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INTRODUCTION

The company's advanced surveillance and protection capabilities guard against air and missile threats (including ballistic missiles), both for homeland security and in expeditionary environments. They protect blue forces and assets in out-of-area operations, at major events, and safeguard critical network infrastructures.

Our advanced joint C4I systems, fixed or deployable, permit immediate planning, tasking and execution of missions based on real-time Situational Awareness of the current scenario. Low, medium and high coverage of the surrounding airspace, together with early warning and very short reaction time response, are ensured by the presence of long/medium-range and battlefield surveillance sensors.

The company provides also total solutions for naval requirements through the whole warship lifecycle. Today, all modern navies need to comply with evolving mission scenarios. These include peacekeeping operations, shipping lane patrols, piracy deterrence, exclusive economic zones surveillance and oil platform protection, as well as search & rescue activities.

To meet these requirements, we develop and deliver naval systems and state-of-the-art technology radars offering high operational flexibility, leveraging a design approach based on its learning-by-doing philosophy. Its international footprint has been achieved delivering the best-in-class radar sensors in service with major customers worldwide.

The company has embraced a high-level strategy for ensuring continued advancement in our core technology areas. This process, underpinned by constant activity by our in-house laboratories devoted to specific areas of applied research, promotes the effective integration of new, innovative components within our existing capability portfolio. A key element of this strategy is the development of AESA radar capability based on the company's fully-owned GaAs and GaN technologies.



Land Radars

ARGOS 30VS 2D Coastal Radar

Argos 30VS is a fully coherent X-band primary radar for combined surface and air surveillance of sensitive zones of coastal environment and for Exclusive Economic Zone protection. The selection of the most appropriate technique from those available is based both on an extensive geographical and adaptive mapping system.

Argos 30VS can be easily integrated to provide a coastal surveillance system network. Argos 30VS is fully controlled from a remote position and the radar site is normally unmanned.

The radar can be sheltered (ISO standard) for truck transport. Argos 30VS supports three operational roles:

- Mode 1 - Long-range range surveillance (surface and air surveillance of small air/surface targets)
- Mode 2 - Medium range surveillance, characterised by a high rotation speed
- Mode 3 - Over-The-Horizon (OTH), low rotation speed.



AULOS® Passive Covert Radar

AULOS® is the passive radar system to provide detection and tracking capability for defence and homeland security applications. The system works by processing reflections from illumination sources such as commercial broadcast and communications signals. AULOS is an eco-friendly system since it doesn't produce electromagnetic pollution.



Passive radar systems are unique because they do not have their own transmitters but exploit the electronic waves already produced by existing sources e.g., FM radio signals, telecommunication equipment. Passive radar systems are often referred as Passive Covert Radar (PCR) and, as a covert radar, the system is ideal for military applications.

A passive radar is not detectable by Anti Radiation Missile (ARM) and not easily disturbed by jammers. Since it exploits low frequencies, it can be successfully used to detect and track small targets flying at low altitude in urban areas and even in difficult orographic conditions.

AULOS is a technologically advanced system, developed on the basis of a software defined radar approach. This involves signal sampling directly at the carrier frequency using COTS devices for signal reception and digital processing MultiCore and GPU technologies powered personal computer. AULOS has proven to be highly effective for maritime surveillance in coastal areas characterized by cliffs and reliefs, and more in general for detecting surface targets.

In its deployable configuration, Aulos has two receiving systems connected to two Uniform Circular Arrays (UCA), each with eight dipole elements, one array operating in the FM band and the other one in the DVB-T band. Each receiving system contains eight coherent receiving channels connected to the array dipoles.

KRONOS® GRAND **3D Multi-function Radar**

KRONOS® GRAND is a multi-function radar system designed to support air and coastal defence tactical operations. The system simultaneously performs surveillance, dedicated target tracking and ECCM. It detects and tracks any type of air and maritime threat, such as aircrafts, high speed missiles, low level UAVs, hovering helicopters, rockets and artillery.

It is a member of the KRONOS multi-function radar family, based on Active Electronic Scanning Array (AESA) technology.

Emerging threat scenarios and requirements for military forces to exercise increased security with reduced manpower and improved response times demand easily deployable tactical sensor units to support a range of different operations. In this context, the company produced the KRONOS GRAND MOBILE radar for tactical operations. It combines a range of capabilities into a single system, is easily deployed and can be put into operation in a very short time.

KRONOS GRAND can be easily integrated into a defence surveillance network, contributing to the general Recognized Air Picture (RAP). When integrated into a surface-to-air

missile system, the radar can simultaneously provide multiple missile uplinks. In addition, KRONOS GRAND also includes Counter Rocket, Artillery & Mortar (C-RAM) capabilities by providing simultaneously Fire Finder to detect and locate enemy artillery, and Fire Director to direct fire from friendly forces, estimating and recording shell impact points.



KRONOS® LAND **3-D Multi-function Mobile Radar**

KRONOS® LAND is a multi-function mobile 3D C-Band radar that employs an Active Electronically Scanned Antenna (AESA), hosted in a full standard 20-ft ISO container equipped with autonomous power supplying, temperature conditioning, loading and unloading means for high mobility.

KRONOS LAND successfully accomplishes coastal surveillance, point defence, gap filling and co-ordination of SAM systems.

KRONOS LAND automatically schedules and performs the activity classified as priority according to the tactical scenario by scanning the beam both in azimuth and elevation while mechanically rotating in azimuth at 60rpm.

KRONOS LAND supports the following main tasks:

- Air and surface surveillance up to 250km in range and 30km in height
- Air and surface tracking (500 tracks): according to the threat evaluation
- Dedicated tracking for at least 20 tracks with high data rate (1s) to reduce reaction time and engage time against small and low visible targets
- Target designation to weapon systems
- Deployment and tear down time of less than 15 minutes
- Counter Rocket, Artillery & Mortar (C-RAM) capabilities



Land Radars - Air Defence and Surveillance LYRA® 10 and LYRA® 50

LYRA® 10 Ground Surveillance Radar

The LYRA® 10 is a ground surveillance radar system completely designed and developed by the company for homeland protection and man-portable applications. It is available in different configurations.

The LYRA 10 can detect people, vehicles, boats and low altitude flying helicopter. It provides outstanding range and azimuth data. In addition, it automatically performs target classification. LYRA 10 has the following capabilities:

- Automatic sector surveillance
- Automatic audio/video alarm for detection
- Automatic target tracking
- Automatic classification of a selected target.

In addition, it incorporates the following characteristics:

- Very low electromagnetic emission
- Short re-deployment and maintenance time
- Ease of operation
- Remote control and command control datalink facilities
- Power supply through batteries or mains

When powered up, the LYRA 10 automatically goes in stand-by mode. In stand-by mode, all system functions are active but there is no antenna scanning and no radar emissions.



LYRA® 50 Harbour/Coastal Radar

The LYRA® 50 is the most recent system completely designed and developed for vessel traffic service and coastal surveillance applications.

It has the following capabilities:

- Detection of steady or moving vessels, boats and low flying targets
- High spatial resolution which provides rejection of unwanted background echoes and ensures the required system sensitivity

It uses fully solid-state technology and very powerful digital processing boards, featuring proprietary state-of-the-art algorithms, which allow the following improvements when compared to existing radars:

- Low in transmission peak power
- Low voltage supply
- High compactness
- High reliability
- Frequency diversity transmission on multiple frequencies capability

The LYRA 50 X band guarantees a coverage from 50m to 48km (instrumented range), with a constant range resolution obtained by means of pulse compression technique. Built-In Test Equipment monitors the system status continuously and detects and locates faults. Detection performance is compliant with IALA V-128 Advanced Recommendations.



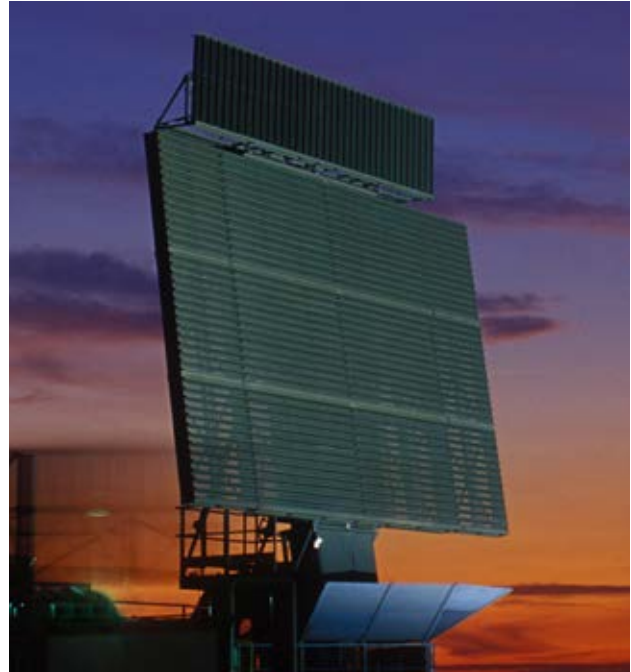
RAT-31DL **L-Band Solid-state 3D Air Surveillance Radar**

The RAT-31DL is an advanced L-band solid-state phased array, 3D surveillance radar NATO Class 1, effective to a range of over 470km. It is designed to operate within modern military air defence systems and is a direct derivative of the successful RAT-31 SL.

The RAT-31DL rapidly adapts to a broad spectrum of changing operational scenarios where jammers coexists with heavy clutter. It uses multiple simultaneous independently phase controlled pencil beams, which provide flexibility in scanning and very high data rate, effective for clutter processing. Each beam provides monopulse altitude measurements with excellent accuracy, even in the frequency agility mode. Reduced peak power provides resistance against Anti-Radiation Missile (ARM) and Electronic Counter Measures (ECM).

Fixed and adaptive notch Moving Target Indicator (MTI) filters increase the performance in ground and sea clutter, rain, chaff and clear conditions. Excellent Electronic Counter Counter Measures (ECCM) are provided by very low sidelobe antennas, reduced peak power, frequency agility, jam strobe reporting and by a separate receiver for ECM monitoring. The RAT-31DL can be controlled through the local radar

management console or through a remote console. The mechanical configuration is designed to facilitate assembly/disassembly on the battlefield, providing increased survivability. The radar is highly reliable due to its total solid-state technology and graceful degradation characteristics.



RAT-31DL/M **Deployable 3D Long-range Radar**

The RAT-31DL/M is the mobile version of the RAT31-DL family of radars. It is designed to be fully compliant with NATO/ACCS criteria and standards, including Tactical Ballistic Missile (TBM) detection. The RAT-31DL/M is a light, compact, 3D long-range range air defence radar combining Primary Surveillance Radar (PSR) and a Secondary Surveillance Radar (SSR) acting as Identification Friend or Foe (IFF).

The radar is easily integrated with remote systems, (Control and Reporting Centre, CRC, or Controlling Entity, CE), to which it provides primary plots, identification (SSR) plots, associated plots, TBM tracks, jam-strobe data, ECM data and from which it can receive “operational” and “functional” commands.

The RAT-31DL/M DADR is an advanced L-band, solid-state, phased array, 3D air surveillance radar, effective to a range of 400km. It is a state-of-the-art radar system designed to operate within modern military air defence systems.

The RAT-31DL/M is completely adaptive to the operational environment with simultaneous and independent scanning beams, multi-range mode, and well-proven anti-clutter and anti-ECM features. It has a monopulse antenna, forming simultaneous sum and difference elevation and azimuth

patterns for each beam, in order to allow a very accurate estimation of target position in height and azimuth.



PAR 2090C Precision Approach Radar

The PAR 2090C Precision Approach Radar system is a fully coherent radar operating in the frequency band assigned by ICAO for this type of equipment. This radar provides the ground controller with all information required to guide one or more aircraft during the landing phase up to the touch down in critical weather conditions.

It comprises two main subsystems: the Radar Head Subsystem and the Presentation Subsystem.

The Presentation Subsystem can be housed in a dedicated building or shelter as well as in the control tower. As standard provision, the PAR also includes a set of frangible reference corner reflectors for two approach directions. Each set consists of five passive reflectors.

The PAR 2090C can be provided with an external Power Supply to sustain operational tasks in case of power supply interruption as well as to filter and stabilize the incoming power supply.

The Cassegrain parabolic antennas are installed on a platform which can be rotated over $\pm 180^\circ$ to orient the antennas in accordance with the landing directions to be served (at the moment up to eight landing directions can be programmed). The antenna scanning is mechanical.



During the installation phase the platform is lifted to the final position by the motor driven movable central arm (Lifter). The arm permits also the placement of the platform to a convenient height for the installation/maintenance of both antennas.

PAR 2090C is available in two models:

- PAR 2090CF (Fixed) sheltered and easily transportable by truck
- PAR 2090CM (Mobile) compact, rapidly deployable and transportable onboard of C-130.

Installation of the PAR 2090CF can be completed in one day by four persons, provided that all required civil works have been completed.

ATCR 33S

S-Band Primary Surveillance Radar

ATCR 33S provides en-route and terminal management area services. It is an S-band air traffic control radar. The ATCR 33S is designed to be compliant with the international standards for PSR sensors. Functional and performance characteristics meet the requirements issued by ICAO and EUROCONTROL.

Key features

- Designed for unattended 24 hour operation
- MTTR of 20 minutes
- Range - 60nm to 100nm
- Rotation - 12rpm or 15rpm
- Availability better than 99.999%
- Emission Control function
- Adaptive selection among four MTD filters
- Extensive mapping techniques for CFAR
- Fully coherent A-MTD
- Automatic antenna beam switching for ground clutter suppression



ATCR 44S

L-Band Primary Surveillance Radar

ATCR 44S provides superior surveillance on long-range-range and en-route applications, as well as to provide optimum performance at lower ranges, namely extended TMA applications.

Designed to comply with the international standards for Primary Surveillance Radar (PSR) systems and to guarantee a high degree of maintainability, ATCR 44S also meets the requirements issued by ICAO and EUROCONTROL in terms of functional and performance characteristics.

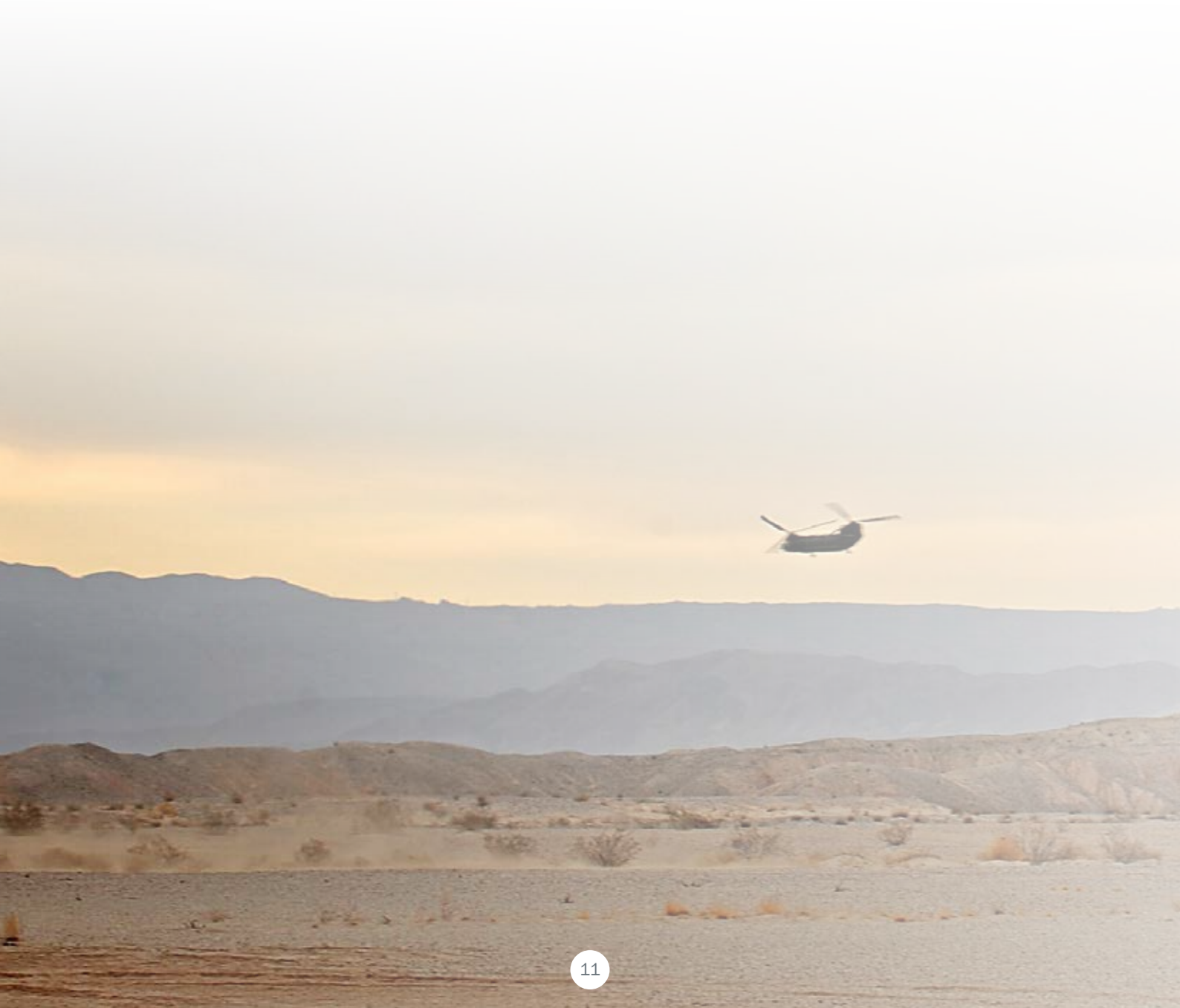
The ATCR 44S radar provides enhanced processing capabilities and extended performance monitoring in order to support 24 hours operations.

Monitor and control activities can be performed from local or remote stations with user-friendly operator's interface. High operational flexibility and system availability are also guaranteed through cutting edge technological choices.

SIR-M
Secondary Surveillance Radar

The SIR-M Secondary Surveillance Radar is a modular system fully compliant with ICAO and EUROCONTROL recommendations on Mode-S operation. SIR-M is a dual-channel system (single channel configurations are also available) with automatic changeover, solid-state transmitter and receiver, and is designed for unmanned operation.

Each SSR channel consists of a transmitter, a receiver, and a programmable extractor/controller. The powerful processing platform is based on COTS equipment and is completely software programmable, in order to exploit the improvements of commercial platforms and prevent obsolescence problems.



FALCO PLUS Fire Control System

Falco Plus is a radar-controlled Fire Control System (FCS) to control medium caliber guns and guide semi-active missiles in anti-air warfare roles. It is based on the ORION RTN 25X tracking radar which is a J-band fully coherent system with extensive ECCM and anti clutter features. Falco Plus is part of the fire control center integrated in the SPADA 2000 Plus surface-to-air defence system.

It performs the following functions:

- Search (panoramic and sector) on 360° and up to 85° in elevation
- Acquisition on target on external designation or auto-designation
- Acquisition and tracking in range and angles (azimuth and elevation) of the primary target
- Missile guidance through interferometer comparison between pulsed waveform echo from target and CW illumination of the missile
- Expelled Missile Detection (DME): detection and alarm for missile expelled from primary target



KRONOS® DOME Tactical Mobile 3D Radar for Artillery Weapon Location and Fire Control

The KRONOS® Dome is a highly compact and mobile weapon locating and fire control system able to detect rocket artillery, gun artillery and mortars, with the main objectives to locate enemy artillery and to provide fire control when integrated with a weapon system.

It fully exploits the X-band Active Electronic Scanning Antenna (AESA) against multiple threats by scanning the beam both in azimuth and elevation.

The instrumented range of the KRONOS DOME is 50 km, operating over a nominal azimuth sector of 90° up to the zenith in elevation.

Completely contained in a full standard 10-ft ISO-cornered shelter equipped with autonomous power supplying (24 hour fully operating without refueling), redundant Air Conditioner and NBC protection, transportable by standard commercial trucks or tracked vehicle, helicopter, aircraft, ship or train.

Functional capabilities

- Automatic priority evaluation of threats
- Adaptive waveforms based on clutter level estimations
- Automatic computation of local horizon on a sector base
- Fire Finder Capability to detect and locate enemy artillery estimating Rocket&Mortar launch points
- Fire Director capability to support counter battery fire estimating own shell impact point.





Naval Radars

BPS-730

LPI Navigation/Surveillance Radar for Submarines

The BPS-730 I-Band navigation/surveillance radar features the Low Probability of Intercept (LPI) characteristics indispensable for the operating requirements of submarines.

The innovative and proprietary coded pulse LPI architecture gives several advantages over competitor LPI FMCW radars:

- Compatibility (interfacing) with on-board ESM allowing simultaneous operations
- Capability to operate in narrow water without radar saturation and loss of resolution
- Higher resistance to ELINT classification
- Greater immunity to ECM

Key features include:

- Best trade-off among long range detection and very low interceptability by Electronic Support Measures (ESM)
- Power management allows BPS-730 to be employed in various operative conditions and with different interceptability requirements;
- IMO standard range scales
- Up to 48 NM OTH surveillance range scale
- Solid-state, Very low peak power further reduced with power management
- Pulse codification, frequency agility, jittered PRF

Options include:

- ARPA and AIS function IMO compliant
- Additional doppler processing package to detect small naval targets moving in heavy clutter and to improve air targets detection
- Single scan Hovering Helicopter detection and classification
- Single scan/silent map update mode
- Pressure tight bridge display

KRONOS® DUAL BAND

Fixed panels multifunctional dual band radar

KRONOS Dual Band radar is designed to fulfill the most demanding missions for world-class Navies. Antennas' designs are based on the extensive experience in developing multifunctional radar systems. All radar components are fully solid-state, offering unrivalled detection performance and high reliability of the overall mission system with a modular and scalable radar architecture.

Unmatched performance for the following applications:

- Local Area and Self Defence
- Fire Control & Missile Guidance
- Littoral Warfare
- Electronic Attack
- Anti Tactical Ballistic Missile Defence



KRONOS Dual Band combines two AESA radar architectures:

- KRONOS® Quad with four fixed panels in C Band
- KRONOS® StarFire with four fixed panels in X Band

KRONOS Quad (bottom panel in the picture) is the main asset of the Principal Anti Air Missile System for multiple active-missiles guidance exploiting the following functions:

- Multiple target tracking
- Missile Up-link Transmission
- Instantaneous track initialization
- Precise and effective power emission control
- Volumetric search
- Electronic Attack
- Jammer detection and tracking
- Clutter detection

KRONOS StarFire (top panel in the picture) is the secondary sensor responsible for:

- Air/Surface Surveillance
- Very precise multiple tracking with high accuracies
- Electronic attack

Both AESA radars are designed with scalable architecture and the number of TRMs is selected according to the required performance. KRONOS Quad and StarFire simultaneously and independently perform their tasks by electronically scanning the beams both in azimuth and elevation. KRONOS Dual Band combines Quad and StarFire capabilities to provide Surface Combatant Vessels with 360° Azimuth/90° Elevation high range performance and extensive ECCM features.

KRONOS® GRAND NAVAL

Naval Multi-function Active Radar for Principal Anti-Air Missile System

KRONOS® GRAND NAVAL is a multifunction radar, based on advanced Active Electronically Scanned Array (AESA) technology, used as main radar for the Principal Anti Air Missile System. KRONOS GRAND NAVAL applications include extended self-defence, air and sea surveillance and tracking, volumetric search and multiple missiles guidance.

KRONOS GRAND NAVAL is the most advanced 3D naval radar world-wide, validated by various trials on the FREMM class vessels.

It is a real multi-function radar designed to enable warships, such as frigates and destroyers, to perform naval war fighting missions such as extended self-defence and area protection, in complex scenarios against multiple attacks in very severe (clutter and jammer) environments.

Being fully solid-state and with redundancies for all equipments, it offers an unrivalled high availability.

KRONOS GRAND NAVAL uses its multi-function capability to simultaneously and independently perform surveillance and targets tracking by electronically scanning the beam

both in azimuth and elevation, in addition to mechanical rotation. The system offers high-performance ECCM features. KRONOS GRAND NAVAL exploits a high data rate to reduce reaction time and engage time against small and high manoeuvring targets. 3D air surveillance extends to 300km and up to 70° in elevation.



KRONOS® NAVAL

3D Multi-function Radar

KRONOS® Naval is a multi-function C Band radar based on advanced Active Electronically Scanned Array (AESA) technology, used on naval vessels of 400 gross tons and above. KRONOS Naval applications include point defence, air and sea surveillance, littoral warfare, missile and gunfire support. KRONOS Naval is designed for small and medium warships, such as corvettes and offshore patrol vessels performing naval missions such as point defence, patrolling and land forces assistance.

Suitable for a wide range of vessels, KRONOS Naval performs the following main tasks:

- Air and surface surveillance up to 250km, with elevation coverage of up to 70° to help counter high diving missile threats
- Priority evaluation of threats
- Air and surface dedicated tracking with different refresh rates depending on the danger of the threat
- Dedicated tracking for active missile guidance (e.g., VLMICA, ASTER)
- Dedicated tracking against small and low visible target or pop-up targets, such as Sea Skimmers
- Target designation to weapon systems
- Gunfire support/splash spotting

- The radar coverage is obtained by phase scanning both in azimuth and elevation while the system mechanically rotates at 60rpm. KRONOS Naval is a multi-mission system, which can be easily and fully integrated in any type of combat management system.



RAN-21S

2D Medium Range Surveillance Radar

RAN-21S is a dual mode 2D air/surface surveillance S-Band radar, suitable to be installed onboard medium-size warships. With its instrumental range of 120km, the radar can be the primary sensor, effective for air and surface targets detection, as well as to detect low flying air/missiles.

As main or auxiliary sensor, it performs air and surface surveillance modes to consistently contribute to the compilation of the tactical picture. Each mode has been designed with a proper set of transmitting waveforms. The antenna is mechanically stabilized in roll and pitch.



RAN-30X

2D Medium Range Surveillance Radar

RAN-30X is a multi-mode 2D air/surface surveillance radar operating in X-Band. It can be installed onboard small and medium combatant vessels with different operational mission roles.

The RAN-30X is manufactured in two different versions to be especially effective against surface targets as small ships, snorkels, low flying targets (anti-surface warfare) and against high diving air targets (anti-air warfare).

As main sensor, it performs air and surface surveillance mode to support the compilation of the tactical picture. Each mode as air/surface surveillance, navigation support and helicopter control and anti-sea skimmer missile, has been designed with a proper set of transmitting waveforms. The antenna is mechanically stabilized in roll and pitch.



KRONOS® POWER SHIELD

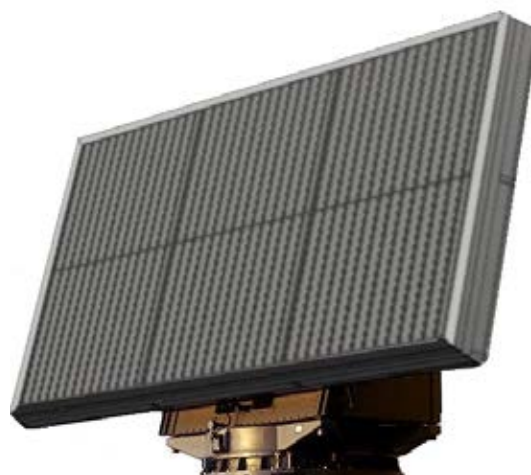
3D Early Warning Radar for Ballistic Missile Defence

KRONOS® Power Shield is the innovative Early Warning AESA Radar for Anti Ballistic Missile (ATBM) and Air Breathing Target (ABT) Defence for Naval application able to operate in rotating and staring mode.

Based on state of the art GAN transmit and receive modules antenna and digital beam forming technology for the fully AESA (Active Electrically Scanned Array) array it performs a complete real time adaptivity to detect and track evolving threats in the surrounding scenario.

Superior performances:

- Normal Surveillance Mode: Long Range Early Warning, providing 360° Surveillance and Tracking of both ABTs and TBMs, combined and contemporary at all altitudes up to 400km.
- Extended Surveillance Mode: Very Long Range Early Warning for ABTs and TBMs at low altitudes up to 600km.
- Fence Mode with focus in a specific elevation window for Medium Range Ballistic Missiles (1000/1300) within a defined azimuth sector.



SPN-730

LPI Surveillance and Navigation Radar

The SPN-730 is a Low Probability of Intercept (LPI) navigation radar, designed to provide excellent detection features IMO compliant combined with silent mission capability. Easy to install on any type of combat vessel, SPN-730 is an I-band LPI pulsed radar using solid-state technology and its unique coded pulse LPI architecture assures effective integration with on-board Electronic Support Measures (ESM). SPN-730 has been installed on about 30 combat ships in Italy and in a NATO country.

The SPN-730 comprises two units that, if required, can be supplied already integrated with a conventional (magnetron) navigation radar to provide alternatively LPI or normal operational mode. When low interceptability against ESM or Anti-Radiation Missiles is required, the SPN-730 provides high LPI performances, while ensuring continued excellent detection capabilities compliant with IMO requirement. The SPN-730 is highly modular and comprises the Transmitter-Front-End Receiver Unit, the Digital TX RX/ Processor Unit and a RF switch to interface existing antenna.

The SPN-730 can be installed with existing standard Navigation Antenna Group (slotted array) for refit purposes.

Key features

- LPI pulsed radar with power management
- Solid-state transmitter, intrinsic coherent architecture
- Digital compressed pulses
- Interfaced with on-board electronic warfare devices without degradation of their performance
- Frequency agility, PRF jittered
- High resistance to ECM
- Standard video output and control signals for easy integration with ARPA and/or multifunction consoles
- Sector blanking transmission
- Zoom on window on higher range scale



SPS-732

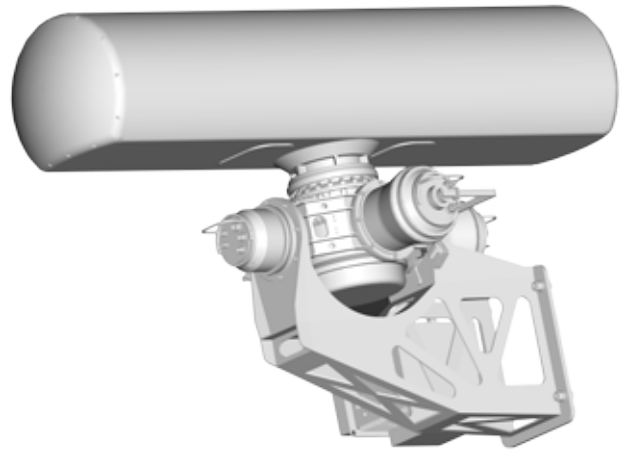
2D LPI Surveillance Radar Family

The SPS-732 is an X-Band Low Probability of Intercept (LPI) multi-function Doppler radar. It is suitable for surface situation awareness and air surveillance at low level. The IMO compliant radar is designed to provide excellent detection features combined with silent mission capability, and also navigation assistance and helicopter control in all weather conditions.

The SPS-732 utilizes proprietary state-of-the-art coded pulse LPI techniques. It uses an advanced digital receiver and waveform generator to allow simultaneous long range detection and minimum range coverage. Doppler modes for low false alarm air target detection are implemented through fully coherent radar features.

Key features

- Multi-Mode Radar: Surface, air and combined surveillance optimized modes with Very High resolutions
- LPI pulsed radar, featuring easy interface with on board ESM
- Very low power solid-state transmitter with power management adaptive to operational environment
- Fully coherent architecture, with high dynamic Doppler



(MTI) processing

- Lightweight high gain antenna fully stabilized reflector antenna with cosec² pattern
- Digital compressed pulses with proprietary, digitally generated complex waveforms
- No close range blind zones
- Range scale up to ~100nmi for OTH detection
- Frequency agility, PRF Jittered
- High resistance to ECM
- Interferences processing elimination to manage High electromagnetic density environment

SPN-720

LPI Shipborne Precision Approach Radar

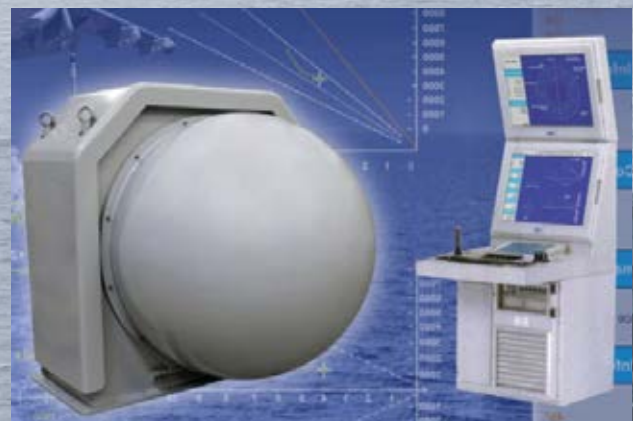
SPN-720 is a Solid-state, Low Probability of Intercept (LPI) naval Precision Approach Radar. Its compact dimension (around 1 cubic meter) allow easy installation on any Ship and stand it as candidate for the smallest PAR in the world. The radar is able to provide safe and reliable final approach and deck landing guidance for aircraft during day/night and in adverse weather conditions.

The SPN-720 offers CV NATOP Mode III landing, manual approach, ICAO compliant during which the radar controller relays continuous updates to the pilot on his position and direction via a secure VHF Channel.

The SPN-720 employs an I-band Doppler radar with coherent solid-state transceiver, utilizing frequency agile monopulse tracking with operating range from 60 m up to 12 nautical miles.

The SPN-720 is capable of automatically correcting the parallax error between the radar location and the landing path and can be operated as a stand-alone system or it can be integrated with the ship Combat Management System.

The SPN-720 can provide simultaneous control of two aircraft. Its Man-Machine Interface features two consoles each fitted with the PAR Display the Air Search Display. The two consoles can operate in master/slave mode or dedicated to the assistance of one of the two simultaneous landing aircraft.



NA-25X

Fire Control System

NA-25X is a Fire Control System (FCS) able to control medium calibre guns in the anti-air and anti-surface warfare roles as well as small calibre guns in the CIWS role. Up to three guns of different calibres can be controlled by its computer unit. NA-25X is a modern Fire Control System (FCS) based on the ORION RTN-25X tracking naval radar, a J-band fully coherent equipment which is characterised by anti-nodding, extensive ECCM and anti-clutter features together with high tracking accuracy.

A set of two EO sensors (TV camera, IR camera) can be mounted on the radar director, to enable firing assessment and to provide an alternative line-of-sight on the same target. A third sensor (Laser Range Finder) can be mounted to provide a complete EO tracker facility.



Naval Radars - Gun Control and Missile Guidance Support NA-30S and NA-30S MK2

NA-30S

Fire Control System

NA-30S is an advanced modular weapon control system designed to control surface-to-air missile system and guns (up to three gun outputs) in a sophisticated threat environment and in coordinated fire reaction mode.

NA-30S is a modern Fire Control System (FCS) based on the ORION RTN-30X tracking naval radar, a I-band fully coherent equipment which is characterised by antinodding, extensive ECCM and anti-clutter features together with high tracking accuracy.

A set of two EO sensors (TV camera, IR camera) can be mounted on the radar director to enable firing assessment and to provide an alternative line-of-sight on the same target. A third sensor (Laser Range Finder) can be mounted to provide a complete EO tracker facility.

NA-30S interfaces the CW Illuminator Transmitter and supports the engagement against a target, conducted through the deployment of the ESSM (Evolved Sea Sparrow Missile), by illuminating the target itself.

A couple of Targets Designation Sight (TDS) enhance the FCS configuration. Through an internal additional function, NA30S system can be integrated inside an Artillery System (including



at least two FCSs), to optimize the use of all onboard guns against multiple concurrent targets (missiles, air and surface targets).

NA-30S MK2

Multi-Sensor Fire Control System

NA-30S MK2 is a new generation Weapon Control System designed to control modern guns (up to three) against conventional and asymmetric air/surface threats with a reduced reaction time.

NA-30S MK2 is based on a dual-band (X and Ka) naval tracking radar with a stealth antenna design which combines high tracking accuracies with improved range performance. Both X and Ka bands are processed in order to optimise tracking performance according to the targets.

The Weapon Control System automatically selects the optimum ammunition and firing patterns according to the tracked threats. A set of combined sensors (TV camera, IR cameras and laser) can be mounted on the radar antenna to enable firing assessment and to provide either an alternative or redundant line-of-sight.

Main operational functions

- Dual-band radar and optronic tracking
- Gun fire control with automatic coordination of different weapons
- Automatic engagement of evaluated priority target up to firing action
- OTH (Over-The-Horizon) tracking features

- Reduced reaction times to allow detection, tracking and artillery response with high HIT Probability particularly against sea skimmer/high diving supersonic missiles and asymmetric threats
- DART ammunition guidance
- The NA-30S MK2 Fire Control System is optionally provided with CWI illumination for semi-active missile guidance, HRRP and panoramic surveillance features



SUPPORT TO SYSTEMS AND CAPABILITIES

Systems developed by the company are high value assets, created with the promise of an effective operational life-cycle. To guarantee total customer satisfaction, after-sales support services are carefully engineered to ensure high levels of systems performance. We have dedicated department which consists of specialists, along with a network of value-adding partnerships with support related companies, in order to provide the best after-sales support to its valued customers.

The service concept offers a cost-effective, flexible solution which is capable of adapting and adjusting the support content and levels of support, in order to meet the evolving needs of the customer.

The company provides customers with Contractor Logistics Support (CLS) type contracts, which specify the after sales support services and level of service requirements through formalized Service Level Agreements (SLA). The customer support department is geared to provide support services to any type of system, from basic low-level operating systems to large complex systems.

The Customer Support Service Desk (CSSD) represents the Single Point of Contact (SPOC) with the company (Customer Support) for the customer. The Customer Support Service Desk is a multi-channel medium designed to ease communication (telephone, fax, e-mail, Web Portal).

Customer Support services can be customized in order to meet the specific requirements of the customer whilst delivering the best value for money. Additional service components may be added in accordance with specific support requirements.

Key support service delivery includes:

- Configuration Management Services
- Engineering Services
- Field Engineering Services
- Material Management Services.





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