For Immediate Release:

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Leading Firms Endorse Open Standard for Linking Risk Applications

Oct. 12, 2014 - ProbabilityManagement.org announces its open SIPmath™ 2.0 Standard for linking simulation applications into auditable, enterprise-wide risk management networks.

Simulations have been used for decades to manage uncertainty within stand-alone applications in areas as diverse as finance, engineering and energy. The SIPmath Standard, developed by Palo Alto-based nonprofit ProbabilityManagement.org, allows companies to link the results of their simulations together using new data structures and free software tools.

The SIPmath 2.0 Standard will be formally introduced on Nov. 9, 2014 at the INFORMS Annual Meeting in San Francisco, see October 2014 OR/MS Today.

"SIPmath can be a breakthrough in the way we think about and analyze uncertainty," said Brian Putt, Decision Analyst at Chevron, one of the nonprofit's corporate sponsors, which also include several other Fortune 500 Companies.

"Uncertainties drive decision-making at all levels of business and government, where they are often replaced with single *average* best guesses," said Dr. Sam L. Savage, Executive Director of ProbabilityManagement.org and Consulting Professor at Stanford, "Unfortunately, this leads to a set of systematic mathematical errors, which I refer to collectively as the Flaw of Averages. This explains why so many projects are behind schedule, beyond budget and below projection."

The new standard communicates uncertainties as arrays of auditable data called SIPs (Stochastic Information Packets). For example, the SIP representing the roll of a die consists of thousands of simulated rolls stored in Excel or a database. The associated metadata would include the number of rolls and the name of the person who rolled the die.

"SIPs are an ideal means for modeling and conveying uncertainty in a standardized fashion," said Eric Wainwright, Co-Founder and Chief Technology Officer of Oracle's Crystal Ball simulation package. "The standard will play an increasing role in the way organizations manage uncertainty through their informational and predictive systems."

Calculating with SIPs is called SIPmath, and Microsoft Excel has recently become powerful enough to use SIPs to calculate uncertainties as easily as it calculates numbers, without relying on macros or add-ins (see Analytics Magazine). "In fact," said Savage, "thousands of trials can be run before your finger leaves the 'Enter' key." This places the benefits of interactive simulation within reach of tens of millions of managers, scientists, engineers and educators.

"The notion of performing arithmetic with uncertainties is as foundational as the arithmetic of ordinary numbers," said Dr. Duane Crum, the California State Leader of Project Lead the Way, a nonprofit that promotes STEM (Science, Technology, Engineering & Mathematics) education. "SIPmath makes the arithmetic of uncertainty

accessible to school children, with practical lessons ranging from understanding why it is so hard to get projects done on time to deciding how many boxes of Girl Scout cookies the troop should purchase."

When dealing with uncertainty, technology is only half the battle. In today's litigious "give me a number" corporate culture, many organizations cannot acknowledge uncertainty for fear of incurring liability. Yet in the age of big data, we are suddenly awash in statistical information that can quantify uncertainty more precisely than ever before. Nobel Laureate and board member of ProbabilityManagement.org Harry Markowitz said, "The standardization of the representation of such information - with associated provenance - is essential to not clumsily drown in this ocean of data."

Through such standardization, ProbabilityManagement.org will provide a common language for uncertainty that elevates the discourse between stakeholders in disputes over risk, and gives management the "permission" to be uncertain within auditable limits.

The discipline of probability management is a network phenomenon. For example, the revolution of the smartphone was not in the already proven technologies of computers, mobile phones, and touch screens, but rather in the network of 100 million nodes suddenly sharing photos, videos, traffic conditions, etc. Similarly, the revolution of SIPmath is not in the proven technologies of simulation, array arithmetic, or big data, but rather in a network of risk models in such popular applications as Oracle's Crystal Ball, Palisade's @RISK, MathWorks' MATLAB and Frontline Systems' Risk Solver, which has the potential to share common understandings of uncertainty and risk throughout society.

SIPmath 2.0 Standard – Formal Introduction
INFORMS ANNUAL MEETING
Hilton Union Square
333 O'Farrell Street
San Francisco, CA 94102
Nov. 8-12

Exhibition
Grand Ballroom A-B, Booth #45
Sunday 11/9 12:00 - 5:00 pm, 7:30 - 9:00 pm
Monday 11/10 9:00 am - 5:00 pm
Tuesday 11/11 9:00 am - 5:00 pm
Wednesday 11/12 9:00 am - 1:00 pm

Vendor Workshop
Imperial B, Ballroom Level
Saturday 11/8 9:00 - 10:30 am

Software Demo: The SIPmath™ Modeler Tools
Green Room, Grand Ballroom Level
Sunday 11/9 8:00 - 9:30 am

For more information or to arrange interviews with Dr. Sam Savage, please contact:
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Probability Management, Inc. is a 501(c)(3) non-profit that is changing the way we think about uncertainty through standards, best practices and education. Its board of directors includes Nobel Laureate in Economics, Harry Markowitz. Its sponsors include Chevron Corporation, General Electric, Lockheed Martin, Wells Fargo Bank, Lone Star Analysis, Ortec Consulting, Computer Law LLC, and the Foundation for Creative Dispute Resolution. Executive Director Sam L. Savage is author of *The Flaw of Averages: Why we Underestimate Risk in the Face of Uncertainty*, and is a Consulting Professor at Stanford University. To learn more visit ProbabilityManagement.org.