KRONOS® GROUND SHIELD

ELECTRONICS DIVISION

MULTIFUNCTION AESA D-BAND TACTICAL RADAR

Forming part of the KRONOS Family of radars, KRONOS Ground Shield is an Active Electronically Scanned Antenna (AESA) multifunction radar, designed for surveillance and ballistic missile defence.

The key feature of the KRONOS Ground Shield architecture is its fully digital antenna based on technology already proven through in-service AESA radars. The core block of the digital antenna is the Digital Active Tile (DAT), which implements a full radar chain for each single radiating element, starting from the Waveform Generation up to the broadband ADC.

Over 1000 radiating elements (grouped into DATs) provide a completely distributed architecture controlled at single element level. This brings increased performance and functionality, in addition to the wide range of scanning architectures required to satisfy current and future operating requirements.

FULL BALLISTIC MISSILE DEFENCE

KRONOS Ground Shield covers the full spectrum of Ballistic Missile Defence (BMD) capabilities that modern complex scenarios require for an Early Warning Radar (EWR).

TACTICAL BALLISTIC MISSILE DEFENCE

High data rate and excellent detection accuracy for a tempestive cue of descending phase Tactical Ballistic Missiles (TBMs) for area defence.

TACTICAL BALLISTIC MISSILE SURVEILLANCE

Very extended range for wide area surveillance and Early Warning Initiation of ascending phase TBMs. Mission flexibility to support Tactical Picture Updating or cueing to FCR for self-reaction against ABT and TBM threats.

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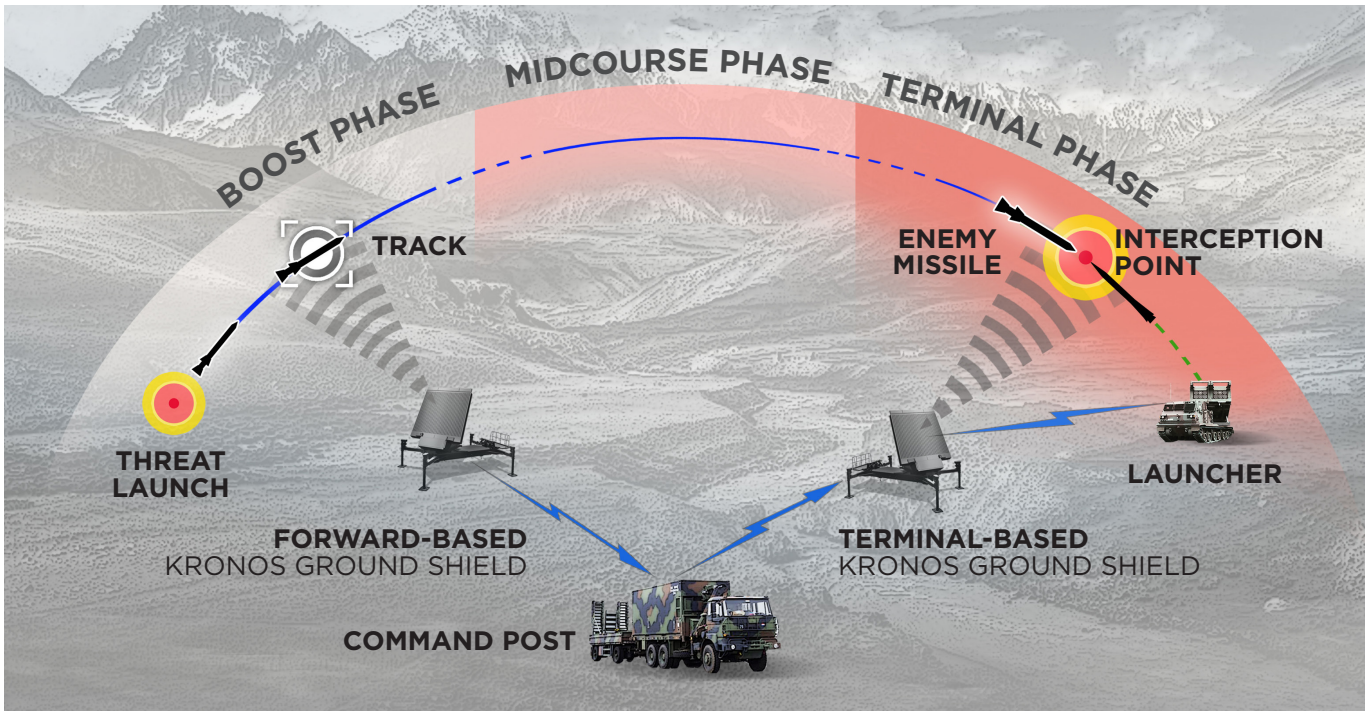

Dedicated track beams in elevation while maintaining coverage in the normal surveillance volume. The distributed architecture supports sustained mission operations as system continues to operate through failures.

KEY FEATURES

- New generation of software defined radar
- Full Digital Rx
- Full band ADC at single element level
- Full Digital Tx
- Waveform generation at single element level
- Excellent tracking accuracy thanks to bi-dimensional digital monopulse based on single element input
- High Range Resolution (Wide Band) to discriminate TBM Booster from TBM Re-entry Vehicle
- Advanced ECCM capabilities and Clutter/ Multipath suppression by means of Adaptive Digital Beamforming (ADBF)
- Stared antenna operation for radar performance extension

TECHNICAL DESCRIPTION

IRadar type	Multifunctional, Full DBF
Antenna type	AESA GAN technology
Frequency band	L/D 1.215GHz to 1.400GHz
Antenna rotation	15rpm
Search volume	360° in stared mode
IFF antennna	Co-mounted
Electronically scanning	Azimuth ±45° Elevation 0° to 90°
Instrumented range	≥1500km
Simultaneous track	>1000
Update time	4s rotating 1s stared
Elevation coverage	70° search
	90° tracking
Cooling	Liquid cooled

DIGITAL ACTIVE TILE - RADAR AT ELEMENT LEVEL

- Digital TRM
- Waveform Generation
- Tx RF Channel
- High Power Amplifier in GaN
- Rx RF Channel
- Full Band ADC

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