

Optimisation model for sixteen-week Maintenance Planning in Alcoa



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Maintenance planning and scheduling are critical in any business and having an effective schedule will bring a range of benefits to the company. In Alcoa, in order to produce maintenance schedules each week, it is highly important to have a good sixteen-week plan so that the resources allocations, external contractors, activities prioritisation, major overhaul tasks and assets activities are well planned weeks ahead. Moreover, in a complex refinery site, by nature, the assets interrelate to each other. For example, an asset is taken out for maintenance, it will impact the activities of other assets as well as the overall production. Therefore, a good sixteen-week plan must take into account asset maintenance activities to reduce the bad clashes and increase desired alignments between each maintenance activity. Currently, most maintenance schedules are prepared manually, which is inefficient and time-consuming. In this project, we aim at developing optimisation models to produce a good sixteen-week plan, taking into account all requirements in Alcoa (time window, resource limitation, prioritisation) and at the same times maximising good alignments and reducing bad clashes.

[Presentation Link](#)