EXSYS Case Study

Severe Thunderstorm Prediction

National Oceanic and Atmospheric Administration

A knowledge automation system was developed by NOAA to assist in the prediction of severe thunderstorms in the area of northeast Colorado and adjacent states.

A large body of meteorological data is collected constantly and available to meterologists through computer systems such as PROFS (Program for Regional Observing and Forecasting Services). Such programs provide a meteorologist with the data needed to develop a good weather forecast. However, often there is a limited time frame in which to make a prediction and some problems, such as severe thunderstorm prediction, require highly specialized and complex knowledge.

To address this problem, a knowledge automation system was built to help use the data available to predict severe thunderstorms. The system makes calls to external programs to handle the necessary complex mathematical calculations. The system can make predictions on thunderstorm likelihood and severity. In testing, the knowledge automation system has performed well in predicting storms provided that full data is available.