

## Berkin Engineering Showcases its Mature and Diversified Solutions



Admiral Adnan Özbal, Commander of the Turkish Naval Forces, receives information from Yücel Atalay, Managing Director at Berkin Engineering, about the company's products.

The development and diversity of Berkin Engineering's marine platform solutions were reflected in the company's participation at NSS 2019. Building on its participation at NSS 2017, where Berkin Engineering opened a stand, the company came to NSS 2019 to display even more products and made a presentation during the event.

Among the solutions from the expanding product family of Berkin Engineering on display were the PIU-0430 Programmable Interface Unit, the NDDS-300 Real Time Data Distribution System and the NMFD-100 Programmable Multifunctional Repeater, as well as inertial measurement unit solutions. The PIU-0430 was highlighted by the company both at the stand and in the presentation. Naval platforms continue to serve for many decades after they are launched, and the PIU-0430 differs from its competitors by taking this long life-cycle into account. During this long-life cycle, the equipment on such platforms are updated or replaced many times to take advantage of technological developments and modernisation programs. During these activities, the compatibility of the new equipment with the existing system, especially electronic interfaces, can sometimes become a significant problem. These situations can be most likely to occur when, at any time, a decades-old device is required to be used with a device that is only a few months old. The harmonisation of the hardware and software interfaces between two such devices may need require significant work at the time of installation aboard the platform, and sometimes, such harmonisation works may require a special unit to be designed. Berkin Engineering developed the PIU-0430 precisely for



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such situations, featuring various interfaces used aboard land and naval platforms, and thus allowing the rapid and easy interface integration of different systems. Data transmitted to the unit via a connection to any device can be routed to another device that uses a different connection standard. This routing can be done easily and quickly due to the programmability of the unit, which can be carried out by the end user in the field.

The idea for the PIU-0430 was developed into a technology by Berkin Engineering, for which a patent application has been made. This technology was described in detail in a presentation entitled "Redundancy and Soft Porting in Data Distribution Systems and Interface / Adaptation Units" made by Burak Akça, Embedded Software Engineer at Berkin Engineering, on the first day of the event.

In classical data distribution systems, the CPU boards and input/output units are separate components but are combined in single component (board), in multiples according to required IO ports, in Berkin Engineering's solution. These boards communicate with each other via the intelligent backplane to which they are connected, and if one fails, the others continue to perform the same functions. Another important difference in Berkin Engineering's solution is the "software porting" approach, for which another patent application has been made by the company. In this approach, the controller on the backplane of the system controls the connections between the input/output ports and the CPU boards, allowing any input/output ports to connect to any board on the backplane by a virtual matrix. Different from classical data distribution systems, these technologies make PIU-0430 a scalable and adaptable product, allowing it to serve the user throughout the life-cycle of the concerned product. ♦