

Make in India Paradigm Roadmap for a Future Ready Naval Force

18th-19th April 2016

COMMERCIAL IN CONFIDENCE

MBDA
MISSILE SYSTEMS



- **MBDA is an industry leader and a global player in the missile and missile systems sector**
- **MBDA is Number 1 in Europe and one of the worldwide leaders, thanks to its wide market coverage and customer base**
- **MBDA has been working with India for over 50 years**
- **Thanks to an unrivalled product portfolio covering the whole range of land, maritime and airborne requirements, MBDA is working with the 3 Indian Armed forces**



INDIAN NAVY



- **Magic 1 and LR 155 on Sea Harrier**
- **Sea Eagle on Sea Harrier and Sea King**
- **Magic 2 on Sea Harrier**
- **Exocet SM39 on Scorpene submarines**
- **SRSAM selected for Navy**
- **Exocet AM39 proposed for MRMR and H225 M NMRH**





MBDA helicopter launched anti-ship missiles

MBDA has an extensive anti-ship weapon system capabilities for helicopter platforms:

- **Heavy weight antiship missile with the Exocet AM39**
- **Medium weight antiship missile with the Marte ER and MK2/S**
- **Light weight antiship missile with the Sea Venom**

AM 39 main features :

- Dimensions :
 - Length : ~ 4.70 m
 - Diameter : ~ 0.35 m
 - Wingspan : ~ 1.10 m
 - Weight : ~ 665 kg
- Long range (more than 50 km for helo application)
- Fitted with an active RF radar seeker
- All weather
- Fire and Forget
- High subsonic
- Terminal maneuvers
- Selectivity
- Advanced ECCMs

- Integrated on various helicopters :
EC725, Super Puma, Sea king,...



MARTE FAMILY MULTIPLATFORM MISSILES



PATROL BOATS



HELOS (NH90, AW101...)



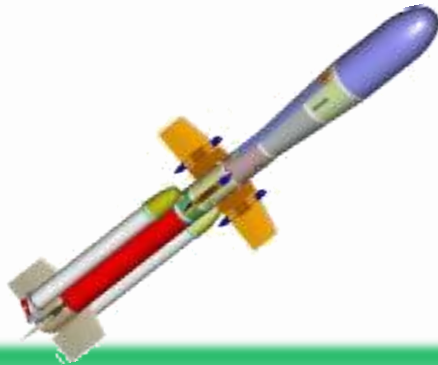
MARITIME PATROL A/C



COASTAL DEFENCE

MARTE MK2 and MARTE ER OVERVIEW

100 km range



30 km range

MARTE Mk2/S – Mk2/N

- ▶ Fire & Forget
- ▶ 310 kg
- ▶ Length: 3.85 m
- ▶ Active RF I-BAND Seeker
- ▶ Way Point guidance
- ▶ Advanced Mission Planning
- ▶ Propulsion: rocket motor



COMMERCIAL IN CONFIDENCE

JOINT FRENCH-UK PROGRAM



Full development to be completed in 2018

Available on different helicopters



Eurocat



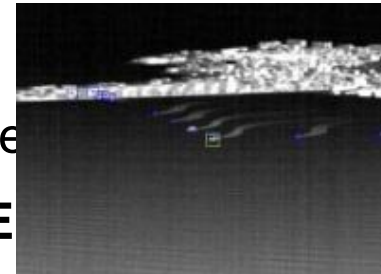
Panther



NH-90-NFH

DESIGN FOR LITTORAL OPERATION

- Multi-mode operation
- Fire and Forget and/or **Man-In-The-Loop** allowing “secured” engagement in complex



LIGHT MISSILE FOR MEDIUM HELICOPTER

- **100 Kg** class
- **20 Km** range

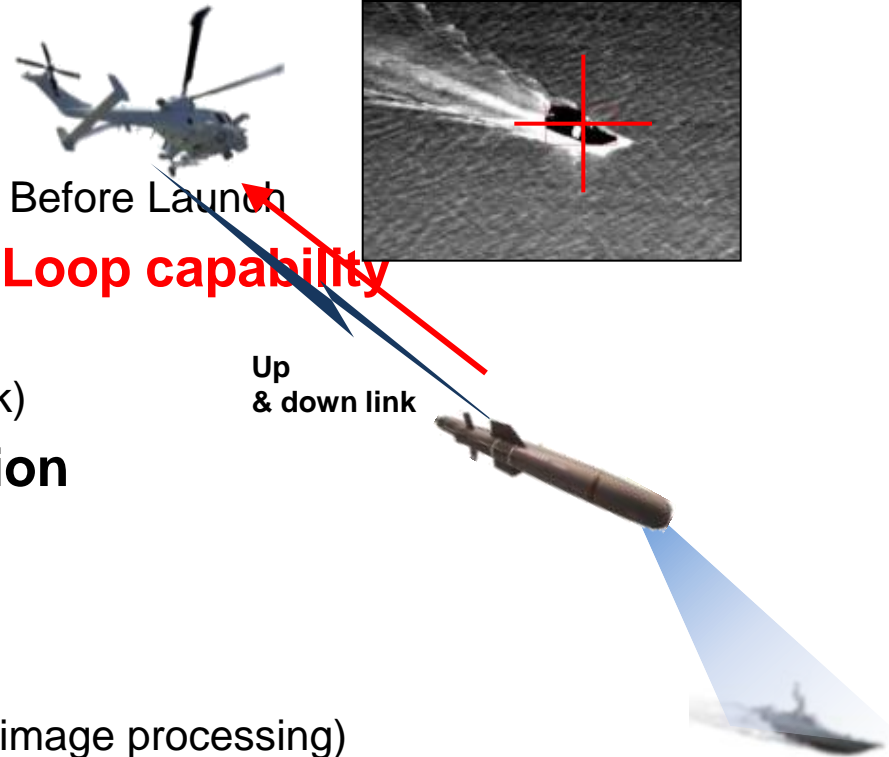
ANTI-SHIP MISSILE

- High subsonic
- Sea skimming
- High lethal effect on littoral units (e.g. FAC & Corvettes)



SEA VENOM-ANL main design features

- **Imagery IR Seeker** (uncooled)
- **Fire and Forget**
 - Look-On After Launch or Look-On Before Launch
- **2-way data-link / Man-In-The-Loop capability**
 - Target update (up-link)
 - IRS image transmission (down-link)
- **High subsonic solid propulsion**
 - Boost + Sustain propeller
- **Low vulnerability**
 - Sea skimming (radar altimeter)
 - Robustness to Counter-measure (image processing)
- **Warhead**
 - 30kg class
 - Semi-armour piercing blast and fragmentation
 - Impact (small target) / Delay (large target)



→100kg class weapon
→20km class range



For MBDA “Make In India” is already a reality:

- **Milan 2T anti tank missile production under licence with BDL**
- **MICA Missile and MICA Missile Launchers sub-assemblies production and maintenance in India.**
- **ATAM Missile Launcher sub-assemblies production and maintenance in India**
- **Existing partnerships with both major companies and SME’s**



MBDA is also preparing the next steps meeting the new “IDDM” policy

SRSAM

- **New missile jointly developed by DRDO and MBDA France and produced in India**

ATGM 5th generation

- **This fifth generation ATGM missile, already ordered by the French Army (MMP) is being discussed as the basis of a potential future co-development program with India**
- **Both programs are based on the Franco-Indian G to G Agreement on Defence Cooperation**