

Multi-Attribute Procurement Auctions with Ordered Weighted Reference Information

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Abstract

Recent progress in Information and Communication Technologies (ICT) has triggered the process of introducing electronic form of auctioning into several purchasing procedures. Multi-attribute auctions (also called multidimensional auctions) facilitate negotiations based on multiple attributes, thus escape from the standard price-only domain into a rich multidimensional domain that can comprise additional attributes pertinent to particular features or some other aspects important for acquiring products like e.g. guarantee conditions. In this type of auction buyers are asked to reveal some of their multi-attribute preferences on the item which they want to purchase. Subsequently, sellers compete on all of the specified attributes to win the auction. Currently most of multi-attribute preference models used in auction mechanisms are based on a ranking derived from weighted sum. The weighted sum, however, is not well suited for all situations. The most prominent problem of weighted sum is favoring unbalanced solutions while balanced solutions are often preferred by buyers.