, embodying the vision of building indigenous, inter-operable, and future-ready SDR solutions — designed in India, for India and ready for the world. The specification is designed to evolve with operational requirements. It also lays the foundation for integrating future technologies.

The workshop covered the journey of IRSA, its technical overview, ecosystem roles and future directions. It also provided a platform for industry, academia and the tri-services to discuss collaboration opportunities, pilot projects and adoption pathways.

The event brought together representatives from the Indian Armed Forces, Department of Defence Production (DDP), Defence Public Sector Undertakings (DPSUs), industry, academia and research institutions, highlighting a comprehensive and collaborative approach towards developing indigenous communication technologies. Dr Samir V Kamat, Secretary DD R&D and Chairman DRDO was the Chief Guest of the event. Air Marshal Ashutosh Dixit, Chief of Integrated Defence Staff, and Dr Rajat Moona, Director IIT Gandhinagar were the Guests of Honour. The National workshop was organised under the guidance of Dr. BK Das, DG (ECS).

About IRSA:

The IRSA initiative traces its origin to 2021, when the critical role of SDRs in modern military communication was highlighted and the need for a national software standard was felt. A core technical team led by DRDO initiated work in 2022, engaging with the Integrated Defence Staff (IDS) and the Services to capture operational and user requirements. After extensive reviews and consultations with stakeholders, IRSA Version 1.0 was approved by the High-Level Advisory Committee (HLAC) in 2025, becoming India's first national specification defining a standardised software architecture for Software Defined Radios. The vision is to position IRSA not just as a national standard, but as a global benchmark — enabling India to shape the future of SDR technology and export IRSA-compliant solutions to friendly nations.



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