

Rapidly Deployable Mobile Counter Rockets Artillery and Mortar (C-RAM)

Letter of Intent ¹ signed	Memorandum of Understanding ² signed	Delivery
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Participants



German C-RAM system Mantis currently in use.

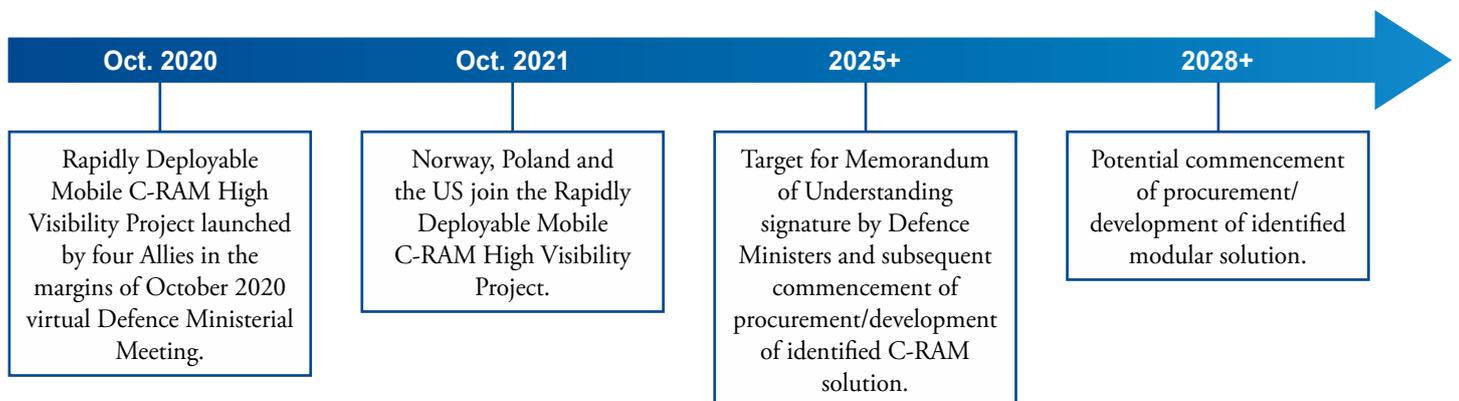
What is C-RAM?

The Counter Rockets Artillery and Mortar (C-RAM) is a set of systems used to detect and destroy incoming rockets, artillery, and mortar rounds in the air, before they hit the ground. This multinational High Visibility Project aims to develop and procure such counter rockets, artillery, and mortar capabilities that are mobile and can be rapidly deployed to protect troops and at risk installations.

Multinational effort

In 2018, Allied National Armaments Directors initiated the development of a structured approach for facilitating multinational cooperation in key capability areas. This resulted in the creation of the Enabling Multinational Cooperation in the CNAD⁴ work strand. The approach has been validated in 2019, through a first pilot case exploring cooperation opportunities in the area of ground-based air defence. One of the related areas investigated was the development and procurement of rapidly deployable mobile counter rockets, artillery, and mortar capabilities.

Following further analysis and negotiations, the Defence Ministers of Germany, Greece, Hungary, and the United Kingdom launched the multinational Rapidly Deployable Mobile C-RAM High Visibility Project through the signature of a Letter of Intent in the margins of the October 2020 Defence Ministerial Meeting. Following the signature of the Letter of Intent, the four participating Allies started working on the development of a detailed set of common requirements and a corresponding Memorandum of Understanding, which will provide the legal basis for the development and procurement of the rapidly deployable mobile C-RAM capability.



1 Initial non-binding document outlining participants' will to explore the area in question further.
 2 Legally binding document specifying details of cooperation.
 3 Multinational initiative tailored to address key capability areas, usually launched on the Defence Ministers' level.
 4 Conference of National Armament Directors – senior committee responsible for promoting armament cooperation among nations.

Why is it important?

C-RAM capabilities are key for NATO's readiness. Development and procurement of effective capabilities will enable the Alliance to better defend its forces and forward operating bases against rockets, artillery, and mortar threats. The project will therefore be a critical building block in a layered defence for effectively protecting personnel, facilities, and equipment.

Fielding C-RAM capabilities multinationally could allow participating Allies to more easily explore highly innovative solutions such as directed energy based systems. Furthermore, this multinational initiative could provide for a lower cost and more resilient solution, while increasing interoperability among the participants.

How does it work?

-RAM is made up of variety of components which provide the ability to sense, warn, respond, intercept, control, and protect deployed forces. When a threat is spotted, the weapon system automatically detects, evaluates, tracks, engages, and conducts battle-damage assessment. While the majority of current systems uses explosive bullets as munition, there are also more modern laser-based systems. Such technologies provide considerably lower interception costs, increased range, and decreased interception time.

Did you know?

The most effective C-RAM capabilities are able of firing 4,500 rounds per minute, countering anything from missiles to rockets to artillery shells.

