



**Laboratory for Manufacturing
and Productivity**

30 YEARS OF ENGINEERING THE REAL WORLD

Kratulos

Hyoung-Gon (Ken) Lee & Edmund W. Schuster

Each year, the amount of data grows as much as 40-60% for many organizations. In 2004 alone, shipments of data storage devices equaled four times the space needed to store every word ever spoken during the entire course of human history.

Putting data to practical use remains a challenge because of the proliferation of standards and data formats. For XML there are hundreds of commercial standards designed to meet the needs of specific industries. Even within a particular standard there often are variations caused by versioning. This creates a barrier to the rapid formation of integrated data sets.

Since no universal standard exists for XML, data communication or integration requires prior agreement on semantics and syntax between the sender and receiver. This is a time consuming process given the large increase of data available within a firm or through the Internet. If data lacks organization in an effective way for search and integration, its value in business decision-making decreases. This is true at the enterprise level and for the Internet.

Kratulos is a system architecture, advanced commercial database technology, high tech dictionary with embedded ontologies, and specialized computer code that enhance the semantics and syntax of XML. In this way, XML and the data it contains become interoperable. Essentially, Kratulos is an auxiliary language that acts as a type of glue to integrate XML and mathematical models needed to analyze data. A major feature is the reduction of semantic ambiguity often associated with XML.

Extensive prototype testing has taken place in the agricultural industry. Specifically, Kratulos accomplishes the rapid integration and interpolation of weather data from NOAA with spatial data on plant disease obtained via a scout using a PDA. The application integrates XML data from two different sources and formats, and connects the data set to a mathematical model that estimates the disease growth rate. With this information, a grower can monitor fields, vineyards, or orchards in real time and apply agricultural chemicals when needed.

Kratulos has many other applications besides agriculture in areas that involve data integration and modeling.

For more information about licensing Kratulos, please contact:

Technology Licensing Office

Massachusetts Institute of Technology
Five Cambridge Center, Kendall Square
Room NE25-230
Cambridge, MA 02142-1493

Tel: 617-253-6966

Fax: 617-258-6790

Email: tlo@mit.edu

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