ROLLS ROYCE
DATA STORYTELLING CHALLENGE

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SCENARIO 1 - CORRECTIVE MAINTENANCE

Unexpected engines / components failure during maintenance

Check existing spare for engine / component replacement

A

Faulty engine / component sent to testing site

VISUAL A

Able to check engine / component current spares availability

Spare Engine Availability

VISUAL B

Spare Component Availability

VISUAL C

Testing Site Availability

VISUAL D

Predicting probability of new maintenance period (overhaul / repair) based on existing maintenance period

Maintenance Period Prediction

A If no spares available, swap with other engines / components or buy in advance

VISUAL E

Cost / Year Maintenance Trend

VISUAL F

Maintenance Demand for Engines / Components

B Scenario 2 - Modification Campaign

SCENARIO 2 – MODIFICATION CAMPAIGN

B

Develop engine / component failure tendency (based on pre-existing data)

Notify operator for new modification campaign

Replace in-use engines / components

Faulty engine / component sent to testing site

Back to Scenario 1

VISUAL G

Position of Current Engine (Map / Location –based)

VISUAL H

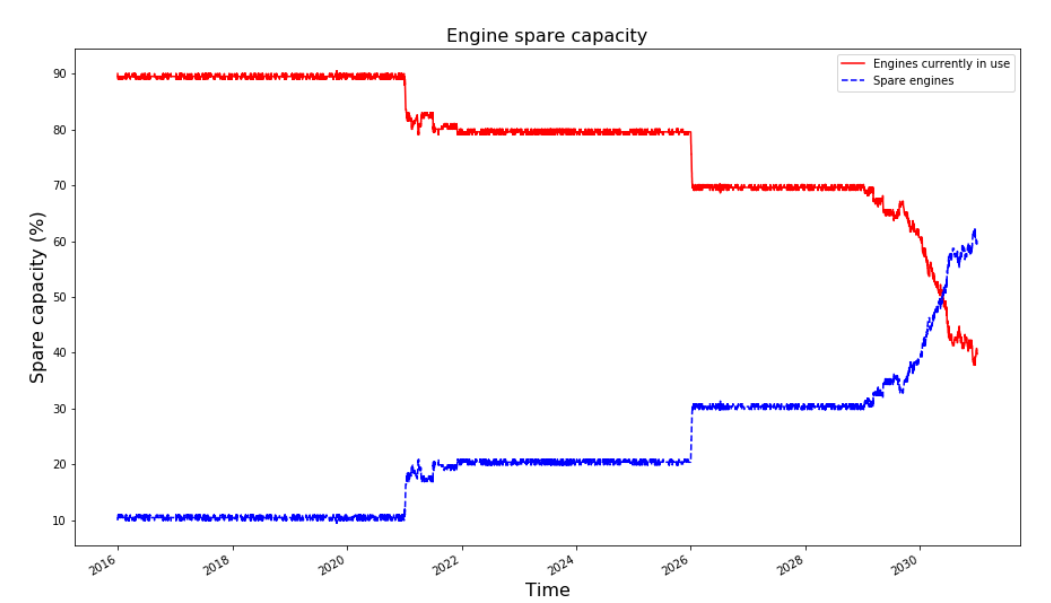
Likelihood of Engine / Component Failure

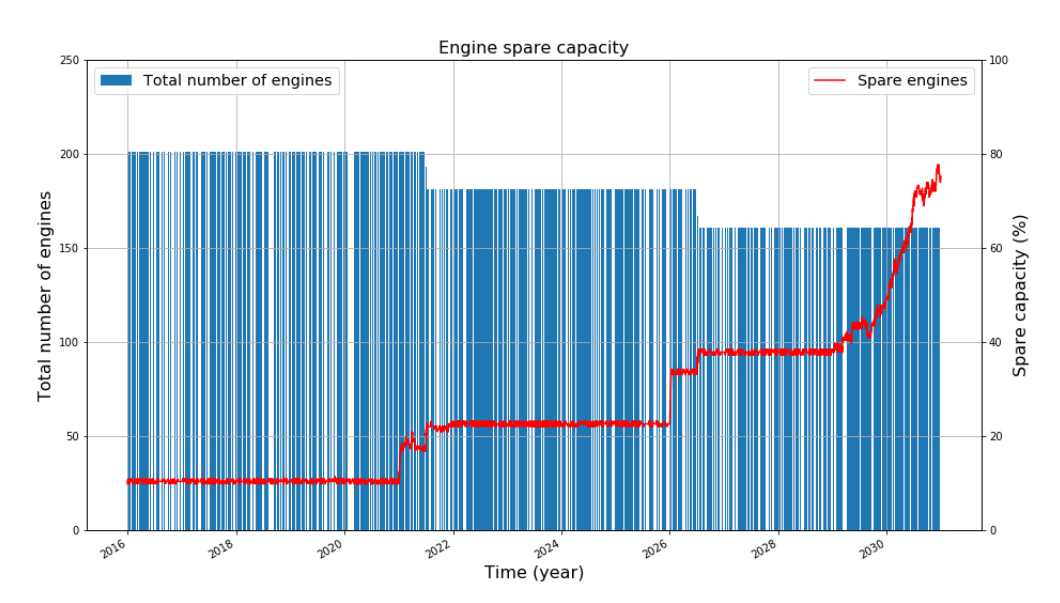
VISUAL I

Engine / component replacement operating window (per operator)

VISUAL A – SPARE ENGINE AVAILABILITY

THE IDEA – Assist operator & spares planner in knowing availability of engines year on year based on forecasted data





Assumptions: No additional / new engines added to the total pool throughout 15 year period (2016 – 2030)
Tables Utilized: Equipment List & Output Equipment Activities

VISUAL B – SPARE COMPONENT AVAILABILITY

THE IDEA – Assist operator & spares planner in knowing availability of components year on year based on forecasted data

Assumptions:
Tables Utilized:

VISUAL C – TESTING SITE AVAILABILITY

THE IDEA – Advise workshop manager to know current load of testing site (either repair or overhaul) year on year based on forecasted data

Assumptions:
Tables Utilized:

VISUAL D – MAINTENANCE PERIOD PREDICTION

THE IDEA – Advise operator on the probability of maintenance period (how long) based on the forecasted data of the engines / components

Assumptions:

Tables Utilized:

VISUAL E – COST / YEAR MAINTENANCE TREND

THE IDEA – Measure cost / year maintenance trending for all the related maintenance activities

Assumptions:
Tables Utilized:

VISUAL F – MAINTENANCE DEMAND

THE IDEA – Portray the demand by prediction of the existing factors e.g. operating hours, operating cycles, equipment & component configuration, etc.

Assumptions:
Tables Utilized:

VISUAL G – MAP OF CURRENT ENGINE LOCATION

THE IDEA – Visualize the existing location of engine and components in-used by the flight operators. Require new data type e.g. coordinates of each flights (Flight Radar)

Assumptions:
Tables Utilized:

VISUAL H – LIKELIHOOD OF FAILURE

THE IDEA – Prediction of likelihood failure for engines or components based on the inputs from the existing maintenance trend (or demand). Feedback for in-used engines / components

Assumptions:
Tables Utilized:

VISUAL I – REPLACEMENT OPERATING WINDOW

THE IDEA – Aid operator on the best time for engines or components call-back for maintenance & testing

Assumptions:
Tables Utilized: