RADARS & LAND SYSTEMS

EMBRAER

PROTECTING *NATIONAL ASSETS AND SOVEREIGNTY*

RADARS & LAND SYSTEMS

TECHNOLOGICAL INTEGRATION AND AUTONOMY

Comprehensive, low-risk, and scalable radars & land systems solutions for territorial monitoring and protection, including Border Surveillance, Air Defense and ATC. Embraer offers proven, precise, reliable, and cost-effective solutions.

From portable radars to mobile shelters for diverse applications, such as ISR, communications and command & control, as well as COMINT sensors, C2 and C4I software, Embraer develops fully integrated and customizable solutions to meet each customer's specific needs, giving them complete autonomy and operational flexibility.

WORLDWIDE PRESENCE

EMBRAER WAS BORN FOR DEFENSE as a successful strategic plan by the Brazilian Government. The company has more than 50 years of and is recognized globally for the quality of its products and services.

Privatized in 1994 and listed on the New York Stock Exchange, Embraer is a global leader in solutions for Defense and space, offering an integrated portfolio from aircraft to complex systems of border control.

Learn more about our services and products at defense.embraer.com/global.

RADARS

FLEXIBILITY TO OPERATE IN DIFFERENT ENVIRONMENTS AND ACCURACY IN TARGET DETECTION

IN SERVICE

LOW ALTITUDE AIR DEFENSE

M60

- 3D Radar
- Range 60 km (32NM)
- Integrated IFF

COAAE

- Anti-Aircraft Artillery Operation Center
- VSHORAD Application

SURFACE SURVEILLANCE

M20

- Range 20 km (light vehicle)
- Fixed, Mobile and Transportable Versions

AIR TRAFFIC CONTROL | IFF

S200R

- Secondary Radar
- Range 200 NM
- Modes 1, 2, 3/A, C
- Provision Mode 4

MEDIUM RANGE AIR DEFENSE SURVEILLANCE AND EARLY WARNING

M200 VIGILANTE (2022)

- 3D Radar
- Active Electronically Scan
- Range 200 km (108NM)
- Integrated IFF

NEW DEVELOPMENTS

MEDIUM ALTITUDE AIR DEFENSE MULTI-MISSION

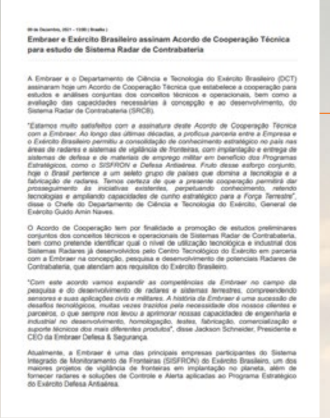
M200 MULTI-MISSION (2023)

- 3D Radar
- Active Electronically Scan
- 200 km range (108NM)
- Integrated IFF

COUNTER-BATTERY MULTI-MISSION

COUNTER BATTERY (2024)

- 3D Radar
- Active Electronically Scan
- Range 80 km (43NM)



09 de Dezembro, 2021 – 13:00 | Brasília |

Embraer e Exército Brasileiro assinam Acordo de Cooperação Técnica para estudo de Sistema Radar de Contrabateria

A Embraer e o Departamento de Ciência e Tecnologia do Exército Brasileiro (DCT) assinaram hoje um Acordo de Cooperação Técnica que estabelece a cooperação para estudos e análises conjuntas dos conceitos técnicos e operacionais, bem como a avaliação das capacidades necessárias à concepção e ao desenvolvimento, do Sistema Radar de Contrabateria (SRCB).

"Estamos muito satisfeitos com a assinatura deste Acordo de Cooperação Técnica com a Embraer. Ao longo das últimas décadas, a profícua parceria entre a Empresa e o Exército Brasileiro permitiu a consolidação de conhecimento estratégico no país nas áreas de radares e sistemas de vigilância de fronteiras, com implantação e entrega de sistemas de defesa e de materiais de emprego militar em benefício dos Programas Estratégicos, como o SISFRON e Defesa Antiaérea. Fruto desse esforço conjunto, hoje o Brasil pertence a um seleto grupo de países que domina a tecnologia e a fabricação de radares. Temos certeza de que a presente cooperação permitirá dar prosseguimento às iniciativas existentes, perpetuando conhecimento, retendo tecnologias e ampliando capacidades de cunho estratégico para a Força Terrestre", disse o Chefe do Departamento de Ciência e Tecnologia do Exército, General de Exército Guido Amin Naves.

O Acordo de Cooperação tem por finalidade a promoção de estudos preliminares conjuntos dos conceitos técnicos e operacionais de Sistemas Radar de Contrabateria, bem como pretende identificar qual o nível de utilização tecnológica e industrial dos Sistemas Radares já desenvolvidos pelo Centro Tecnológico do Exército em parceria com a Embraer na concepção, pesquisa e desenvolvimento de potenciais Radares de Contrabateria, que atendam aos requisitos do Exército Brasileiro.

"Com este acordo vamos expandir as competências da Embraer no campo da pesquisa e do desenvolvimento de radares e sistemas terrestres, compreendendo sensores e suas aplicações civis e militares. A história da Embraer é uma sucessão de desafios tecnológicos, muitas vezes trazidos pela necessidade dos nossos clientes e parceiros, o que sempre nos levou a aprimorar nossas capacidades de engenharia e industrial no desenvolvimento, homologação, testes, fabricação, comercialização e suporte técnicos dos mais diferentes produtos", disse Jackson Schneider, Presidente e CEO da Embraer Defesa & Segurança.

Atualmente, a Embraer é uma das principais empresas participantes do Sistema Integrado de Monitoramento de Fronteiras (SISFRON) do Exército Brasileiro, um dos maiores projetos de vigilância de fronteiras em implantação no planeta, além de fornecer radares e soluções de Controle e Alerta aplicadas ao Programa Estratégico do Exército Defesa Antiaérea.

DEC/21

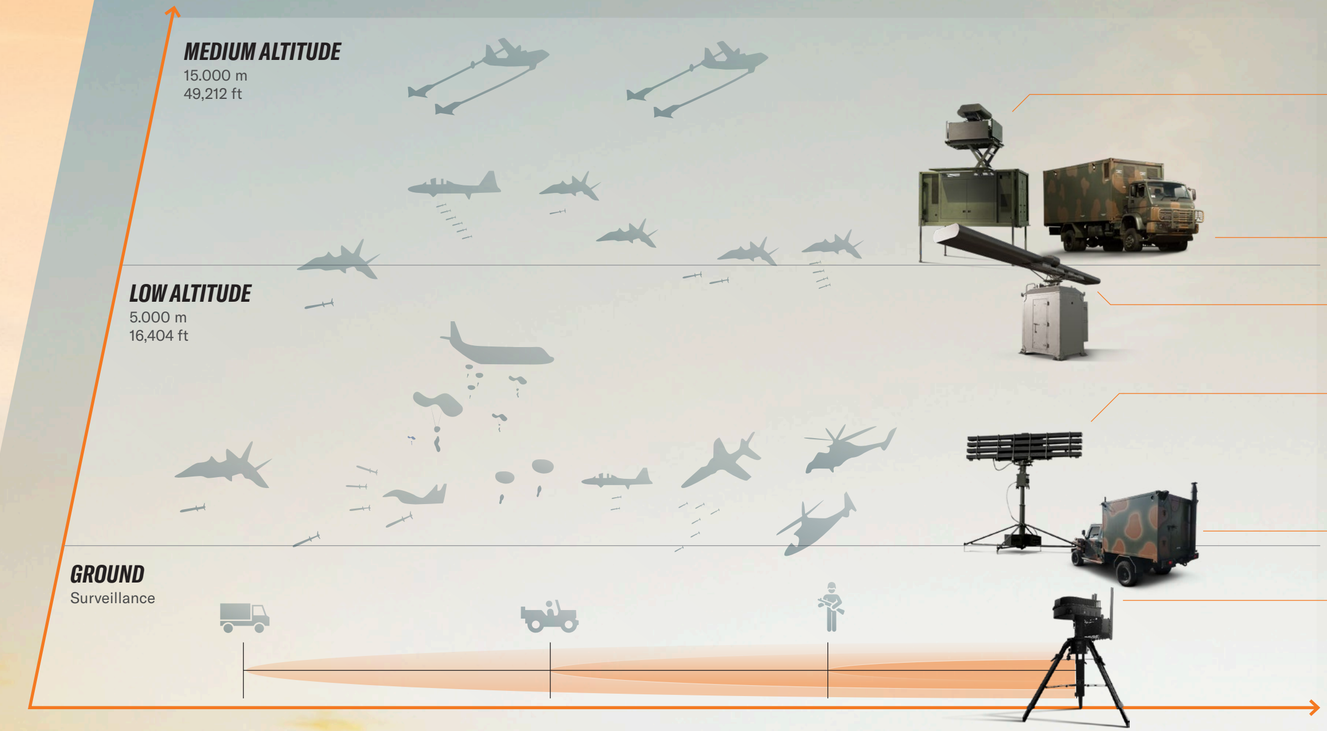
Technical cooperation agreement for joint studies and analysis of the technical and operational concepts for counter-battery system (SRCB).

DEFENSE RADARS SYSTEM & ATC RADAR

COMPREHENSIVE AND HIGH RELIABLE SOLUTIONS FROM GROUND SURVEILLANCE TO MEDIUM RANGE AIR DEFENSE AND ATC

Embraer's Radar and Land Systems solutions guarantee the protection of critical assets, creating layers of surveillance from the surface to medium heights and from very short to medium range, including air traffic management.

In addition, Embraer develops Command and Control Centers and integrates all the systems it creates, both with each other and with legacy actuators, with total flexibility for the customer to personalize the solutions according to their specific needs, in a modular and scalable way.



MEDIUM RANGE AIR DEFENSE RADARS
- Phased array technology
- Air surveillance/early warning
- Search/defense & fire control
- Integration readiness: air defense system, anti aircraft artillery and ATC

AD OPERATIONS CENTER: C2/C3
- Command & control / communication

AIR TRAFFIC CONTROL & AIR DEFENSE
- Monopulse secondary stand-alone
- Range 200 NM & built-in IFF

SHORT RANGE AIR DEFENSE RADAR
- Anti-aircraft defense system
- IFF integrated
- Range 60 km/ 32 NM
- Readness for C2/ C3 integration
- Transportable

AD OPERATIONS CENTER: C2/C3
- Command & control / communication

GROUND SUVEILLANCE RADAR
- Battlefield surveillance
- Border surveillance
- Critical infrastructure security
- Readiness for C2/ C3 integration
- Up to 8 radars remote controled

RADAR M20

The new generation military multi-mission sensor that brings operational flexibility, enhanced situation awareness and tactical support to ensure integrity of critical infrastructure and continuous operation on battlefield with high level of mission accomplishment.

RADAR M20

The Embraer M20 radar provides enhanced monitoring data to ensure the security of borders and critical assets, assisting decision-making and possible aircraft engagement to combat counter-insurgency and threats or law enforcement actions. It can also be used in Close Air Support actions and is fully integrable with Embraer C4i systems or the ones customer already has.

- LAND BORDER SURVEILLANCE
- PROTECTION OF CRITICAL INFRASTRUCTURES
- PERIMETER SURVEILLANCE
- CLOSE AIR SUPPORT

ENSURE INTEGRITY AND CONTINUOUS OPERATION OF CRITICAL INFRASTRUCTURE
Easy integration, Transportability, Low crew operation and one radar with several applications

OPERATIONAL FLEXIBILITY
Easy integration, Transportability, Low crew operation and one radar with several applications

ENHANCED TACTICAL SUPPORT IN BATTLEFIELD
Quickness in updating targets, Lower vulnerability, Electronic Protection Measures and Transportability

ENHANCED TACTICAL SUPPORT IN BATTLEFIELD
Quickness in updating targets, Lower vulnerability, Electronic Protection Measures and Transportability

HIGH CONFIDENCE IN MISSION ACCOMPLISHMENT
High Mission Reliability, Availability and Operation Predictability

RADAR M20

ADVANTAGES

- Proven in service – integrated border surveillance in Brazil and Mauritania.
- 24 units in operation with + 87.000 operating hours.
- ITAR free.
- Real effectiveness LPI – low probability of interception (radar difficult to be detect).
- Effective 360º coverage with continuous rotation.
- Scan / update rate (scan speed) HIGHER THAN MOST COMPETITORS.
- Embraer ability to generate integrated solution.
- Ability to customize/ flexibility.

FEATURES

Antenna: Rotatory SAR (Synthetic Aperture Radar)

Frequency range: X band

Technology: Solid State

Rotation speed: 7.5 or 15 rpm

Instrumented range: ≥ 40 km

Azimuth coverage: 360º

Target detections: ≥ 60 targets simultaneously

Detection range: People walking: 8,3 km Light vehicle: 17,5 km Heavy vehicle: 23km Boat: 600 m to 9 km (depending on environment and RCS)

Antenna TILT CONTROL: electromechanical system

Built-in Coverage analysis tool

Integration With EO/IR LRC (Long Range Camera)

Transportable by 3 soldiers

ADDITIONAL CONFIGURATION

TACTICAL/ TRANSPORTABLE MODULAR SOLUTIONS

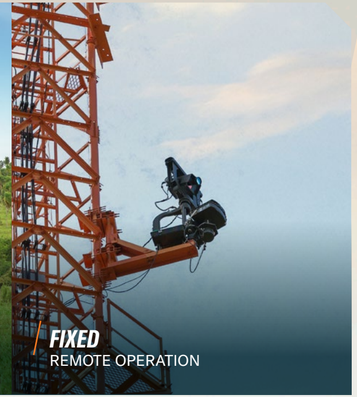
M20 radar integrated in a Land Platform with a Long Range Camera EO/IR, for an optimized detection and identification and mission accomplishment at any terrain.

RADAR M20

OPERATIONAL FLEXIBILITY

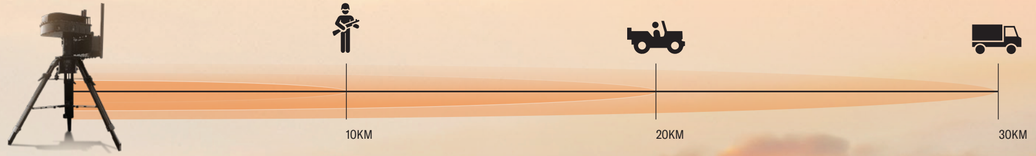
TACTICAL / TRANSPORTABLE MODULAR SOLUTIONS

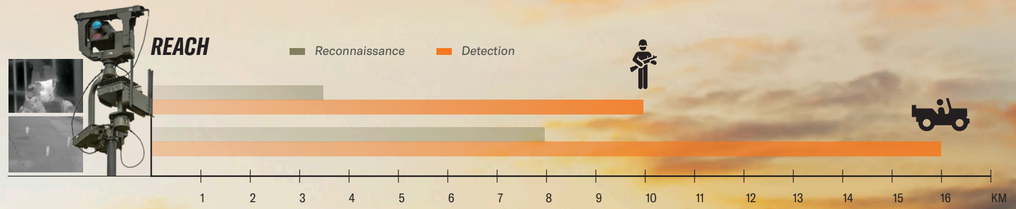
The Embraer M20 radar has excellent operational flexibility, is light and provides 360º surveillance, as it rotates around its axis. It can be integrated with legacy systems and other electromagnetic and optical sensors and offers maximum mobility, being carried in a backpack, for example, or installed in vehicles and Towers.



DETECTION CAPACITY

The Embraer M20 radar offers several configurations and can be deployed in the field in multiple or alternative ways, either fixed or transportable, with the ability to control other sensors and perform target tracking and classification, with the highest scanning speed for a radar of its category. In addition, the M20 uses low power, giving it a low probability of interception, has electronic counter-measures and is capable of identifying enemy electromagnetic interference (jamming).





RADAR M60

3-D Tactical military low altitude air surveillance sensor that brings operational flexibility and enhanced situation awareness to ensure integrity of sites under protection with easy integration with legacy actuators.

RADAR M60

The Embraer M60 is a tactical low-altitude air surveillance radar that provides surface protection (air bases, oil refineries, hydroelectric/ nuclear power plant) against air threats with a radius of 32 nautical miles (60 km), ensuring the image and control of the airspace. It gives first air coverage for the asset it is protecting and has short range weapon system integration.

- *LOW ALTITUDE AIR SURVEILLANCE*
- *PROTECTION OF CRITICAL INFRASTRUCTURES*
- *AIR BORDER SURVEILLANCE*
- *VERY SHORT RANGE AIR DEFENSE*

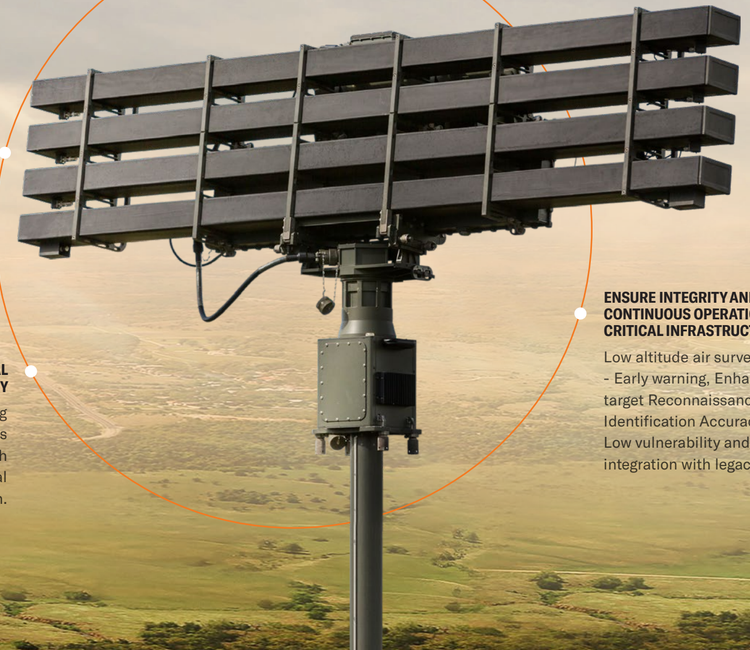
ENHANCED SITUATIONAL AWARENESS

Enhanced target Reconnaissance and Identification Accuracy, User friendly Screens and Easy integration.

ENHANCED TACTICAL SUPPORT IN BATTLEFIELD

HIGH CONFIDENCE IN MISSION ACCOMPLISHMENT

High Mission Reliability, Availability and Operation Predictability.



ENSURE INTEGRITY AND CONTINUOUS OPERATION OF CRITICAL INFRASTRUCTURE

Low altitude air surveillance - Early warning, Enhanced target Reconnaissance and Identification Accuracy, Low vulnerability and Easy integration with legacy actuators.

OPERATIONAL FLEXIBILITY

Able to operate in the most challenging and difficult to access environments (air, land and sea), One radar with more than one application, Tactical Transportable Radar, Easy integration.

RADAR M60

ADVANTAGES

- Proven in service – integrated air defense in Brazil and Mauritania.
- 33 units in operation supporting different missions in diverse environments for the Army, Air force and Navy.
- ITAR/EAR free.
- Real effectiveness LPI – Low probability of interception (Radar difficult to be detect).
- Tactical Portable – transportability.
- Fast deployment.
- Effective 360º coverage with continuous rotation / IFF integrated.
- Embraer ability to generate integrated solution.
- Ability to customize / flexibility.

FEATURES

3D radar: Range, azimuth and elevation measurement

Antenna:
rotatory, slotted waveguide

Frequency range:
L band (IEEE), D (OTAN)

Technology:
Solid State, coherent pulse-doppler

Primary range:
32 NM (60 km)

Secondary range:
44 NM (82 km)

Ceiling:
5000 m

Azimuth coverage:
360º

Target detection:
up to 60 targets simultaneously

Scan rate:
4S (15 rpm) or 8S (7.5 rpm)

Variable PRF
(Pulse Repetition Frequency)

Eletronic protection
measures

Antenna Tilt control:
Manual, mechanical

Target classification:
Fixed and rotary wing

Deployment and start operating:
15 min by 3 soldiers

Ready integration with
AAOC C2/C3

Weight:
< 1000 kg

RADAR M60

ADDITIONAL CONFIGURATION

TACTICAL / TRANSPORTABLE MODULAR SOLUTIONS

- Coordination, control and use of weapon systems and alert control.
- Continuous monitoring of the evolution of the air situation, and the coordination of the stablished air defense.
- Air vectors transmission, using ASTERIX protocol.
- Manage up to 4 Firing Units.
- Able to receive data from several radars.
- Exchange and coordinate information with other actuators and Operational Control Centers.
- Powered by generator or from power grid.
- Air transportable by the KC-390.

COAAE
AIR DEFENSE
OPERATIONS CENTER

RADAR S200R

Best value high transportable Air Traffic Control radar that brings high availability at a low operational cost suitable for military application.

RADAR S200R

The Embraer S200R is an autonomous secondary omnidirectional radar that controls, manages, and monitors air traffic and identifies friendly aircraft, offering the highest availability at a low operational cost.

IDENTIFICATION FRIEND OR FOE (IFF)

AIR TRAFFIC CONTROL (ATC)

RELIABLE AND ACCURATE ATC SYSTEM

Compliant with ATC standard.

HIGH FLEXIBILITY FOR SPECIALIZED CLIENTS

High transportability.

BEST VALUE FOR MONEY

Low investment in installation due to simplified infrastructure, Low life cycle cost and Easy integration with operating doctrine.

HIGH AVAILABILITY AT A LOW OPERATIONAL COST

Low life cycle cost and High availability rates.

SUITABLE FOR MILITARY APPLICATION

High transportability and Capable of operation in remote environment.

USER FRIENDLY OPERATION

Friendly human-machine interface and Interoperable.

SEAMLESS INTEGRATION

Flexible to customize, Simplified infrastructure requirements and Little training needed.

RADAR S200R

ADVANTAGES

- Compliant with ICEA requirements.
- Compliant with ICAO annex 10 vol. 4.
- High availability - 365 days / 24 hours operation at very low maintenance.
- Low power consumption.
- Simplified installation infrastructure.
- Self-contained structure.
- Embraer ability to generate integrated solution.
- Ability to customize / flexibility.

Note: ICEA - Brazilian Institute of Airspace Control.

FEATURES

Secondary stand alone

Antenna:
Rotatory, 8m

Range:
200 NM (370 km) up to 30.000 ft

Operation modes:
1, 2, 3/A, C and provision for 4 BR

Technology:
Solid State, monopulse

Rotation Speed:
4 or 15 rpm

Frequency:
1030 mhz and 1090 mhz

Peak power:
2 KW (63 dBm)

Range precision:
70 m

Azimuth precision:
0,08º

Antenna tilt:
From -5º to 15º Adjustable

Processing capability: 600 tracks in 360º scan, 50 tracks in a 30º sector

Elimination of mixed responses (garbling), async responses and fruit

Recognition special responses:
Kidnapping, communications failure, civil and military emergency

Total weight: ~2.3 ton

RADAR M200 VIGILANTE

Complete air early warning supporting to point defense solution
for the protection of critical infrastructures and essential assets.

RADAR M200 VIGILANTE

The Embraer M200 Vigilante is a transportable tactical radar that offers 108 nautical miles early warning and surveillance capabilities, with low acquisition and operating costs, designed to be easily deployed in military field operations and transported on airlifters such as the Embraer C-390 Millennium.

- AIR SURVEILLANCE
- EARLY WARNING
- IDENTIFICATION FRIEND OR FOE (IFF)
- MILITARY AIR TRAFFIC CONTROL

- SECURITY OF INTEGRITY AND CONTINUOUS OPERATION OF CRITICAL AND/OR MAIN LOCAL INFRASTRUCTURES GUARANTEED BY A PROMPT RESPONSE
- INCREASED TACTICAL EFFECT ON THE BATTLEFIELD
- MINIMUM TRANSPORT LOGISTICS
- MISSION ACHIEVEMENT GUARANTEE
- INCREASED SITUATIONAL AWARENESS
- FAST UNFOLDING
- MULTI-MISSION

RADAR M200 VIGILANTE

ADVANTAGES

- Range 108nm (200km)
- Digital technology.
- Modular and scalable architecture.
- Integrated primary and secondary radar functions.
- National design and development: freedom for customization and assured local support.
- Technological updates and developments in Brazil.
- Ready for integration with:
  - Air defense system.
  - Anti-aircraft artillery.
  - Military Air Traffic Control.
- Low acquisition and operating costs.

FEATURES

Antennae: AESA, 4 independent fixed panels (primary) and 1 rotating (IFF)

3D radar: Distance, azimuth, speed and elevation measurement

TR modules: Solid state, modular and scalable electronics

Instrumented range:
108 NM, 200 km

Secondary operation modes:
1, 2, 3/A, C and provision for 4 BR

Detection probability and false alarm probability: 80% and 10-6

Elevation range: 49,200 ft ceiling, 15 km @ 50 km distance

Detectiom precision:
150 m (distance); 2º (azimuth)

Resolution precision:
300 m (distance); 5º (azimuth)

Scan modes: ≤ 1s scan rate (fast); up to 8s scan rate (slow)

Target classification:
Fixed and rotary wing aircraft

Hydraulic system: Radar head elevation and leveling system integrated into the shelter

Autonomy:
48 hours (integrated diesel generator)

Dimension / weight:
Installed in a shelter ISO 15” / 10 tons

Transport:
Truck or 1 KC390 military CARGO aircraft

RADAR M200 MULTI-MISSION

MEDIUM ALTITUDE, SURVEILLANCE AND AIR DEFENSE

Next step in the evolution of the high added value AESA radar family with all the radar technologies developed in Brazil, ensuring sovereignty and protection against present and future threats.

M200 MULTI-MISSION

A SINGLE RADAR, MULTIPLE MISSIONS

The Embraer M200 Multi-mission is a transportable tactical radar optimized for multirole missions, gathering the Embraer knowledge and capabilities in radars development, was designed to supporting comprehensive and simultaneous missions, being a step ahead, using high end technologies, with all capabilities in the same hardware and being able to support a heavier capacity weapons system.

AIR SURVEILLANCE | **EARLY WARNING** | **IDENTIFICATION FRIEND OR FOE (IFF)** | **SEARCH / DEFENSE** | **FIRE CONTROL** | **MILITARY AIR TRAFFIC CONTROL**

AIR DEFENSE: *MEDIUM ALTITUDE MISSILE GUIDANCE*

Non-collaborative target tracking. Identification of friendly aircraft.

WEATHER

Safe navigation support

OPTIMIZED *TACTICAL RADAR WITH ENHANCED CAPABILITIES*

ADVANTAGES

Multi-mission: configurable panels to perform specific missions, independently and simultaneously

Primary multimodes:
- Surveillance (108 NM, 200 km)
- Search / Defense (65 NM, 120 km)
- Fire Control (65 NM, 120 km)

Primary and secondary radar functions integrated

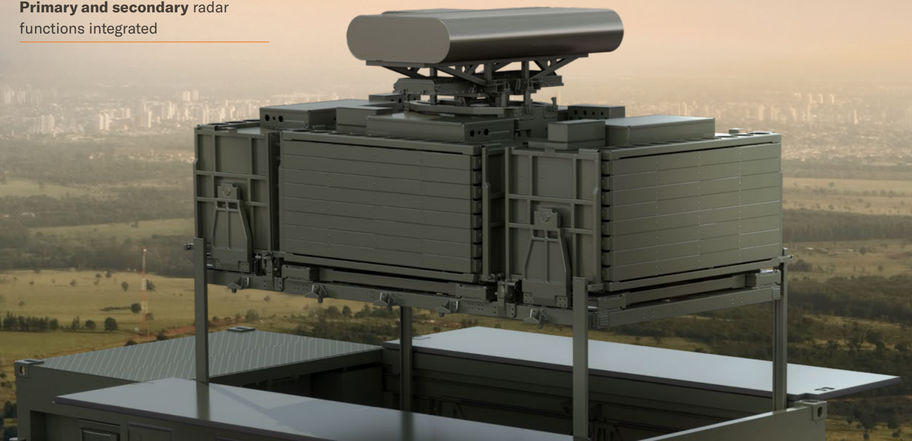
Modular and scalable architecture

Independent design and development: freedom for customization and assured local support

Technological updates and evolutions in Brazil

Transportable by container carrier truck as well as by C-130 or Embraer C-390 Millennium

Ready to be integrated with:
- Air Defense System
- Anti-Aircraft Artillery
- Military Air Traffic Control



M200 MULTI-MISSION

HIGH EFFECTIVENESS IN TARGET DETECTION

PRIMARY RADAR

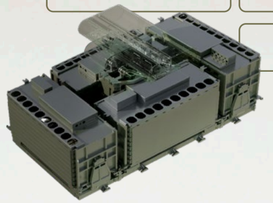
- Technology: Phased Array Antenna (AESA), with 4 independent panels
- Range/Altitude: 0 – 20 km
- Range/Horizontal: 200 km
- Surveillance, Search and Fire Control modes
- Provisioned for: ATC, Weather, Ground and Maritime Surveillance, PAR and ISAR

SECONDARY RADAR / IFF

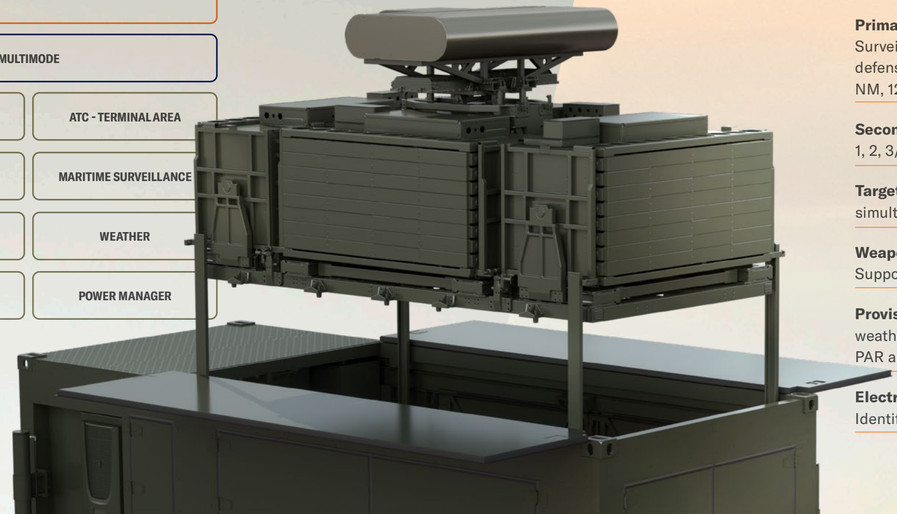
- Mode: 1, 2, 3/A, C
- Provisions for: Mode 4 (encrypted)
- Range/Horizontal: 200 km (108 NM)

PROVISIONS FOR INTEGRATION WITH:

- Air Defense System
- Anti-aircraft Artillery
- Military Air Traffic Control



M200 MULTI-MISSION		
BASIC MODES	MULTIMODE	
SURVEILLANCE	ATC - ROUTE	ATC - TERMINAL AREA
DEFENSE / SEARCH	GROUND SURVEILLANCE	MARITIME SURVEILLANCE
FIRE CONTROL	PAR	WEATHER
	SAR-INVERSE	POWER MANAGER



FEATURES

Antennae: AESA, 4 independent fixed panels (primary) and 1 rotating (IFF)

TR modules: Solid State, modular and scalable electronics

Primary operation modes: Surveillance (108 NM, 200 km), search / defense (65 NM, 120 km), fire control (65 NM, 120 km)

Secondary operation modes: 1, 2, 3/A, C and provision for 4 BR

Target detection: up to 150 targets simultaneously

Weapons system integration: Support of up to 16 firing units

Provisioned for additional modes: ATC, weather, ground and maritime surveillance, PAR and ISAR

Electronic protection measures: Identifies jamming source azimuth

Detection probability and false alarm probability: 90% and 10-6

Elevation range: 65,600 ft ceiling, 20 km @ 30 km distance

Detectiom precision: 30 m (distance); 1º (azimuth and elevation)

Scan modes:≤ 1s SCAN RATE (fast); up to 6s SCAN RATE (slow)

Target classification: fixed and rotary wing aircraft, cruise missiles and UAVs

Remote operation and control with automatic alert system for operator

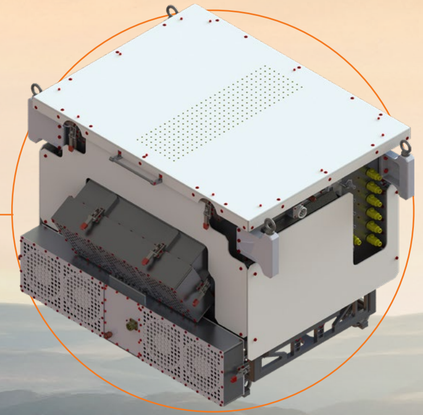
Hydraulic system: radar head elevation and leveling system integrated into the shelter

Dimension / weight: installed in a shelter ISO 20" / 15 tons

BIT: Built-In Tests with a distinguished maintainability concept that allows module replacement within few minute

ELECTRONIC WARFARE SENSORS CAPABILITIES

Embraer has developed a wideband COMINT receivers family and DF & Monitoring antennae that meets the requirement the most harsh environment, supporting a complete Intelligence cycle since signals collection, automatic fusion of data and network analysis to the reporting generating for decision making.



EW / COMINT ESM STATION

FEATURES

Frequency BAND:
HF, VHF and UHF

Instantaneous bandwidth:
20 MHZ (HF) AND 80 MHZ (V/UHF)

Modular wideband
digital receiver

Technology:
AOA (Angle Of Arrival), using interferometry and Watson watt

Channels:
6 or 10 paralel channels (depending on the HW configuration)

Antenna: Direction finding and monitoring antennae integrated

Processing units and
wideband recording system

Electromagnetic Spectrum Survey
for optimized installation

Network connection:
Integration with regional and national monitoring center

SAR3000 REMOTE SENSING

InSAR airborne radar with two bands for remote sensing, mapping, and monitoring, the SAR3000 delivers high precision and resolution even when operating at night and with cloud cover.

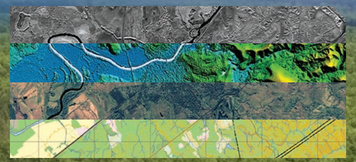
SAR3000 REMOTE SENSING

The Embraer SAR3000, with Dual Band (one for above and one for under the forest canopy), provides a complete view of activities in forest lands, even those hidden under the cover of trees. It also offers change detection capability for continuous monitoring through a software feature that automatically compares multiple readings of a location.

MULTI-MISSION

- High Accuracy due to the use of two bands, X and P.
- Compact, lightweight, and easy to install.
- Possibility of integration with optical sensors (visible/IR).

IMAGES / LAND MODELS



SPECIFICATION

- **Total Weight:** 95 kg (approx.)
- **Standard Power:** 28VDC, 450W max
- **Installation** on non-pressurized aircraft
- **Simultaneous recording** on the X and P bands

SAR 3000 SYSTEM

P-BAND ANTENNA

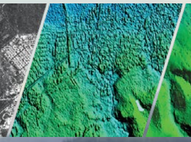
X/P RADAR

The interferometric synthetic aperture radar in the X and P Bands guarantees the delivery of geographic information of high added value and high cost-benefit for different applications.

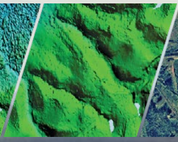
PRODUCTS

X-BAND

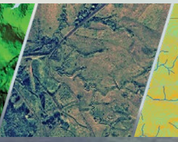
P-BAND



DIGITAL SURFACE MODEL



DIGITAL TERRAIN MODEL



ORTHO IMAGEM COLOR

TOPOGRAPHIC MAP

ALL THE PRODUCTS ARE OBTAINED THROUGH POST-PROCESSING
AFTER DATA COLLECTION, IN GROUND BY A SPECIALIZED TEAM.

LAND SYSTEMS | TERRITORIAL MONITORING & PROTECTION

Embraer Land Systems are a complete solution developed for territorial monitoring and protection, including sensors, communication infrastructure and command and control centers (C2s), with full integration between all parts. It can be implemented modular and scalable, combined with customers' legacy systems.

INTEGRATED DEFENSE AND SECURITY SOLUTIONS FOR BORDER SURVEILLANCE AND STRATEGIC STRUCTURES PROTECTION

Embraer offers a wide range of sensors, communication systems and Command and Control Centers, which can be customized according to the scale of customer needs, from complete and complex packages to small solutions for local use.

SENSORS

COMMUNICATION

COMMAND AND CONTROL

SENSORS

COMINT SYSTEM ARCHITECTURE

SENSORS

FIXED ESM DF & MON V/UHF

TACTICAL ESM H/V/UHF & SHF

FIXED ESM DF HF

EW AIRBORNE DF V/ UHF & SHF

DATA FUSION SYSTEM & ANALYSIS

RMC

INTEL. DB

REGIONAL MONITORING CENTRE

DATA FUSION SYSTEM & ANALYSIS

NMC

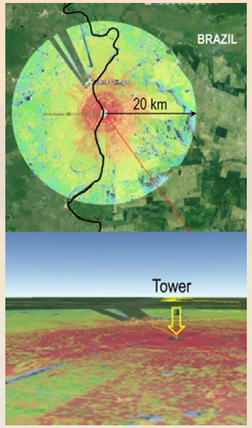
INTEL. DB

NATIONAL MONITORING CENTRE

SURVEILLANCE & RECONNAISSANCE SYSTEM ARCHITECTURE

SENSORS COVERAGE SIMULATION

PLANNING



SENSORS

TRANSPORTABLE
Radar & thermal binocular

FIXED
Radar & Long Range Camera

MOBILE
Radar & Long Range Camera
Mobile thermal binocular system

COMMAND AND CONTROL

ERC2 & C2SW

COMMUNICATION

ACCESS NODE

FEATURES

Solution designed to support Soldiers, Vehicles and Fixed Stations

Multiple communication technologies integrated on a single heterogeneous network

HF, VHF, UHF, L band and **HCLOS** Systems

Mobile network designed to suit the military organic structure and needs

High throughput to support multiple video streams simultaneously, data and voice transmission

Provides the link between deployed mobile sensors and Command and Control Centers

Secure communications with cryptography and ECCM (Electronic Counter-Countermeasures)

Seamless interface to Strategic Networks

TACTICAL COMMUNICATION HIERARCHY

SOLDIER COMMUNICATION

- Both Handheld and Manpack tactical radios.
- GPS reports of tactical radios enable a real-time situational awareness throughout the chain of command.
- Wearable tactical cameras provide live video streams for upper echelons and record locally for post mission analysis.

TACTICAL VEHICLES COMMUNICATION

- Amplified tactical radios for extended range.
- Rugged integration to withstand harsh environment.
- Tactical routing capabilities to integrate heterogeneous communication technologies.
- Rugged computers provides situational awareness to the vehicles of commanders.

COMMAND AND CONTROL

MOBILE C2 CENTER

Embraer develops tactical mobile Command and Control Centers (C2) for local operations with several customizable layouts and configurations, including communications capabilities, giving customers maximum flexibility.

FEATURES

Mobile Command and Control Center provides the infrastructure for forward operation command posts

IT features includes: VoIP phones, PC terminals, notebook's, displays, wlan, video conference and network switch

Tactical Communication vehicle provides routing and call management features to the mobile C2 Centers

Access to Tactical and Strategic networks provided by a Tactical Communication Vehicle

Network, VoIP and Video Conferencing integration with fixed C2 Centers via Tactical and Strategic networks

Configurations:
Brigade level and unit level

BORDER SURVEILLANCE SYSTEMS

SISFRON | EXÉRCITO BRASILEIRO | EMBRAER

6500+

REQUIREMENTS CONTRACTED, INTEGRATION AND SAFETY

SUCCESS EXPERIENCE

SISFRON is one of the largest military programs in the world and aims to protect Brazil's borders – an extent of 16,886 kilometers (10,492 miles) between the country and ten neighbors. It was born with the purpose of strengthening the presence of the State on the terrestrial border strip, which encompasses ten states and 27% of the nation's territory. An important mission with which Embraer was entrusted by the Brazilian Army, becoming responsible for SISFRON's deployment and integration. This challenging program showcases Embraer' strength and capacity to act in the protection and defense of an entire country.

SISFRON PHASES

PHASE 3A
Specialized border modules - amazon region

PHASE 2
CONTRACT SIGNED JAN/22
Ongoing project expansion

PHASE 1
IN EXECUTION - 91%
Field proven with high performance & availability

PHASE 3
Expansion – CMS

16,886 KM
FULL SCOPE OF THE PROJECT

27%
OF THE NATION'S TERRITORY

10
NEIGHBOR COUNTRIES

SEVERAL OPERATIONAL AMBIENTS / URBAN / RURAL / WETLANDS / FORESTS

SISFRON IN NUMBERS

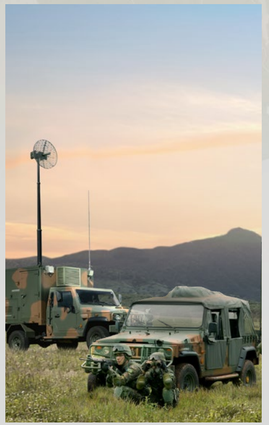
PHASE 1

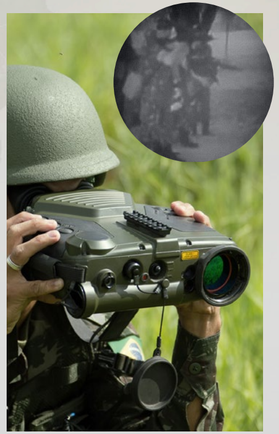
300+
VEHICULAR MODULES FOR DIVERSE APPLICATION

600+
OPTRONICS SYSTEMS FOR FIXED OR PORTABLE USE

2600KM+
DEDICATED NETWORK WITH 99,99% AVAILABILITY

1300+
TACTICAL RADIO SETS FOR VOICE AND DATA TRANSMISSION





INTEGRATED LOGISTICS AND SUPPORT

Embraer's Radars and Land Systems have a complete support solution, with services and parts packages fully customizable according to the client's wishes and needs.

Coordinating the various Services & Support options available, Embraer maintains a Customer Contact Center working 24 hours, 7 days a week, ready to provide the necessary answers and solutions, and fully committed to keeping the Sensors, Communications Infrastructure and Command & Control Centers always ready for the mission.

ADAPTED *LOCAL SUPPORT TO TAKE ADVANTAGE OF EXISTING RESOURCES*

GUARANTEE *OF AVAILABILITY AND RELIABILITY LEVEL*

SYSTEMS DESIGNED *TO ENSURE EASY MAINTENANCE*

SUPPORT *THE WHOLE LIFE CYCLE*

24 X 7 OPERATION, SURVEILLANCE AND SERVICE CENTER (NOC)

PREVENTIVE AND CORRECTIVE MAINTENANCE

EMBRAER RADARS & LAND SYSTEMS

COMPLETE PORTFOLIO

M20

M60
COAAE

S200R

M200 VIGILANTE

M200 MULTI-MISSION

COUNTER-BATTERY

ISR-M

COMINT
ESM STATION

ACCESS NODE

MOBILE C2 CENTER

EMBRAER, PRESENT IN ALL DEFENSE ENVIRONMENTS

EMBRAER IS A GLOBAL COMPANY WITH MORE THAN 50 YEARS OF AEROSPACE EXPERTISE. In addition to the A-29 Super Tucano, an advanced training and light attack aircraft, and the C-390 Millennium, a multi-mission military transport aircraft, it offers a complete line of integrated solutions for air, space, sea, land, and cyber systems.

With more than 8000 aircraft delivered and solutions present in more than 60 Governments and Armed Forces, Embraer offers solutions for land applications such as Command and Control (C4I), sensors, ISR (Intelligence, Surveillance and Reconnaissance), information systems, communication, border monitoring and surveillance, naval combat and management systems, and integration of geostationary satellites for communication and observation. In the cyber area, it provides complete solutions for business protection and defense and security applications.

AIR

SEA

CYBER

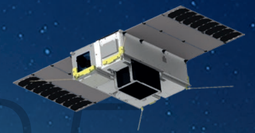
CYBER

CYBER

CYBER

FULL SYSTEM INTEGRATION CAPABILTY

SPACE



LAND


GET THE DIGITAL VERSION
USING THIS QR CODE
embraerds.com
EMBRAER
CHALLENGE.
CREATE.
OUTPERFORM.
November/2022