The Logistics Institute Asia Pacific

NUS National University of Singapore

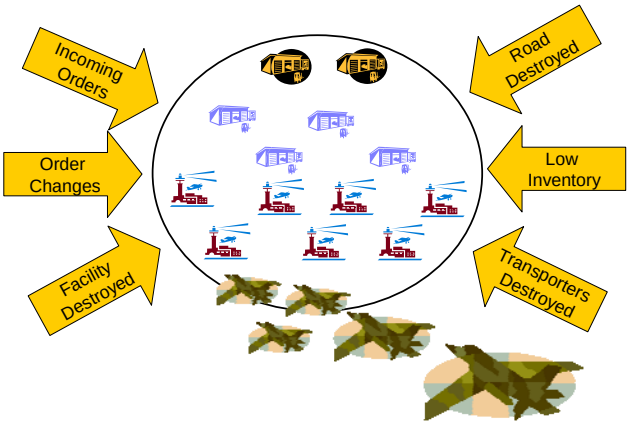
Georgia Institute of Technology

JAGUAR PROGRAMME

DYNAMIC RESPONSE AIRCRAFT PAYLOAD ASSEMBLY

•Multi-echelon production scheduling network with multi-indenture goods

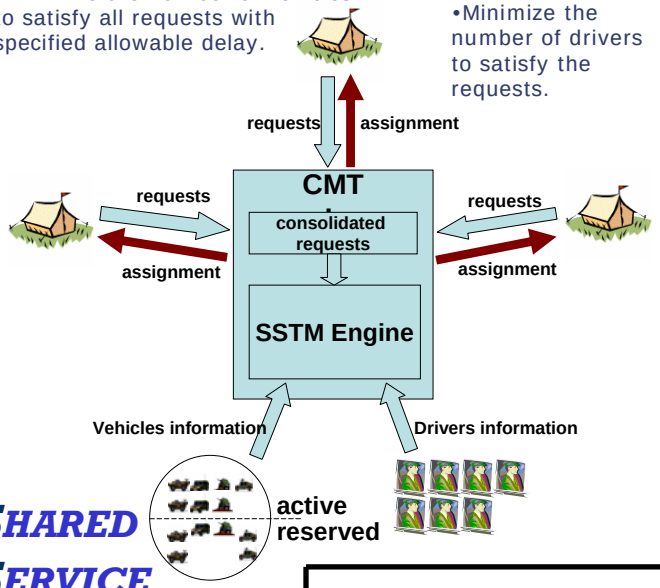
•Respond dynamically to new requests or changes in network characteristics



SHARED SERVICE MILITARY TRANSPORT MANAGEMENT

•Minimize the number of vehicles to satisfy all requests.
•Minimize the number of vehicles to satisfy *R* requests.
•Minimize the number of vehicles to satisfy all requests with specified allowable delay.

•Maximize the number of requests satisfied given a set of vehicles.
•Minimize the number of drivers to satisfy the requests.



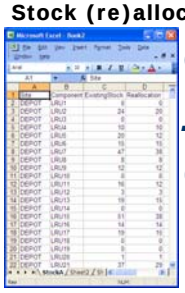
To develop a prototype system to assist in the routing of military vehicles between a pair of origin and destination that will optimize a composite index reflecting the multiple objectives of military requirements.

- System availability evaluation.
- Spares optimization.
- Spares re-allocation.

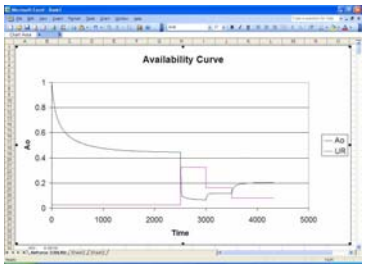
- Multi-echelon inventory structure.
- Multi-indenture system structure.
- Time-dependent Poisson demand.
- Limited maintenance resources.
- Commonality and redundancy.
- Inventory capacity constraints.

CORRECTIVE MAINTENANCE OPTIMIZATION

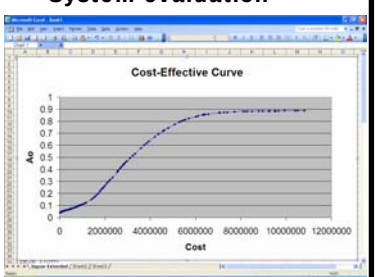
Stock (re)allocation



C/E curve for optimization



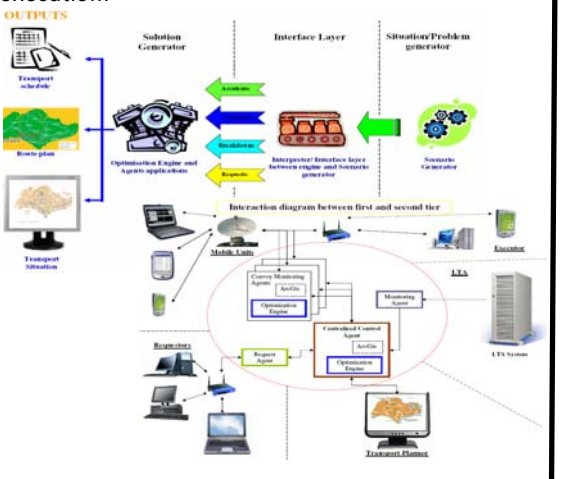
System evaluation



Resource Optimization Suite

MOVEMENT CONTROL

•Assist and guide the users to effectively direct convoys through a specified road network.
•Track the progress of convoys.
•Routing and scheduling of convoys .
•Adapt to changes by allowing for dynamic re-planning if deviation occur between plan and execution.



MULTI-OBJECTIVE ROUTE PLANNING FOR MILITARY VEHICLES

Route planning addressing multiple and sometimes conflicting objectives of:
•Shortest distance traveled
•Fastest travel time
•Easy to maneuver
•Lesser impact to public traffic
•Lower accident rate
•While meeting all the constraints of military operations