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(54) **METHODS AND SYSTEMS FOR
DEPLOYING EQUIPMENT REQUIRED TO
MEET DEFINED PRODUCTION TARGETS**

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(57) **ABSTRACT**

Methods and systems determine at least one production constraint for a material loading system and a material processing system; estimate an effect of entropy on a cycle time of a material conveying system to produce a future cycle time estimate; estimate an effect of entropy on a material processing time to produce a future material processing time estimate; predict whether a delay will occur during the operation of the material loading, material conveying, and material processing systems; estimate a duration of the predicted delay; determine a loading system capacity and a conveying system capacity required to meet the defined production target based on the production constraint and estimates of the future cycle time, the future material processing time, and the duration of the predicted delay; and deploy one or more material loading and conveying systems to meet the determined loading and conveying system capacities.

