1154-VN-2390   **Kathryn A Boddie*** (`kathryn.boddie@louisiana.edu`), Mathematics Department, University of Louisiana at Lafayette, P.O. Box 43568, Lafayette, LA 70504. *A Minimal Time Solution to the Firing Squad Synchronization Problem with Von Neumann Neighborhood of Extent 2.*

Cellular automata provide a simple environment in which to study global behaviors. One example of a problem that utilizes cellular automata is the Firing Squad Synchronization Problem (FSSP), first proposed in 1957. A new extension to the standard FSSP to a different neighborhood definition - a Von Neumann Neighborhood of extent 2 - will be presented. An 8 state 651 rule minimal time solution to the extended problem will be described and presented along with an outline of the proof of the correctness of the solution. (Received September 17, 2019)