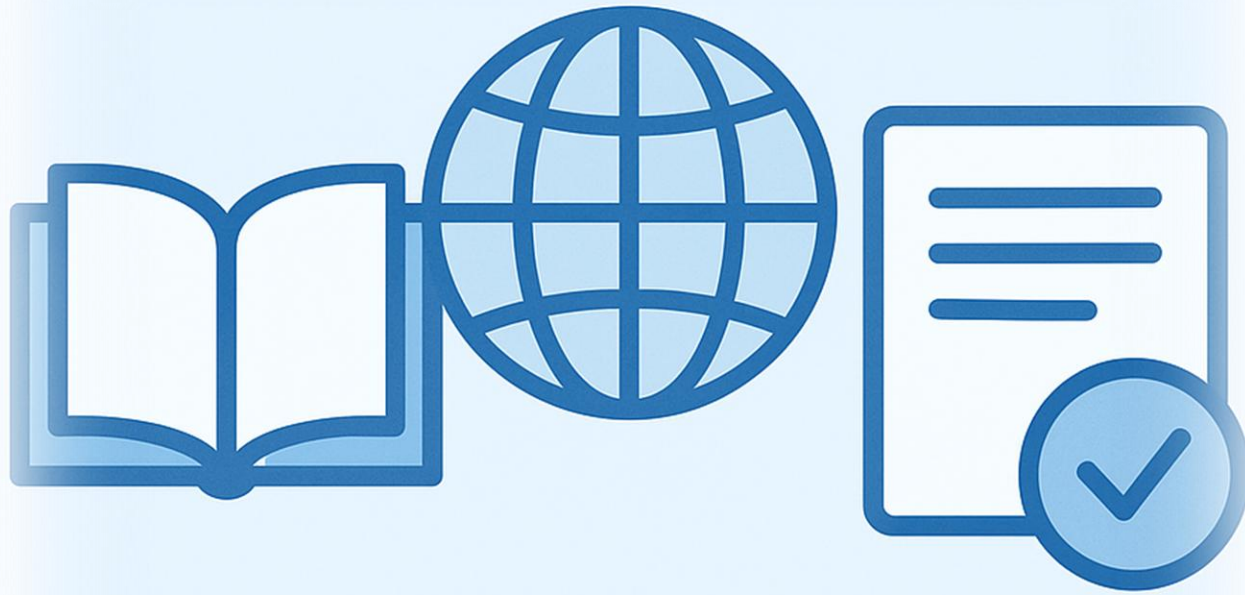




Eng. Ângelo Canavitsas – D. Sc.
Regulatory Relationship Manager
PETROBRAS – Petroleum Sector

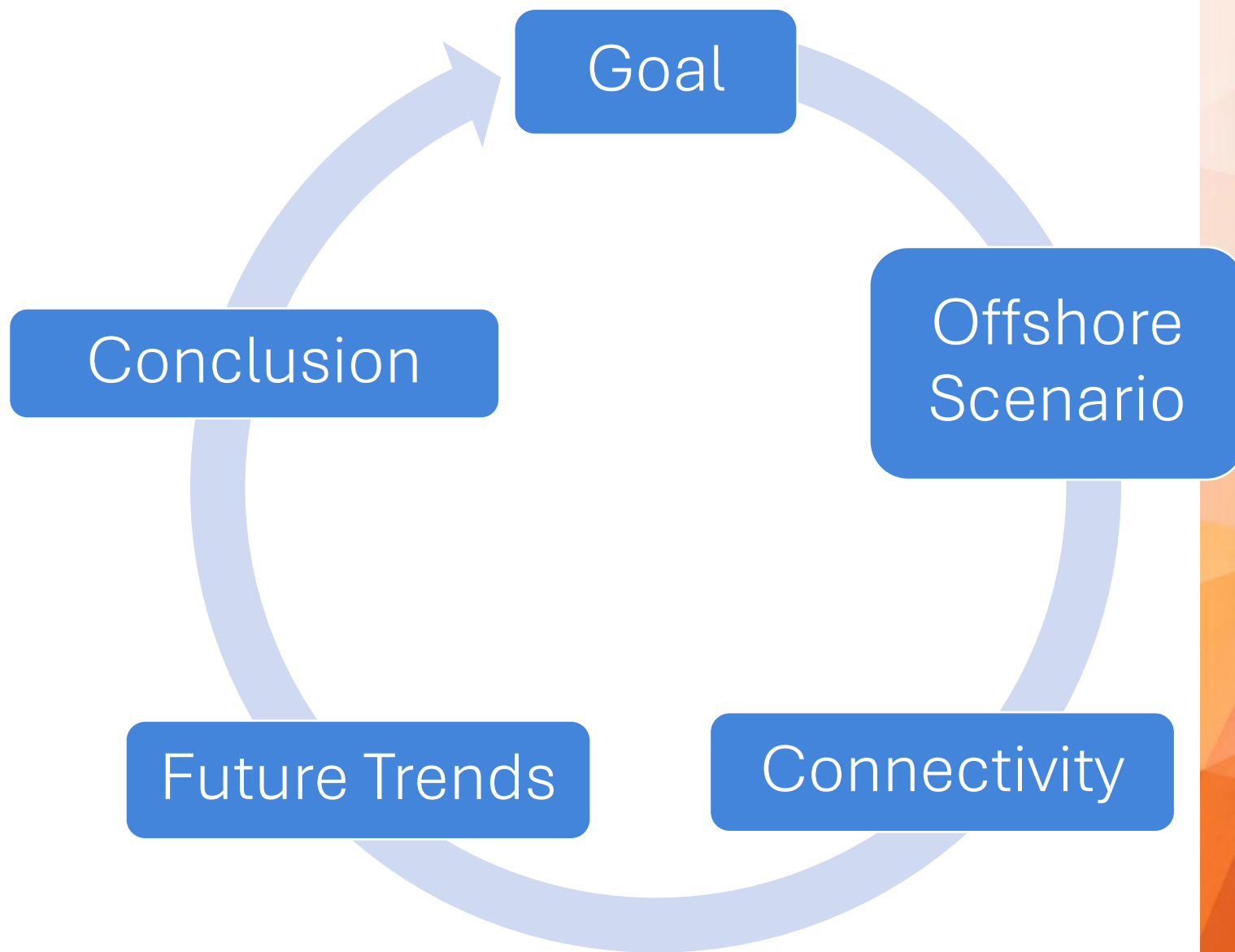
**OFFSHORE OIL & GAS PLATFORMS
CONNECTIVITY**



**This information
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presentation is
public

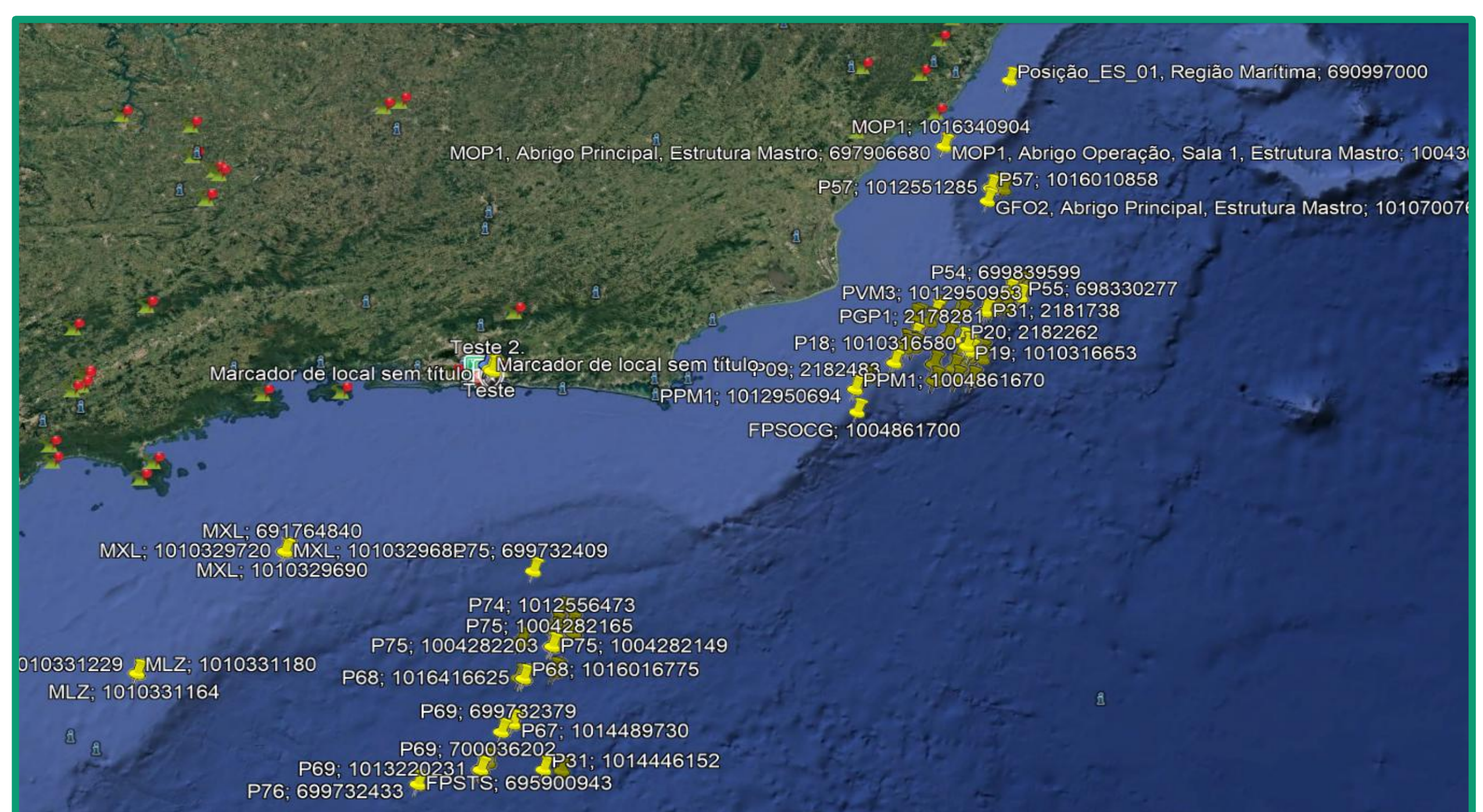
Summary



Goal

- Show the current scenario of offshore oil and gas exploration and its connectivity needs, with telecommunications services that ensure continuous and safe operation.





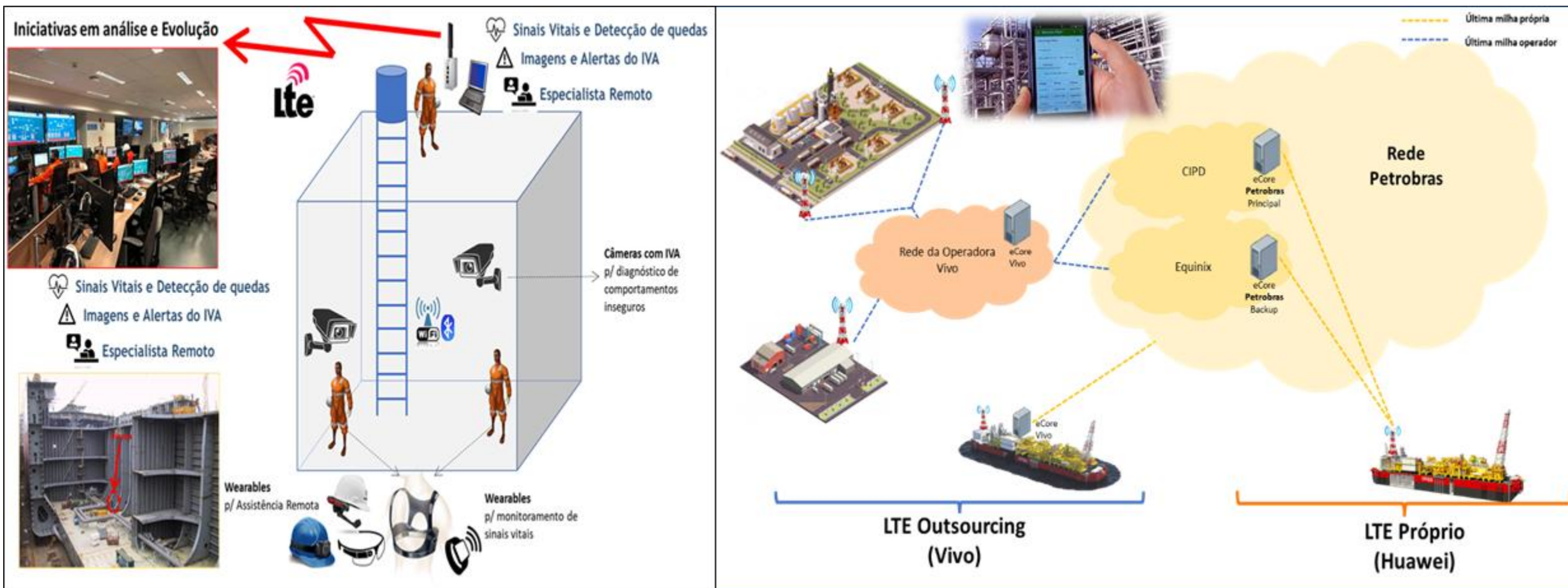
Offshore Scenario

- "5 MHz blocks, in the 700 MHz band
 - Private 4G - LTE network (Industrial automation, radio communication, video, and various applications)
- 1,800 MHz band
 - By operator for onshore and offshore systems (Industrial automation in refineries and Oil & Gas production platforms.) 4G - LTE network."



Connectivity

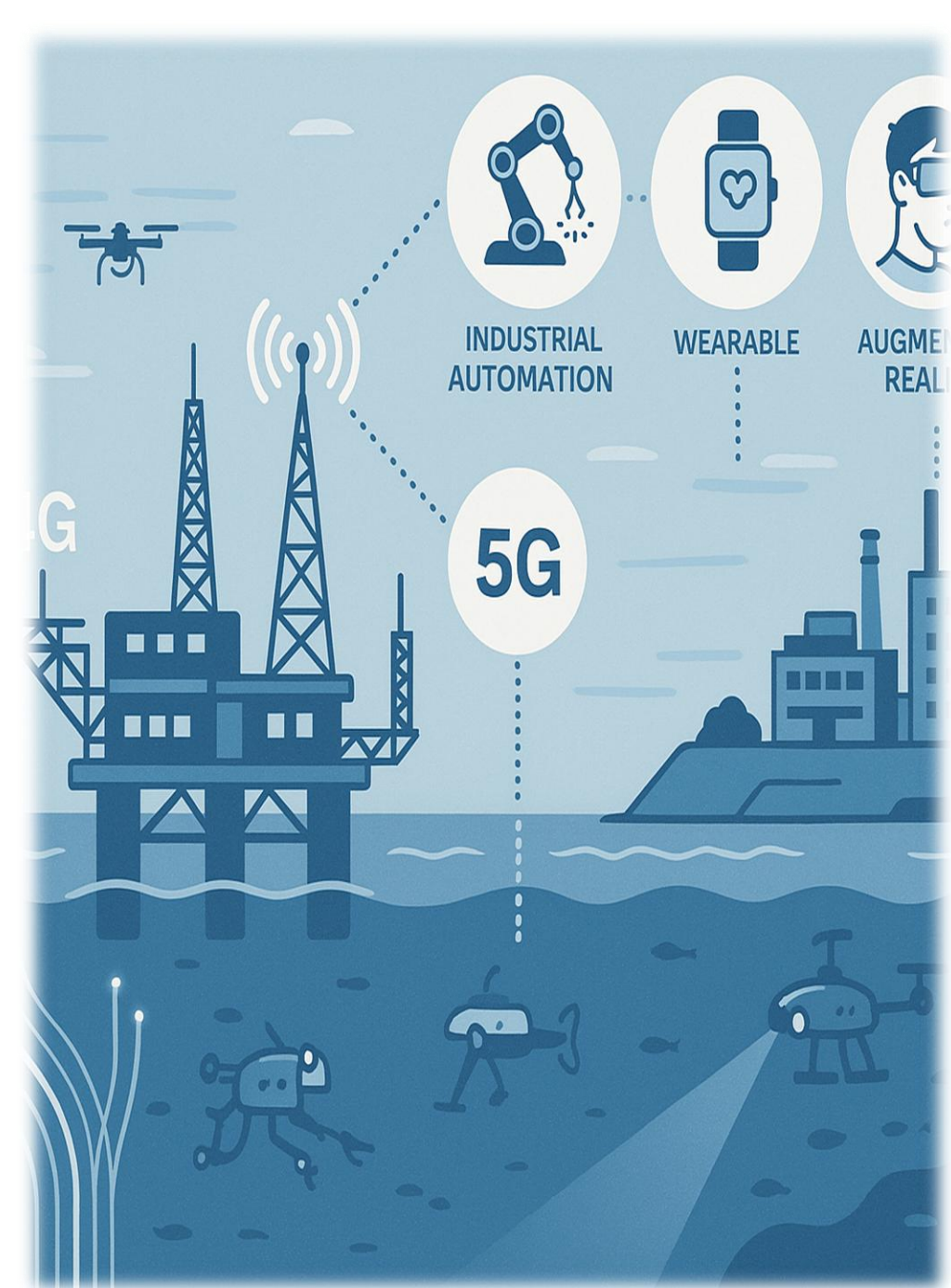
- Robot Control / Augmented Reality / Wearable Sensors / Remote Operation of Platforms / Operation of Underwater Robots / Digital Twins



Future Trends



- Connection of Platforms with optical fibers, expanding the existing network.
- Evaluation of the use of 5G for critical communications.
- Expansion of remote operations.
- Increased use of robots and drones.
- Promote, together with Regulatory Agencies, the development of specific telecommunications regulations for the offshore area.



Conclusion

- LTE has enabled and accelerated industrial digitalization through connectivity, incorporating IIoT technologies, increasing productivity, and reducing costs and risks.
- Enabling the 4G network with an operator allowed for agile and efficient deployment with lower investments and operational advantages.
- Significant advances have been achieved with digitalization, enabling operational mobility, connecting field operators to control centers with remote maintenance assistance.

Thanks!

Eng. Ângelo Canavitsas – D. Sc.
canavitsas@petrobras.com.br

