



BULLETIN

No. 64 (659), 13 May 2014 © PISM

Editors: Marcin Zaborowski (Editor-in-Chief) • Katarzyna Staniewska (Managing Editor)
Jarosław Cwiek-Karpowicz • Aleksandra Gawlikowska-Fyk • Artur Gradziuk • Piotr Kościński
Łukasz Kulesa • Roderick Parkes • Patrycja Sasnal • Marcin Terlikowski

South Korea's Air and Missile Defence: Below the Threat Level

Marcin Andrzej Piotrowski

South Korea (ROK) is facing a multifaceted threat from the artillery, ballistic missiles and drones of North Korea (DPRK). At the same time, due to its relations with China, and because of historical issues, Seoul is resisting participation in the integrated missile defence network with Japan and the United States, which would serve to protect not only American bases, but also their all allies in region. For this reason, ROK is seeking alternative partners in building its national air and defence system.

The Threat from the North. DPRK ballistic missiles are a growing threat to the U.S. troops in the region, and for ROK. The missiles are an important element of Pyongyang's strategy, because its army, though large (with 1.2 million troops), is poorly trained and equipped. Seoul has a well-equipped army of 671,000 troops, and is supported by U.S. forces on the Korean Peninsula and in Japan. During the past two decades, it has also been apparent that ROK and the U.S. have different perceptions of the threat. In the 1990s, the U.S. began to protect their bases on the Korean Peninsula with the Patriot systems, at a time when ROK was beginning studies on missile defence. Seoul has been much more focused on the threat from conventional long-range artillery and rockets, weapons which give DPRK leverage by allowing it to threaten ROK capital (with a population of 1.5 million), just 40 km from the border. ROK also estimates that DPRK has up to 5,000 tonnes of chemical agents. Since the beginning of Pyongyang's missile tests, Washington has focused on the defence of its bases in Asia and the continental United States. Seoul began to be much more concerned by DPRK's nuclear tests in 2006, 2009 and 2013. DPRK added a new dimension to the threat when it demonstrated its drones in action in 2014, and the country may have around 300 UAVs (including 10 advanced Yak-61s).

DPRK have tens of thousands of heavy artillery devices and multiple rocket launchers with ranges of up to 80 km, and may also have an arsenal of a few hundred ballistic missiles. U.S. intelligence estimates that DPRK has 100 mobile launchers for short range ballistic missiles (80-500 km), mainly Scuds and Scarabs. DPRK might also have 50 launchers for the medium range Nodong ballistic missiles (which, with a range of 1,500 km, are capable of reaching Japan), as well as 50 launchers for the intermediate range Musudan ballistic missiles (4,000 km range, capable of reaching Japan and Guam). Pyongyang is also testing the Taepodong-2/Unha space launch vehicle, which might be converted for ballistic missile use, with a range of up to 6,000 km. More questionable are the capabilities of Hwasong-13, a mobile inter-continental ballistic missile, mock ups of which were demonstrated during parades in 2012 and 2013. U.S. intelligence agencies are divided in their estimates about DPRK's capability to miniaturise nuclear devices, but ROK intelligence estimates that such technology is possible if the Nodong missile is adapted for nuclear a warhead weighing of 1.5 tonnes.

The American Factor. A bilateral alliance between the U.S. and ROK was established in 1953. The presence of U.S. troops and the American "nuclear umbrella" are of essential importance for in DPRK's calculations and deterring aggression towards ROK. U.S. troop reductions were halted when the number of soldiers reached 28,500 (which might be augmented by three divisions) and Seoul committed to pay for 6% of the U.S. bases' costs. The U.S. is currently in the process of realigning its bases on the Korean Peninsula and transitioning operational command to ROK (it had previously been foreseen that South Korean troops would come under direct U.S. command). Since 1994 Washington, has been building the missile defence for its troops in ROK, firstly with Patriot PAC-2 batteries.

Washington proposed an integrated regional missile defence with Japan and the ROK many times, but Seoul refused, not wanting to antagonise China and Russia, which are influential in Pyongyang and oppose high altitude and long-range ballistic missile defence systems. New plans for common missile defence were included in a bilateral agreement signed in 2013, and the Pentagon has stressed that implementation should be based on interoperability between the defence networks of the U.S. and ROK's forces. There are currently nine American batteries in ROK (with 45 PAC-2 launchers and 27 for the more advanced PAC-3), which might be augmented by U.S. Navy destroyers envisaged for the protection of ROK and Japan and equipped with Aegis ballistic missile defence systems and SM-3 interceptors.

Searching for Alternatives. During the last two decades, governments in Seoul have searched for solutions that could limit ROK's dependency on U.S. equipment and technologies and support South Korean military research and development. While this is realistic in the area of air defence, it seems less likely regarding missile defence. ROK armed forces' modernisation plans for the period to 2020 also serve South Korean industry and create additional jobs. The result is that local corporations (Samsung, Hyundai and Hanjin) are delivering 77% of military equipment to ROK armed forces. In 2006, the Ministry of Defence also created the Defence Acquisition Programme Administration (DAPA), responsible for procurement planning and implementation. Seoul's approach has had a negative impact on the slow progress of building the national air defence network, which was, until recently, based on the obsolete Nike-Hercules and HAWK systems. In 2007, South Korea decided to buy second-hand PAC-2 batteries in Germany (costing \$1 billion) and was seeking further offers and partners as alternatives to American cooperation. Among these options was Russia, which, on an arms-for-debt basis, assisted with some elements of South Korea's Chiron portable anti-aircraft missile, cheap and mass produced since 2005. Moscow also offered S-300 and S-400 systems to Seoul, but the transfer of some technologies useful for South Korean indigenous construction would be more likely. ROK is also cooperating with Israel, including an offer of early warning and localisation radars against DPRK artillery units.

KAMD. The majority of experts assess ROK's current air and missile defence as inadequate as regards the threat from DPRK. Since 2006, Seoul has been working on low-altitude defence, the Korea Air and Missile Defence (KAMD), which would initially cost \$3 billion. This is currently based on the Israeli C3I Citron Tree system and two Green Pine early warning radars. Since 2009, KAMD has included eight strategic location batteries with 48 launchers and 192 PAC-2 GEM-T missiles. Negotiations about the delivery of an additional 112 PAC-2 missiles from the U.S. are ongoing (at a cost of \$404 million). Between 2008 and 2012, ROK Navy also received three modern KDX-III Sejong-class destroyers with Aegis systems and SM-2 missiles. It should be stressed that ROK army is saturated with MANPADS, including more than 3,000 Chiron, Iglá, Stinger and Javelin missiles.

In the context of the growing threat, ROK has decided to augment KAMD further between 2016 and 2020, with American PAC-3 missile interceptors (\$1.3 billion). Seoul is planning another three Sejong-class destroyers with SM-6 missiles, more advanced than the SM-2s. It is possible that Seoul will decide to buy more capable missile defence systems, such as THAADs, SM-3s, Arrows, or even S-400s. Due to the scale of the rocket threat, the large area of Seoul and the costs of interceptors, procurement of the Israeli Iron Dome system is much less likely. However, ROK is planning to buy 10 RPS-42 TASRS Israeli radars (\$191 million) in the near future, for detecting drones and cruise missiles at very low altitude.

The "Kill Chain" Concept. The expected high costs of counter-rocket, missile and air defence have caused a review of investments in conventional offensive equipment. Revised plans for ROK's armed forces are now focused on the "Kill Chain," a concept of deterrence and pre-emptive strikes more ambitious than KAMD. They are foreseen as capabilities for immediate retaliation and destruction of DPRK rocket and missile units. The Kill Chain will utilise ROK's air forces (with 210 multi-purpose aircraft), as well as satellite reconnaissance, early warning Boeing-737 planes, and RQ-4 drones. This concept is also in accordance with an agreement with the United States, revised in 2012, which permitted ROK to arm itself with missiles with a range of up to 800 km, thus putting the whole DPRK territory within reach. Here, attractive options for ROK might be the highly accurate Hyunmu-2 ballistic missiles and Hyunmu-3C cruise missiles.

Conclusion. As DPRK has advanced its nuclear programme, the threat perceptions of Seoul and Washington have become closer. South Korea undertook a long period of studies into its own missile defence needs, initially depending fully on U.S. systems, and later introducing second-hand PAC-2s. In the past decade, Seoul has modernised its defence industry and developed cooperation with Russia and Israel, resisting U.S. plans for an integrated regional missile defence network. Contrary to South Korea's original plans, it is less likely to achieve independence from the United States, which appears to be shown by the latest decision to buy PAC-3s and SM-6s. The KAMD network is a work in progress, with options for further modifications to increase altitude and range. The current shape of KAMD is the result of priorities in ROK's defence strategy and Seoul's reluctance to cooperate with Japan, not to mention the need to avoid antagonising China and Russia. South Korea is also moving towards a much more ambitious defence system, with capabilities to deter threat and retaliate should DPRK attack. Poland should look not only at Seoul's experience of building KAMD, but also at the development of its doctrine of immediate retaliation against North Korea, independent from U.S. security guarantees and nuclear deterrence.