

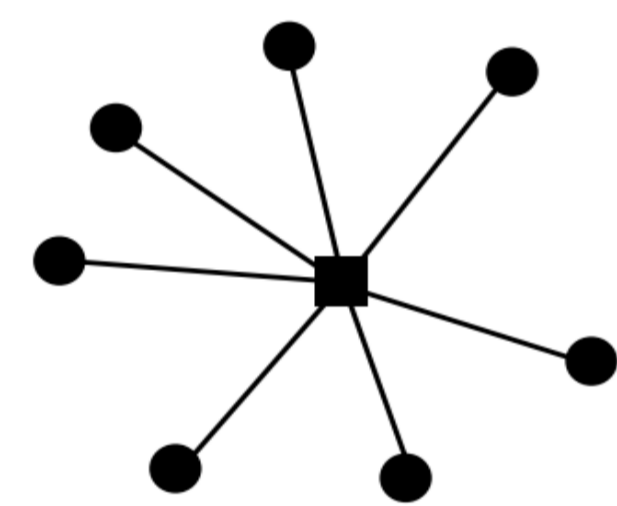


## Applicability of a new ant colony optimisation algorithm to predicting demand in the logistics industry

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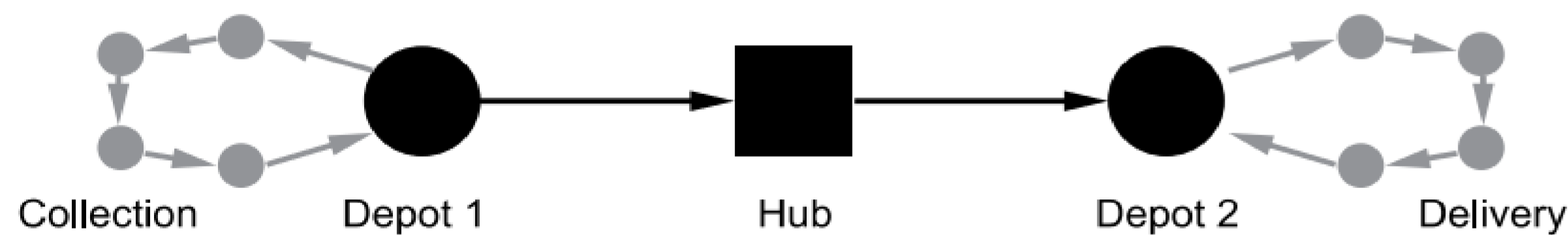
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### The overall problem



■ Hub  
● Depot

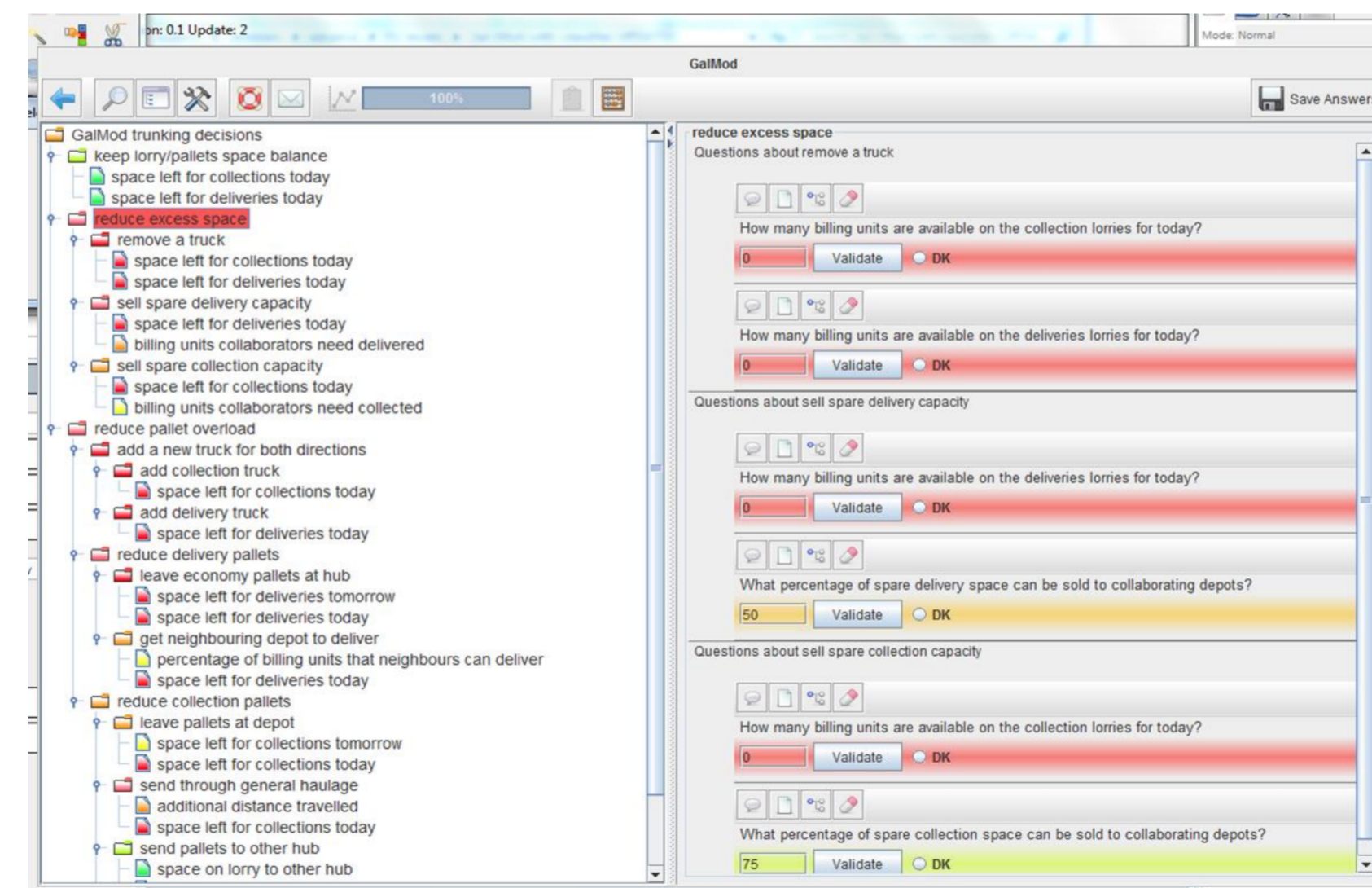
Hub-and-spoke logistics networks accumulate a blizzard of data each month, generated every minute of every day by thousands of pallets travelling on hundreds of trailers for millions of customers scattered across hundreds of thousands of postcodes.



Trailers' capacity is often under-used.

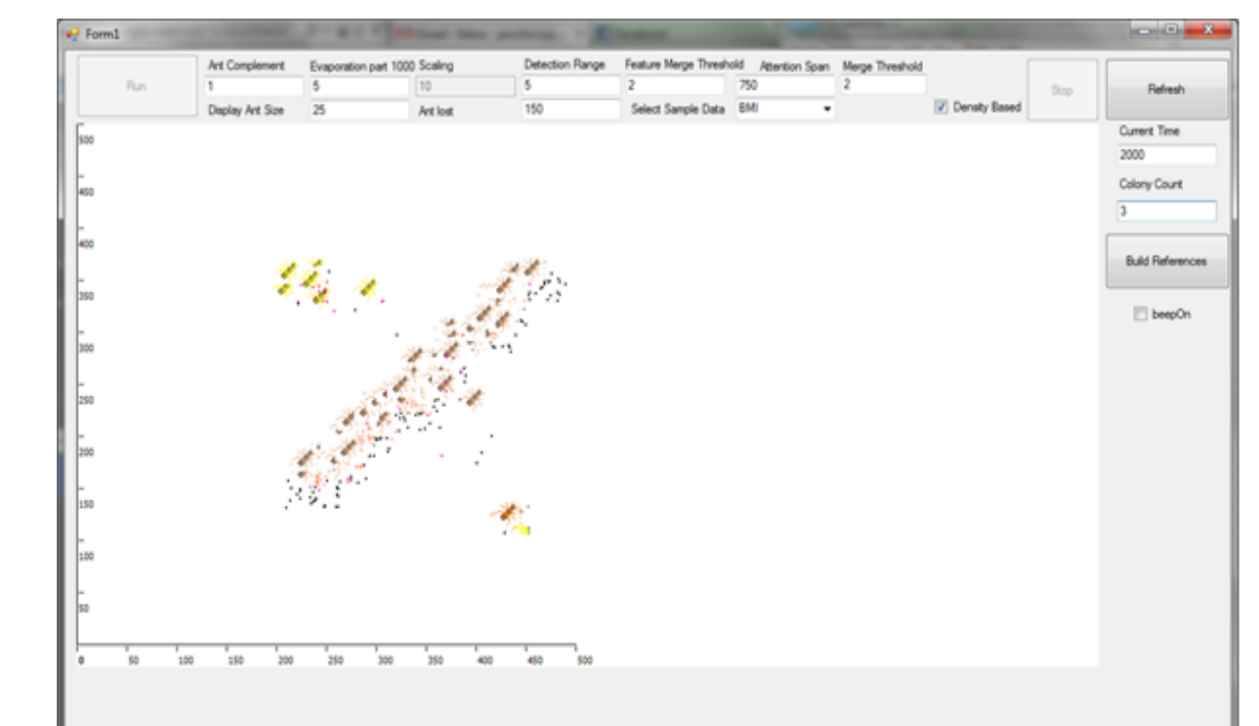
So far we have produced a decision support system based on predictions of end-of day demand using regression methods.

### The decision support system



### Ant colony optimisation

We are considering the history of predictions at various time-points during the day. One ant will be associated to each day and each time-point. Ants will have pheromone values corresponding to actual end-of-day values. Ants will cluster together the days according to their similarities in predictions.



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