143i The Multimedia Integrated Environmental Management System Software Development

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An interest in studying and addressing influences and effects of emissions through physical media such as air, water, and soil has been issued and increased recently. Multimedia problems include atmospheric emissions of hazardous pollutants that obviously affect surface water and landfill of hazardous wastes that leak into groundwater. Multimedia Integrated Environmental Management System software so called SKYi developed as a useful tool in providing spatial and temporal pollutant data for establishing quantity and reduction of environmental risk and in mapping pollution distribution in the multimedia based on observation and prediction due to emission information from various sources. The SKYi is based on the graphical user interface (GUI) that supports users inputting the data required by the system and enables the system to output answers to the system user and that is implemented in Visual Basic (VB), an easy but strong toolkit using the basic language. The SKYi consists of several modules as follows; (1) Emission Databases from various sources: a top-down approach has been used for High qualitative resolution of emission inventory from point and non-point sources based on census divisions and priority substance list (PSL). (2) Development of pollutant behaviors: Atmospheric Dispersion and Multimedia Modules describe mathematical presentation of relevant information and processes to examine our understanding of ecosystems (fate of pollutants in the ecosystems), to examine causes of problems, and to predict conditions considered future effect on the environment. The SKYi also provides information of emissions, meteorology, and topography, and field observation data of pollutants, and the model results can be evaluated by a statistical tool included in the SKYi.

The SKYi may help to support scientific appropriateness for decision makers related to risk assessment, or environment management and policy.