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Magnetic Field Scanning for the New Muon g-2 Experiment RAN HONG, JOSEPH GRANGE, PETER WINTER, Argonne Natl Lab, MUON G-2 COLLABORATION COLLABORATION — A magnetic field scanning system has been developed for high-precision measurement of the magnetic field of the muon storage ring used in the New Muon g-2 Experiment (E989) at Fermilab. The former trolley system from E821 with 17 NMR probes was refurbished and upgraded with new electronics, probes and a modern motion control system. A new controlling and data acquisition software system was also developed for interfacing with the field-scanning trolley. The precision of the NMR system is better than 1 part-per-billion (ppb) in a highly uniform solenoid magnet. The motion system was successfully tested inside the muon-storage vacuum chamber.

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