

dessan Model

dessan Model is used to evaluate major project designs prior to implementation. By using complex modelling techniques the exact signalling infrastructure of any part of the railway network can be replicated including mainline, station areas, yards and depot facilities.

Options can then be changed in a virtual way to fully test the integrity of the design.

dessan Model has been utilised in a diverse range of projects, including:

Derby

- Early sketches of scheme plans were provided showing only track, signals, points and platforms
- dessan Model was created from this scheme plan by adding track breaks
- Pseudo Vanilla Interlockings were created to provide a simulation so trains could run
- Further updates to sketches were provided as the project progressed so the simulator and interlockings were modified to simulate these changes

Stoke Gifford

- A model of the Hitachi Depot was created from a supplied scheme plan and a location area plan
- Pseudo Interlockings were created to simulate train movements
- Real train acceleration and breaking data was added for the classes of trains which were scheduled to use the depot
- Real life dwell times were loaded into the simulation:
 - Time spent in the maintenance shed
 - Time spent refuelling
 - Both are based on the length of the train
- A timetable was created for the depot movements for one evening

Transpennine

- The aim was to find Journey Time Improvements (JTIs)
- A model was created from Manchester to York by connecting up the existing simulations and creating data for sections that weren't based on supplied scheme plans
- Real train acceleration and breaking data was added for the classes of trains that were scheduled to traverse in the area
- Various interventions were implemented:
 - Line Speed Improvements:
 - Blanket change across the whole route
 - Targeted change in line with route knowledge to ETCS
 - Simulation of change to ETCS Signalling across route:
 - Removal of Singalling Constraints
 - Increase of breaking rate
 - Simulation of ETCS driving runs
 - Removal of overlaps
- A report was produced to indicate the JTIs that could be obtained from each intervention

