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# India-US Defence S&T Partnership — From DTTI to Innovation Bridge, the 24th JTG Plenary and What It Means

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# India-US Defence S&T Partnership — From DTTI to Innovation Bridge, the 24th JTG Plenary and What It Means

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## WHY IN NEWS

The 24th India-US Joint Technical Group (JTG) Plenary Meeting was held at DRDO Headquarters, New Delhi on February 3–4, 2026 — the premier forum for India-US defence science and technology cooperation. Co-chaired by DRDO's Dr. Chandrika Kaushik and the US Department of War's Mr. Michael Francis Dodd, the meeting signed a new project agreement and opened collaboration in Electronic Warfare, Cyber, and Artificial Intelligence under the 2025 Major Defence Partnership framework.

## THE ARCHITECTURE OF INDIA-US DEFENCE S&T COOPERATION

India-US defence cooperation has evolved from a cautious post-Cold War engagement to a structured, institutionalised partnership spanning technology, production, and strategic interoperability. Understanding this architecture is essential for UPSC Mains.

### The foundational agreements (chronological):

**LEMOA (Logistics Exchange Memorandum of Agreement) — 2016:** Allows each country's military to use the other's land, air, and naval bases for resupply and repair. India became the first non-ally Asian country to sign such an agreement with the US. Enables Indian Navy to refuel at US Diego Garcia base and vice versa.

**COMCASA (Communications Compatibility and Security Agreement) — 2018:** Allows India to procure advanced US communication systems and ensures interoperability between Indian and US forces during joint operations. Upgrades the 2002 GSOMIA (General Security of Military Information Agreement).

**BECA (Basic Exchange and Cooperation Agreement for Geo-Spatial Cooperation) — 2020:** Provides access to US geospatial intelligence, maps, and aeronautical charts. Critical for precision-guided munitions — India can now use US GPS data for accurate missile targeting. Signed at the 2+2 Ministerial Dialogue.

**iCET (Initiative on Critical and Emerging Technology) — 2023:** Launched at the Modi-Biden summit, Washington DC. Covers AI, quantum computing, semiconductors, space, and advanced telecommunications. The most comprehensive technology cooperation framework India has joined.

**Major Defence Partnership (2025):** Formalised in October 2025 between Raksha Mantri Rajnath Singh and US Secretary of War Pete Hegseth. Provides the overarching political framework under which the 24th JTG operates.

## WHAT IS THE JOINT TECHNICAL GROUP (JTG)?

The JTG is India-US's bilateral defence science and technology (S&T) dialogue forum, institutionalised under the **Defence Technology and Trade Initiative (DTTI)** launched in 2012. It is a technical-level forum (not ministerial) that:

- Reviews ongoing cooperative S&T projects between DRDO and US defence labs
- Identifies new areas for joint research and development
- Monitors implementation of signed project agreements
- Coordinates with the two countries' defence industries on dual-use technology transfer

The JTG alternately meets in India and the US. The 24th Plenary (India) follows the 23rd (US). The meeting brought together senior officials from the US Department of Defence, Department of State, DRDO scientists, India's Tri-Services (Army, Navy, Air Force), Ministry of Defence, Ministry of External Affairs, and the National Security Council Secretariat.

## THE INNOVATION BRIDGE — A NEW PARADIGM

A significant development at the 24th JTG was the exploration of **DRDO–Defence Innovation Unit (DIU) collaboration** under the **Innovation Bridge** framework.

**Defence Innovation Unit (DIU):** A US DoD agency established in 2015 to accelerate commercial technology adoption by the US military. Located in Silicon Valley (not the Pentagon). Focuses on AI, autonomy, cyber, and space. Works directly with startups and commercial companies — bypassing the traditional slow defence procurement pipeline.

### Why this matters for India:

Traditional DRDO cooperation with US defence labs (like DARPA, ARL, NRL) focused on government-to-government R&D projects with long gestation periods

The DIU model brings **venture capital-backed startups and commercial technology firms** into the equation — faster, cheaper, more innovative

India's iDEX (Innovations for Defence Excellence) is India's DIU equivalent — connecting startups with defence procurement challenges

A DRDO-DIU partnership would essentially link India's startup ecosystem to US defence innovation — enabling faster indigenisation of cutting-edge technologies

## KEY TECHNOLOGY COOPERATION AREAS — 2026 PRIORITIES

**Electronic Warfare (EW):** India faces sophisticated EW threats from both China (PLA's advanced jamming and SIGINT capabilities) and Pakistan (Chinese-supplied EW systems). EW capability — the ability to jam enemy radar, communications, and guidance systems while protecting your own — is now considered a decisive factor in modern warfare. India's EW systems have historically been inferior to Chinese counterparts; the DRDO-US cooperation aims to close this gap.

**Cyber:** India's cyber defence capabilities have been a known weakness — the 2020 Galwan crisis was accompanied by attempted cyberattacks on India's power grid (attributed to Chinese state actors). The JTG cyber cooperation focuses on defensive cyber — protecting critical infrastructure (power, finance, communications) rather than offensive operations.

**Artificial Intelligence:** AI is transforming warfare in three ways: autonomous weapons (drones, loitering munitions), intelligence analysis (processing satellite imagery and signals intelligence faster than human analysts), and logistics optimisation. India's defence AI is nascent — the JTG framework gives DRDO access to US methodologies and possibly pre-trained models for defence applications.

## DEFENCE TRADE CONTEXT — BUDGET 2026-27

The 24th JTG meeting coincides with the defence budget picture:

**Total defence allocation: Rs 7.85 lakh crore** (15% increase; 2% of GDP)

**Capital acquisition budget: Rs 2.19 lakh crore** — of which **75% (Rs 1.39 lakh crore) reserved for domestic industry**

**DRDO allocation: Rs 29,100 crore** (up from Rs 26,817 crore)

Key India-US defence deals underway:

**113 GE F404 engines** (~USD 1 billion) for Tejas Mk-1A LCA — India's indigenous fighter aircraft

**GE F414 engines** (licensed production for Tejas Mk-2) — partial technology transfer; the degree of tech transfer remains a point of negotiation

**MQ-9B Predator drones** — 31 armed drones (USD 3 billion) approved by Cabinet; delivery 2025-27

**114 Rafale jets** (proposal by Dassault Aviation) approved by Defence Procurement Board (note: Rafale is French, but comparison contract with US equipment is in consideration)

## INDIA'S STRATEGIC HEDGING — THE BALANCE WITH RUSSIA

The JTG cooperation must be read alongside India's **strategic hedging** posture:

India remains the world's largest arms importer; Russia has historically been the #1 supplier (~55% of India's defence imports pre-2020)

Post-2020 (Galwan), India has diversified — US, France, Israel have gained share; Russia's share declining

India's S-400 Triumf air defence system (Russian) creates a CAATSA (Countering America's Adversaries Through Sanctions Act) friction point with the US

India maintains: operational S-400 systems, long-term MiG-21 fleet (retiring), Russian submarine leases, AK-203 assault rifle joint venture in UP

The JTG cooperation does not require India to abandon Russian systems — it creates US-origin technology depth in specific capability gaps (EW, cyber, AI) where Russian alternatives are unavailable or inferior.

## UPSC RELEVANCE

*DTTI (2012); LEMOA (2016); COMCASA (2018); BECA (2020); iCET (2023); Major Defence Partnership (2025); DIU (Defence Innovation Unit, US — Silicon Valley, 2015); iDEX (Innovations for Defence Excellence — India's startup defence programme); 24th JTG Plenary (DRDO HQ, Feb 3-4, 2026); DRDO full form; GE F404 (Tejas Mk-1A engine; 113 units, ~USD 1 billion); GE F414 (Tejas Mk-2, licensed production); MQ-9B Predator drones (31 units, USD 3 billion); CAATSA (2017, US sanctions law); S-400 Triumf (Russian air defence system); Defence budget 2026-27: Rs 7.85L cr, 75% domestic capital acquisition; DRDO: Rs 29,100 cr.*

*India-US defence S&T cooperation architecture; DTTI and its evolution; indigenisation targets vs. defence import dependence; role of DRDO in India's strategic autonomy; the Innovation Bridge and startups in defence; AI, EW, and Cyber in modern warfare. **GS-2:** Foundational agreements (LEMOA, COMCASA, BECA) — significance; India's strategic autonomy doctrine; Quad and India's role; CAATSA risk and India's Russia relationship.*

## ★ FACTS CORNER — KNOWLEDGEPEDIA

### INDIA-US DEFENCE COOPERATION ARCHITECTURE:

DTTI (Defence Technology and Trade Initiative): **2012** — premier forum for tech transfer  
 LEMOA: **2016** — mutual logistics access; India: 1st non-ally Asian country  
 COMCASA: **2018** — advanced communications interoperability; upgrades GSOMIA (2002)  
 BECA: **2020** — geospatial intelligence + GPS access for precision munitions  
 iCET: **2023** (Modi-Biden, Washington) — AI, quantum, semiconductors, space, 5G/6G  
 Major Defence Partnership: **October 2025** (Rajnath Singh + Pete Hegseth)

### 24TH JTG PLENARY (FEB 3-4, 2026):

Venue: **DRDO HQ, New Delhi**  
 India Co-Chair: **Dr. Chandrika Kaushik** (DG, Production Coordination & Services Interaction, DRDO)  
 US Co-Chair: **Michael Francis Dodd** (Asst Secretary of War for Critical Technologies)  
 New focus: Electronic Warfare (EW), **Cyber, AI**  
 DIU-DRDO collaboration: Under **Innovation Bridge** framework

### DEFENCE INNOVATION UNITS:

DIU (US): **Defence Innovation Unit**; est. 2015; Silicon Valley; commercial-military tech bridge  
 iDEX (India): **Innovations for Defence Excellence**; India's equivalent; connects startups with defence challenges; 200+ challenges issued

### KEY DEFENCE DEALS (INDIA-US, ACTIVE):

GE F404 engines: **113 units**, ~USD 1 billion; for **Tejas Mk-1A LCA**  
 GE F414 engines: Licensed production for **Tejas Mk-2**  
 MQ-9B Predator drones: **31 units**, USD 3 billion; approved by Cabinet  
 India-US defence trade value: **USD 20 billion**

### DEFENCE BUDGET 2026-27:

Total: **Rs 7.85 lakh crore** (15% increase; ~2% GDP; 14.67% of total expenditure)  
 Capital: **Rs 2.19 lakh crore** (+24%)  
 Domestic acquisition: **Rs 1.39 lakh crore** (75% of capital)  
 DRDO: **Rs 29,100 crore**; BRO: Rs 7,394 crore

### CAATSA AND S-400 CONTEXT:

CAATSA: **Countering America's Adversaries Through Sanctions Act** (US, **2017**)  
 S-400 Triumph: Russian advanced air defence system; India signed deal **2018** (~USD 5.4 billion)  
 US waived CAATSA sanctions on India (informally) — preserving strategic partnership

### OTHER RELEVANT FACTS:

Quad members: India, US, Japan, Australia (reactivated **2017**; first leaders summit **2021**)  
 India's arms imports: Russia (~55% historically); diversifying to US, France, Israel  
 DRDO: Established **1958**; 52 labs; under Ministry of Defence  
 India's defence exports target: Rs 35,000 crore; achieved ~Rs 21,000-23,000 crore (FY25)

Sources: PIB, IDRW, Ministry of Defence, Insights on India

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