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# IceCube Gen2

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The existence of high-energy neutrinos from astrophysical sources is now fact. An excess of events at energies above 100 TeV was discovered by the IceCube collaboration in 2013; the sample of events grows by some dozen per year of operation. The originators of these neutrinos, however, continue to elude us and to date no sources have been conclusively identified. An expanded IceCube collaboration seeks to design, construct, and operate a larger instrument that will push beyond discovery into the study of sources. The instrument, based on proven engineering and operational experience gained from the IceCube Neutrino Observatory, nevertheless requires new techniques to achieve an order of magnitude increase in effective volume at PeV energies and reach out to the EeV energy scales.. This presentation will describe the scientific mission to understand the sources of high energy neutrinos and will describe the conceptual-level designs under evaluation. Technical aspects such as advances in photodetection and detection via RF sensors are then covered along with associated electronics. Drilling and logistics make up a significant portion of the total project: new designs and strategies for large scale drilling and construction activities in an environment different from that of the IceCube construction merit close attention. The presentation concludes with project-level concerns such as cost, schedule, and the mobilization of large financial and human resources across the globe.

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