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Propulsion in Paraguay: How PROSEM Ingeniería Uses NavCad and PropElements for Success

A conversation with Helio Centurion of PROSEM Ingeniería

An age-old philosophy is “Tell me who your friends are, and I’ll tell you who you are,” meaning that it matters who you surround yourself with. In business, the same can be said for not only a professional network, but also the tools and resources a company uses. Those who thoughtfully choose what makes up their business - the principles, the people, and the practices - know that all of these choices are a reflection of their organization as a whole. After a worldwide search for the best software tools for their projects, PROSEM Ingeniería, located in Paraguay, chose HydroComp’s NavCad and PropElements. We spoke with Helio Centurion, one of the founders of PROSEM, in addition to the head of commercial management and technical advisor.



Founded in 2004, PROSEM provides services for the naval and industrial sectors. They pride themselves on their professional team, customer relationships, and advanced software tools. Their largest market is the Paraguay-

Parana Waterway, but also expands to the rest of Paraguay, Argentina, Uruguay, Colombia, and Brazil. Most of their work is developed for river service vessels.

When asked about his typical day, Helio says, “My main task is to be the link between the client and the PROSEM project engineers. I need to be able to detect the requirements, problems, and needs of the clients, in order to be able to offer specialized engineering services, prepare budgets, and outline the commercial policies of the company.”



“Since the acquisition of NavCad and PropElements in 2019, we have been able to improve the times and level of professionalism in our work, mainly in the areas of naval propulsion, advance resistance, propeller performance optimization, and ship repowering,” explains Helio. “With the help of HydroComp software, we have achieved very satisfactory results in all the work carried out since the implementation of its use.”



Helio continues to give us a specific example. “We have carried out the development of a propulsive study to evaluate the thrust capacity of a tugboat with its convoy of barges, taking the different real navigation conditions as input data. The navigation environment is in the Magdalena River in the area between Barranquilla and Barrancabermeja,” he shares. “Two simulation trees were proposed with the different possible combinations of upstream and downstream navigation, followed by the specification of the different conditions that are taken as



The PROSEM engineers who use NavCad and PropElements.

restrictions. The client was very happy with the results and the work done by PROSEM with the help of HydroComp software.”



Helio at PROSEM’s booth for Naval Fair of Manaus, Brazil in May 2023.

PROSEM is such a strong supporter of HydroComp that they never shy away from displaying the relationship. At Navegistic 2022, HydroComp product logos were a prominent part of their exhibition stand. Plus, they even did a presentation titled “Estudios de Resistencia al Avance y Propulsión: Guía para el Análisis de Velocidad y Rendimiento de Potencia. Diseño optimizado de Hélices” (“**Resistance and Propulsion Study: A Guide to Speed and Power Performance Analysis. Propeller Optimized Design**”) featuring NavCad and PropElements. HydroComp’s Latin America dealer, Gustavo Manzanilla (MANZ Group), also attended the event and collaborated with PROSEM.

Whenever PROSEM has a question, they know that they can depend on HydroComp. Helio states, “Every time we require help from HydroComp, we have been attended to in a very good way. We are very happy with HydroComp software and having them as partners.” HydroComp is thrilled to see PROSEM’s accomplishments with NavCad and PropElements - and very proud to be their chosen software.

About HydroComp

Since 1984, HydroComp has been a leader in providing hydrodynamic software and services for resistance and propulsion prediction, propeller sizing and design, and forensic performance analysis. Through its unique array of software packages and services, HydroComp now serves over 1400 naval architectural design firms, shipyards, yacht owners, ship operators, propeller designers, universities and militaries around the globe.

For more information, contact:

HydroComp, Inc.
Tel +1.603.868.3344
danielle.doonan@hydrocompinc.com
www.hydrocompinc.com

PROSEM Ingeniería S.R.L.
Tel (595.972) 614.238
helioc@prosem.com.py
www.prosem.com.py