



KONGSBERG



**NASAMS**  
Air Defence System

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# WORLD CLASS

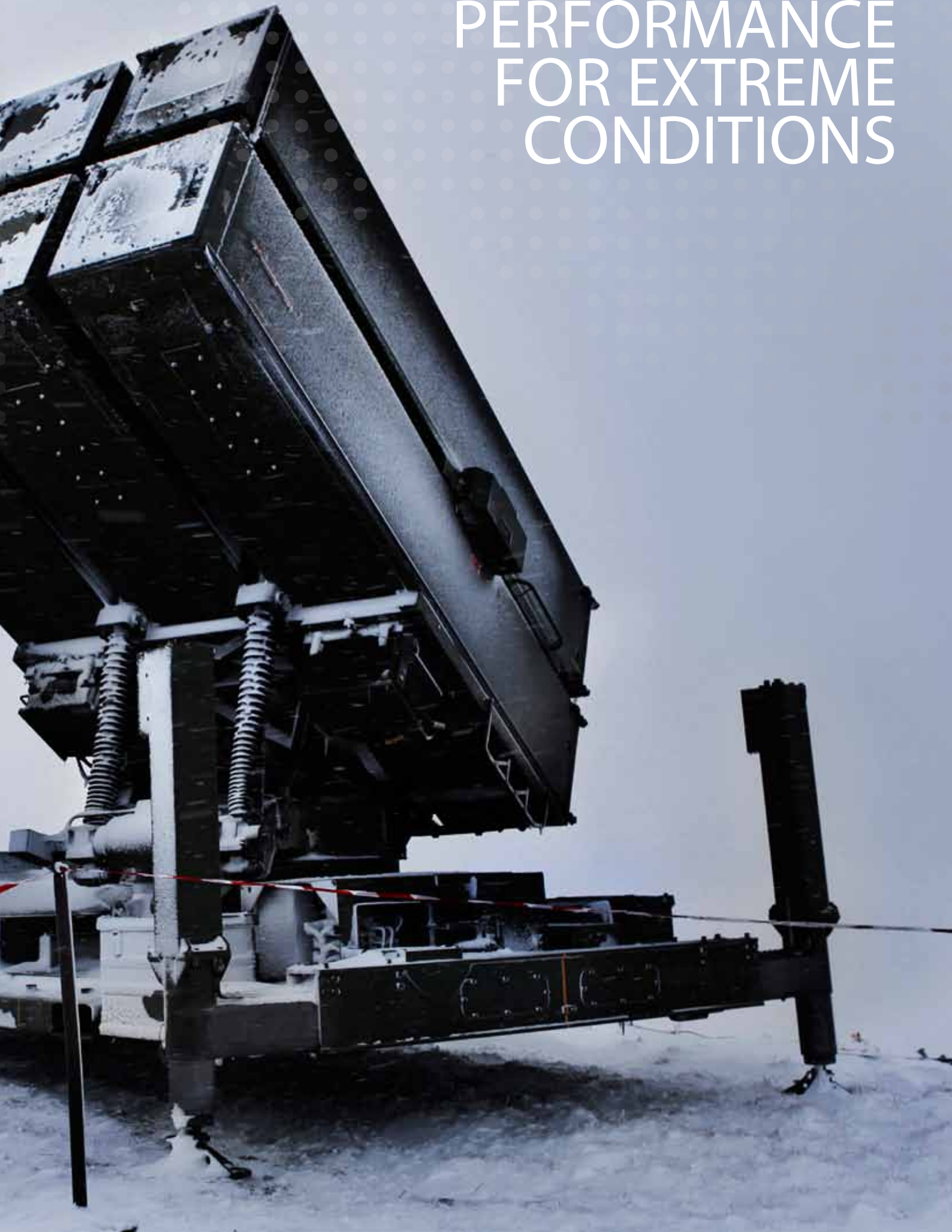
- through people, technology and dedication

Kongsberg Gruppen ASA (KONGSBERG) is an international technology corporation that delivers advanced and reliable solutions that improve safety, security and performance in complex operations and during extreme conditions.

KONGSBERG is a customer focused organization with a worldwide performance culture. KONGSBERG works with demanding customers in the global defence, maritime, oil and gas and aerospace industries.



# EXTREME PERFORMANCE FOR EXTREME CONDITIONS



## NASAMS

### - The Network Centric Air Defence System

NASAMS is the world's first operational Network Centric Medium Range Air Defence System. Its unique features with net centric architecture, multiple-simultaneous engagement and beyond visual range (BVR) capabilities, closely integrated and adapted to a country's adjacent weapons and command and control systems, expands the defended area and enhances the total fighting capability of the force.

Since the introduction in Norway, another four countries in NATO and EU have acquired NASAMS. NASAMS is renowned for its use of the Raytheon AMRAAM missile, but is further- more operational with command and control of a range of guns and short and medium range missiles, such as e.g. L-70 guns, RBS 70 and HAWK. It has also proven integration with directed-energy weapons (DEWs) and longer range systems, such as e.g. Patriot. A total of eight nations have acquired the KONGSBERG command and control solution adapted to their requirements.

#### THE SYSTEM

A standard NASAMS unit has a modular design comprising a command post FDC, an active 3D radar AN/MPQ64F1 Sentinel, a passive electro-optic and infra-red sensor and a number of missile canister launchers with AMRAAM missiles. Normally, four NASAMS units are netted in a battalion network.

The system is tied together with a uniquely designed "hard-real-time" communication network to ensure minimum latency over large distances for maximum performance of the AMRAAM missile.

This modular design permits mission oriented task force organization of NASAMS, allowing the operators to maximize the effect of the components and tailor the system to the task.

#### CONTINUED ACTIVE MISSION DEPLOYMENT TO WASHINGTON, DC, UNITED STATES

The United States selected NASAMS for the defence of the capital Washington DC in the War on Terror.

The 24/7 deployment to Washington has accumulated more than 65.000 hours of active mission. NASAMS has proven extremely reliable and demonstrated very high availability.





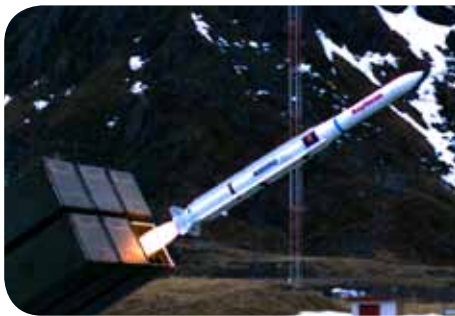
NASAMS IS DESIGNED FOR OPERATION  
IN ARCTIC, SUB TROPIC AND WARM-DRY  
CLIMATIC CONDITIONS. IT IS TESTED AND  
PROVEN UNDER ALL CONDITIONS.



# STRONG PERFORMANCE CULTURE

## VALUE OF NASAMS

KONGSBERG/Raytheon proposes a fielded and proven NASAMS configuration able to protect several areas and high-value assets separated by large distances. Endurance, stamina and flexibility are typical NASAMS characteristics enabled by the relatively small and agile components comprising the system. The NASAMS' ability to protect static and highly mobile assets with the same type of equipment opens for a range of both military and civilian roles and missions.



### DUAL USE AMRAAM MISSILE

NASAMS uses the Raytheon AMRAAM missile, identical to the AMRAAMs used on fighter aircraft. This dual-use concept has operational advantages and reduces logistics cost.

### DEFENDS A LARGE GEOGRAPHICAL AREA

The radar and launcher elements can be deployed over a large area separated by up to 25 kilometres, providing an extended coverage with few elements. Dispersed elements increase its survivability against enemy air and ground attacks.

### AN INTERNATIONAL SYSTEM

The KONGSBERG command post and networking technology are selected by several nations in NATO and the EU. Experience and practical knowledge from these programs are embedded in NASAMS and ensure proven interoperability with a nation's higher echelon unit and allied, NATO/EU forces.

NASAMS is in operational use in Norway, Spain the US and the Netherlands, and in production for Finland and one undisclosed customer. Poland, Greece, Sweden and Turkey selected the KONGSBERG command and control solution for meeting their requirements.

### NASAMS EVOLUTION

NASAMS is designed to evolve with the development of technology and can integrate with or utilize future technology when available. This can be future active or passive radars and sensors, Sense & Warn capability, and a wide range of effectors (e.g. longer and shorter range missiles, C-RAM, etc.).





## NASAMS FEATURES

Status of NASAMS	In production and in operational use
NASAMS Tests & tactical firings	162 (90,5 % success)
AMRAAM Dual use (identical missile)	Fighter Aircraft and NASAMS
AMRAAM combat kills	>9
Target sets	Aircraft, UAVs, helicopters, cruise missiles, UCAVs
NASAMS Architecture	Open SW & HW architecture, COTS, Network Centric
Simultaneous multiple engagements	72
Engagement modes	Active and/or Passive
Mission of Reference	> 70 000 hours in the United States (continuous operations (24/7), ongoing)
Transportability	Air (C-130 and helicopter), Sea and Land
Data links (implemented and in use)	Link 16, JRE, Link 11, Link 11B, LLAPI, ATDL-1
Mission Planning Tool	Embedded and stand alone (PC)
NASAMS User nations	6
Air Defence C2 (FDC) User nations	10
AMRAAM User nations	35



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Air Defense partner - **Raytheon**

