





**VIII Inter-American Naval Conference specialized in
Science, Technology and Innovation (CNIE-CT & I) 2021
Salinas- Ecuador**

PRESENTATION

**BRAZILIAN NAVY
(BN)**

- OCT2021 -

Summary

- 1. Design of unmanned air and naval units; rules for the regulation of military and civil use of DRONES; use of ANTI-DRONE systems;**
- 2. Development of DRONES with LIDAR technology for coastal characterization in critical areas such as border areas with mangroves;**
- 3. Development of a Command and Control Center for decision-making during the occurrence of oceanic events, such as TSUNAMIS and "El Niño" and "la Niña" phenomena; and**
- 4. Conclusion.**

Design of unmanned air and naval units



DGDNTM



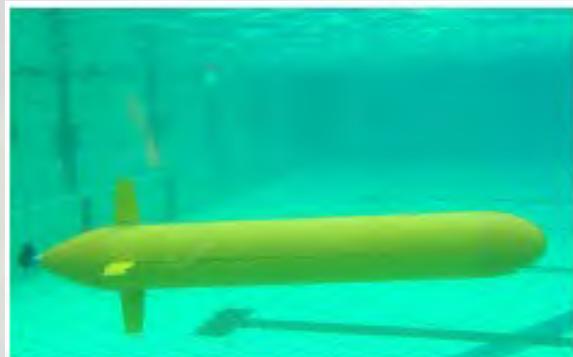
CTMRJ



TIDEWISE



Design of unmanned air and naval units



Unmanned submarine vehicle "Paraty" in association with the University of São Paulo (USP)



Inertial System Test Car



Catamaran (surface vehicle) of proof")



Unmanned Aerial Vehicle "Carcará" in partnership with the company Santos Lab

Design of unmanned air and naval units

AIR DOMAIN:

Partnership with the company Stella Tecnologia



Atobá Unmanned Aerial System

Design of unmanned air and naval units

SURFACE DOMAIN:

Project MB-2021



BN Autonomous Vessel

Partnership with the company Tidewise



Tupan Surface Autonomous Vehicle

Design of unmanned air and naval units

Partnership with
SENAI / CIMANTEC



Prototipe do Flatfish

**SUBMARINE DOMAIN:
Underwater Acoustic Landscape
Monitoring Project (PMPAS)**



Seaglider



Partnership with the
Nautilus UFRJ Project



AUV BrHUE 2020

Rules for the regulation of military and civil use of DRONES



Civil Regulatory Agency



**Brazilian Aeronautical
Authority**



**DAerM
BN Military Regulatory
Organization**

REGULATIONS

Rules for the regulation of military and civil use of DRONES

To learn about these standards in detail, follow the links to the websites:

Federal Law (Brazilian Aeronautics Code):

http://www.planalto.gov.br/ccivil_03/leis/L7565.htm

FAB:

<https://www.decea.gov.br/drone/>

ANAC:

<https://www.anac.gov.br/assuntos/paginas-tematicas/drones> e

<https://www.anac.gov.br/assuntos/legislacao/legislacao-1/rbha-e-rbac/rbac/rbac-e-94>

BN:

<https://www.marinha.mil.br/daerm/>

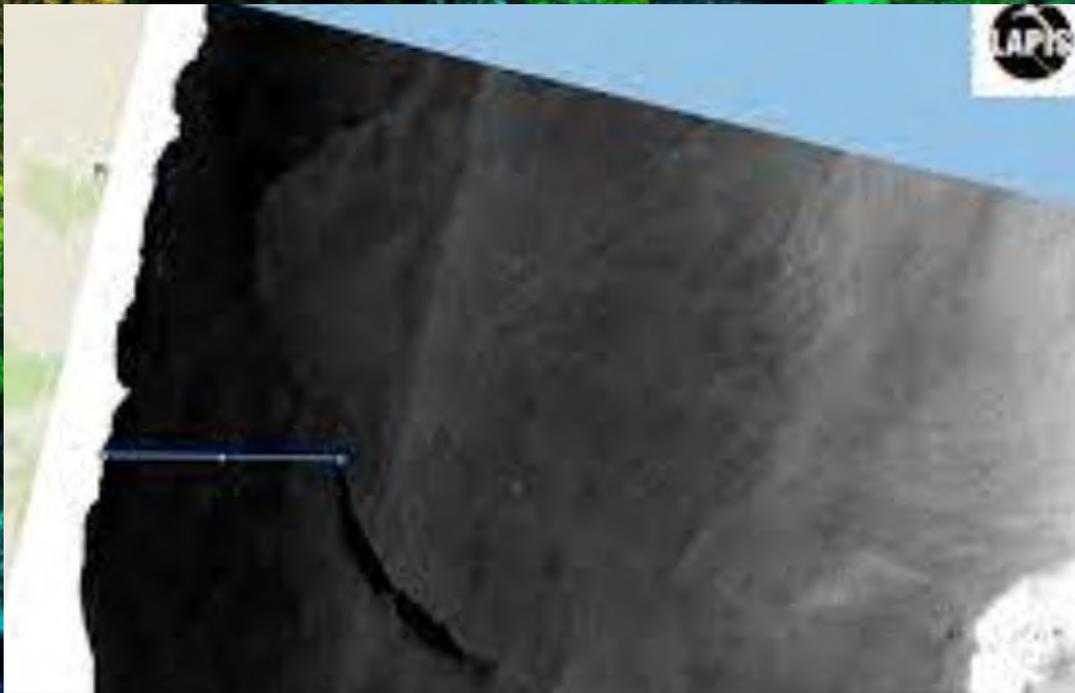
Use of ANTI-DRONE systems



Brazilian Navy has been following the development of this equipment and is seeking development partnerships with companies such as Rohde-Schwarz and IAI Systems.



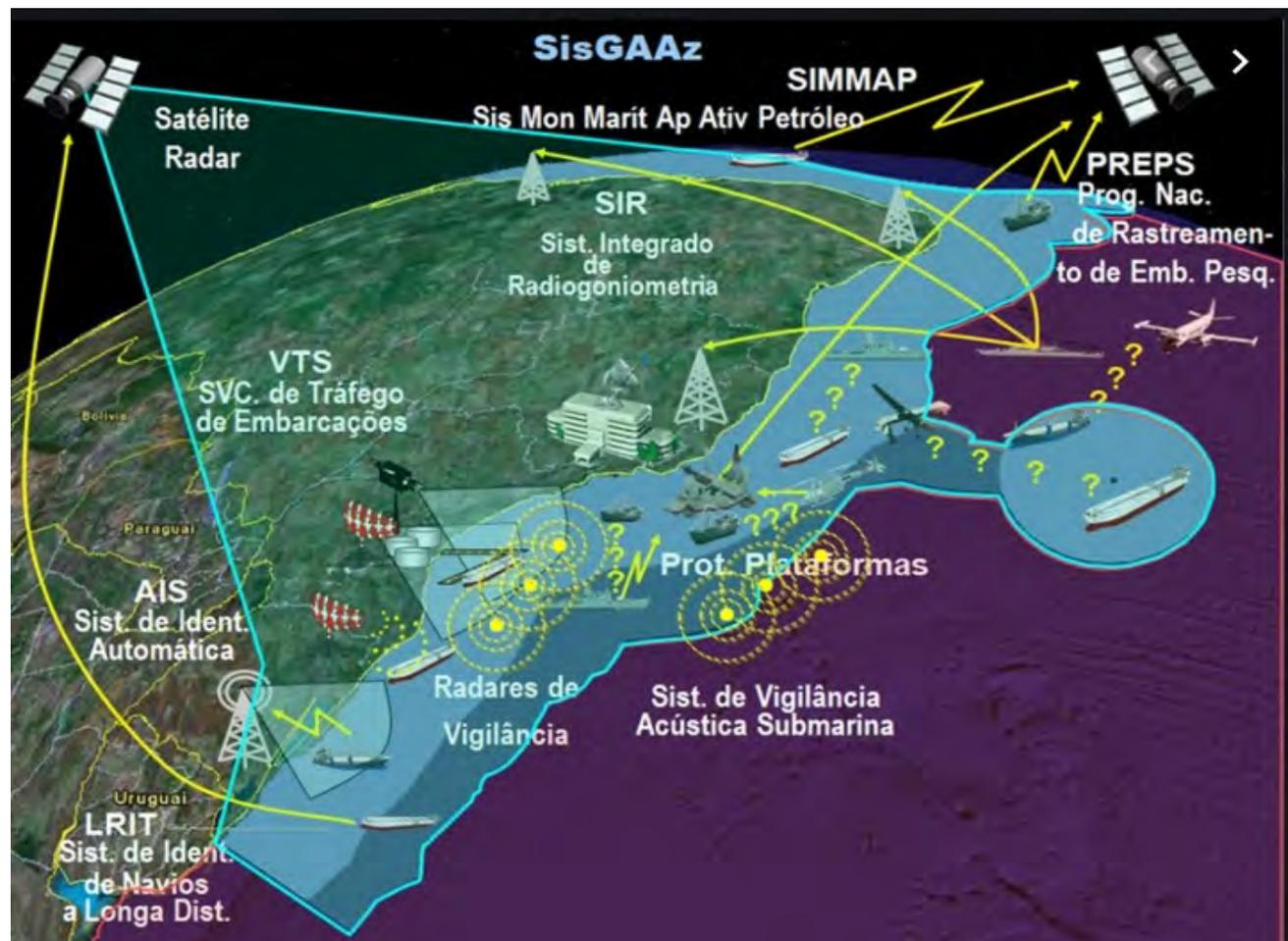
Development of DRONES with LIDAR technology for coastal characterization in critical areas such as border areas with mangroves



DJI Matrice 600 embedded with LIDAR sensor from RIEGL company

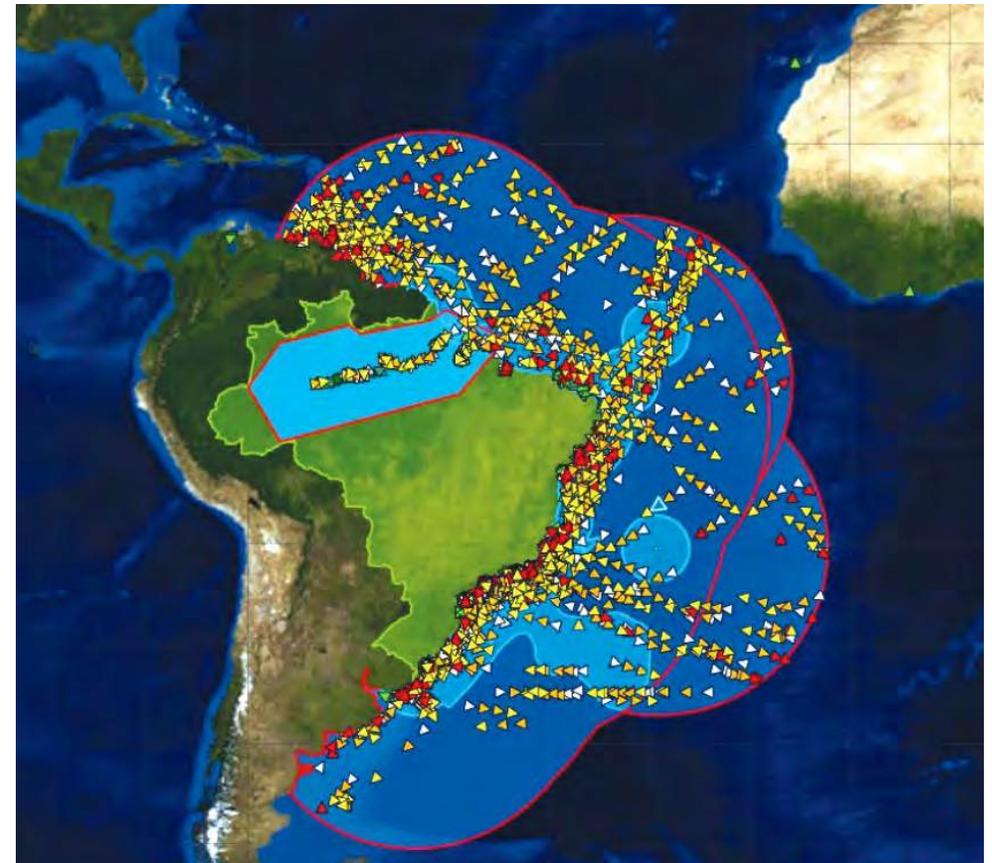
Development of a Command and Control Center for decision-making during the occurrence of oceanic events, such as TSUNAMIS and "El Niño" and "la Niña" phenomena

Blue Amazon Management System (SisGAAz)



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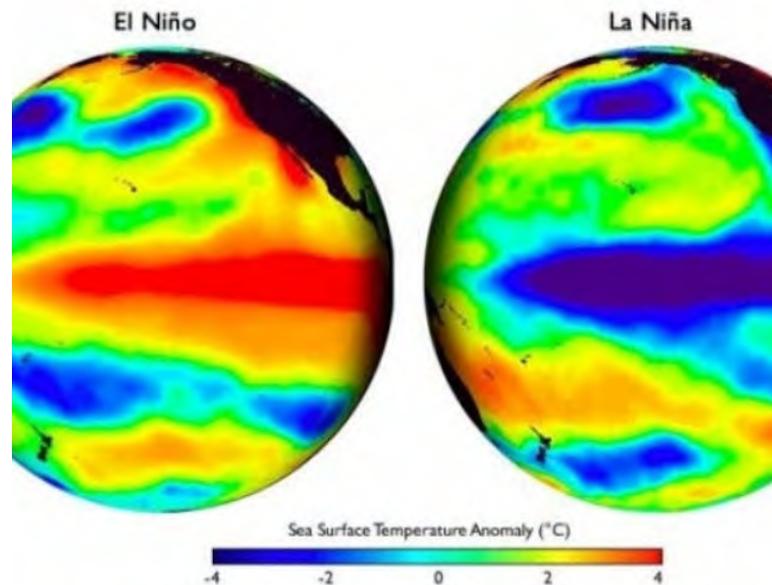
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Development of a Command and Control Center for decision-making during the occurrence of oceanic events, such as TSUNAMIS and "El Niño" and "la Niña" phenomena

Blue Amazon Management System (SisGAAz)

Integration with coastal seismic sensors for tsunami warning is possible and extends the capabilities of the system, as well as with climate change systems and sensors for the "El Niño" and "la Niña" phenomena.



Conclusion

The Brazilian Navy has its own technologies and capabilities in the topics covered, which can collaborate with the defense efforts of this Forum.

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- Possible partnerships can be discussed, not only between governments, but also with the triple helix (governments, companies and universities).



**MUCHAS GRACIAS!
THANK YOU!
OBRIGADO!**

