**Routine Inspection Optimisation Formulation v1**

**Sets**

* : Set of routine inspection segments
* Set of point defects
* : Set of all job nodes
* Set of all nodes including depots

**Constants**

|  |  |
| --- | --- |
| **Constant description** | **Notation** |
| Job score | where |
| Job estimated completion time | where |
| Time from location to location | where |

**Decision variables**

**Objective**

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**Constraints**

1. Inspection segments must be completed
2. At most one edge can be active leaving a job
3. At most one edge can be active entering a job
4. If a job is completed, then ensure that we leave the job.
5. If a job is completed, then ensure that we enter the job.
6. Vehicle leaving and returning to the depot
7. Can’t enter the start depot and can’t leave the end depot
8. Cannot visit itself
9. Temporal constraints (Subtours constraint)
10. Shift time constraints