For the Markov property of a multivariate process, a necessary and sufficient condition on the multi-dimensional copula of the finite-dimensional distributions is given. This establishes that the Markov property is solely a property of the copula, i.e., of the dependence structure. This extends results by Darsow, W., Nguyen, B., and Olsen, E. (1992) from dimension one to the multivariate case. In addition to the one-dimensional case also the spatial copula between the different dimensions has to be taken into account. Examples are also given.