

Race on for protection against hypersonic missiles

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Israeli hypersonic missile interceptors were on display at the Paris air show.

Defense firms are racing to meet demand for systems to protect against attacks using tricky-to-intercept hypersonic missiles, with several on display at this week's Paris Air Show.

Flying at multiples of the speed of sound, "everything's going faster, that's what changes the game," said Lionel Mazon, of European missile maker MBDA's Future Systems division.

"They change course. It's hard to know whether they're coming towards you, it's challenging to predict their behavior," he added—although the new missiles "can be intercepted, especially in the terminal stage" of their flight.

MBDA said Tuesday it had launched a three-year program to develop an interceptor dubbed Aquila, with 19 partner firms from five EU nations—France, Germany, Italy, the Netherlands and Spain.

Brussels is expected to chip in with 80 million euros (\$87 million) from the European Commission.

But no MBDA interceptors are expected to fly before 2030.

Next generation

Some of the first trials by fire of hypersonic systems have come in Ukraine, where Kyiv said in May it was able to shoot down a Russian Kinzhal missile flying at over five times the speed of sound (6,000 kilometers or 3,730 miles per hour).

Russian President Vladimir Putin had previously described the weapons as "invincible"—although Kyiv has since claimed more shootdowns.

At Paris' Le Bourget airport this week, defense manufacturers are more focused on upcoming generations of hypersonic missiles that combine extreme speed with the ability to manoeuvre throughout their flight.

Flying on almost horizontal trajectories between the ranges covered by

existing low- and high-altitude anti-air systems, these include China's DF-ZF hypersonic glider and Russia's Zircon hypersonic cruise missile.



Israel's arch-enemy Iran recently announced it has developed a hypersonic ballistic missile.

Countering such attacks means combining a detection system with a interceptor missile that can itself reach hypersonic speeds.

"We have to be more manoeuvrable than them, with gigantic speeds at the moment of intercept, more than 12,000 km/h," MBDA's Mazenq said.

"The challenge is to defeat the threat in the altitude between 25 to 75 or 80 km, the environment is totally different and most of the systems that exist today feel uncomfortable" so high up, said Pini Yungman, head of air defense at Israeli group Rafael.

That leaves a gap tens of kilometers high in which hypersonic missiles can do "all sorts of maneuvers," he added.

The Israeli firm's unveiling of its Sky Sonic hypersonic interceptor Monday drew huge crowds to its Le Bouget stand—as well as Israeli Defense Minister Yoav Gallant.

The missile boasts "a very unique seeker to detect and track the threat" that can react in "milliseconds, nanoseconds or even less," Yungman said.

Rafael says that development of the Sky Sonic has already cost tens of millions of dollars and that it is now looking for states willing to join the program.

Its unveiling comes just after Israel's arch-enemy Iran announced it had developed a hypersonic ballistic missile.

Playing catch-up

As well as MBDA—who are displaying a mockup of their Aquila [interceptor](#) out on the tarmac at the airshow—a consortium led by Spanish firm Sener that includes Germany's Diehl Defense has received 100 million euros for their own project.

While both Russia and China have showed off their hypersonic weapons, European countries and the United States are still working on theirs.

American defense research agency DARPA says it has successfully tested a [missile](#) called HAWC that uses atmospheric oxygen to fuel its engine.

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