

Shortnews

'Agni 5' Intermediate Range Ballistic Missile

India has successfully conducted the test-firing of the Agni-5 Intermediate Range Ballistic Missile (IRBM) from the APJ Abdul Kalam Island, Odisha.

About 'Agni 5' Intermediate Range Ballistic Missile

Range - Over 5,000 km (covers entire Asia, parts of Europe & Africa)

Stages - Three-stage, solid-fuel missile

Guidance - Equipped with advanced navigation and guidance systems with high accuracy using Ring Laser Gyro-based Inertial Navigation System (RINS) and Micro Inertial Navigation System (MINS).

Launch Platform - Road- and rail-mobile launchers, enhancing survivability.

Warhead Capacity - Can carry nuclear or conventional payloads (~1.5 tonnes).

Technology - Incorporates composite material airframes, canister launch system for rapid deployment, and high mobility. A canisterised launch system is a missile launch mechanism in which the missile is stored, transported, and fired directly from a sealed canister mounted on a road-mobile or rail-mobile launcher.

Significance

Strategic Deterrence - This is part of India's effort to strengthen its strategic deterrence under the nuclear triad and reinforce its commitment to a credible minimum deterrent within the framework of the No First Use (NFU) policy.

Second-Strike Capability - Enhances survivability and credibility of India's nuclear doctrine.

Indigenous Technology - Reflects DRDO's self-reliance in missile technology under the IGMDP (Integrated Guided Missile Development Programme).

Geopolitical Signal - Positions India among a select group of nations (US, Russia, China, UK, France) with comparable IRBM/ICBM capability.

India, EAEU Sign Terms Of Reference (TOR)

India and the Eurasian Economic Union (EAEU), have signed the Terms of Reference (ToR) to start Free Trade Agreement (FTA) negotiations.

Trade turnover between India and EAEU stood at USD 69 billion in 2024, a 7% increase over 2023.

India EAEU combined GDP - \$6.5 trillion

About Eurasian Economic Union (EAEU)

Nature - An international organization that promotes regional economic integration among former Soviet states.

Establishment - Created through the Treaty on the Eurasian Economic Union, signed on 29 May 2014, and officially came into effect on 1 January 2015.

Membership - Five countries are part of the Union—Russia, Belarus, Kazakhstan, Kyrgyzstan, and Armenia.

Institutional Structure

Eurasian Economic Commission (EEC)

Nature - Permanent regulatory body of the Union.

Role - Oversees the functioning and development of the EAEU.

Presidency - Rotates annually among member states, with one state serving as the Union's chairman each year.

Current President - Bakytzhan Sagintayev from Kazakhstan

Court of the Eurasian Economic Union – Handles dispute resolution and interprets the legal framework of the EAEU.

Customs Union of the EAEU – A customs union among member states.

About Free Trade Agreements (FTAs)

Definition – FTAs are arrangements between two or more countries that seek to reduce or eliminate trade barriers such as tariffs, quotas, and import/export restrictions. They grant preferential market access through tariff reductions and by easing non-tariff barriers.

India's Major Trade Agreements

1. India–ASEAN FTA
2. India–South Korea Comprehensive Economic Partnership Agreement (CEPA)
3. India–Japan CEPA
4. India–Sri Lanka FTA
5. India–UAE CEPA

Terms of Reference (ToR) refers to the formal framework or guiding document that lays down Scope of Negotiation, Objectives, Timeline etc.

“Anna-Chakra” Supply Chain

Recently the Union Minister of State for Consumer Affairs, Food and Public Distribution informed the Rajya Sabha about the implementation of the “Anna-Chakra” Supply Chain Optimisation Tool under the Public Distribution System (PDS).

About Anna Chakra

Initiative – Launched by the Department of Food and Public Distribution with World Food Programme and Foundation for Innovation and Technology Transfer (FITT) at IIT-Delhi to optimize PDS logistics.

Objective – Use advanced algorithms to identify optimal routes, ensuring faster, cost-effective, and eco-friendly movement of food grains.

Scale – Covers 81 crore beneficiaries, involving 4.37 lakh Fair Price Shops and ~6,700 warehouses across the country.

Impact – Route optimization in 30 states, saving about ₹250 crore annually.

Integration – Linked with FOIS (Freight Operations Information System) portal of the Railways through the Unified Logistics Interface Platform (ULIP) and integrated into the PM Gati Shakti platform, mapping FPSs and warehouses.

Benefits – Improves delivery speed, lowers fuel use, reduces logistics costs, and cuts carbon emissions.

About Public Distribution System (PDS)

PDS is India's food security mechanism designed to provide food grains at subsidised prices to tackle food scarcity.

Legal Framework – Functions under the National Food Security Act (NFSA), 2013, covering about two-thirds of the population (as per Census 2011).

Nodal Ministry – Implemented by the Ministry of Consumer Affairs, Food and Public Distribution.

PM Gati Shakti

A national master plan for multi-modal connectivity designed to boost infrastructure development and give India's manufacturing sector a competitive edge.

Objective – To ensure integrated planning and coordinated execution of infrastructure connectivity projects.

Collaboration – Brings together 16 ministries and departments of the Government of India under a unified platform.

Pseudomonas Aeruginosa

Researchers have now identified that a gene in the bacterium *Pseudomonas aeruginosa* shows bistable expression, offering new insights into what makes it so virulent.

About *Pseudomonas aeruginosa*

Nature – A gram-negative, aerobic, non-spore-forming bacterium found in soil and water; highly **adaptable and resistant to antibiotics**.

Pathogenicity – Acts as an opportunistic pathogen, posing serious risks to burn victims, immunocompromised individuals, and patients with chronic lung diseases.

Infection – Responsible for pneumonia, urinary tract infections, bloodstream infections, keratitis (eye infection), and post-surgical or burn wound infections.

Antimicrobial Resistance – Many strains are multidrug-resistant (MDR), making treatment difficult; recognized by WHO as a priority pathogen for new antibiotic development.

High-Risk Groups – Hospitalized patients, especially those on ventilators, catheters, or with open wounds.

Transmission – Spread occurs via contaminated surfaces, water, soil, or direct contact—often through hands.

Bistable Expression

Bistable expression refers to a biological or genetic system in which a cell can stably exist in two distinct states of gene expression (ON or OFF), rather than showing a gradual or intermediate response.

