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OPEN OPPORTUNITIES

DATE: October/24

Updated August 23, 2024

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Solution Aquisition

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7004315163 - Software for Technological Design of Oil and Gas Production Systems in Peer-Assisted Mode

Seeking a digital tool for conceptual design of Oil and Gas Production Systems through integrated phenomenological simulation of reservoirs, multiphase flow, and primary oil processing, incorporating technologies that PETROBRAS does not usually apply in its projects, as well as innovative solutions. The ability to generate conceptual designs in an integrated and expedited manner, and to evaluate and compare them, represents a goal that will allow PETROBRAS to innovate and generate value. Innovation may come from the application of new technologies under development by PETROBRAS or emerging technologies, even those not yet mapped.
Petronect Opportunity: 7004315163

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Module Startups

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2024 Startups Module Call for Proposals

We have launched a new R$ 16 million call for startups! As part of the Petrobras Connections for Innovation Program, in partnership with Sebrae, the call addresses challenges in the area of asset integrity. In addition to financial support, startups will gain access to a real-world testing environment in the oil, gas, and energy industries, enabling them to scale their solutions to market. Winning companies may receive up to R$ 2 million for the development of hardware and materials, for example.
Applications are open until November 11.

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NAVE Proposals - ANP Open Innovation Program

The public notice and registration form for the first edition of NAVE, ANP's open innovation program, were published on September 25, 2024, on the Agency's website.
Startups interested in participating have until November 8 to register for the program, which was launched on September 23 and 24 at the IUP Innovation Connections, a side event of ROG.e, held in Rio de Janeiro, RJ.
A total of R$ 28 million has been allocated to NAVE, which presents 67 technological challenges in the energy sector.

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237 - Assisted inspection report on subsea rigid pipeline welds

The challenge is to develop a tool (soft tech) for evaluating images generated in Phased Array ultrasound inspections carried out on welded joints of rigid subsea pipelines in order to verify/assist the inspector's report, in an automated way, identifying the geometry of the weld, the possible presence of discontinuities and their dimensions.

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238 - Bellmouth or Curvature Stiffener drop monitoring technology

With the advanced age of the BSN 300 bell mouths, inspections have revealed various anomalies related to the mouths breaking and the bending stiffener falling out. The fact is that these anomalies can only be identified through underwater inspection (ROV or Diver). These anomalies can cause damage to the riser, resulting in accidents with an impact on the environment, property, people and image.

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239 - Non-contact inspection (scanning) or monitoring of flexible pipeline annulus flooding

Identify whether there is a build-up of water in the annular space of each section of a flexible pipeline interconnection in operation, without the need to attach a tool (inspection system).

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240 - Motorization of a specific underwater thickness mapping tool

We have a concept (under patent) for thickness mapping in subsea equipment spools, which has high coverage efficiency and scanning speed. We are evaluating the possibility of motorizing it, to extend the range of use beyond the limit of the ROV arm, which would greatly increase the scope of use of the tool for different types of underwater equipment. It is our intention that the motorization will not only enable the tool to be moved along the spool (including curved sections), but also to avoid any obstacles along the way.

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247 - Characterization of the operational envelope of disconnected and monitored wells via a hydroacoustic system

Analysis of sensor data, enabling the identification of the operating envelope; and all the structuring of the layer for making data available in corporate systems and the alarm process, guaranteeing a rapid response in the event of an unwanted event.

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248 - RIG PROCESS VIEW

Develop agile and simple software that graphically represents all the barriers in a well, including the structure mounted on the rig in an educational diagram. We need to create a tool for the POÇOS system that includes components such as the BOP, riser, drilling equipment, cementing unit, well test, among others. In addition to this equipment, the software should show the flow paths in the rig along with pipes and valves. The opportunity lies in meeting the demand to draw the system/process "mounted" on the rig at the time of operation, so that the inspector can use it quickly, minimizing the time needed to create the drawing. The software must clearly and objectively show the barriers installed both in the well and on the rig at all times during operations and provide a schematic. The preventive barriers of the rig must be shown considering the equipment/pipe they are connected to. Mitigating barriers should be shown according to their physical position. Procedural barriers to operation (if any) must be mentioned somewhere in the software menu.

The system must include the construction of libraries of current and future equipment, allowing edits via a "Block Editor" to make the assembly of schematics more flexible. In addition, the software needs to indicate valve switching and other requirements to make it easier to visualize the process and its vulnerabilities. It is important that the software has the capacity to integrate via REST API with real-time data tools. Other desirable attributes of the software would be:

Function to import the well drawing from a specific module of POÇO WEB (Petrobras).

Ability to add values and text at specific points in the schematic.

Change in the color of the flow line according to the alignment status of the valves and the type of fluid. Valves and pumps change color based on their status.

Possibility of indicators/alerts for possible communications inside the well and on subsea equipment.

The system to be developed must have a module for designing assemblies, allowing the detailing of an assembly in its cavities, elementary barriers and connection points. The sets created would be stored and made available in a library for use. In the editing module, for example, the user could represent a well connected to their platform, using the pre-created sets available in the library and linking them together. In the editing assembly module, the user can indicate the status of valves and barrier components.

The lack of a comprehensible visual solution is currently a problem and our software can solve this gap, facilitating the understanding and planning of operations and improving aspects related to human factors.

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249 - High throughput inspection (>200 m/day) of non-piggable pipes and ducts in operation

Inspecting the entire stretch of pipeline is extremely complex and practically unfeasible due to the need for external access to the pipe/duct in order to carry out the inspection. Recently, technology has been developed called the MSIB (Multi Sensor Inspection Ball), which is a small sphere equipped with different sensors. The ball can be introduced into the line through a branch of the pipe/duct, use the fluid itself as a “propellant” inside the line and collected in another branch of the line. From there, the data obtained by the sensors (especially magnetometer-type sensors) could be analyzed and points of internal/external corrosion in the line identified quickly.

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250 - Detection and sizing of the remaining thickness in the region of external corrosion in overhead and elevated pipes

Detection and sizing of the remaining thickness in the region of external corrosion located in aerial and elevated pipes on the topside of Petrobras platforms.

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251 - System for monitoring thickness loss in large stretches of pipe or duct, with remote data communication

System for monitoring thickness loss in sections of large pipes or ducts with remote data communication.

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252 - Detection of cracks in the weld overlay or clad layers of subsea pipelines in operation

Detection of cracks in clad layers of subsea pipelines in operation.

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260 - Structuring and integrating data for visualization and integrity analysis in expert systems for rigid subsea pipelines

Structuring and integrating data for visualization and integrity analysis in expert systems for rigid subsea pipelines.

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Module Pre-commercial Procurement

PETROBRAS intends to contract the development and support of an open digital platform for the integration of c
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Asset 360 Open platform for digital asset integrity management in production.

Petrobras intends to contract the development of the qualification of high-performance natural gas CO2 separation membranes, developed of the hollow fiber type, in partnership with PAM Mmembranenas Sselectives Ltda., according to patent BR 10, 2022, 024002 7. This membrane model has the potential to eliminate future bottlenecks by increasing the CO2 concentration of an FPSO's processing systems, while reducing downtime for membrane element changes.

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Module Technology Transfer

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1 click Licensing - Petrobras offers 214 patents for licensing

Petrobras is offering 214 technologies for licensing in a simple and fast way. The objective is to accelerate the implementation of innovations and contribute to the development of suppliers that can implement the technologies in Petrobras' business. There are opportunities available in the areas of Exploration and Production, Production Development, Refining and Sustainability.

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Public Offering - Subsea Recirculation Depressurization System

The proposed system is applied in subsea oil flow lines provided with a pumping unit external to the well and can be implemented in a resident way in arrangements of individual wells, known as satellite, or wells grouped by a centralized collector (manifold) for prevention and eventual correction (dissolution) of hydrates. This public offer is intended for business companies or consortiums of companies that are interested in producing and selling the products or services related to this Intellectual Asset.

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Public Offering - Electrical Impedance Sensor For Gas-Oil Drainage

The electrical impedance sensor for gas-oil flow consists of a mechanical spool with flanges at its ends, so that it can be connected to the oil and gas transport piping. The rod and the electronic circuit housed in the spool allow the rod to read the electrical impedance and finally calculates the process variable. This public offer is intended for business companies or consortiums of companies that are interested in producing and selling the products or services related to this Intellectual Asset.

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Public Offering - Process to Inhibit the Formation of Gel in Paraffin Oils

It is a process to inhibit the formation of gel in paraffinic oils during their flow through the pipelines, especially when the ambient temperature is reduced. It is a mechanical process in which rapid cycles of pressure and relief are applied simultaneously to the period in which the fluid is cooling down, during the production stoppage, obtaining a fluid with lower gel strength. This public offer is intended for business companies or consortiums of companies that are interested in producing and selling the products or services related to this Intellectual Asset.

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Public Offering - Method to Adapt an Oil Maritime Production Facility

The present method aims specifically to adapt the liquid processing plant of an offshore oil production facility (offshore), already in operation, to new production conditions that arise throughout the productive life of an oil field. Depending on the variation in the amounts of oil and water produced, over the course of production time, equipment intended for oil treatment can be converted into equipment for water treatment. This public offer is intended for business companies or consortiums of companies that are interested in producing and selling the products or services related to this Intellectual Asset.

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Public Offering - Antifouling Equipment for Smart Completion Valve

The antifouling equipment for smart completion valve is a chemical injection capsule. It is a cylindrical tubular device, which is positioned over the smart completion valve by creating an annular space in front of the valve, to serve as a chamber where the turbulence of the oil flow that is being extracted promotes efficient mixing between the scale inhibitor or other chemical agent and the oil being extracted/produced. This public offer is intended for business companies or consortiums of companies that are interested in producing and selling the products or services related to this Intellectual Asset.

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Public Offering - Annular Flow Generator Cyclonic Device

The antifouling equipment for smart completion valve is a chemical injection capsule. It is a cylindrical tubular device, which is positioned over the smart completion valve by creating an annular space in front of the valve, to serve as a chamber where the turbulence of the oil flow that is being extracted promotes efficient mixing between the scale inhibitor or other chemical agent and the oil being extracted/produced. This public offer is intended for business companies or consortiums of companies that are interested in producing and selling the products or services related to this Intellectual Asset.

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Public Offering - Vortex-Induced Motion Suppressor Flips

The accessory applied to large submerged structures, with a cylindrical or predominantly cylindrical configuration, specifically floating oil prospecting platforms of the mono-column or SPAR type, mitigating the movements induced by vortices in these structures, mainly when they are subject to strong currents. This public offer is intended for business companies or consortiums of companies that are interested in producing and selling the products or services related to this Intellectual Asset.

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Public Offering - First Stage Multiphase Separator and Method of Separation of a Multiphase Fluid

The first stage Multiphase Separator produced in one or more oil wells provides a method of separating a multiphase fluid, comprising the steps of: inserting the multiphase fluid into a separation vessel; collecting a volume of gas separated from the multiphase fluid in an upper part of the separation vessel; collecting a volume of oil separated from the multiphase fluid in an intermediate part of the separation vessel; collecting a volume of water separated from the multiphase fluid in a lower part of the separation vessel; and injecting a mixture of pressurized collected gas and collected water into a lower portion of the separator vessel. This public offer is intended for business companies or consortiums of companies that are interested in producing and selling the products or services related to this Intellectual Asset.

If your company is interested in obtaining a license under the terms and conditions of the Agreement offered, email to licenciatec@petrobras.com.br. Documents sent through this channel will be treated as confidential information by Petrobras. The opportunity can be found by clicking below.

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Module Open Lab

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3w

It promotes the experimentation of Machine Learning based approaches and algorithms for specific problems related to undesirable events that occur in offshore oil wells.

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WPRAutoencoders

It contains a well pressure response generator, a dataset of 20,000 synthetic pressure responses, and an autocoder neural network capable of clustering this data based on transmissibility and reservoir geometry.

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Petrobras on Github

Access Petrobras on GitHub and learn about the Open Lab Module opportunities.

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ROSS

ROSS is a Python library for rotordynamic analysis, enabling the construction of rotor models and their numerical simulation. The shaft elements are modeled using Timoshenko beam theory, which considers shear and rotational inertia effects, and discretized using the Finite Element Method. The tool allows for rotor geometry visualization and the execution of simulations such as static analysis, modal analysis, undamped critical speed, frequency response, unbalance response, time response, and more.

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BibMon

Python package that provides predictive models for fault detection and diagnosis, soft sensing, and process condition monitoring.

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Petrobras conexões para inovação

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WAID

The “Wellbore Acoustic Image Database” (WAID) aims to promote the development of applications based on Machine Learning, particularly Deep Learning, for automating tasks related to interpreting acoustic image logs representing the wellbore surface. Such solutions involve the segmentation of structures, filling of voids in the image, event detection and generation of new synthetic data, among others

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GeoSlicer

GeoSlicer is a software platform for digital rock visualization and image processing, encompassing multiple approaches involving thin section, CT and mCT imagery. We use advanced techniques, like Convolution Neural Networks, to deliver a unique solution that allows users to solve complex workflows from a single platform.

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CCP

CCP is a python library for calculation of centrifugal compressor performance. It uses CoolProp/REFPROP for the gas properties calculations.

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