Efforts have been made to develop a general theory for the design of two-phase experiments \citep{Brien1983, Wood1988, Brien1999, Jarrett2008}. \cite{Brien1983} defined a set of factors in an experiment as a \emph{tier}. Two-phase experiments involve three tiers of factors, two tiers of block factors and one tier of treatment factors. Consequently, two-phase experiments are also known as \emph{multi-tiered experiments}. Tiers 1 and 2 comprise block factors from the Phase 2 and 1 experiments, respectively. Tier 3 contains the treatment factors of the overall experiments. In addition, the designing procedure for the two-phase experiments consist of a two-step process: (1) the allocation of treatments to experimental units in the Phase 1 experiment and (2) the allocation of experimental units from the Phase 1 experiment to the experimental units in the Phase 2 experiment. Hence, the randomisation procedure generally needs to be preformed twice for each of these two allocations. \cite{Brien2006b} thus named the randomisation procedure for the multi-tiered experiments, including the two-phase experiments, \emph{multiple randomisation}, and compared and contrasted six different types of multiple randomisation procedures. The method used to separate the total variability into different sources of variation is known as \emph{information decomposition}. The decomposition of the data space for different multiple randomisation procedures was discussed by \cite{Brien2009, Brien2010}. \cite{Brien2011} gave simple explanations of existing theories, together with some fundamentals of the design of two-phase experiments. Additionally, \cite{Brien2011} provided a set of basic rules for deriving the EMS; but these rules were applied manually and only for the generally balanced design \cite{Payne2003}.