

MITRE Technologies

What is Available for License



technology transfer office

Patented technology for determining hazard levels of NBC agents

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Hazard Warning Algorithm

The MITRE Corporation has developed a Hazard Warning Algorithm (HWA) designed to give Nuclear, Biological and Chemical (NBC) detection devices the ability to express chemical concentrations. These patented algorithms are used to generate hazard level indications, measure concentrations, and determine accumulated dosages.

US Patent # 6,441,743 is used to indicate the accumulated dosage that is hazardous to human beings or other living organisms. It estimates hazard level values by applying an exponentially weighted moving integration to measure the concentrations of the agent in the environment. The algorithm generates an indication of the level of hazard when the estimated hazard level values match or exceed empirically predetermined hazard dosage values for the agent in question.

US Patent # 6,539,311 involves an apparatus capable of predicting concentrations of vapors at any time during some predetermined mission and of predicting dosages accumulated during the mission time. It relies on NBC detectors in which a Kalman filter, with automatically adjusted filter attributes, is used for low noise prediction of concentrations and accumulated dosages of agents. The algorithm enables devices to warn and dewarn people exposed to these agents during a mission time.

These algorithms can be used in conjunction with NBC detection devices to achieve extremely fast measurement and processing times, accurate and informative indications of dosage, added safety feature of dosage prediction and accuracy of readings across a range of concentration levels and high memory efficiency in information system storage.



Algorithm can be used in a device to measure the hazard level concentrations.