



SIMLOX™

VERSION 3

The release of SIMLOX version 3 includes several important improvements to modeling capability, user interface and report functionality. The result is an even more efficient and flexible tool for simulating logistics support and operation scenarios.

KEY ENHANCEMENTS AT A GLANCE

GRAPHIC GAME MODE

RESOURCE FAILURE MODELING

SCHEDULED DATA CHANGES

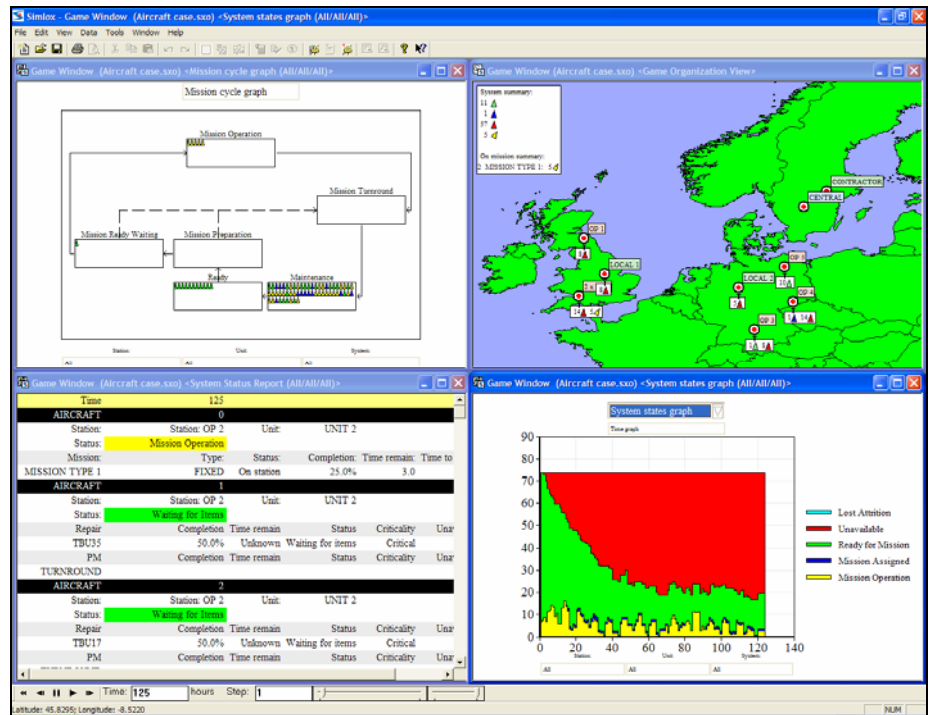
MISSION DEPENDENT FAILURE RATES

QUANTITY REQUIRED FOR MISSION DEFINED PER SYSTEM TYPE

ITEM VIEW (SAME AS OPUS10 v6)

VARIABLE RESULT COLLECTION INTERVALS

SIMLOX IS A POWERFUL AND VERSATILE TOOL FOR SIMULATION AND ANALYSIS OF COMPLEX OPERATIONAL AND LOGISTIC SUPPORT SCENARIOS. SIMLOX MAKES IT POSSIBLE TO SIMULATE HOW PERFORMANCE VARIES OVER TIME GIVEN A CERTAIN OPERATIONAL PROFILE, SUPPORT STRUCTURE, SPARES ASSORTMENT AND MAINTENANCE RESOURCES.

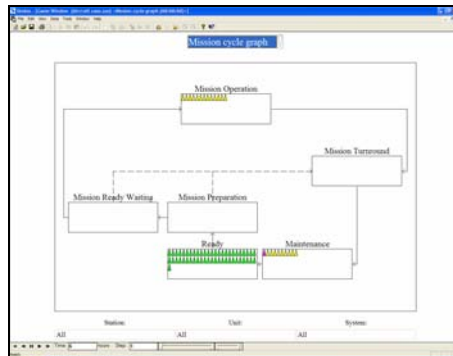


GAME MODE - 4 WINDOW VIEW

GRAPHIC GAME MODE

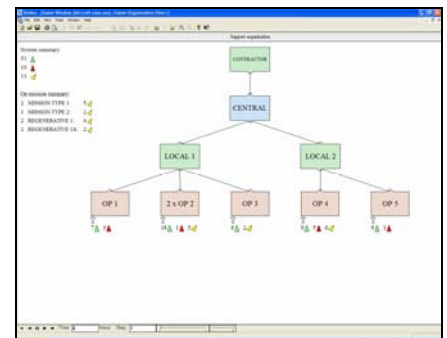
The most significant enhancement in SIMLOX version 3 is a new graphic and interactive program mode.

This *Game mode* makes it possible to monitor the simulation progress in great detail. Using play control buttons, it is possible to stop, continue or single step the simulation and observe system states and other parameters changing graphically in real-time.



GAME MODE - MISSION CYCLE

The Game mode furthermore allows the user to model the support organization geographically, directly in a map.

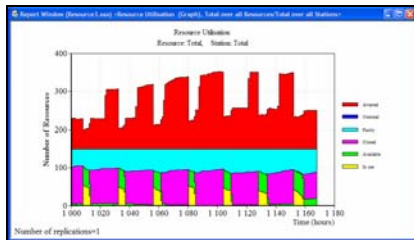


GAME MODE - SUPPORT ORGANIZATION

The game mode is a very useful feature for modelers as it makes it easier to validate and adjust the model. In addition, it is a powerful aid when presenting a completed support solution and communicating modeling results.

RESOURCE FAILURE MODELING

Another noteworthy new feature is the introduction of a model for simulating limited resource availability due to failures. It is possible to specify MTBF (Mean Time Between Failures) and MDT (Mean Down Time) values for each type of resource at each station. The time to next failure is drawn from an exponential distribution and may refer to either calendar time or utilization time. The down time has a set of distributions to choose from.



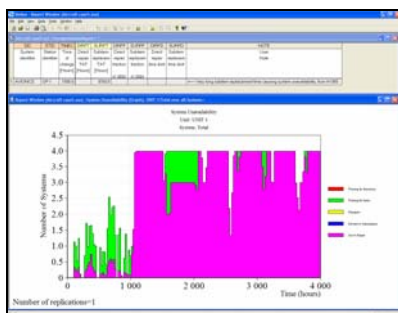
RESOURCE UTILIZATION DIAGRAM

The resource utilization diagram shows that the new resource state FAULTY (blue area) has been added to the earlier states FREE, IN USE and CLOSED.

SCHEDULED DATA CHANGES

In version 3 of SIMLOX it is possible to specify *scheduled data changes* for a number of maintenance related input parameters. This is useful for long term changes that occur only a few times during a scenario. The following data types can be changed:

- Repair times and Repair fractions
- Reorder lead times and discard fractions
- Time to perform preventive maintenance
- Time to perform mission preparation and mission turnaround



A SCHEDULED INCREASE OF REPAIR TIME

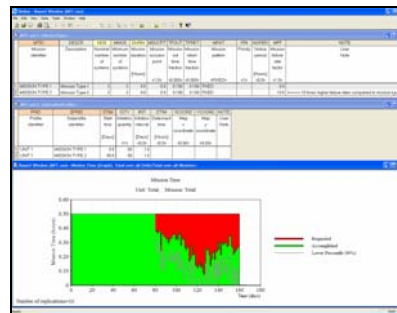
Changes to Number of systems, Number of resources and Number of items in stock are modeled as *Transfers*, as in previous versions of SIMLOX.

Together with the Transport policy profile introduced in version 2 this provides a great flexibility to model scenarios that change over time.

MISSION DEPENDENT FAILURE RATES

The occurrence of failures may often differ for different mission types. Certain items or subsystems can for example be under more stress during certain missions, due to operation conditions or the nature of the tasks performed.

Therefore, the ability to model *mission dependent failure rates* has been introduced in SIMLOX version 3. The *mission failure rate factor* may be set per item as well as on a general level.



MISSION DEPENDENT FAILURE RATES

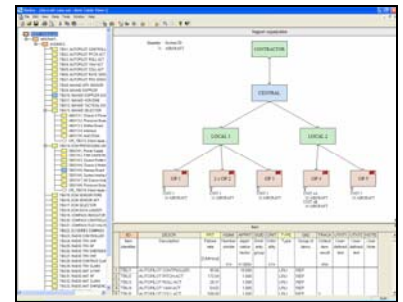
QUANTITY REQUIRED FOR MISSION DEFINED PER SYSTEM TYPE

In SIMLOX version 3, it is possible to specify the *minimum number of systems* required to start/continue a mission individually per system type. In previous versions, *requested* and *minimum number of systems* could only be set per mission type.

This is an important improvement when modeling complex multi-system-type scenarios where the different system types are not mutually exchangeable.

ITEM VIEW

The *Item view* introduced in OPUS10 version 6 is also included in SIMLOX version 3. The system breakdown structure is here represented graphically in a tree and the data displayed in a table is filtered based the selected nodes in the tree.

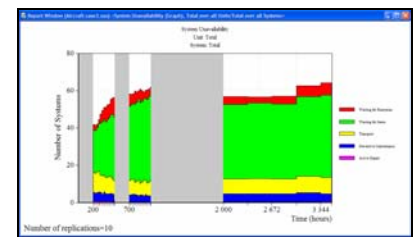


ITEM VIEW

The upper right pane in the Item view shows the Support organization of the selected item with icons that indicate where the item is handled (replaced, repaired or reordered). Changes to item data can be done directly in the table pane.

VARIABLE RESULT COLLECTION INTERVALS

A new *Result policy profile* in SIMLOX version 3 can be used to vary the result collection intervals during different time periods. The collection intervals can even be set individually for each result type.



VARIABLE POLLING INTERVALS

Using too frequent result collection globally may result in poor performance and huge result files. By using a result collection profile with focus only on the time periods and result types of interest, a lot of time and space can be saved.

OTHER CHANGES

System damage modeling has been improved in several ways. It is described by two aspects; *Incidents* with a certain probability, and *consequences*, of which there may be one or more for each incident.

Redundancy repair while on mission is possible in SIMLOX version 3. This is an important improvement for modeling of continuous missions.

The **shift profile** has been modified to become more intuitive.

Several **result graphs** have been added to the report generator and many existing reports have been modified and improved.