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Leif K. Jørgensen* (leif@math.aau.dk), Department of Mathematical sciences, Aalborg University, 9220 Aalborg, Denmark. *New non-symmetric 3-class association schemes on 64 points*. Preliminary report.

The smallest case in which the problem of existence of a non-symmetric 3-class association scheme is unsolved is an imprimitive case on 40 points. The next three open cases are two primitive and one imprimitive case on 64 points. In one primitive and one imprimitive case on 64 points existence has been proved by Enomoto and Mena and by Ionin and Kharaghani.

A complete enumeration of non-symmetric 3-class association schemes on 64 points and with a regular group of automorphisms shows existence in the previously unsolved imprimitive case and in one of the primitive cases. We also find four imprimitive schemes with a rank 4 automorphism group. (Received July 20, 2007)