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BENCHMARKS

SIX YEARS TO QUALIFICATION

- ▶ **SEPTEMBER 13, 2000**
Launch of AASM program.
- ▶ **OCTOBER 9, 2002**
First in-flight carriage.
- ▶ **DECEMBER 1, 2002**
Catapult launch and desk landing tests under a Rafale M on the Charles-de-Gaulle aircraft carrier.
- ▶ **JULY 26, 2006**
First test launch from a Rafale under operational conditions.
- ▶ **DECEMBER 18, 2006**
First qualification firing of the weapon, following manufacturer validation tests.

PROPULSION. The AASM weapon system, primarily intended for the Rafale fighter, will enter service in 2007, filling a new slot in the panoply of precision guided weapons.

AASM MISSILE SOON TO ENTER SERVICE ON RAFALE

The AASM (*armement air-sol modulaire*) modular air-to-ground weapon system was launched in 2000 to meet a requirement of the French Ministry of Defense. Now completing qualification, the AASM was designed by Sagem Défense Sécurité, a Safran subsidiary. According to Jean-Christophe Mügler, director of the systems department at Sagem Défense Sécurité, the AASM is a “guidance kit and a propulsion kit mounted on a warhead, giving us a medium-range precision air-to-ground weapon.”

This new guided missile falls into a new market segment, since it is midway between

short-range laser-guided weapons and cruise missiles. In addition to the guidance kit, the AASM is fitted with a rocket motor that gives it an extended standoff range of more than 50 kilometers, as well as a large firing envelope.

Fire and forget

“The AASM is an all-weather, fire & forget type precision weapon,” notes Christian Dedieu, head of systems and modernization programs at Sagem Défense Sécurité. “In other words, the pilot can disengage right after firing his weapon and concentrate on defending himself, with the added advan-

tage that the AASM is fired from beyond the range of enemy air defense systems.”

The AASM is currently offered with two different versions of the guidance kit: INS/GPS (Inertial Navigation System/Global Positioning System), and INS/GPS/IR (adding an infrared sensor). Both systems offer accuracy to within a meter and optimize impact conditions; i.e., they control the trajectory to strike the target from above. “The IR terminal guidance model compensates for target positioning uncertainty and/or GPS jamming,” says Jean-Christophe Mügler. This version of the AASM can be used day or night, and only requires the target’s approximate coordinates since it compares an image stored in its memory with the real-time image provided by the infrared sensor.

Adaptable guidance kit

The modular guidance kit is now configured for 250 kilogram warheads. But as Christian Dedieu explains, “It’s designed for use with warheads of 125, 500 or even 1,000 kilos! And other types of seekers could be added in the future.”

Already authorized for use on the Rafale, where it will be one of the primary weapons, the AASM may shortly be qualified on the Mirage 2000D as well. “Up to 3,000 AASMs could be delivered in the French market, in several batches,” according to Mügler. The first examples of the INS/GPS version will be delivered this year, concurrently with its qualification, for a complete technical-operational assessment. Production will then ramp up to about fifteen kits a month, including both the INS/GPS and INS/GPS/IR models.

“The AASM is a compact weapon,” notes Mügler. “It uses the conventional weapon hard points, so there are no particular problems for integration on the aircraft.” This also means excellent prospects in export markets, with a sales target of several thousand units. “In December 2005 we signed a contract with Morocco to provide these weapons for their Mirage F1s,” says Christian Dedieu. “A number of other countries could well be interested in the AASM to modernize their aircraft or their defense capabilities.” Furthermore, the AASM uses controlled-effect warheads, which are perfectly suited to modern combat requirements: they offer enhanced strike effectiveness with higher precision, and reduced exposure for the aircraft and pilot. ■