JMP® Conference – Israel 2020

JMP® Based Solutions

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JMP® Conference – Israel 2020

- Introduction
- Presentation Topics Briefing
- Expanding on Cause & Effect Extended Capability
- Review JMP® Based Toolbox

Introduction

- We are a consulting firm
- About 20 years of experience with JMP®
- Instructing JMP® fundamentals in Hebrew University by Dr. Shaul Tsionit
- Developing solutions for engineering, geographical and statistical wise needs

Presentation Topics Briefing

- Extending JMP® Capabilities Principles in a Nutshell
- Extending JMP® Cause & Effect Capability
- JMP® Based Toolbox
- Interactive Control Environment for Transportation Models (ICETM) - Optional

Extending JMP® Capabilities Principles in a Nutshell

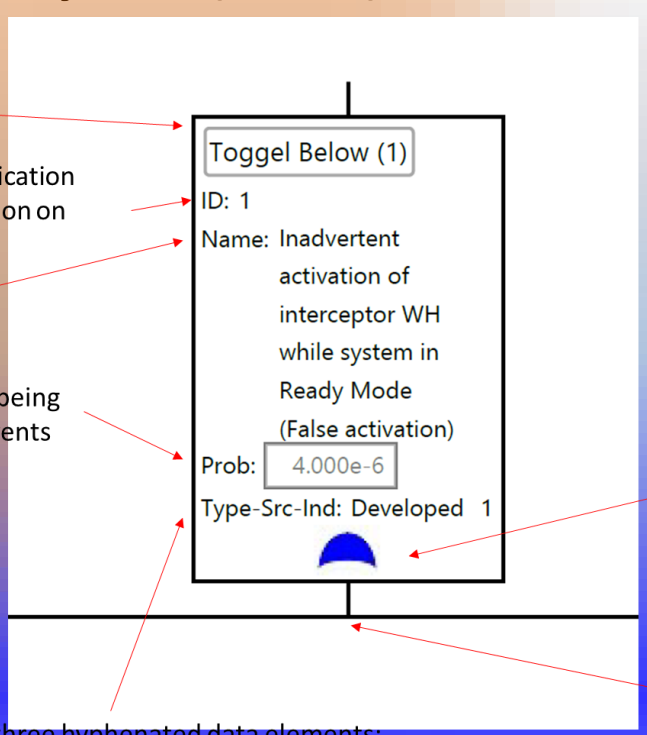
- JMP® uses three main entities to carry-out solutions:
  - Data tables
  - Column embedded formulas/functions
  - Scripts
- Solutions we are developing are optimal and provide a balanced relationships among those three entities

Extending JMP® Cause & Effect Capability

- Cause & Effect Analysis is part of Root-Cause Analysis
- Extending JMP® capability is reflected via:
  - Results analysis including:
    - Casual factors nature and statistical analysis
    - Critical paths analysis (Cut-Set Order)
    - Sensitivity analysis
  - Results visualization
  - Data management
  - Top event probability evaluation/quantification
  - Enriching graphics with annotation

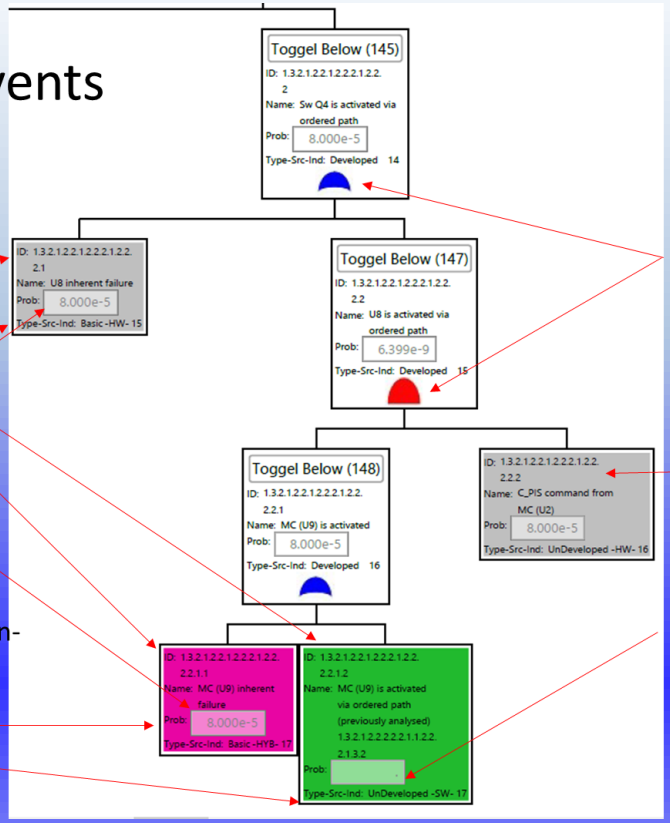
Extending JMP® Cause & Effect Capability

- Event Tree Analysis (ETA) based JMP® sample



Extending JMP® Cause & Effect Capability

- Event Tree Analysis (ETA) based JMP® sample



Basic events are colored to denote their nature i.e. HW, SW, Environment etc. as depicted in the following color scheme.

Event probability as being assigned/calculated based on failure mode characteristics.

Event Nature: basically includes three hyphenated data elements:

- Type of the event (Developed, Basic, Undeveloped, Inhibit)
- Source of the event: Hardware, Software, Firmware, etc. (Assigned to non-developed events only)
- Indenture: The hierarchy of the event in relation with the Top-Event

A symbol of the gate through which this event can be generated. This gate may encapsulated OR gate or AND gate where OR gate denotes that at least one of the consequents of events below is required to generate the subsequent events.

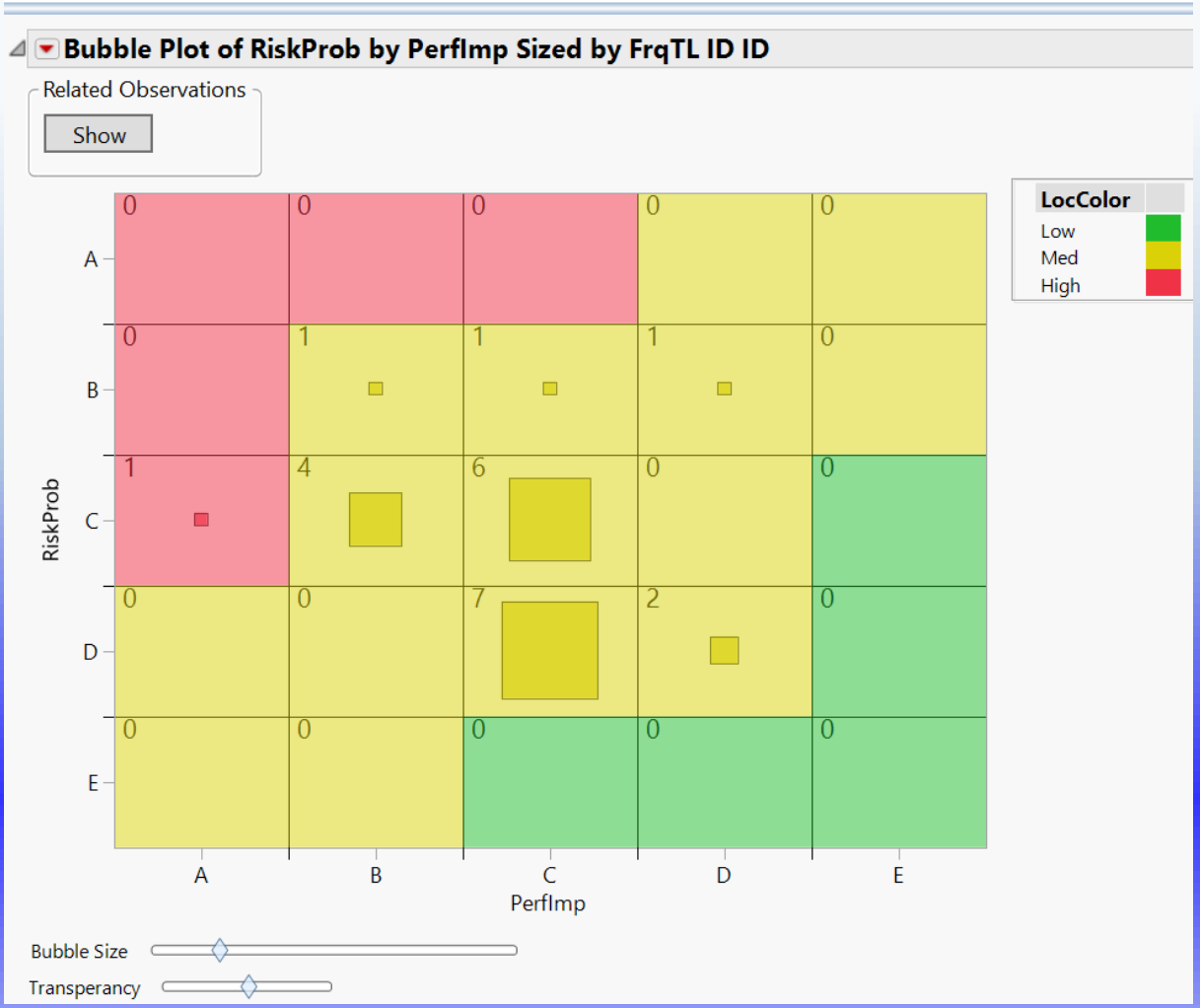
Wrapped Id.

Software-type event are not probability-assigned

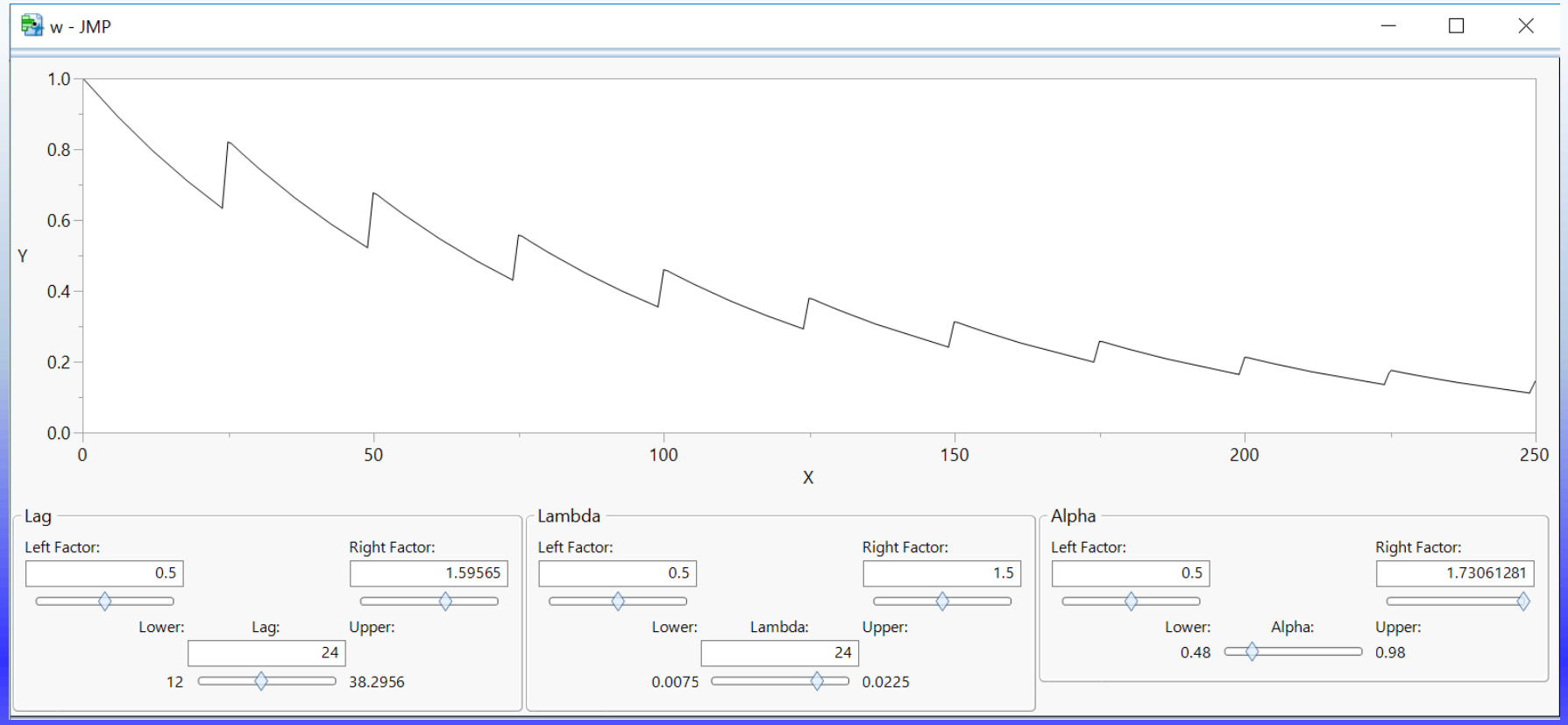
JMP® Based Toolbox

- Various tools were developed for different disciplines
- Tools provide interactive solutions for visualization and statistical evaluation
- Selected tools out of the box:
  - Risk Management
  - Saw Diagram
  - System Availability Evaluation

JMP® Based Toolbox - Risk Management



JMP® Based Toolbox – Saw Diagram



JMP® Based Toolbox – Availability Evaluation

Interactive Control Environment for Transportation Models (ICETM) - Optional

- Control is required to validate models results
- ICETM was developed to support transportation prediction models control and validation
- ICETM is JMP® based using data management and statistical features

Open ICETM

- **Open**
  - Open architecture, Non-limited growth capabilities
  - Open Code
- **I** – Interactive
  - Online Analysis Driven Visualization (ADV)
  - Online Visualization Driven Analysis (VDA)
  - Filtering
  - Online Simulation
- **C** – Control
  - Inter-scale Analyses (Trips, Routes, Journeys, Activities, Persons, Households entities)
  - Descriptive Statistics (Current), Predictions (Future), Modeling
  - Comparison based
  - Sensitivity analyses
- **E** – Environment
  - Multi-dimensions/Levels
  - Dynamic

for

- **T** – Transportation **M** - Model