A capacity available-to-promise model for Drum-Buffer-Rope systems

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Abstract

The capacity available-to-promise (CATP) concept, which is designed to enhance the available-to-promise (ATP) feature in MRPII for changing production strategy from make-to-stock (MTS) to make-to-order (MTO), was developed recently. In contrast to an ATP, which is the future uncommitted inventory as projected by master production schedule, a CATP provides a detailed and time-phased diagram of unused production capacity. Hence, a CATP can allow marketing personnel to establish realistic order promise dates and concentrate on selling idle capacity in the future, and enable customers to select their preferred future capacity. This study proposes a CATP model for drum-buffer-rope (DBR) systems. The DBR scheduling system is one of finite capacity schedule systems and is currently being implemented by a growing number of manufacturing companies. This CATP model can help DBR users improve the due-date promising and exploitation of bottleneck. This CATP model can also be embedded in current commercial or private DBR scheduling systems so as to enhance their effectiveness.

Keyword：Available-to-promise (ATP); Capable-to-promise (CTP); Capacity available-to-promise (CATP); Drum-buffer-rope (DBR); Due-date assignment; Order promising