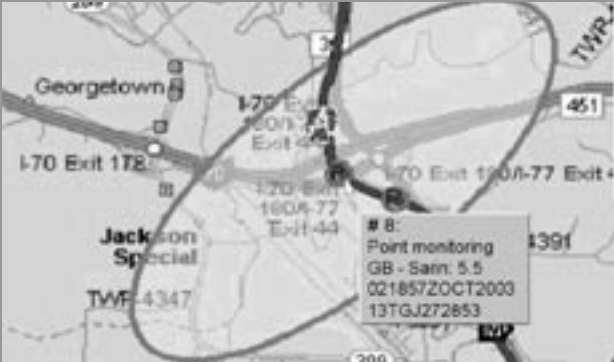


NBCSIM™



## NBCSim™ Wide area NBC Simulator

NBCSim™ provides simulation of chemical and radiological contamination and airborne hazards. Instruments respond to the simulated hazard and allow training of the correct response to instrument readings in a battlefield scenario.

In a vehicle simulation setup, NBCSim™ simulates an NBC reconnaissance. The vehicle could be fixed in a laboratory and the location of the NBC reconnaissance vehicle is simulated by a vehicle control application.

Used in simulation mode in a mobile vehicle and actually used as a simulator, the vehicle location information is controlled by the GPS installed in the vehicle. A rugged laptop is plugged into the vehicle feeding the vehicle instruments with simulated data based on the vehicle location.

NBCSim™ may also be used with hand held instruments carried by personnel.

NBCSim™ can be tailored to use radio systems to update pocket size receivers with the hazard based on GPS location. This can trigger simulated casualties based on the personal protection level and can be used to make hand held devices respond to the simulated hazard.

Planning training missions for the NBC reconnaissance vehicle crew crossing a chemical and radiological contamination area can be done in a fast and organized way with NBCSim™ thus optimizing the planning process.

During simulation NBCSim™ provides the instructor with the possibility to change mission complexity. This means that the instructor observing an efficient NBC reconnaissance vehicle crew during the simulation process can modify the mission to suddenly include more complex hazard areas by changing the intensity of the chemical compound.



The instructor is planning the simulation data such as contamination area, weather information, and route. After the simulation, the instructor can evaluate the performance of the of the reconnaissance crew.

Full log of all operator actions with NBCSim™ will give the instructor the complete overview after the training session thus enabling the instructor to pinpoint specific areas of crew actions that need special attention.

The option of using the actual vehicle in a simulator role increases the training capacity and provides the option of training operators "in theatre", where traditional simulators may not be available. The simulation mode in the vehicle is only active when the laptop is plugged in and is clearly indicated on the central computer display.



The crew of a Fox simulator has completed its route through the simulated hazard area. From the screen, the instructor analyses the positioning of markings and the use of the various monitoring capabilities of the Fox.

Using NBCSim™ for placing exercise hazards provides a much better control of the scenario to be trained compared to traditional methods such as release of simulants. It also removes the unwanted environmental impact of this type of training. Only computerised management of the simulated hazards gives the instructor the control and provides the diversity required for fully efficient training.

In the light of the changing threat around the world today, the importance of simulation of chemical and radiological contamination is evident. With NBCSim™ chemical and radiological contamination simulation is ensured, and training of crew response to sensor readings is fully optimised.

Simulation capabilities of NBCSim™:

- Simulation of chemical spread based on attack conditions.
- Simulation of fallout from nuclear burst based on meteorological conditions.
- Simulation of radioactive decay.
- Simulation of detector clear-down time when leaving contaminated area.
- Fallout areas can be customized to meet specific exercise objectives.
- Simulation of low-level hazards.
- Simulation of multiple attacks/strikes.
- Simulation of breakdown of chemical agents into sub-compounds for detection by advanced instruments such as the MM-1.
- Display of events on map with additional information visible for each location.
- Maps can be imported in the major map formats: Tiff World (tfw), ASRP, ADRP, CADRG, CRP, VPF, VMAP0, VMAP1, VMAP2, DCW and CIB.
- Aerial photographs and maps in other commercially available map formats can be imported using MapInfo.

Exercise management capabilities of NBCSim™:

- Each exercise is stored in a scenario library for later reuse.
- In simulators the instructor has live visibility of crew actions and current hazards.
- The simulation laptop is blocked while used for in-vehicle simulation. When the exercise is completed, the instructor gets a visual overview of the events that has taken place and is able to focus on each of these events for further details.
- After action report can be printed for briefing the exercise players.
- Full log of operator actions, e.g. the start of air monitoring or the placement of flags to mark contamination. Registration of events to be supported must be built into the vehicle software.
- Use of actual GPS locations if applicable. If in a simulator, NBCSim™ will simulate the vehicle route.
- Integrated with the MM-1 Mass spectrometer produced by Bruker Daltonik GmbH.
- Integrated with SVG2 Sensor produced by Bruker Daltonik GmbH.
- Integrated into Fox/Fuchs vehicle.
- Prepared for integration into bespoke simulators.
- Prepared for integration with bespoke hand held simulators.
- Prepared for integration to bespoke radio base stations.
- Prepared for HLA (High Level Architecture) interfacing to other simulators.

Interfaces:

- Use of actual GPS locations if applicable. If in a simulator, NBCSim™ will simulate the vehicle route.
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Availability:

- Version 1 will be available in 4th quarter of 2003.
- If your detectors, instruments or vehicles are not on the list, please contact Bruhn NewTech for an evaluation of the required integration.

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