

The Risk-to-Mission Assessment Process (RiskMAP)

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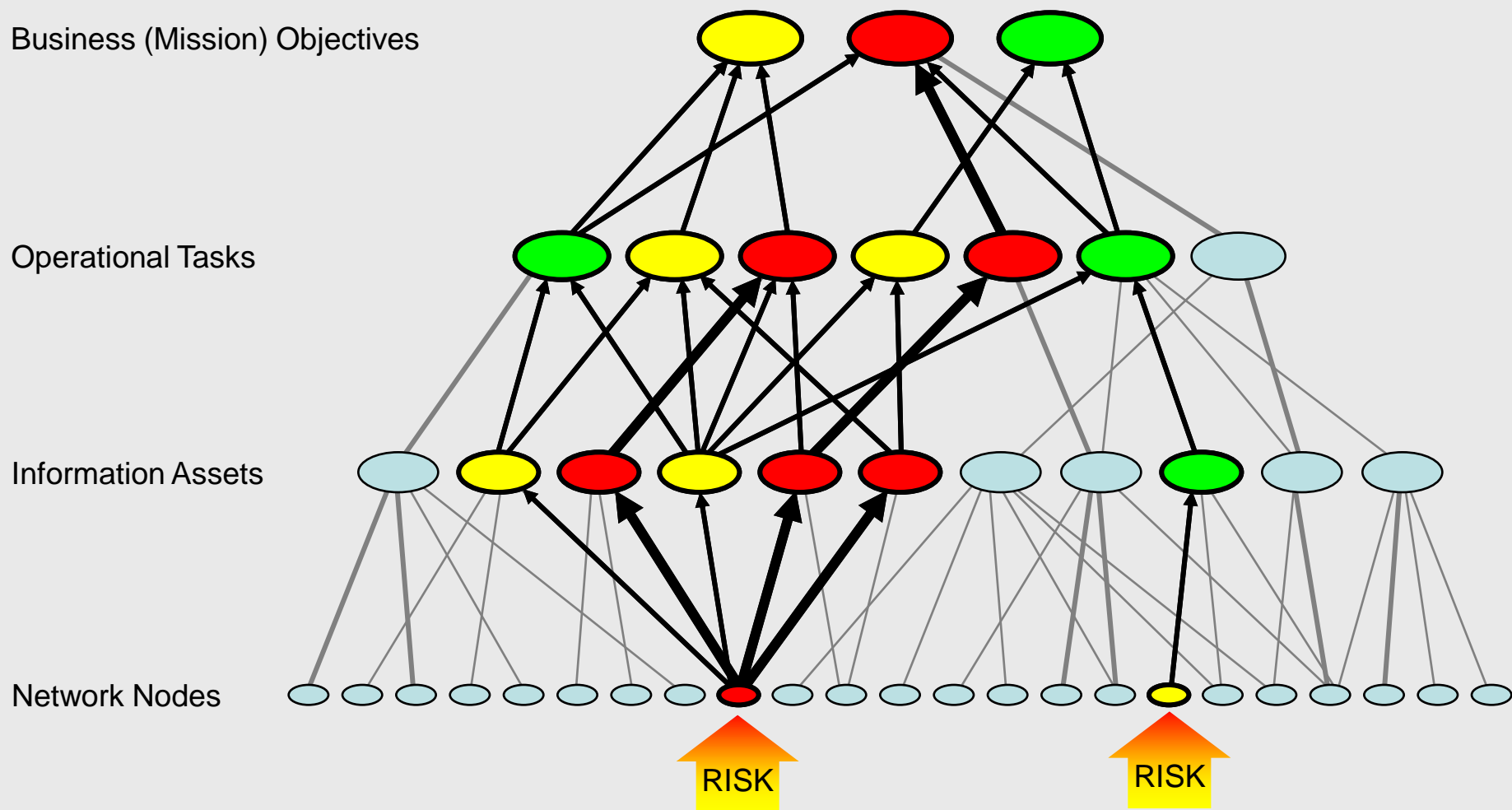
The Need

- As PCS networks are integrated with corporate business networks, the need for inherently secure PCS networks increases
 - Technical security risk analysis is key to improving the security of the system throughout its life cycle
- Network risk analyses are typically done by technologists, while risk mitigation decisions are made by managers
 - Managers must view technical security risks in the larger context of business risks
- **Needed**: A process for assessing PCS network risk *and translating the results* into terms meaningful to corporate-level managers

Our Approach

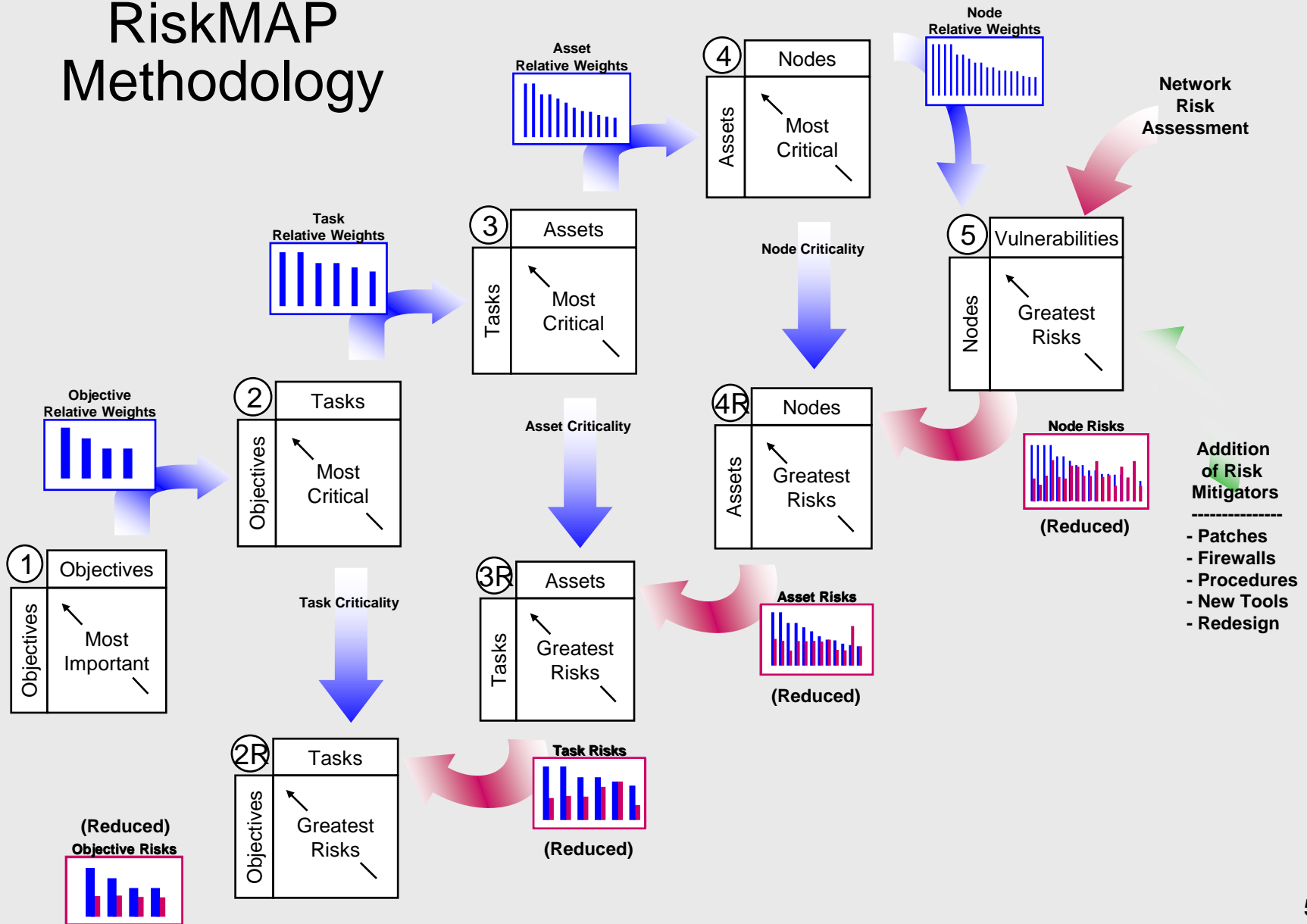
- Apply the Risk-to-Mission Assessment Process (RiskMAP) developed in Support of DHS-Funded I3P PCS Security project
 - Model key features of an organization, from the *Business (Mission) Objectives* to the *Operational Tasks* and *Information Assets* needed to achieve them, to the *Network Nodes* that store, send and make the information available
 - Builds on MITRE work from mid-1990's on DoD risk assessments
 - Draw upon Analytical Hierarchy Process (AHP) and Quality Function Deployment (QFD) methods
 - Capture priorities among corporate mission objectives and operational tasks, and identify the most critical information assets and network nodes
 - Use this model to map risks at the Network level up to the Business (Mission) Objective level, providing executives with solid, credible support for risk mitigation decisions

Our Approach: Find the Dependency Paths

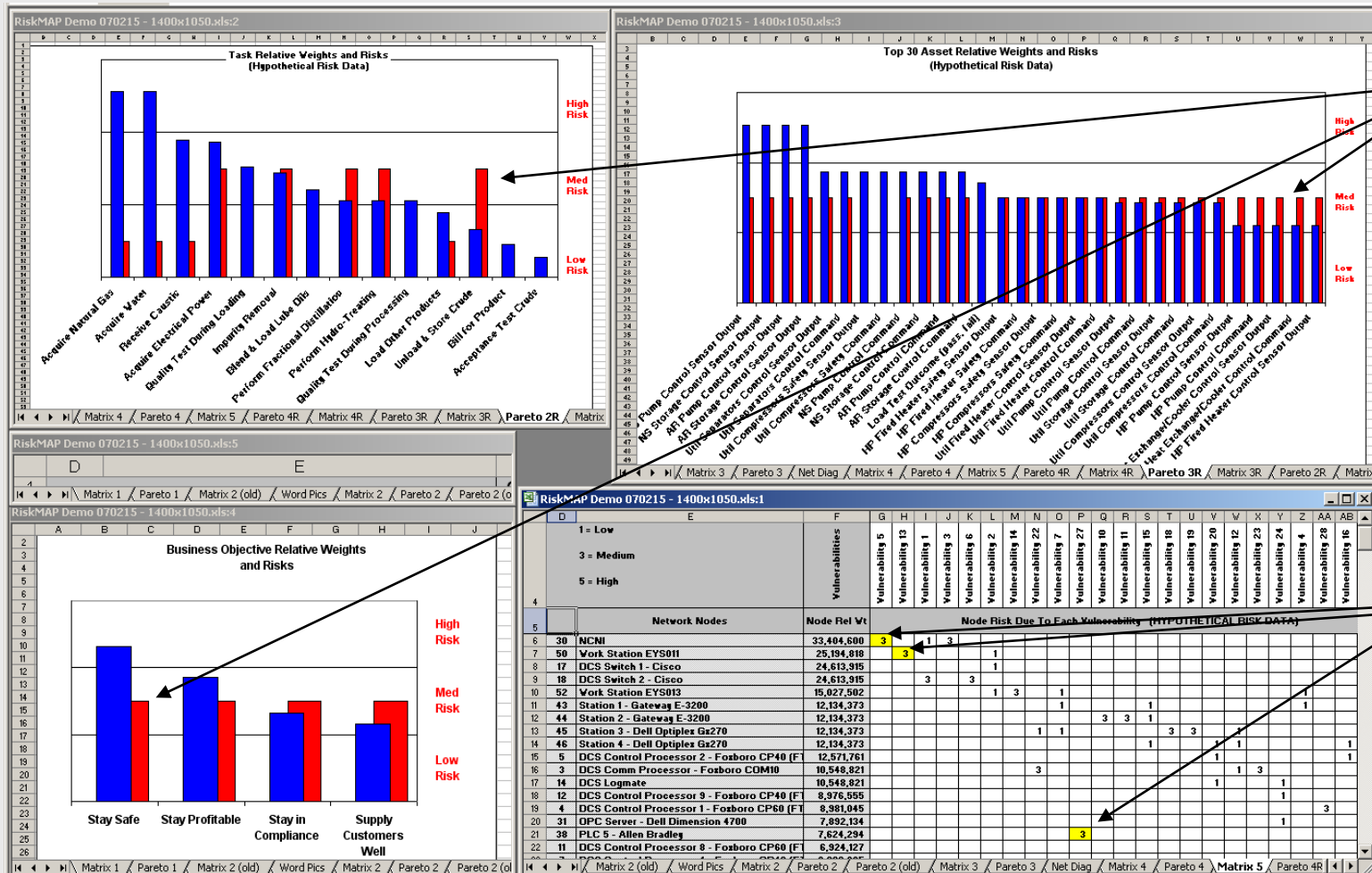


Risk Follows Dependency Paths

RiskMAP Methodology



Dashboard View – After Mitigation



Screen Shot of RiskMAP prototype

Status and Future Research

- RiskMAP Methodology:
 - Adapt from DoD methods
 - Add Calibrated Weighting Scales
 - Add treatment of CONFIDENTIALITY
 - Perform sensitivity analysis of QFD
- Data Templates:
 - Small Refinery (with Ergon Refining, Inc.)
 - Large Refinery (with a major energy firm)
 - Pipeline Operation (seeking a collaborator)
 - Other Sector (Water, Power, Telecommunications)

Technology Transition

- License Agreement signed with Matrikon, Inc. on 10 Oct 07
 - Produce commercial tool based on RiskMAP technology
 - Exclusive license to sell to the following:
 - Power Generation Facilities (Coal, Hydroelectric, Nuclear)
 - Power Transmission & Distribution
 - Chemical Plants
 - Oil & Gas Refineries
 - Non-exclusive in other sectors
- Fluid Innovation (Austin, TX) serves as intermediary
 - Licensing available for other sectors
 - Info at www.fluidinnovation.com

What Can You Do?

- Today:
 - Start thinking about your own enterprise in terms of business objectives, supporting tasks, information assets, and associated network nodes.
 - What are your dependencies at each level?
 - What would you put into a RiskMAP model?
- For Additional Practical Information:
 - Forthcoming Matrikon tool - rick.kaun@matrikon.com
 - Licensing opportunities - andrew.allemann@fluidinnovation.com
- For Additional Research Information:
 - RiskMAP methodology - www.thei3p.org/publications
 - Collaborating on a data template - jwatters@mitre.org