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AURA - Next generation neutrino detector in the South Pole HAGAR LANDSMAN[1], University of Wisconsin, Madison, AURA COLLABORATION — Neutrino astronomy may have answers to many intriguing questions such as the existence of the GZK cut-off and hadronic processes in astronomical phenomena i.e., supernovae, GRBs, and SGRs. It also holds a unique opportunity to conduct ultra-high-energy astronomy. Due to the evasiveness of the neutrinos this challenging search requires detectors with large effective volume and/or long exposure. Due to the attenuation of light in ice and water, and the cost of building and deploying optical detectors in extreme environments, complementary techniques aiming to detect radio frequency signals or acoustic waves are useful. The AURA experiment (Askaryan Under-ice Radio Array) is built upon experience and knowledge from three leading high energy neutrino experiments: RICE, ANITA and IceCube. We have designed, built and verified the functionality of three radio detector units that are scheduled to be co-deployed with the IceCube experiment in the deep Antarctic ice during the 2007 Austral summer.

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