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The Extended Draft Platform: An advanced OOI prototype buoy

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The network design for the OOI Global-scale nodes will initially use two platforms: a discus buoy moored with an inverse-catenary mooring employing acoustic telemetry to subsurface instrumentation, and the tri-moored Extended Draft Platform (EDP) which will provide substantial power and bandwidth to the seafloor. This paper describes the EDP, which has been designed using industry and NSF support and will be funded and built by industry for the OOI. The EDP is a very capable platform, planned for deployment early in the program at the mid-Atlantic site near the DSDP Hole 396B. Thus it will generate early science results and provide a testbed site for power generation, communications, and sensor technologies. The EDP comprises three vertical columns between a deck structure and a submerged pontoon. The columns and pontoon are raised when at quayside and during towing. When lowered, the structure behaves like a deep draft semi submersible and motions are comparable to those of a spar buoy. The EDP will have a draft of about 23 m and the deck will be over 10 m above the sea surface. It will weigh 800 t and be able to support payloads of over 50 t. An offshore supply vessel assisted by a small offshore tug can install the EDP while an ROV equipped vessel would install the EO cable and the seafloor instrumentation.