

Avangard Hypersonic Missile System

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Context: Russia's first regiment of Avangard hypersonic missiles has been put into service

- Previously referred to as Project 4202,
- It is a nuclear-capable missiles can travel more than 20 times the speed of sound
- They have a “glide system” that affords great manoeuvrability and could make them impossible to defend against.
- Mounted on top of an intercontinental ballistic missile, the Avangard can carry a nuclear weapon of up to two megatons.
- Hypersonic missiles, as their name implies, fly very fast, at above Mach 5 – ie at least five times the speed of sound.
- They can be cruise-type missiles, powered throughout their flight. Or, they can be carried aloft on board a ballistic missile from which the hypersonic “glide vehicle” separates and then flies to its target. Such “boost-glide” systems, as they are known are launched like a traditional ballistic missile, but instead of following an arc high above the atmosphere, the re-entry vehicle is put on a trajectory that allows it to enter Earth's atmosphere quite quickly, before gliding, unpowered, for hundreds or thousands of kilometres.
- The manoeuvring capability of the Avangard hypersonic missile makes it difficult to predict its trajectory, and gives it the ability to protect itself from air and ballistic missile defences by delivering nuclear warheads to targets, for instance, in Europe and the US.
- Avangard missiles have a range of over 6,000 km, weigh approximately 2,000 kg and can withstand temperatures of

over 2000 degree celsius.

- Avangard hypersonic glide vehicle is a technological vehicle comparable to the 1957 Soviet launch of the first satellite.

Other

- The US has its own hypersonic missile programme, as does China
- Russia allowed US experts to inspect the Avangard under the rules of the 2010 New START treaty, an agreement that seeks to reduce the number of strategic nuclear missile launchers. The New START accord, which expires in February 2021, is the last major nuclear arms control treaty between Russia and the US.
- In August this year, the US withdrew from the Intermediate-Range Nuclear Forces Treaty (INF), which was signed by US President Ronald Reagan and Soviet leader Mikhail Gorbachev in 1987. Russia has linked the development of Russia's strategic weapons to the US withdrawal from the Anti-Ballistic Missile Treaty (ABM) in 2002