The reliability and throughput in an industrial wireless sensor network can be improved by incorporating the predictions of channel gains when forming routing tables. Necessary conditions for such predictions to be useful are that statistical dependences exist between the channel gains and that those dependences extend over a long enough time to accomplish a rerouting. In this paper, we have studied such long-term dependences in channel gains for fixed wireless links in three factories. Long-term fading properties were modeled using a switched regime model, and Bayesian change point detection was used to split the channel gain measurements into segments. In this way, we translated the study of long-term dependences in channel gains into the study of dependences between fading distribution parameters describing the segments. We measured the strengths of the dependences using mutual information and found that the dependences exist in a majority of the examined links. The strongest dependence appeared between mean received power in adjacent segments, but we also found significant dependences between segment lengths. In addition to the study of statistical dependences, we present the summaries of the distribution of the fading parameters extracted from the segments, as well as the lengths of these segments.