ANTI-MISSILE

Belarus develops Talisman self-protection suite

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This artwork shows how the Talisman pods can be mounted on underwing hardpoints and can carry weaponry on their lower surface.

Oboronniye Initsiativi: 1331733

An airborne self-defence suite intended to protect combat aircraft from all types of radar-guided air-to-air and surface-to-air missile is under development in Belarus by a new closed joint-stock company set up to develop and manufacture airborne ECM self-defence suites for aircraft.

The name of the company has not yet been finalised, nor has the number of partners. However, it is likely to be designated Oboronniye Initsiativi (Defence Initiatives) and to consist of up to seven partners. Seven are currently involved, *Jane's* was told, but this could fall to five.

Three initial projects are planned – the Talisman EW suite for combat aircraft, a similar system for military transport aircraft and another for civilian airliners.

The impetus to form the company followed the successful development and production of the Satellit and Satellit-M jamming systems by Belarus's institutes and defence industry. Satellit-M is produced by the 558th aircraft repair plant (558.ARZ) in Baranovicsi, Belarus, and the first customer was the Kazakhstan Air Force, which bought three systems for use on the Su-27UBM2, which is being modernised by the 558.ARZ.

The main components of the Talisman system are two containers – the KPB (konteyner pravovo borta) and KLB (konteyner levovo borta) that must be fitted under the wing of the aircraft and positioned as far apart as possible. Each is designed to fit onto an existing underwing hardpoint and carries similar attachment points on its lower surface. The latter allows weapons to be hung underneath the container so that the aircraft does not lose the use of the location occupied by the container.

The system is connected to a control and display console located in the aircraft's cockpit.

Each container is 2.1 m long, 26 x 26 cm in cross-section, weighs 40 kg and requires 500 W of electrical power. Inside each container is a radar-warning receiver, front and rear-mounted jammers, a radar-based missile-approach warning system, plus control and recording subsystems. The jammer at the front of the container is designated PPS (perednaya polusfera) while that at the rear is the ZPS (zadnaya polusfera).

Support equipment includes two transporting carts, a set of cables, a control console, a power source and a set of covers designed to block RF radiation during ground testing.

Talisman covers a frequency range of 8.0 to 12.0 GHz and provides protection over front and rear sectors measuring ±45 degrees in azimuth and ±30 degrees in elevation from the aircraft's longitudinal axis. The system is designed to have a service life of 15 years. ●

SPECIAL REPORT

Capabilities of Glonass satellite are questioned

The planned launch of additional Russian Glonass navigation satellites scheduled for 5 December has led to commentary in the Russian press of the importance of this satellite system to weapons guidance. Press reports in Russia had suggested that the launch might be delayed until at least late December due to technical problems, write *David C Isby and Doug Richardson.*

On 11 November, the Russian Federal Space Agency reported that a fault had been identified in one of the subsystems of Glonass-M spacecraft 39 and that the satellite would be returned to the manufacturer for troubleshooting, but stated that this would not affect the planned December launch.

On 22 November, the agency confirmed that the launch date was still 5 December, and that the process of mating spacecraft 39, 40 and 41 with the DM-3 upper stage of the Proton-M launch vehicle had begun.

In a press conference devoted to the Glonass system on 27 October, Russia's First Deputy Prime Minister Sergey Ivanov had stated that the development of precision weapons in the country would be impossible without a Russian satellite-navigation system. "Precision weapons cannot exist without Glonass. All the programmes involving precision weapons involve Glonass, too," he said.

However, the November issue of the monthly Moscow tabloid, Sovershenno Sekretno , which features political exposés and investigative reporting, contained an article critical of the Glonass system.

A Russian Iskander theatre ballistic missile (SS-26 'Stone') used in action against Georgia in 2008 had missed its target because of an inability to access the Glonass system, the magazine claimed, while the Topol-M (SS-27) mobile intercontinental ballistic missile (ICBM) system had been unable to use Glonass when first introduced.

Despite receiving extensive publicity from the Russian government and media as an example of high-technology success, the current 26-satellite Glonass constellation (19 in use, five under maintenance and two on standby) lacks sufficient accuracy for weapons-guidance applications, the article claimed.

In the late 1990s, financial constraints had resulted in the constellation dropping below the 18 needed to maintain global real-time coverage, but in 2001, the Russian government decided to rebuild the constellation.

On 23 November, the Russian Federal Space Agency listed 20 satellites in the constellation as operational and four as unusable.

The article in Sovershenno Sekretno stated that "the reliability, service life and viability of Glonass devices are many times lower than those for GPS. The regulation service life of an American satellite is 10 years, as opposed to two or three years for ours".

In practice, the US Navstar Block II/IIA spacecraft was designed to have an operational life of 7.5 years, a figure raised to at least 10 years for the follow-on Navstar Block IIR.

The operational life of future Glonass spacecraft is being increased. Older satellites have a two- to three-year life, but the follow-on Glonass-M series were designed for a seven-year lifetime and the third-generation Uragan-K spacecraft are designed to have a lifetime of 10 to 12 years. ●