

Maintenance Optimisation for Network Connected Assets



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Refineries take particular care in determining the maintenance strategy for assets that sit on the critical path of production. Failures in these assets can cause significant losses in production. A common strategy for critical asset maintenance is to provide surplus, or redundant, assets that can replace a critical asset requiring maintenance. However, this strategy is further complicated when the assets are interconnected, and maintenance activities are governed by hard scheduling constraints.

In this presentation I present a maintenance optimisation model for a network of digester banks, a critical path asset found in the Bayer process. I will outline the formulation of the model, as well as the real-world considerations required. Finally, I will present a new solution algorithm designed to solve the model and determine the optimal maintenance schedule.