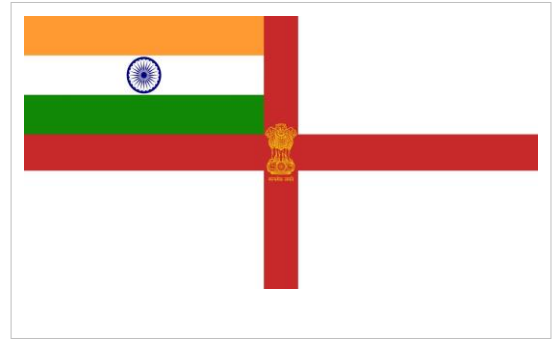


Indian Navy Warships, Submarines & Naval Tactics



List of active Indian Navy ships







List of active Indian Navy ships is a list of ships in active service with the Indian Navy. In service ships are taken from the official Indian Navy website.^[1] The Indian Navy is one of the largest navies in the world,^[2] and as of 2014 possesses two aircraft carriers, one amphibious transport dock, 9 Landing ship tanks, 9 destroyers, 15 frigates, one nuclear-powered attack submarine, 14 conventionally-powered attack submarines, 25 corvettes, 7 mine countermeasure Naval Ensign of the Indian Navy. vessels, 10 large offshore patrol vessels, 4 fleet tankers and various auxiliary vessels and small patrol boats. For ships no longer in service see List of ships of the Indian Navy.

Besides the following navy ships, the Indian Coast Guard operates around 90 - 100 armed patrol ships of various sizes.

Submarine fleet

Nuclear-powered submarines

Class	Picture	Type	Boats	Origin	[3] Displacement	Note
Nuclear-powered submarines in Service)						
1 i						
<i>Chakra</i> (Akula II)-class		Attack submarine (SSN)	INS Chakra (S71)	 Russia	12,770 tonnes	Under a 10 year lease from Russia since 2012.
<i>Arihant</i> -class		Ballistic Missile submarine (SSBN)	INS Arihant (S73)	 India	6,000 tonnes, surfaced	Undergoing sea trials, expected to be commissioned by 2014-2015.





Conventionally-powered submarines





Class	Picture	Type	Boats	Origin	Displacement	Note
Conventionally-powered submarines (14 in Service)						
<i>Sindhughosh</i> -class		Attack submarine	INS <i>Sindhughosh</i> (S55) INS <i>Sindhudhvaj</i> (S56) INS <i>Sindhuraj</i> (S57) INS <i>Sindhuvir</i> (S58) INS <i>Sindhuratna</i> (S59) INS <i>Sindhukesari</i> (S60) INS <i>Sindhukirti</i> (S61) INS <i>Sindhuvijay</i> (S62) INS <i>Sindhurakshak</i> (S63) INS <i>Sindhushastra</i> (S65)	 Soviet Union  Russia	3,076 tonnes	S63 <i>Sindhurakshak</i> exploded and sank on the 14 August 2013. Officials say it is "highly unlikely" she will return to active service, but the final decision will be made only after the boat is re-floated and inspected. S61 <i>Sindhukirti</i> is currently written off
<i>Shishumar</i> -class		Attack submarine	INS <i>Shishumar</i> (S44) INS <i>Shankush</i> (S45) INS <i>Shalki</i> (S46) INS <i>Shankul</i> (S47)	 Germany	1,850 tonnes	To be armed with Harpoon Block-II anti-ship missiles





Surface fleet

Aircraft carriers Amphibious warfare ships



Note: In addition, the Indian Navy maintains a number of smaller landing craft that operate from and in conjunction with these vessels below. They serve to transport troops and equipment from ship to shore during an amphibious operation.












Class	Picture	Type	Ships	Origin	Displacement	Note
Amphibious warfare ships (1 in Service)						
<i>Austin-class</i>		Amphibious transport dock (LPD)	INS <i>Jalashwa</i> (L41)	 United States	16,590 tonnes	Under terms of sale, <i>Jalashwa</i> cannot be used during a war or offensive operation, unless such action is granted by the United States [5] Pentagon.
Landing ships (9 in Service)						
<i>Shardul-class</i>		Landing ship tank (LST)	INS <i>Shardul</i> (L16) INS <i>Kesari</i> (L15) INS <i>Airavat</i> (L24)	 India	5,600 tonnes	


Class	Picture	Type	Ships	Origin	Displacement	Note
Aircraft carriers (2 in Service)						
<i>Centaur-class</i>		Aircraft carrier	INS <i>Viraat</i> (R22)	 United Kingdom	28,700 tonnes	STOVL carrier. Scheduled to be decommissioned by 2017 and replaced by INS <i>Vikrant</i> .
Modified <i>Kiev-class</i>		Aircraft carrier	INS <i>Vikramaditya</i> (R33)	 Russia	45,400 tonnes	STOVAR carrier.

<i>Magar</i> -class		Landing ship tank (LST)	INS <i>Magar</i> (L20) INS <i>Gharial</i> (L23)	 India	5,655 tonnes	
<i>Kumbhir</i> -class		Landing ship tank (LST)	INS <i>Cheetah</i> (L18) INS <i>Mahish</i> (L19) INS <i>Guldar</i> (L21) INS <i>Kumbhir</i> (L22)	 Poland	1,100 tonnes	Two larger ships in the center as seen in picture.
Large Landing Crafty (6 in Service) Utilit						
LCT Mk.3		Landing Craft Utility (LCU)	INS LCU 33 (L33) INS LCU 35 (L35) INS LCU 36 (L36) INS LCU 37 (L37) INS LCU 38 (L38) INS LCU 39 (L39)	 India	[6] 640 tonnes	Outer two ships as seen in picture.







Destroyers and frigates







Class	Picture	Type	Ships	Origin	Displacement	Note
Destroyers and frigates (24 in service)						
<i>Kolkata</i> -class		Stealth Guided missile destroyer	INS <i>Kolkata</i> (D63)	 India	7,500 tonnes	Two more ships of the class to be commissioned.

<i>Delhi-class</i>		Guided missile destroyer	INS <i>Delhi</i> (D61) INS <i>Mysore</i> (D60) INS <i>Mumbai</i> (D62)	 India	6,700 tonnes	
<i>Rajput-class</i>		Guided missile destroyer	INS <i>Rajput</i> (D51) INS <i>Rana</i> (D52) INS <i>Ranjit</i> (D53) INS <i>Ranvir</i> (D54) INS <i>Ranvijay</i> (D55)	 Soviet Union  India	4,974 tonnes	Built, in the Soviet Union, to Indian design modifications of the Soviet <i>Kashin class destroyers</i> design.
<i>Shivalik-class</i>		Multi-role stealth frigate	INS <i>Shivalik</i> (F47) INS <i>Satpura</i> (F48) INS <i>Sahyadri</i> (F49)	 India	6,200 tonnes	
<i>Talwar-class</i>		Multi-role stealth frigate	INS <i>Talwar</i> (F40) INS <i>Trishul</i> (F43) INS <i>Tabar</i> (F44) INS <i>Teg</i> (F45) INS <i>Tarkash</i> (F50) INS <i>Trikand</i> (F51)	 Russia	4,035 tonnes	
<i>Brahmaputra-class</i>		Guided missile frigate	INS <i>Brahmaputra</i> (F31) INS <i>Betwa</i> (F39) INS <i>Beas</i> (F37)	 India	3,850 tonnes	

<i>Godavari</i> -class		Guided missile frigate	INS <i>Godavari</i> (F20) INS <i>Ganga</i> (F22) INS <i>Gomati</i> (F21)	 India	3,850 tonnes	
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Corvettes

Class	Picture	Type	Ships	Origin	Displacement	Note
Corvettes (25 in Service)						
<i>Kamorta</i> -class		Stealth ASW Corvette	INS Kamorta	 India	3,400 tonnes	Handed over to the Navy on 12 July 2014. [7] Awaiting Commissioning.
<i>Kora</i> -class		Corvette	INS <i>Kora</i> (P61) INS <i>Kirch</i> (P62) INS <i>Kulish</i> (P63) INS <i>Karmuk</i> (P64)	 India	1,350 tonnes	
<i>Khukri</i> -class		Corvette	INS <i>Khukri</i> (P49) INS <i>Kuthar</i> (P46) INS <i>Kirpan</i> (P44) INS <i>Khanjar</i> (P47)	 India	1,350 tonnes	



Veer-class		Corvette (light)	INS <i>Veer</i> (K40) INS <i>Nirbhik</i> (K41) INS <i>Nipat</i> (K42) INS <i>Nishank</i> (K43) INS <i>Nirghat</i> (K44) INS <i>Vibhuti</i> (K45) INS <i>Vipul</i> (K46) INS <i>Vinash</i> (K47) INS <i>Vidyut</i> (K48) INS <i>Nashak</i> (K83) INS <i>Prabal</i> (K92) INS <i>Pralaya</i> (K91)	 India  Soviet Union	455 tonnes	Customized Indian variant of the Soviet Tarantul class.
Abhay-class		Corvette (light)	INS <i>Abhay</i> (P33) INS <i>Ajay</i> (P34) INS <i>Akshay</i>	 India  Soviet Union	485 tonnes	Customized Indian variants of the Soviet Pauk class corvettes.








			(P35) INS <i>Agray</i> (P36)			
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Mine countermeasure vessels

Class	Picture	Type	Ships	Origin	Displacement	Note
Mine countermeasure vessels (7 in Service)						
<i>Pondicherry</i> -class		Minesweeper	INS <i>Alleppey</i> (M65) INS <i>Karwar</i> (M67) INS <i>Cannanore</i> (M68) INS <i>Cuddalore</i> (M69) INS <i>Kakinada</i> (M70) INS <i>Kozhikode</i> (M71) INS <i>Konkan</i> (M72)	 Soviet Union	891 tonnes	

Patrol vessels



Class	Picture	Type	Ships	Origin	Displacement	Note
Patrol vessels (47 in Service)						
<i>Saryu</i> -class		Offshore patrol vessel	INS <i>Saryu</i> (P54) INS <i>Sunayna</i> (P57) INS <i>Sumedha</i> INS <i>Sumitra</i>	 India	2,215 tonnes	

<i>Sukanya-class</i>		Offshore patrol vessel	INS <i>Sukanya</i> (P50) INS <i>Subhadra</i> (P51) INS <i>Suvarna</i> (P52) INS <i>Savitri</i> (P53) INS <i>Sharada</i> (P55) INS <i>Sujata</i> (P56)	 South Korea  India	1,890 tonnes	
<i>Car Nicobar-class</i>		Patrol boat	INS <i>Car Nicobar</i> (T69) INS <i>Chetlat</i> (T70) INS <i>Kora Divh</i> (T71) INS <i>Cheriyam</i> (T72) INS <i>Cankaraso</i> (T73) INS <i>Kondul</i> (T74) INS <i>Kalpeni</i> (T75) INS <i>Kabra</i> (T76) INS <i>Koswari</i> (T77) INS <i>Karuva</i> (T78)	 India	325 tonnes	
<i>Bangaram-class</i>		Patrol boat	INS <i>Bangaram</i> (T65) INS <i>Bitra</i> (T66) INS <i>Batti Malv</i> (T67) INS <i>Baratang</i>	 India	260 tonnes	





			(T68)			
<i>Trinkat</i> -class		Patrol boat	INS <i>Trinkat</i> (T61) INS <i>Tarasa</i> (T63)	 India	260 tonnes	
<i>Super Dvora</i> -class		Patrol boat	T80 T81 T82 T83 T84 T85 T86	 Israel	60 tonnes	
Solas Marine fast interceptor boat		Patrol boat	at least 4 in service	 Sri Lanka	60 tonnes	Total 80 on order.
Immediate Support Vessels (ISV)		Patrol boat	10 in service	 India		Total 23 ordered.


Auxiliary fleet

Replenishment ships





Class	Picture	Type	Ships	Origin	Displacement	Note
Replenishment ships (4 in Service)						
<i>Deepak</i> -class		Replenishment oiler	INS <i>Deepak</i> (A50) INS <i>Shakti</i> (A57)	 Italy	27,500 tonnes	

Class	Picture	Type	Ships	Origin	Displacement	Note
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<i>Jyoti</i> -class		Replenishment oiler	INS <i>Jyoti</i> (A58)	 Russia	35,900 tonnes	
<i>Aditya</i> -class		Replenishment oiler & Repair ship	INS <i>Aditya</i> (A59)	 India	24,612 tonnes	



Research and survey vessels (10 in Service)						
Sagardhwani		Research vessel	INS <i>Sagardhwani</i> (A74)	 India	2,050 tonnes	

Support ships







Class	Picture	Type	Ships	Origin	Displacement	Note
Support ships (6 in Service)						
<i>Nicobar</i> -class		Troopship	INS <i>Nicobar</i> INS <i>Andamans</i>		19,000	
		Hospital ship	INS <i>Lakshadweep</i>			Not listed on official Indian Navy website.
<i>Astravahini</i> -Class		Torpedo recovery vessel	INS A-72 (TRV) INS A-73 (TLRV)	 India	110 tonnes	
		Diving support vessel	INS <i>Nireekshak</i> (A15)		2,160 tonnes	

Research and survey vessels




<i>Sandhayak</i> -class		Survey vessel	INS <i>Nirupak</i> (J14) INS <i>Investigator</i> (J15) INS <i>Jamuna</i> (J16) INS <i>Sutlej</i> (J17) INS <i>Sandhayak</i> (J18) INS <i>Nirdeshak</i> (J19) INS <i>Darshak</i> (J20) INS	 India	1,800 tonnes	
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			<i>Sarvekshak</i> (J22)			
<i>Alcock Ashdown</i> -class		Survey vessel	INS <i>Makar</i> (J31)	 India	500 tonnes	New catamaran design. Five more ships are under various stage of construction.

Training vessels


Class	Picture	Type	Ships	Origin	Displacement	Note
Training vessels (4 in Service)						
		Training vessel	INS <i>Tir</i> (A86)	 India	3,200 tonnes	
		Training vessel (sail)	INS <i>Varuna</i> INS <i>Tarangini</i> (A75) INS <i>Sudarshini</i> (A77)	 India	500 tonnes	
		Training boat (sail)	INSV <i>Mhadei</i> (A76)	 India	23 tonnes	Has been used for solo, unassisted, non-stop circumnavigation under sail two times.


Tugboats

Class	Picture	Type	Ships	Origin	Displacement	Note
Tugboats (19 in Service)						
<i>Gaj</i> -class tugboat		Ocean-going tugboat	INS <i>Matanga</i> (A53)	 India	1,334 tonnes	The first ship of the class, INS <i>Gaj</i> (A51) was decommissioned in 1996.
		Ocean-going tugboat	INS <i>Gaj</i> (2002)		560 tonnes	
<i>Bhim</i> -class		Tugboat	INS <i>Bhim</i> INS		373 tonnes	Not listed on official Indian Navy website.

			<i>Balshil</i> INS <i>Ajral</i>			
<i>Madan Singh</i> -class		Tugboat	INS <i>Madan Singh</i> INS <i>Shambhu Singh</i>		382 tonnes	Not listed on official Indian Navy website.
<i>Balram</i> -class		Tugboat	INS <i>Balram</i> INS <i>Bajrang</i>		216 tonnes	Not listed on official Indian Navy website.
<i>Bahadur</i> -class		Tugboat	INS <i>Bahadur</i>		100 tonnes	Not listed on official Indian Navy website.
<i>Anand</i> -class		Tugboat	INS <i>Anand</i>		100 tonnes	Not listed on official Indian Navy website.
<i>B.C. Dutt</i> -class		Tugboat	INS <i>B. C. Dutt</i> INS <i>Tarafdar</i>		355 tonnes	Not listed on official Indian Navy website.
<i>Nakul</i> -class		Tugboat	INS <i>Nakul</i> INS <i>Arjun</i>		373 tonnes	Not listed on official Indian Navy website.
<i>Arga</i> -class		Tugboat	INS <i>Arga</i> INS <i>Bali</i> INS <i>Anup</i>		239 tonnes	Not listed on official Indian Navy website.
		Tugboat	INS <i>Sarathi</i>	 India	25 tonnes	

Miscellaneous

Class	Picture	Type	Ships	Origin	Displacement	Note
Miscellaneous (24 in Service)						
<i>Ambika</i> -class		High sulphur diesel oiler	INS <i>Ambika</i>		1,000 tonnes	Not listed on official Indian Navy website.
		Fuel carrier (barge)	INS <i>Poshak</i>	 India	671 tonnes	Not listed on official Indian Navy website.
<i>Modest</i> -Class		Fuel carrier (barge)	INS <i>Purak</i> INS <i>Puran</i>		731 tonnes	Not listed on official Indian Navy website.

<i>Hooghly</i> - Class		Fuel carrier (barge)	INS ??? INS ??? INS ??? INS ???		1,700 tonnes	Not listed on official Indian Navy website.
<i>Vipul</i> -Class		Water carrier (barge)	INS <i>Pamba</i> INS <i>Pulakesin-1</i> INS <i>Ambuda</i>		598 tonnes	Not listed on official Indian Navy website.
<i>GSL</i> -class		Small ferryboat	INS <i>Manohar</i> INS <i>Modak</i> INS <i>Mangal</i> INS <i>Madhur</i> INS <i>Manorama</i> INS <i>Manjula</i>		175 tonnes	Not listed on official Indian Navy website.
<i>Manoram</i> - class		Small ferryboat	INS <i>Manoram</i> INS <i>Vihar</i>		578 tonnes	Not listed on official Indian Navy website.
<i>Shalimar</i> - class		Small ferryboat	INS <i>Neelam</i>	 India	218 tonnes	
<i>Corporated</i> - class		Sullage (barge)	INS <i>SB-II</i> INS <i>SB-II</i> INS <i>SB-V</i> INS <i>SB-VII</i>		220 tonnes	Not listed on official Indian Navy website.



INDIAN NAVY



MISSILE AND GUN SYSTEMS FOR A FUTURE READY NAVAL FORCE





Scope



Introduction

Missile and Gun Capability

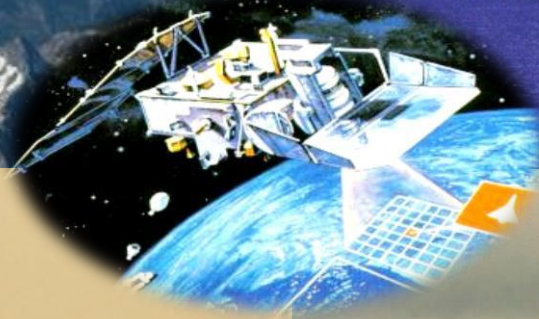
Technology

Indigenisation

Conclusion



Introduction



Multi-dimensional Networked Force

Introduction



- 138 Ships and Submarines
- 235 Aircraft

2016

2027

- 200 Ships and Submarines
- 500 Aircraft

Indigenous production of Missiles and Guns a 'Win-Win' situation for both Indian Navy and Industry



- Conceptualisation to delivery takes 8-10 years
- Technology under development v/s Proven Technology
- Early Identification Critical
- Interaction between Military/ Industry/ Academia/ Scientific Community



IN Weapons

Missile Systems

Anti Surface

Anti Air

Land
Attack

Surface
to
Surface

Sub
Surface
to
Surface

Air to
Surface

Surface
to Air

Air to
Air

Ship/
SM to
Land



Missile Inventory



SSM/
TLM



SAM



ASM



AAM

Future requirements – Technology Perspective
and Capability Roadmap



IN Weapons

Gun Systems

New Technology
Weapons

Medium Range
Guns

Close in
Weapon
Systems

Small Arms

Rail
Guns

Laser
Weapons

Anti
Surface\
Anti Air

Coastal
Batteries

Anti Air/
Surface

Personal
Weapons

Platoon
Weapons



Gun Systems

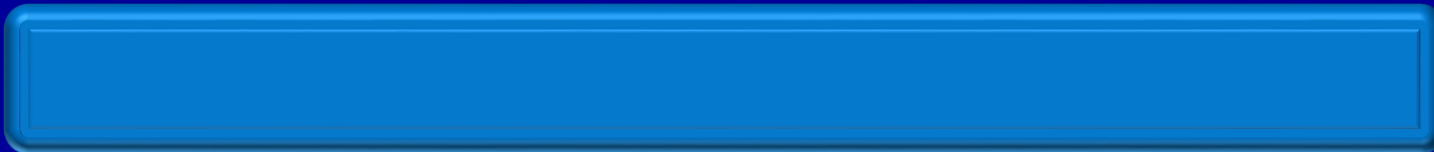


MR
Guns

CIWS

Small
Arms

Future Requirements – 127 mm, 30 mm Naval
Surface Gun, LIMO Weapons



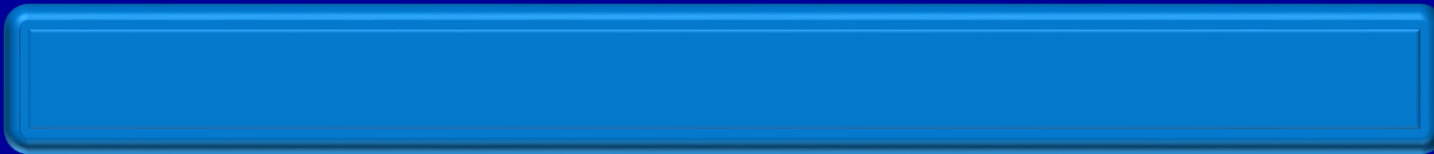
Procurement Rationale



Platform Capability – Weapon Fit



Self Sufficiency in Combat



Broad Considerations



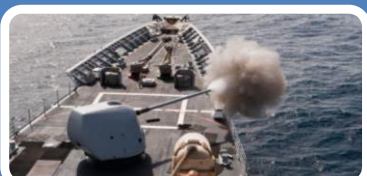
Standardisation



Modularity



Compatibility



Versatility



Maintainability and Supportability



Emerging Technologies – Missiles



Hypersonic Missiles



Loitering Missiles



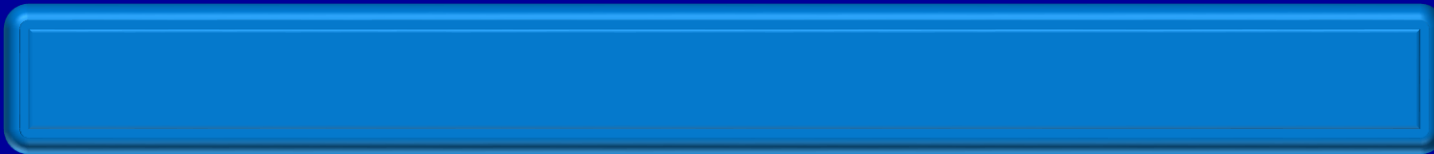
Man-in-Loop Capability



Terminal Manoeuvres



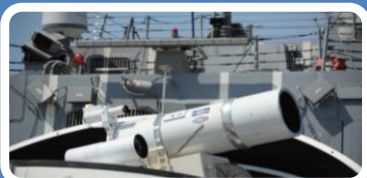
Low Radar Cross Section



Emerging Technologies – Guns



EM Rail Guns



Laser Weapons



Extended Range Ammunition



AHEAD Ammunition



Precision Guided Munitions



Indigenisation Efforts



- Indian Navy – Pioneer in Self Reliance
- Missiles – BrahMos and Long Range Surface to Air Missile
- Guns – 76 mm, 30 mm and 12.7 mm. Significant ToT envisaged for 127 mm/ 5 inch gun



Indigenisation Efforts



Indigenisation in Weapons

Need of the Hour

Missiles

- Seeker Technology
- Missile Control Systems

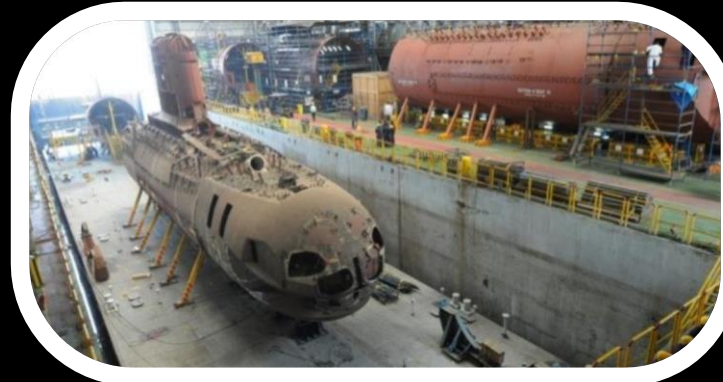
Guns

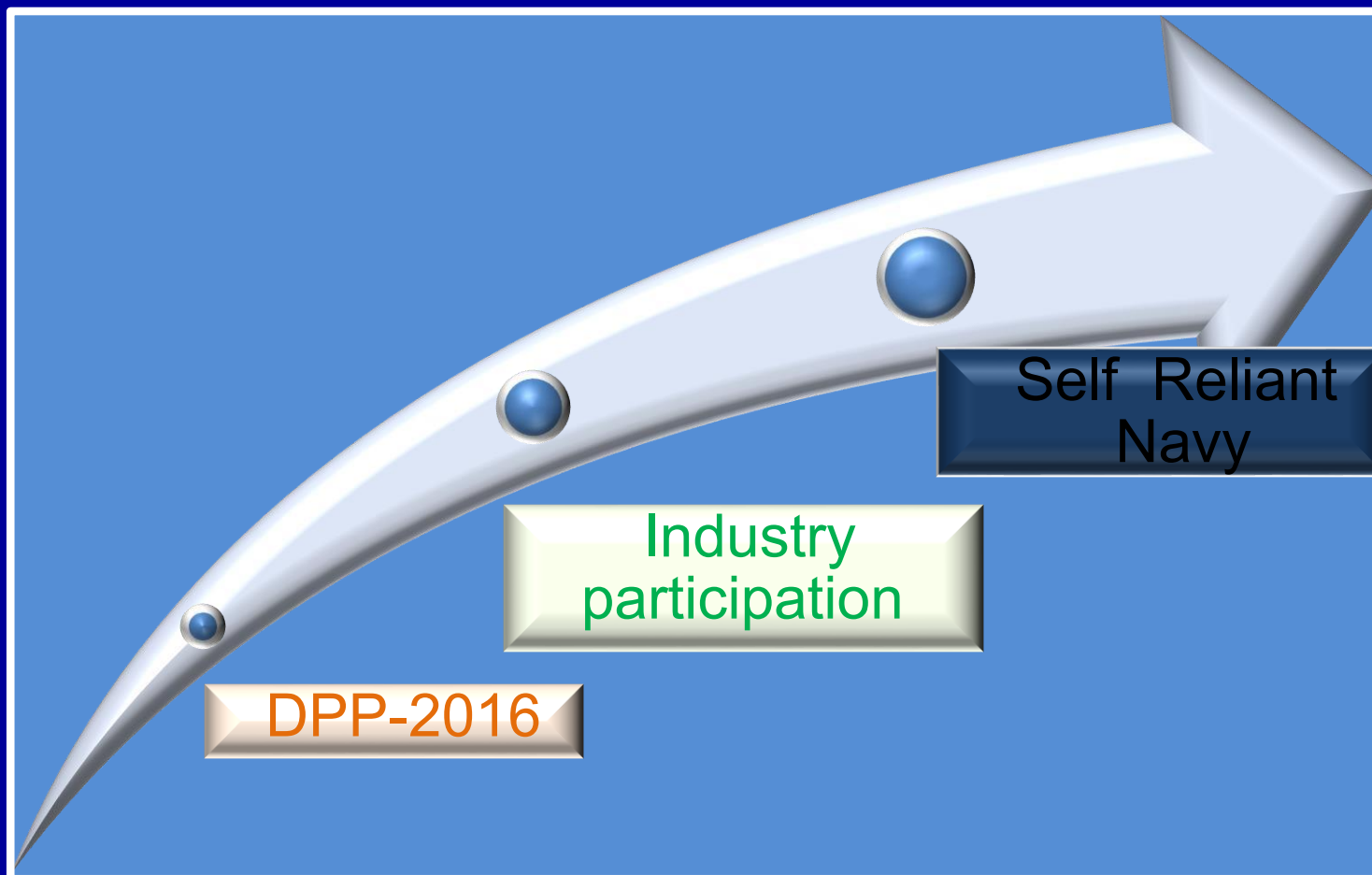
- Stabilisation
- Barrel Technology
- Miniaturisation



➤ On the path of sustained growth, the Navy would induct aircraft carrier, advanced underwater platforms, ships and aircraft

➤ Indigenisation and Self Reliance







THANK YOU