

# E-TRIMS Version 1.0

Enterprise Version  
Technical Risk Identification & Mitigation System

## **Requirements Document** *DRAFT-3*

Revision 0 - 22 Jan 2008 (7:00pm)

Approved/Accepted by: \_\_\_\_\_

Date: \_\_\_\_\_

## 1.0 INTRODUCTION

This document covers the Enterprise (web-based) version of the TRIMS system.

### TRIMS Background

Originally, TRIMS was designed as Process-Based risk management tool. The original methodology consisted of Templates (derived from DoD 4245.7-M), containing expert Questions (taken from NAVSO P-6071). TRIMS was distributed as part of the Program Manager's WorkStation (PMWS), a suite of tools that included TRIMS, the BMP Database, and KnowHow. Each Question included search terms specific to that Question, and TRIMS provided links to launch the BMP Database and KnowHow tools, and automatically search them for information relevant to the Question being viewed. Developed using Navy/Office of Naval Research funding, the PMWS was offered to the U.S. Defense Industrial Base and all DoD Program Offices free-of-charge, with the expectation that use of PMWS could help reduce costs on DoD acquisition programs, enough to cover PMWS' development costs. Because of the desire to distribute PMWS without licensing or usage requirements, several requirements were applied to PMWS Tools:

- 1) Could not use or rely on any commercial [database or word processing] engine that could not be distributed with the tools, or which required individual user licenses.
- 2) For portability, the tools had to be completely self contained, and capable of being run from a CD (without being "installed").

Later, TRIMS added "Product Risk" and "Problem Tracking" functionality. Where Process Risks (Templates) contained smart Questions, which were used to calculate the risk level, Product Risks and Problems are conventional "Pf/Cf" type risks, where the Likelihood (Pf) and Impact (Cf) are entered as a number from 1 to 5; the two values are then cross-referenced on a 5x5 matrix to determine the risk level. The only difference between Product Risks and Problems is that they use different 5x5 Likelihood/Impact matrices to determine their risk levels. The only reason that TRIMS makes a distinction is to force users to consider whether issues being added to TRIMS are "Risks" or "Problems", and allow them to be tracked separately.

TRIMS has always included a Filtering capability, which provided the user with a variety of ways to filter Templates and Questions, in order to allow the risk data to be analyzed, or to limit data for reporting purposes. TRIMS today provides a variety of reports; most of them in graphical format which can be printed or exported directly as PowerPoint files (an incredibly popular feature of TRIMS!)

The very first version of TRIMS used relational database tables to store Categories, Templates, and Questions. An individual "data set" consisted of 6 different files, which all had to be present in order to work with the data. As it was not unusual for users to transmit their data files to others for review, and fairly common for them to only send the first file instead of all six, Brian (Willoughby) directed that the next version of TRIMS be designed to store its data in a single file. Files were also required to be password-protectable, and encrypted, so that the contents could not be read without the password.

When TRIMS 3 was developed, TRIMS-CE was developed as well. The latter was a limited version of TRIMS that ran on handhelds under WindowsCE. This program was capable of opening a TRIMS 3 data file, and allowing the user to answer Questions, as well as edit some of the basic Question data. This program never saw any significant use, but Brian has indicated that he would like to have some kind of "portable" TRIMS data entry capability, for use when conducting surveys and interviews.

The latest version of TRIMS now has the capability to read a data file from a TRIMS Server via secure TCP-IP; the file is then shared among any users accessing the server at the same time. Any changes made by a user are transmitted immediately to the server, and re-broadcast to other online users. While this works quite well, it still requires the installation of the TRIMS client. The desire for the next generation of TRIMS is a web-based (access via any internet browser) tool that does not require a user to install or run anything on his local machine, aside from a standard internet browser.

Future of TRIMS: At this time we expect that the TRIMS 4 will continue to be made available for free via the BMP Website, so that people interested in Process-Based risk management can review the tool and learn how it works. Those users that decide they need web capability would then send funding to WILLCOR in order to have their programs hosted on our Enterprise-TRIMS server (E-TRIMS). [Note: a pricing model still needs to be determined, but the recommended approach would be an annual charge on a per-TRIMS-Element basis.] Since some programs might start with TRIMS 4 before adopting E-TRIMS, there would have to be some means of populating an E-TRIMS System with data from TRIMS 4. Ideally, it would also be nice if there were some means of using TRIMS 4 as a local client to access and update E-TRIMS data. (For those users with the ability to install the TRIMS 4 application on their systems.)

## **Typical E-TRIMS Usage Scenarios**

### ***Case 1 - DoD Program Office & Contractors***

Description: These users would be members of a DoD Program Office and its major contractors, participating in a larger scale risk management program. Very likely, WILLCOR staff would be providing some risk management support, but the expectation is that the majority of the data entry into the system would be handled by PO/Contractor personnel. Because of software installation restrictions, all access to E-TRIMS would be via a browser (usually Internet Explorer, but also possibly FireFox). Contractors will be *extremely* concerned about other contractors seeing their data. The program manager will want to see everything, and will generally be concerned with the program's "top" risks, and how they compare to a month ago/six months ago/a year ago. The program office and contractors will want to generate reports, which will frequently need to be presented in PowerPoint. Many program offices will have their own methods doing risk management, and will typically want to track a number of other data values besides the core values normally tracked by TRIMS. (Examples: whether a risk is a program risk, cost to mitigate, critical risk, which contractor is responsible for a risk, closed risk, etc.)

Usage Issues:

- Most Program Managers will want individual users to be able to propose new [product] risks, but they should not be entered in to the system until they have been reviewed by a risk review board, and approved for entry by the/a risk administrator.
- Most PMs seem to be VERY sensitive about user access rights (who can access what data, and who can make changes), tracking and logging changes that are made, historical comparisons (how does this month's data compare to last month's data?), and generating reports (including which risks are or aren't included in a given report, and in some cases, which fields are or aren't included). Typically, they will want their reports in PowerPoint format, as the reports are ususally distributed as a briefing, or as part of a briefing.
- PMs will also be concerned about the security of their data - that it cannot be compromised from our server or during transmission.
- The data-entry users (the people actually *answering* the questions) will be concerned with the effort required to answer and maintain 560+ questions in the Systems Engineering model, so ease-of-editing is important!
- Often contractors will want to track risks that they don't necessarily want the Program Office to see.
- Sometimes you could have 2 people updating same record at the same time (e.g: Performer and Manager), so there has to be a way to manage "collisions".
- Program offices and contractors are typically short-staffed and over-worked, and don't want to spend any more time on risk management than is absolutely necessary! The interface to the tool must be simple and efficient, requiring the minimum number of steps to get at or modify data.

### ***Case 2 - Single User; Small Program or Independent Evaluation***

Description: This user of the system would be someone who has found TRIMS via a web search, a referral, or a specific recommendation. This person has typically been hunting for a small, easy to use, inexpensive risk management tool for use on a small program or project, or may be evaluating software for use on a larger program. User rights will typically NOT be an issue, as this one user will be the only person using the tool. It should also be noted that some programs may start using the system way, but end up growing into more formal usage of the tool (Case 1.)

Usage Issues:

- In order to evaluate the tool, the user must be able to set up a system and user account fairly quickly (no more than a few minutes), and it should be an automated process (that does not require human intervention on the part of WILLCOR staff).

*Comments: The user may be able to use TRIMS4 instead of the web based E-TRIMS.*

### ***Case 3 - Demo/Teaching (WILLCOR Staff)***

Description: WILLCOR Staff will frequently need to conduct demos of the E-TRIMS system to prospective clients. They will also be called on to conduct hands-on training for new clients.

Usage Issues:

- The primary issue here is that a normal TRIMS system is time-sensitive: as time passes, actions become overdue, TBD Templates become semi-active, and future Templates become active as the begin-activity date is passed. A demo/training system however, must *not* be time-sensitive, or the state of the system will quickly erode into a useless collection of overdue actions and high-risk Templates.

#### ***Case 4 - Risk Management Support of Other Program (WILLCOR Staff)***

Description: In many cases, WILLCOR staff will be tasked with providing risk management support to a Program Office using E-TRIMS. In that role, WILLCOR staff will be doing a significant amount of the data entry/data management and report generation for the PO.

WILLCOR staff will typically also be acting as the Risk Administrators for the Program.

WILLCOR Staff will often attend program reviews on behalf of the Program Manager. In these cases, they will typically need a copy of the Program's TRIMS data available for reference during the review.

Usage Issues:

- Data entry will be a much more significant issue here, as the majority of the data entry task will be put on one person (instead of being distributed amongst multiple users). Interface responsiveness and ease-of-use are critical.
- When attending reviews, internet access may be unavailable, necessitating off-line access to the data.
- WILLCOR staff will be considered risk administrators, and will need to be able to add Templates and Questions as needed.

#### ***Case 5 - Program Reviews/Red Teams***

TRIMS is used by WILLCOR Staff to perform an assessment; questions are only answered one time, and the results are used to generate a report for a customer.

Usage Issues:

- *TBD*

## Summary of Major Requirements

### 1) The ability to track and analyze Process Risks (Templates);

- Templates contain Smart Questions which can be weighted (relative to other Questions within each Template);
- users answer the Questions, and the risk level for the Template is calculated based on the answers
- Questions require reference documentation to support compliance
- Question include a "Next Action to remain compliant"
- Question compliance automatically reset if next-action becomes overdue
- Question tense changes automatically based on Begin-Activity date
- Question compliance automatically reset when Begin-Activity date is passed
- Templates too far in the future automatically marked as TBD

### 2) Baselineing

- Flexible architecture allows users to add Questions, add Templates, or add Categories
- Users can adjust matrices used for calculating Risks

### 3) Filtering

- Flexible filtering capabilities affect all displays and report generation

### 4) Reporting

- Multiple Report Formats, can be exported to PowerPoint (graphical formats) or MS Word (text formats)
- Custom report-templates, to match Customers' standard PowerPoint layouts.

### 5) The ability to track and analyze Product Risks and Problems

- Product Risks use manually entered Likelihood and Impact to calculate risk level

### 6) User-Defined Flags/User-Defined Selections

- Provide flexibility in tracking, filtering, and analyzing risks

## 1.1 Version

1.1.1 This version of TRIMS will begin at 1.0, and will increment from there as needed.

## 1.2 General Description

1.2.1 TRIMS is a tool designed identify, quantify, and track risks in a program, and then reduce or mitigate these risks to acceptable levels. Because TRIMS is a knowledge-based, process-oriented System, its baseline Templates are product independent. Each Template incorporates a series of expert Questions, invoking best practices in its process area. Most Questions deal with continuing activity and so require the user to provide evidence of current compliance, as well as a next action to remain compliant. TRIMS automatically tracks the status of a program and notifies the user when a Template falls out of compliance. Users can tailor the System to incorporate product-specific data for risk assessment, tracking, and mitigation. Users can also add their own Categories, Templates, and Questions tailored to specific aspects of their program. Another aspect of TRIMS is a wide range of reporting features designed to provide individuals with the information they need, from the employee on the factory floor to the CEO of the company (or military Program Manager).

1.2.2 This new program is based on the windows version of the TRIMS program; it must perform all of the same functions as the previous version (currently v4.1) on which it is based, except as noted in sections 3 and 4.

## 1.3 Conventions Used In This Document

1.3.1 Section 2 contains those requirements which are “inherited” from the TRIMS v4.1, and which will be retained in TRIMS-W.

1.3.2 Section 3 contains requirements which are new to TRIMS-W.

1.3.3 Section 4 contains those “requirements” from TRIMS v4.1 which are being eliminated in TRIMS-W. This allows reviewers to explicitly identify those features which are being eliminated in the new version.

1.3.4 In sections 2 and 3, text written in italics are programmer annotations intended to aid in understanding the requirements. They are not binding requirements, nor are they intended to be interpreted as part of the final software design.

1.3.5 Requirements will be marked with the following notations:

[M]	Mandatory	[D]	Desirable
[O]	Optional	[F]	Future

## 2.0 REQUIREMENTS FOR EXISTING FEATURES

### 2.1 Main Page

2.1.1 The program must display one or more TRIMS Elements as follows: [M]

A user-configurable [up to] 3-column display, that includes nested categories, which are displayed in a collapsible tree-style format. The user may configure the number of columns to use (1, 2, or 3), and which risk types (Process Risks (Templates), Product-Risks, or Problems) should be displayed in each column. [M]

A display of Templates contained in each Category, OR a summary of risk levels contained within the Category (determined by user preference) [M]

Each template should have color corresponding to that of its respective Template risk level (see 2.10.2 for definitions of Template risk levels). [M]

Each Template/Risk must include a Risk-Level code/symbol next to the Risk display for people who are color-blind. The recommend symbols are:

Low Risk     Medium Risk     High Risk    ( ) TBD    × N/A

2.1.2 On logging in to the system, TRIMS must display all Elements available to the user. [M]

2.1.3 Elements must be displayed completely collapsed, completely expanded, or in their previous state, per user preference. [M]

Default for a single Element is to open it completely expanded. [M]

Default for multiple Elements is to open them completely collapsed. [D]

2.1.4 The program must include access to Baselining options; this option must be restricted to Admin users only. [M]

2.1.5 The program must include an ability to set and edit filters for the current Element/System. (See section 2.5)

2.1.6 The program must include the ability to view/browse the current Question & Risks set of a specific Element through the “Browse Risks and Questions” page. (See section 2.6)

2.1.7 The program must include an ability to request reports. (See section 2.7)

2.1.8 The program must include a key showing the colors used for different Risk levels.

2.1.9 The program must include the ability to select the Risk Display.

*(Risk Levels are calculated using one of the four available impact factors. The risk display selection determines which impact factor to use in calculating the risk levels. Any one of the four impact factors may be selected, OR the user may choose to use the highest of the four for determining the risk level.)*



## 2.2 Edit Process Risk (Template)

2.2.1 The program must include an ability to display the following information associated with the current Template:

current Element Name

current Category Name

Template ID and Name

Last updated date

Risk Level

current Risk Display Mode

Numeric Risk Level [calculated from likelihood and impact, using risk level matrix]

Risk Matrix, showing current likelihood and impact

2.2.2 The program must include an ability to edit information associated with the current Template which consists of the following fields:

Impact - Four impact values; by default: Performance, Safety, Cost, Schedule

Initiate - Person responsible for initiating assignment

Monitor - Person responsible for monitoring progress

Approve - Person responsible for approving activity on the risk

Weight - How much this Risk should be weighted in terms of importance

Note: The program must display the total weight of all Risks and Sub-Categories in the Category, and the percentage of the Category represented by the current Risk. [Note: this field is only displayed and used if the “Use Advanced Roll-up Weighting” option has been turned on.]

Notes - general purpose Notes

Begin Activity Date - Date that the Template becomes active

2.2.3 The program must include an ability to display and edit up to 6 user-definable true-false (checkbox) fields.

2.2.4 The program must include an ability to display and edit up to 8 user-definable multiple-choice (pull-down) fields.

2.2.5 The program must include an ability to display the current Template’s info (“Why is this Important?”)

2.2.6 The program must include an ability to navigate the Categories of the current Element

2.2.7 The program must include an ability to navigate the Templates of the current Category

2.2.8 The program must display any of the Template's Questions which are visible under the current Filter. The program must display the following information for each Question:

Question Number and Text

Question Compliance (Note: Partial compliance is abbreviate as "Pa.#", where "#"  
represents the partial level [1-9].)

Question Weight

Questions should be clickable - when clicked on, the user must be taken to the  
Answer Questions page for that Question.

## 2.3 Answer Questions

2.3.1 The program must display the following information associated with the current Question:

- Current Element
- Current Category
- Parent Template
- Parent Template's Begin-Activity Date
- Question Number
- Question Text
- Last updated date

2.3.2 The program must include an ability to edit information associated with the current Question which consists of the following fields:

Compliant - Compliance with the Question: yes, no, unknown, partial or n/a  
Note: If the compliance is set to "Partial", the user must be able to specify the partial level, from 1 - 9. (*equivalent to 10% - 90%*)

Weight - How much this Question should be weighted in terms of importance  
Note: The program must display the total weight of all Questions in the Template, and the percentage of the Template represented by the current Question.

Reference Document(s) - List of reference documents for this Question

Reference File(s) - List of reference files for this Question

Next Action - Next action in the list of actions associated with this Question

Due Date - Date Next Action is due to be completed

Performer - Person who is responsible for addressing and maintaining this Question's compliance

Notes - General-purpose notes field

2.3.4 The program must include a read-only display of the "managers" (initiate/monitor/approve) assignments from the Question's parent Template. The names should be clickable, and should display additional personnel information for the name that was clicked on. [D]

2.3.5 The program must include an ability to attach/upload external reference files to a specific Question [M]

Note: valid URLs may be added as well as File references [O]

2.3.6 The program must include an ability to download attached reference files

- 2.3.7 The program must include the ability to display/edit a Question's Next Action
- 2.3.8 The Answer Questions page must be able to display a list of actions through the list of actions page, which must include all of the following functionality:
- (a) An ability to list all actions associated with the current Question and their due dates and completed dates (if they have them)
  - (b) Adding/editing/deleting actions
  - (c) Marking actions in the list as complete/incomplete
  - (d) Maintain order of Action Items (by due date)

- 2.3.9 The program must display the "Next" action, and allow it to be modified directly from the Answer Questions page. The "Next Action" is defined as the incomplete action [in the list of actions] with the earliest due date.

If there is no next action, this field must be left blank; if the user enters data into this field, then the system must create a new action, and add it to the actions list for the Question.

- 2.3.10 The user must be able to mark the Next Action as completed directly from the Answer Questions page.

The completed date for the Next Action must then be assigned the current date.

If there are other incomplete actions in the actions list, then the one with the earliest due date becomes the new "Next Action", and the display must be updated accordingly.

If all actions have been completed, then the display must be updated, with the Next Action field left blank.

- 2.3.11 The program must include an ability to select a person for the Next Action through the select personnel page, which must include all of the following functionality:

- (a) An ability to list all personnel for the current Element/System
- (b) An ability to list the information for the currently selected person from the list of all personnel
- (c) If the user is an Admin, then the program must provide an ability to add people to the list
- (d) If the user is an Admin, then the program must provide an ability to edit people to the list

- 2.3.12 The program must include an ability to navigate the Questions of the current Template

- (a) If the Answer Questions page has been reached from a Template, then navigation must be limited to the Questions within the Template, and the user should only have options to access the next or previous Question.

(b) If the Answer Questions page has been reached from Browse Risks/Questions, then navigation of the entire filter is allowed, and the user must have the ability to access the next/previous Category, Template, or Question.

2.3.13 The program must include an ability to search the KnowHow database for related information

2.3.14 The program must include an ability to search BMP Databases for related information

2.3.15 The program must include an ability to search the internet for related information

## 2.4 Edit Product Risk/Problem

2.4.1 The program must include an ability to display the following information associated with the current Product Risk/Problem:

- current Element Name
- current Category Name
- Risk ID and Name
- Risk Description
- Last updated date
- Risk Level
- current Risk Display Mode
- Risk Matrix, showing current likelihood and impact

2.4.2 The program must include an ability to edit information associated with the current Product Risk/Problem which consists of the following fields:

- Likelihood - the Risk's likelihood of occurrence: 1-5, or "Unknown"
- Impact - Four impact values; by default: Performance, Safety, Cost, Schedule
- Initiate - Person responsible for initiating assignment
- Monitor - Person responsible for monitoring progress
- Approve - Person responsible for approving activity on the risk
- Perform - Person responsible for working the risk
- Notes - general purpose Notes
- Weight - How much this Risk should be weighted in terms of importance  
Note: The program must display the total weight of all Risks and Sub-Categories in the Category, and the percentage of the Category represented by the current Risk. [Note: this field is only displayed and used if the "Use Advanced Roll-up Weighting" option has been turned on.]
- Reference File(s) - List of reference files for this Risk
- Next Action - Next action in the list of actions associated with this Risk
- Due Date - Date Next Action is due to be completed
- Performer - Person who is responsible for completing actions in this Risk

2.4.3 The program must include an ability to attach/upload external reference files to a specific Risk/Problem [M]

Note: valid URLs may be added as well as File references [O]

2.4.4 The program must include an ability to download attached reference files

- 2.4.5 The program must include the ability to display/edit a Risk's Next Action
- 2.4.6 The Edit Risk page must be able to display a list of actions through the list of actions page, which must include all of the following functionality:
- (a) An ability to list all actions associated with the current Question and their due dates and completed dates (if they have them)
  - (b) Adding/editing/deleting actions
  - (c) Marking actions in the list as complete/incomplete
  - (d) Maintain order of Action Items (by due date)

- 2.4.7 The program must display the "Next" action, and allow it to be modified directly from the Answer Questions page. The "Next Action" is defined as the incomplete action [in the list of actions] with the earliest due date.

If there is no next action, this field must be left blank; if the user enters data into this field, then the system must create a new action, and add it to the actions list for the Question.

- 2.4.8 The user must be able to mark the Next Action as completed directly from the Answer Questions page.

The completed date for the Next Action must then be assigned the current date.

If there are other incomplete actions in the actions list, then the one with the earliest due date becomes the new "Next Action", and the display must be updated accordingly.

If all actions have been completed, then the display must be updated, with the Next Action field left blank.

- 2.4.9 When the user marks an action as completed/incomplete (either from the Edit Risk page or the List of Actions page), the program must automatically update the Risk's likelihood and impact values.

The Risk is updated with the values from the last contiguous completed action (i.e: the action immediately before the first incomplete action).

If the first action in the list is incomplete, then the likelihood/impact values must be reset to the Risk's original likelihood and impact values.

2.4.10 The program must include an ability to select a person for any of the personnel field (Performer, Initiator, Monitor, or Approver) through the select personnel page, which must include all of the following functionality:

An ability to list all personnel for the current Element/System

An ability to list the information for the currently selected person from the list of all personnel

If the user is an Admin, then the program must provide an ability to add people to the list

If the user is an Admin, then the program must provide an ability to edit people to the list

2.4.11 The program must include an ability to display and edit up to 6 user-definable true-false (checkbox) fields.

2.4.12 The program must include an ability to display and edit up to 8 user-definable multiple-choice (pull-down) fields.

2.4.13 The program must include an ability to navigate the Categories of the current Element

2.4.14 The program must include an ability to navigate the Risks of the current Category



## 2.5 Filtering

2.5.1 The filtering page must be separated into three parts which, collectively, allow the user to filter the Templates, Questions, and Risks shown in the main page and in reports. [M]

Each filtering part is calculated independently, and the results of each part are combined using a logical AND.

2.5.2 The “Include/Exclude” part of the filter options must include all of the following functionality: [M]

- (a) An ability to filter Templates/Questions based on the criteria selected by the user from the following list: [M]
  - Low/Medium/High/TBD/Not Applicable Templates/Risks
  - Risk Group (Process Risks/Product Risks/Problems)
  - Any User-Defined Selection Field/Property
- (b) An ability to clear all current selections
- (c) An ability to “reverse” the filter: that is, to display the selected items instead of hiding them. [M]

2.5.3 The “Query Filter” part of the filter options must include all of the following functionality:

- (a) An ability to filter based on searching for text in the following Element properties: [M]
  - Category/Template/Risk IDs (*risk IDs include number + name of the risk*)
  - Notes
  - Question text/Risk Description
  - Reference
  - Action items
- (b) When multiple words are specified in the text search string, the program shall consider the text to be found in a target string if: [D]
  1. all of the words occur in the target, anywhere
  2. if any words in the search string are enclosed in double quotation marks, the phrase (all of the words within, but not including, the quotes) shall be treated as a single “word”, and the phrase must be found as specified *e.g. search for **the text** would find any string containing both **the** and **text**, regardless of where they appear; however, searching for “**the text**” would have to find those two words together.*
  3. if the user inserts a pipe symbol (“|”) between words or phrases, the pipe symbols shall be interpreted as a logical OR. Multiple pipe symbols may be entered. *e.g. searching for **this | that** should match any text contain either the word **this** OR the word **that**. Searching for **this thing | that way** would match text contain either the two words **this** and **thing**, OR the two words **that** and **way**.*

4. The user may use commas (“,”) instead of pipe symbols to separate phrases. If both commas and pipe symbols occur (and are not inside quotation marks), then only the pipe symbols shall be recognized, and the commas shall be ignored.

*Note: this capability does not exist in TRIMS at this time, but it is anticipated that it will be added to TRIMS v4.1.1, and will be in use by the time E-TRIMS is released.*

- (c) An ability to filter an Element based on the following conditions: [M]
    - Assigned personnel (Initiate/Monitor/Approve/Perform)
    - Next Action Due - within: (last/next “n” days/weeks/months/years)
    - Last updated - within: (last “n” days/weeks/months/years)
    - Begin activity - within: (last/next “n” days/weeks/months/years)
    - Action Items (Overdue/Not Overdue)
    - Completed Questions/Risks (Completed/Not Completed)
  - (d) An ability to clear all current selections [M]
  - (e) An ability to “reverse” the filter: that is, to display the selected items instead of hiding them. [M]
- 2.5.4 The “Condition Filter” part of the filter options must include all of the following functionality: [M]
- (a) An ability to filter an Element based on the following conditions: [M]
    - Compliance (Yes/No/Partial/Unknown/Not applicable)
    - Likelihood of Occurrence (1-5 or Unknown)
    - Impact (Select one impact, but any of the possible values: 1-5, Unk, N/A)
    - Any User-Defined Flag (checked/not checked)
  - (b) An ability to clear all current selections [M]
  - (c) An ability to “reverse” the filter: that is, to display the selected items instead of hiding them. [M]
- 2.5.5 The program must allow the user to save filters by name and restore them. [M]
- (a) The program must warn users before overwriting an existing TRIMS filter. [M]
- 2.5.6 The program must allow the user to specify a filter to be the default filter, implemented automatically when the user starts a session. [M]
- 2.5.7 The program must include an ability to reset/clear all filter options [M]
- 2.5.8 The program must include an ability to apply currently defined filter [M]
- 2.5.9 The program must include an ability to cancel out of the filter selection page without changing the originally defined filter [M]
- 2.5.10 The program must include a filtering/display option where items which are not in the current filter are displayed in a "lowlight" or grayed-out state, instead of being hidden. [M]

*This feature is called the “Highlight Filter” in TRIMS 4 [although the term “lowlight filter” would be more accurate]; it allows the user to highlight all “design” Templates, while still seeing everything else. Alternatively, it can be used to filter out (“lowlight”) risks which are being ignored, without hiding them completely.*

- 2.5.11 The program must allow the user to define “additional filter” sets (at least two, ideally a number that is tailorable, if more than three filters are needed.) An “Additional filter” consists of a combination and implementation of requirements 2.5.1 through 2.5.4, plus the ability to specify how the results of the filter must be combined with preceding filter results. Valid choices are “Logical OR” and “Logical AND”.

*The implementation of this in TRIMS v4 is as follows: filters are numbered, beginning at zero; filter[0] is the default filter, and is processed first, creating a “mask” of risks and questions to be displayed. If filter[1] is blank (nothing specified) then it may be skipped; otherwise, it is processed next to generate a second results mask. This mask is combined with the result from filter[0], using the combining operation specified as part of filter[1] (logical OR or logical AND). The resulting mask is now the “current display mask”. Filter[2] is processed next, and if it is not blank, then its result is combined with the “current display mask”, using the combining operation specified as part of filter[2], and the result becomes the new “current display mask”. This may be repeated for any number of additional filters.*

## 2.6 Browse Risks/Questions

- 2.6.1 The program must include an ability to display all Risks and Questions in the current filter in a linear list. [M]
- (a) Each item must be displayed on a single line
  - (b) Each Risk must be displayed in a color and using the risk symbol appropriate for its risk level.
  - (c) Each Risk must display the risk ID and name
  - (d) Questions must be indented, and must display the Question ID and text
  - (e) The display must include a summary showing the total numbers of Process Risks, Product Risks, Problems, and Questions in the list
- 2.6.2 Each Risk or Question must be clickable; clicking on a Risk or Question must take the user to the appropriate Edit Template/Process Risk/Problem or Answer Question pages, as appropriate. (see sections 2.2-2.4.)
- 2.6.3 The program must include an ability to go directly to a Risk or Question based on its Category- Template-Question identifier. (i.e. "A-04.2") [O]

## 2.7 Reports

- 2.7.1 The program must include an ability to request Summary Reports (see Appendix A for sample format). [M]
- (a) Summary Reports display all Risks in the current filter, in columns by top-level Category. If the number of Risks is greater than 16, then the Category must be displayed in 2 columns. [M]
  - (b) The program must provide the user with the following options for the report: [M]
    - Fit each risk type on a single page
    - Font and Font Style to use on the report
    - If “Fit each risk type to a single page” is not selected, then the user should be able to specify a Font size as well.
    - Report page orientation (portrait or landscape)
    - Whether or not to include Page Headers (Element Name & Risk Type)
    - Whether or not to include the Printing Date
    - Whether or not to include Page Numbers
    - Whether or not to include a Title Page (if a Title Page is requested, then the user must have the ability to specify a title)
  - (c) The program must include the ability to generate the report in a printable preview mode. [M]
  - (d) The program must include the ability to export the report as a PowerPoint file. [M]
  - (e) The report shall not include different types of risks on the same page. (Each group of risks of a particular type, and belonging to the same Element, shall appear on their own page or pages.) [M]
- 2.7.2 The program must include an ability to request Risk Matrix Reports (see Appendix A for sample format). [M]
- (a) Risk Matrix Reports display all Risks in the current filter; each page of the report include a risk matrix, with risks represented as labeled dots. Each risk is plotted according to its Likelihood and Impact values. The report also includes the full risk ID and name of each plotted risk, in a table next to the matrix. [M]
  - (b) The program must provide the user with the following options for the report: [M]
    - Font, Font Size, and Font Style to use on the report
    - A Category level at which to break pages
    - Whether or not to include Page Headers (Element Name & Risk Type)
    - Whether or not to include the Printing Date
    - Whether or not to include Page Numbers
    - Whether or not to include a Title Page (if a Title Page is requested, then the user must have the ability to specify a title)
  - (c) The program must include the ability to generate the report in a printable preview mode. [M]
  - (d) The program must include the ability to export the report as a PowerPoint file. [M]

- (e) The report shall not include different types of risks on the same page. (Each group of risks of a particular type, and belonging to the same Element, shall appear on their own page or pages.) [M]
- 2.7.3 The program must include an ability to request Risk Detail Reports (see Appendix A for sample format). [D]
- (a) Risk Detail reports display all Risks in the current filter; each Risk is displayed on a single page (or multiple pages if necessary). The report uses different formats for Templates vs Product Risks/Problems. Each page displays information about the risk, including: Element Name, Category Name, Risk ID & Name, Notes, Risk Level, Impact values, Last Updated date, a small matrix with risk's impact/likelihood plotted, and the values of any User-Defined Flags or User-Defined Selections. Templates must also include the Begin Activity Date, the Compliance percentage, the Monitor, and the Template's Questions (including Question Text, compliance, and weight). Product Risks or Problems must include the Risk's description, the Performer, the numeric Risk Level, and the Actions associated with the Risk (including the short description of each action, the due date, and the completion date). [M]
- (b) The program must provide the user with the following options for the report: [M]
- Whether or not to include Page Headers (Element Name & Risk Type)
  - Whether or not to include the Printing Date
  - Whether or not to include Page Numbers
  - Whether or not to include a Title Page (if a Title Page is requested, then the user must have the ability to specify a title)
- (c) The program must include the ability to generate the report in a printable preview mode. [M]
- (d) The program must include the ability to export the report as a PowerPoint file. [M]
- 2.7.4 The program must include an ability to request Overview Reports (see Appendix A for sample format). [O]
- (a) Overview Reports display all Categories and Risks in the current filter, in a tree-style format similar to the main display. [O]
- (b) The program must provide the user with the following options for the report: [M]
- Font, Font Size, and Font Style to use on the report
  - Whether or not to automatically expand all Categories (or to follow the expanded/collapsed state of the main display)
  - Report page orientation (portrait or landscape)
  - Whether or not to include Page Headers (Element Name & Risk Type)
  - Whether or not to include the Printing Date
  - Whether or not to include Page Numbers
  - Whether or not to include a Title Page (if a Title Page is requested, then the user must have the ability to specify a title)

- (c) The program must include the ability to generate the report in a printable preview mode. [M]
  - (d) The program must include the ability to export the report as a PowerPoint file. [M]
  - (e) The report shall not include different types of risks on the same page. (Each group of risks of a particular type, and belonging to the same Element, shall appear on their own page or pages.) [M]
- 2.7.5 The program must include an ability to request Detailed Reports (see Appendix A for sample format). [M]
- (a) Detailed Reports are text-based reports, which display information about every Risk or Question in the current filter. [M]
  - (b) The program must provide the user with a method of specifying which data items should or should not appear on the report.
  - (c) The program must provide the user with a means of saving their specification by name, so that it can be restored and re-used for future reports. [M]
  - (d) The program must provide the user with the following options for the report: [M]
    - Font, Font Size, and Font Style to use on the report
    - Whether or not to force page breaks between Risks
    - Whether or not to include a Title Page (if a Title Page is requested, then the user must have the ability to specify a title)
  - (e) The program must include the ability to generate the report in a printable preview mode. [M]
  - (f) The program must include the ability to export the report as a MS Word-editable file. [M]
  - (g) The program shall allow the Detailed report format to be specified externally, and shall allow the user to select from available report formats. [M]
- 2.7.6 For those reports that can be exported to PowerPoint files (Summary Report, Risk Matrix Report, Overview Report, and Risk Detail Report), the program must allow a PowerPoint file to be specified as a template for reports. Each system shall be allowed its own report template file. [M]

## 2.8 Administrative Tools

- 2.8.1 The program must include an ability to an Element's milestone dates through the milestone dates editor which must include all of the following functionality: [M]
- (a) An ability to change the month day and year milestone for the concept/design/develop/produce sections of the Element
  - (b) An ability to cancel out of the current changes to the milestone dates
  - (c) An ability to change the descriptions and number of milestones in the Element.
- 2.8.2 The program must include an ability to edit an Element's properties through the Element properties editor, which must include all of the following functionality: [M]
- (a) An ability to change the title of the Element
  - (b) An ability to view/edit the Element's notes
  - (c) An ability to define up to six true/false (checkbox) variable for each Risk
  - (d) An ability to define up to eight multiple choice (pulldown) variables for each Risk
  - (e) An ability to apply the current changes to the Element properties
  - (f) An ability to cancel out of the current changes to the Element properties
- 2.8.3 The program must include an ability to adjust Template/Question/Risk weights through the weights page, which must include all of the following functionality: [M]
- (a) An ability to load weights from a pre-defined weight profile
  - (b) An ability to save the weights in the current element to a named weight profile
  - (c) An ability to reset all weights to default values
- 2.8.4 The program must include an ability to edit the current Element's personnel through the personnel editor, which must include all of the following functionality: [M]
- (a) An ability to list all personnel for the current Element/System
  - (b) An ability to display the information for the currently selected person from the list of all personnel
  - (c) An ability to add people to the list
  - (d) An ability to edit people on the list
  - (e) An ability to delete people from the list



2.8.5 The program must include an ability to modify the current Element’s knowledge base through the knowledge base editor, which must include all of the following functionality: [M]

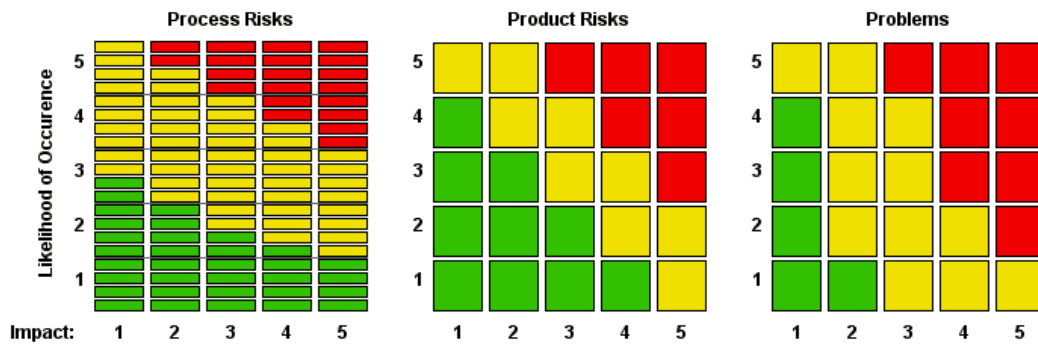
- (a) Ability to list Categories/Templates/Questions in a user-friendly tree-style format. *(Something like the folder list in Windows (98/2000) Explorer.)*
- (b) Appropriately colored symbols next to each Template/Risk name to show its risk/type
- (c) An ability to add/edit/copy/delete items from the listing
- (d) An ability to spell check data in Templates/Risks and Questions in the listing
- (e) An ability to copy Categories/Risks/Questions from one Element, and paste them into another Element

2.8.6 The program must include an ability to delete Elements from the system [M]

2.8.7 The program must include an ability to make a copy of an Element [M]

2.8.8 The program must include an ability to edit the program’s low/medium/high risk thresholds through the risk matrices editor, which must include all of the following functionality: [M]

- (a) Ability to show current high/med/low risk matrices
- (b) Ability to modify current high/med/low risk matrices
- (c) An ability to cancel out of the current changes to the risk matrices
- (d) An ability to copy the new risk definitions to all other Elements within the current System.
- (e) An ability to reset all of the risk matrices to the default values shown below:



2.8.9 The program must include an ability to create/delete TRIMS models through the TRIMS models page, which must include all of the following functionality: [M]

- (a) An ability to create a new model based on an existing Element's structure (Categories, Templates, Questions, milestones, begin-activity dates, and weights)
- (b) An ability to delete an existing model

*Note: the models that are created here are made available as a base to use when creating new Elements.*

2.8.10 The program must include direct access to the TRIMS help graphics, in addition to the normal TRIMS online help [M]

2.8.11 The program must restrict access to the administrative tools to those users who have "Admin" rights specified for their user record within the Element. [M]

## 2.9 Tool/Options/Help

- 2.9.1 The program must provide a “User Preferences” option, allowing the user to specify the following: [D]
- (a) Font to be used for the Main Element display [D]
  - (b) Initial Element Display Mode [D]  
choices should be: everything collapsed, everything expanded, or previous state
  - (c) Category Display (show blocks representing individual templates, or summary bars that show relative percentages of high risk/medium risk/low risk/TBD/NA) [D]
  - (d) Whether empty Categories should be included in Main Display (or not) [D]
  - (e) User should be able to specify background colors for Low Risk, Medium Risk, High Risk Templates and for Category bars. The user should also be able to specify a black or white font color. There should also be an option to restore the default colors. [D]
  - (f) Column display: the user should be allowed to specify the number of columns, and which risks should be displayed in each column. [O]
  - (g) Risk Calculations: whether risk should be calculated based on Performance, Safety, Cost, Schedule, or Highest (This option mirrors the risk display selector on the main display.) [D]
  - (h) The program should provide a global option for the entire system, to determine whether Advanced Rollup Weighting should be used for calculating Category, Risk Group, Element, and System summaries. (see Appendix C for a completed discussion on Advanced Rollup Weighting.) [D]
  - (i) The program should provide a means to re-enable any warning messages that the user has disabled. [M]
- 2.9.2 The program should provide a mechanism to export an Element as an XML file. This capability must be restricted to Admins only. [D]
- 2.9.3 TRIMS must provide an online help System which includes: [M]
- (a) Online help
  - (b) Help graphics
  - (c) Tips
  - (d) “About” page
  - (e) Context-sensitive help throughout the program

## 2.10 Global/Internal

2.10.1 The program must be able to view and edit the currently selected Element's notes [M]

2.10.2 Template Risk Levels [M]

The program must be capable of identifying the risk level of each Template. The Template "risk" is calculated, and must be exactly one of the following:

- TBD (To Be Determined): if the current date is earlier than the Template's "Start Date", then a Template is considered to be TBD. The Start Date is calculated by subtracting the smaller of (18 months) or (25% of the program life [MS[n] - MS[0]]) from the Begin Activity Date.
- Low/Medium/High Risk: If the impact factor is between 1 and 5, or if it has a value of "Unknown", then the risk level is determined by cross-referencing the likelihood and the impact value on a user-definable risk matrix. (If the impact is "unknown" then it is treated as if it were "5".)

Likelihood is calculated as  $95\% - (0.9 * \text{compliance})$ .

*Note: This results in an effective range of 5%-95%. Why? Because: doing absolutely nothing doesn't automatically imply a 100% chance of failure. You could get really lucky. Likewise, following every single process perfectly doesn't automatically guarantee that nothing bad must happen either.*

Compliance is calculated by adding the number of compliant points for each Question<sup>2</sup>, and dividing by the sum of the weights for each Question (and multiplying by 100). Note that Likelihood is measured 0-100 internally, and plotted on the full vertical scale of the risk matrix chart (even though the axis is only labeled 1-5; each value covers 20% of the range). *(the axis is labeled 1-5, but there are 20 divisions for selecting risk ranges, each covering 5% of the range)*

- N/A (Not Applicable): if the sum of the Question weights is zero (ALL Questions are N/A), then the Template as a whole is considered N/A as well. A Template or Risk may also be considered N/A if the Impact value has a value of N/A, or, if Advanced Roll-Up weighting is being used and the Template/Risk has a weight of 0.
- If, based on the above calculations, it is possible for a Template/Risk to be both TBD and N/A, then it shall be marked as N/A.

**Note 2:** The "compliant points" for a Question are determined based on the weight of a Question and its answer:

Yes: points = weight                      No, Unknown: points = zero

Partial: points =  $\text{muldiv}(\text{weight}, \text{partialPct}, 10)$  ["partialPct" is 1 - 9]

*By rule, "Partial Credit" is not allowed for Questions with a maxWeight less than 4. Also, the points must be greater than zero, and less than "weight".*

Not Applicable: Question is not counted.

### 2.10.3 Data Objects/Hierarchy

- (a) **System** - The topmost object in the TRIMS hierarchy is the **System**. A System represents the entire collection of Elements, user accounts, and customer-specific data associated with a single group of TRIMS users. (e.g.: a program office and its contractors, a single customer, etc.)
- (b) **Element** - Systems contain one or more Elements. An Element consists of a collection of Templates, Questions, Risks, and Personnel records.
- (c) **Risk Group** - Each Element contains exactly 3 Risk Groups: one for Templates (Process Risks), one for Product Risks, and one for Problems. The Process Risk Group contains Categories and Templates; the other two Risk Groups contain Categories and Product Risks or Problems (which are identical objects).
- (d) **Category** - Risk Groups may be empty, but otherwise contain one or more Categories. Categories may contain other (sub) Categories or Risks (Templates, Product Risks, or Problems)
- (e) **Template** - Templates are the central risk object in TRIMS. Also referred to as Process Risks, they contain zero or more Questions. (However, a Template that has zero Questions is automatically marked as “N/A”, as it has no smart Questions with which to evaluate the risk level.)  
**Product Risk** - Product Risks (and Problems) appear at the same hierarchy level as Process Risks, and are children of Categories. Product Risks contain Action Items.
- (f) **Questions** - Questions are child-objects of Templates, and contains Action Items.
- (g) **Action Items** - The lowest object in the hierarchy, action items are child-objects of both Questions and Product Risks. Note that Action Items which are child-objects of Product Risks contain additional properties (related to risk-levels; see 2.10.4).

#### 2.10.4 Data Objects/Required Properties

- (a) **System** - Must support the following properties:
- Unique web address
  - Customizable login page
  - Elements (array of Element)
  - Field labels
- (b) **Element** - Must support the following properties:
- Element Name (String)
  - Risk Groups [process, product, problem]
  - Milestones (array of Milestone)
  - Element Notes (Text)
  - User-Defined Flag Definitions (6 x String)
  - User-Defined Selections Definitions (8 x UDS Definition)
  - Risk Matrices Definitions (3 x Risk Matrix)
  - Likelihood/Impact Guidance (Text)
  - Personnel (array of Personnel)
  - Demo Mode (True/False) *(Note: in TRIMS v4, this has been an Element property; however, in all cases where it has been used, every Element in the System has had the same value, so this could be implemented as a System property instead.)*
- (c) **Risk Group** - Must support the following properties:
- Categories (array of Category)
  - Weight (Numeric)
- (d) **Category** - Must support the following properties:
- Name (String)
  - Weight (Numeric)
  - Sub-Categories (array of Category)
  - Risks (array of Template/Risk) *(May be Templates or Product Risks, depending on the Risk Group)*

(e) **Template** - Must support the following properties:

- Name (String)
- Risk ID (Numeric)
- Begin Activity Date (Date)
- Weight (Numeric)
- Last Updated Date (Date) (*Calculated*)
- Risk Level (High, Medium, Low, N/A, TBD) (*Calculated*)
- Impact Values [4] (1-5, N/A, Unknown)
- Personnel Assignments [3] (Ref:Personnel)
- User Defined Flag values [1..6] (True/False)
- User Defined Selection Values [1..8] (Value Reference)
- Notes (Text)
- Questions (Array of Question)
- Template Info (Text) (*Used for "Why is this important?"*)

**Product Risk** - Must support the following properties:

- Name (String)
- Risk ID (Numeric)
- Description (String)
- Weight (Numeric)
- Last Updated Date (Date) (*Calculated*)
- Risk Level (High, Medium, Low, N/A) (*Calculated*)
- Likelihood (1-5, Unknown)
- Impact Values [4] (1-5, N/A, Unknown)
- Personnel Assignments [4] (Ref:Personnel)
- User Defined Flag values [1..6] (True/False)
- User Defined Selection Values [1..8] (Value Reference)
- Notes (Text)
- Actions (array of Action Item)
- Reference Files (array of Files/URL links)

(f) **Questions** - Must support the following properties:

- Future Tense (String)
- Active Tense (String)
- Weight (Numeric)
- Search Phrase (String)
- Last Updated (Date) (*Calculated*)
- Compliance (Yes, No, Partial, N/A, Unknown) (*Partial has 9 subvalues, representing 10%-90%, in 10% increments*)
- Documentation Reference (String)
- Reference Files (array of Files/URL links)
- Actions (array of Action Items)
- Performer (Ref:Personnel)
- Notes (Text)

(g) **Action Items** - Must support the following properties:

- Summary (String)
- Begin Date (Date)
- Due Date (Date)
- Start Date (Date)
- Completed Date (Date)
- Description (Text)

*The following properties are only applicable to Actions for Product Risks:*

- Likelihood (1-5, Unknown)
- Impact Values [4] (1-5, N/A, Unknown)

(h) **Personnel** - Must support the following properties:

- Name (String)
- UserID (String)
- Admin (True/False)
- Phone Number (String)
- Fax Number (String)
- E-mail Address (String)
- Address [3] (String)
- Notes (Text)

#### 2.10.5 Limitations/Minimum Capacities [M]

(a) The program may enforce limits on the following items, but shall not impose limits that are less than the minimum values shown:

Maximum number of Elements: 128

Maximum number of Categories per Risk Group: 256

Maximum number of Risks/Templates per Risk Group: 2048

Maximum number of Questions per Risk Group: 8192 { total for all Templates combined }

Maximum number of Personnel per Element: 2048

Maximum number of Milestones per Element: 32

Maximum length of single-line (String) data fields: 128 characters

Maximum length of multi-line (Text) data fields: 8192 characters

(b) The program shall not limit the number of Action Items per Question/Risk.



## 2.11 Other

- 2.11.1 TRIMS must include an Element notes feature which must have the following abilities: [M]
- (a) An ability to show the current notes pertaining to a specific Element file
  - (b) An ability to edit the current notes pertaining to a specific Element file - restricted to Admins only.
  - (c) An ability to reset/clear the memo pad for the notes pertaining to a specific Element file
  - (d) An ability to save changes to the notes
  - (e) An ability to cancel out of the changes to the notes and revert to their previous state
  - (f) An ability to have the notes pop up for each user when they open the system
  - (g) An ability to remember that the user has seen the notes, and not show it automatically at login. This flag must be reset if the Admin changes the notes again.
- 2.11.2 The user must be able to navigate the entire program using only the keyboard. [D]
- (a) The user must be able to navigate all risk/template/question editing pages using only the keyboard. [M]
- 2.11.3 The system must have a means of importing/converting weight files from Version 4. [M]
- 2.11.4 The system must have a means of importing/converting Element files from Version 4. [M]
- 2.11.5 The program must scan all Elements on a daily basis, to check for overdue actions and Templates that have changed state because of their begin-activity dates. [M]
- (a) If the next action (the incomplete action with the earliest due date) for a Question becomes overdue, then the compliance must be reset to “Unknown”, and the change must be recorded in the log.
  - (b) If a Template is TBD, and the begin-activity date is no longer far enough away for the Template to be TBD, then the Template’s risk status must be changed, and the change must be recorded in the log.
  - (c) If a Template’s begin-activity date is reached, then the compliance for *every* Question in the Template must be reset to “Unknown”, and the change recorded in the log.
  - (d) If the compliance for any Question in a Template is changed, then the Template’s risk status must be re-calculated, and if the new status is different from the previous status, the change must be recorded in the log.
  - (e) The program must provide a means for the user to identify Templates which have been changed as a result of (a) thru (d).

2.11.6 The program must have a means to view the state of the data as it was at some previous date, specified by the user.

*Note: it may not necessarily be required that a user be able to pick any previous date; if the system administrator has the ability to take periodic “snapshots” of the system, and users then have the ability to review those saved snapshots, that would likely be sufficient.*

2.11.7 The program must support a Demo property for Elements\*. If this property is set, then ALL date fields in the Element must be continually advanced so as to retain their relative offset from the current date.

*\* Note: in TRIMS v4, this was implemented as an Element property; however, in all cases where it has been used, every Element in the System has had the same value, so this could be implemented as a System property instead.*

2.11.8 The program must include security features which require a user to “log-in” in order to gain access to the Elements within a System.

- (a) There must be a mechanism to link the logged-in userid to one or more personnel records in each Element.
- (b) The user shall not have access to an Element if their userid can not be linked to a personnel record within that Element.
- (c) Restrictions must be implemented based on personnel assignments. (see Appendix B for the color-coded screen shots that define which fields are accessible to performers, managers, and admins.)

2.11.9 The program must include a function that tracks the changes that are made within a session, which the user can view before closing the session. [O]

## 3.0 REQUIREMENTS FOR NEW/FUTURE FEATURES

### 3.1 Main Page

- 3.1.1 The program must provide a "What does this mean" page, off of the main view, to explain cost/schedule/performance percentile data and impact for high risk Template traps.

*From Brian, Nov '02 - I think what he wants is a button that the user can click, that must display a text report that explains the importance of those templates that are high and/or medium risk. Something along the lines of "Design Reference Mission Profile is HIGH RISK. As a result, your program is likely to suffer the following consequences...". I think that this would be implemented simply by including the 'consequence text' as a property of the template (similar to 'template info'), and simply concatenating the consequence texts for each of the high-risk templates.*

*(This feature has not yet been implemented in TRIMS 4.)*

- 3.1.2 When opening TRIMS & receiving the query about "Change overdue items to unknown", the program must provide a quick way to view those items affected without having to go to the Query filter. *(User requested feature - has not yet been implemented in TRIMS 4; should probably be handled via e-mail notifications to affected users.)*

- 3.1.3 The program's main page should implement a TARS-like System display.  
*(This feature has not yet been implemented in TRIMS 4.)*

### 3.2 Baselining

- 3.2.1 The program must allow the baseline to determine which fields are actually used in Browse/Edit and Detailed Report printing.

*Note: Some fields are required in order for TRIMS to function properly, and cannot be eliminated. Specifically which fields still needs to be determined.*

The following fields are required in order for TRIMS to function correctly, and cannot be filtered out of the display:

- Compliant
- Reference Document
- Next Action
- Due Date

*(This feature has not yet been implemented in TRIMS 4.)*

- 3.2.2 The program should have the ability to upgrade an existing Element file to a new version of the Knowledge Model on which the Element is based. [F]

*Which means the design may need to decouple the model & Element*

- 3.2.3 The program should include a graphical user interface allowing the user to set/change Template Begin Activity Dates. [F]

(This feature has not yet been implemented in TRIMS 4.)

- 3.2.4 The program must include an explanation of the weighting schemes (e.g: high dollar and low volume). (This feature has not yet been implemented in TRIMS 4.)

### 3.3 Tools/Options/Help

- 3.3.1 The program must include definitions of the following terms within its on-line help: Super-System, System, Sub-System, Element, Category, Template, Question

(This feature has not yet been implemented in TRIMS 4.)

### 3.4 Internal

- 3.4.1 The program must implement/support capability levels: The user may answer Questions from the highest (best performance) level first, and if necessary, answer additional levels of Questions. (This feature has not yet been implemented in TRIMS 4.)

- 3.4.2 The program should be capable of sending e-mail notifications for upcoming actions due, and/or when making assignments.

(e.g: An action is assigned to Drew Analyst - e-mail should be sent to Drew to tell him that.) (This feature has not yet been implemented in TRIMS 4.)

### 3.5 Other

- 3.5.1 The program suite should include a TRIMS knowledge base generator analogous to the KnowHow book maker (KBuilder).

*Walt wants an easier way to build TRIMS knowledge models from the ground up. He's looking for something smarter, that could possibly import a basic structure from a Word document.* (This feature has not yet been implemented in TRIMS 4.)

- 3.5.2 The TRIMS program suite shall include a wireless PDA client.  
(This feature has not yet been implemented in TRIMS 4.)

- 3.5.3 The program must be able to export TRIMS data to MS Project. [Deferred]  
(This feature has not yet been implemented in TRIMS 4.)

## **4.0 DELETED REQUIREMENTS**

This section contains those Version 4 requirements that have been explicitly removed from E-TRIMS. This section is provided as a reference, to make it easier to identify features which have been explicitly dropped.

### **4.1 Main Page**

### **4.2 Edit Process Risk (Template)**

### **4.3 Answer Questions**

### **4.4 Edit Product Risk/Problem**

### **4.5 Filtering**

### **4.6 Browse Risks/Questions**

### **4.7 Reports**

### **4.8 Baselineing**

4.8.1 Under Element Properties - there is no need for Elements to have an individual security key, as access rights must be handled separately. Accordingly, the following requirements are dropped:

- An ability to set a security key for the current Element
- Security key must be re-entered to ensure proper password entered
- Security key must be case sensitive

### **4.9 Internal**

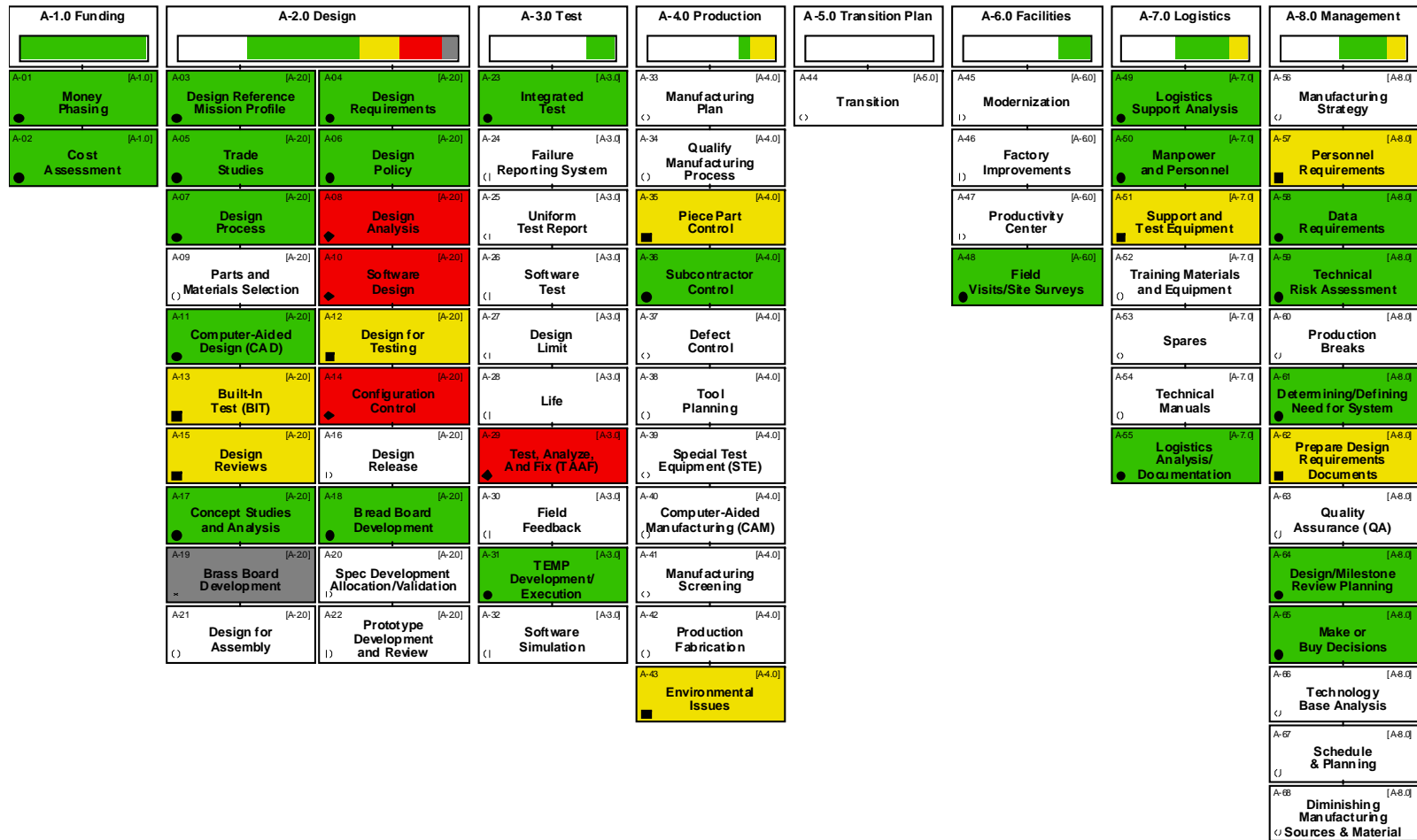
### **4.10 Other**

4.10.1 The requirement for an extract/merge capability is dropped; it has no relevance in a web-based environment, which is inherently client/server.

## **Appendix A - Sample Report Formats**

The following pages contain examples of the Reports that TRIMS must be able to generate. (See section 2.7)

### APM Missile Body [Process Risks]



Summary:

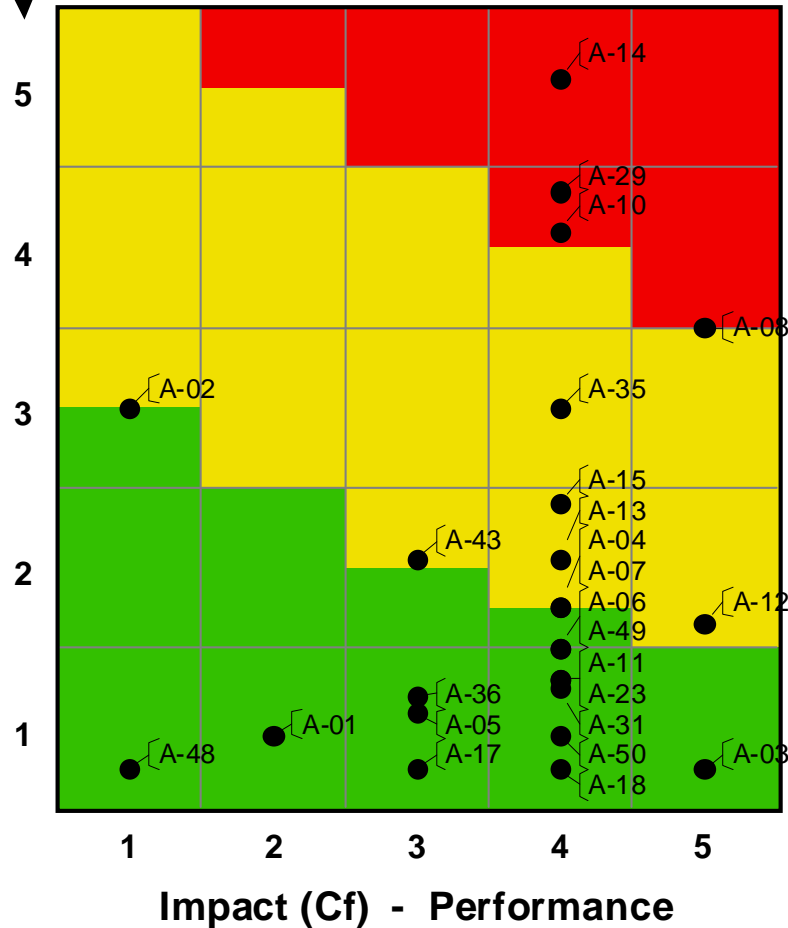
Key:

Printed: 8 Jan 2009

Figure A-1: Sample Summary Report

# APM Missile Body [Process Risks]

Likelihood



Performance

- 2 A-01 Money Phasing [A-1.0]
- 1 A-02 Cost Assessment [A-1.0]
- 5 A-03 Design Reference Mission Profile [A-2.0]
- 4 A-04 Design Requirements [A-2.0]
- 3 A-05 Trade Studies [A-2.0]
- 4 A-06 Design Policy [A-2.0]
- 4 A-07 Design Process [A-2.0]
- ◆ 5 A-08 Design Analysis [A-2.0]
- ◆ 4 A-10 Software Design [A-2.0]
- 4 A-11 Computer-Aided Design (CAD) [A-2.0]
- 5 A-12 Design for Testing [A-2.0]
- 4 A-13 Built-In Test (BIT) [A-2.0]
- ◆ 4 A-14 Configuration Control [A-2.0]
- 4 A-15 Design Reviews [A-2.0]
- 3 A-17 Concept Studies and Analysis [A-2.0]
- 4 A-18 Bread Board Development [A-2.0]
- 4 A-23 Integrated Test [A-3.0]
- ◆ 4 A-29 Test, Analyze, And Fix (TAAF) [A-3.0]
- 4 A-31 TEMP Development/Execution [A-3.0]
- 4 A-35 Piece Part Control [A-4.0]
- 3 A-36 Subcontractor Control [A-4.0]
- 3 A-43 Environmental Issues [A-4.0]
- 1 A-48 Field Visits/Site Surveys [A-6.0]
- 4 A-49 Logistics Support Analysis [A-7.0]
- 4 A-50 Manpower and Personnel [A-7.0]

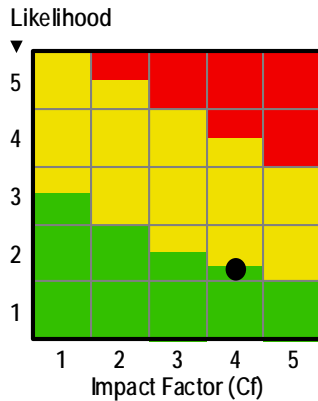
Impact/Risk Profile

Figure A-2: Sample Risk Matrix Report



## APM Missile Body [Process Risks] A-2.0 Design

<b>Performance Risk:</b>									
Impacts:	<table border="1" style="display: inline-table; border-collapse: collapse;"> <tr> <td style="width: 20px; height: 20px; background-color: #90EE90;">4</td> <td style="width: 20px; height: 20px; background-color: #FFFF00;">?</td> <td style="width: 20px; height: 20px; background-color: #FFA500;">2</td> <td style="width: 20px; height: 20px; background-color: #FF0000;">3</td> </tr> <tr> <td style="font-size: 8px; text-align: center;">P</td> <td style="font-size: 8px; text-align: center;">Sa</td> <td style="font-size: 8px; text-align: center;">C</td> <td style="font-size: 8px; text-align: center;">Sc</td> </tr> </table>	4	?	2	3	P	Sa	C	Sc
4	?	2	3						
P	Sa	C	Sc						
<b>Last Updated:</b>	01/08/2009								
<b>Monitor:</b>	Mary Manager								
<b>Additional Data:</b>									
<input checked="" type="checkbox"/> Priority <input type="checkbox"/> Watch List <input type="checkbox"/> New <input type="checkbox"/> External <input type="checkbox"/> UDF (E)									
<b>Status:</b>	Active								
<b>Resolution:</b>	(Unknown)								



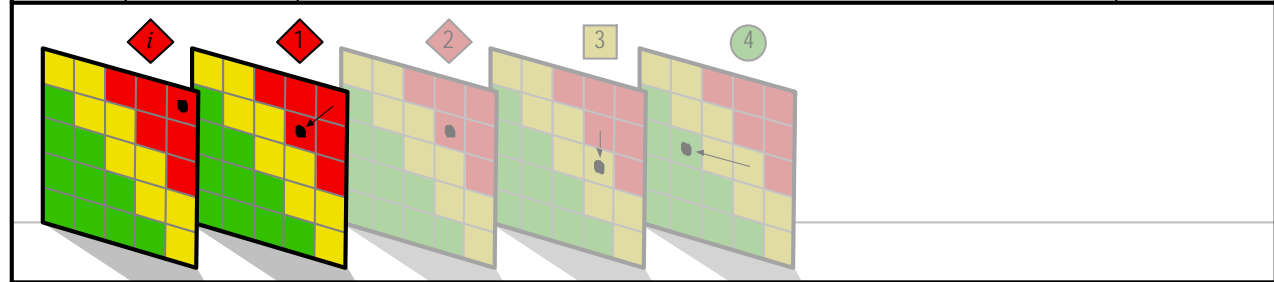
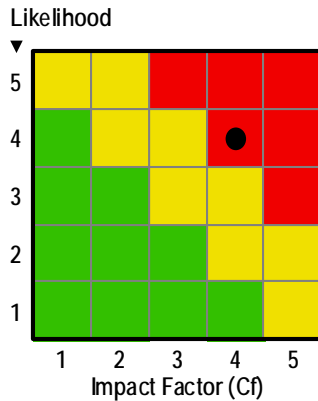
<b>A-04 Design Requirements</b>		<span style="font-size: 1.2em;">●</span> <b>Low Risk</b> Compliance: 78%	
Risk ID:		<i>Begin Activity: 07/25/2007</i>	
Notes:			
Question #	Compliance Questions	Answer	Weight
1	Have system design requirements been specified for, allocated to, and understood by each responsible design engineer and tester?	Yes	10 (7.1%)
2	Have relevant design requirements been flowed down to subcontractors?	Yes	10 (7.1%)
3	Have detailed design requirements been specified in the Request for Proposal (RFP)?	Pa.9	10 (7.1%)
4	Is Inherent Availability (Ai) used as a design requirement?	Yes	10 (7.1%)
5	Have design requirements been frozen at Milestone II?	Yes	10 (7.1%)
6	Has a clear definition of firmware for this project been established?	Yes	10 (7.1%)
7	Are all mandatory requirements stated in a testable fashion?	Yes	10 (7.1%)
8	Has, at the conceptual level, a study been conducted of any possible environmental hazards?	Yes	10 (7.1%)
9	Are environmental hazards acceptable?	Yes	10 (7.1%)
10	Does a traceability plan exist and does it show that all requirements are based on the Design Reference Mission Profile and that specifications are traceable to requirements?	Yes	10 (7.1%)
11	Does a specification tree exist and is it updated regularly?	Yes	10 (7.1%)
12	Has a story board of the full life cycle been communicated to the entire team to further clarify requirements?	Unk	10 (7.1%)

**Figure A-3: Sample Risk Detail Report (Template)**

## APM Missile Body [Product Risks] B-1.1.2 SRB Fuel

<b>Performance Risk:</b>	
Impacts:	4 5 4 4 P Sa C Sc
<b>Last Updated:</b>	01/08/2009
<b>Performer:</b>	Derek Designer
<b>Additional Data:</b>	
<input checked="" type="checkbox"/> Priority <input type="checkbox"/> Watch List <input type="checkbox"/> New <input type="checkbox"/> External <input type="checkbox"/> UDF (E)	
<b>Status:</b>	Active
<b>Resolution:</b>	Pending

<b>B-03 Fuel Components Mixing</b>		◆ High Risk	
Risk ID:		Risk Level: 4	
Description: Fuel components mixing in present facility may not be possible without safety upgrade.			
Notes: (Note: facility is due for OSHA inspection within the next year!)			
Action	Due Date	Mitigation Actions	New Risk Lik, Imp (Lvl)
◆ i	- - - -	<i>(Initial Risk Level)</i>	?, ? (High)
◆ 1	11 Jan 2009	Look up current safety regulations	4, 4 (High)
◆ 2	22 Jan 2009	Identify necessary upgrades	4, 4 (High)
□ 3	31 Jan 2009	Conduct Safety Training	3, 4 (Med)
○ 4	14 Mar 2009	Install new equipment	3, 2 (Low)



**Figure A-4: Sample Risk Detail Report (Product Risks/Problems)**

## APM Missile Body [Process Risks]



Key:  TBD  Low Risk  Med Risk  High Risk  N/A

Printed: 8 Jan 2009

Figure A-5: Sample Overview Report

## Appendix B - Rights Management

Rights are defined simply by whether or not a person has been assigned to a Template/Question/Risk, or if they have been defined as a Risk Administrator (“Admin” for short). All fields are visible to all users defined in the Element. An Admin can edit any field. A “Manager” for a Template/Question/Risk is a person who has been assigned in one of the Initiate/Monitor/Approve personnel fields. A “Performer” is a person who has been assigned in the Performer field (only applicable to Questions/Risks). Restricted fields should be displayed, but should be grayed out and not-editable.

The screenshot shows a software window titled "Edit Process Risks ( G/ATOR: A-2.0 Design )". The main content area is for "A-2.2 Design Requirements".

- Metadata:** Begin Activity: 06/14/2005, Last Updated: 05/16/2005, Compliance: 61%, Medium Risk.
- Impact:** Performance (5), Safety (4), Cost (4), Schedule (4). Each has an "F4" key indicator.
- Weight:** 10 out of 200 (5.0%).
- Assignments:** Initiate: Ralph Sickinger (F4/F5), Monitor: Jorge Cardozo (F4/F5), Approve: (F4/F5).
- Additional:** Watchlist, New Risks 30d, Closed, RMT Que, Top 5.
- Notes:** A Draft Performance Specification will be provided as part of the RFP.
- Questions:** A list of 9 questions with Yes/No options and weights (10).
- Footer:** F3: Why is this important?, F10: Close/Exit, Help.

**Key:**  - Edit by Performer/Manager/Admin  - Edit by Manager/Admin  - Edit by Admin Only

Rev. 1 - 1 June 2005

Figure 1: Rights Mask for Template Editing

**Answer Questions ( G/ATOR: Design )** Begin Activity: 06/14/2005

**A-2.2 Design Requirements** Last Updated: 01/17/2005

**A-2.2.3 Will detailed design requirements be specified in the Request for Proposal (RFP)?**

Compliant: YES F4      Weight: 10 out of 160 ( 6.3% )

Reference: Initial Questionnaire: RFP  
Document

Ref. File(s): [Redacted]

Next Action: [Redacted]

Due Date: [Redacted] No Next Action  F6: Action Completed

Action List: [Redacted]

Performer: J.Barron F4/F5      Initialize: Ralph Sickinger  
Monitor: Jorge Cardozo  
Approve: [Redacted]

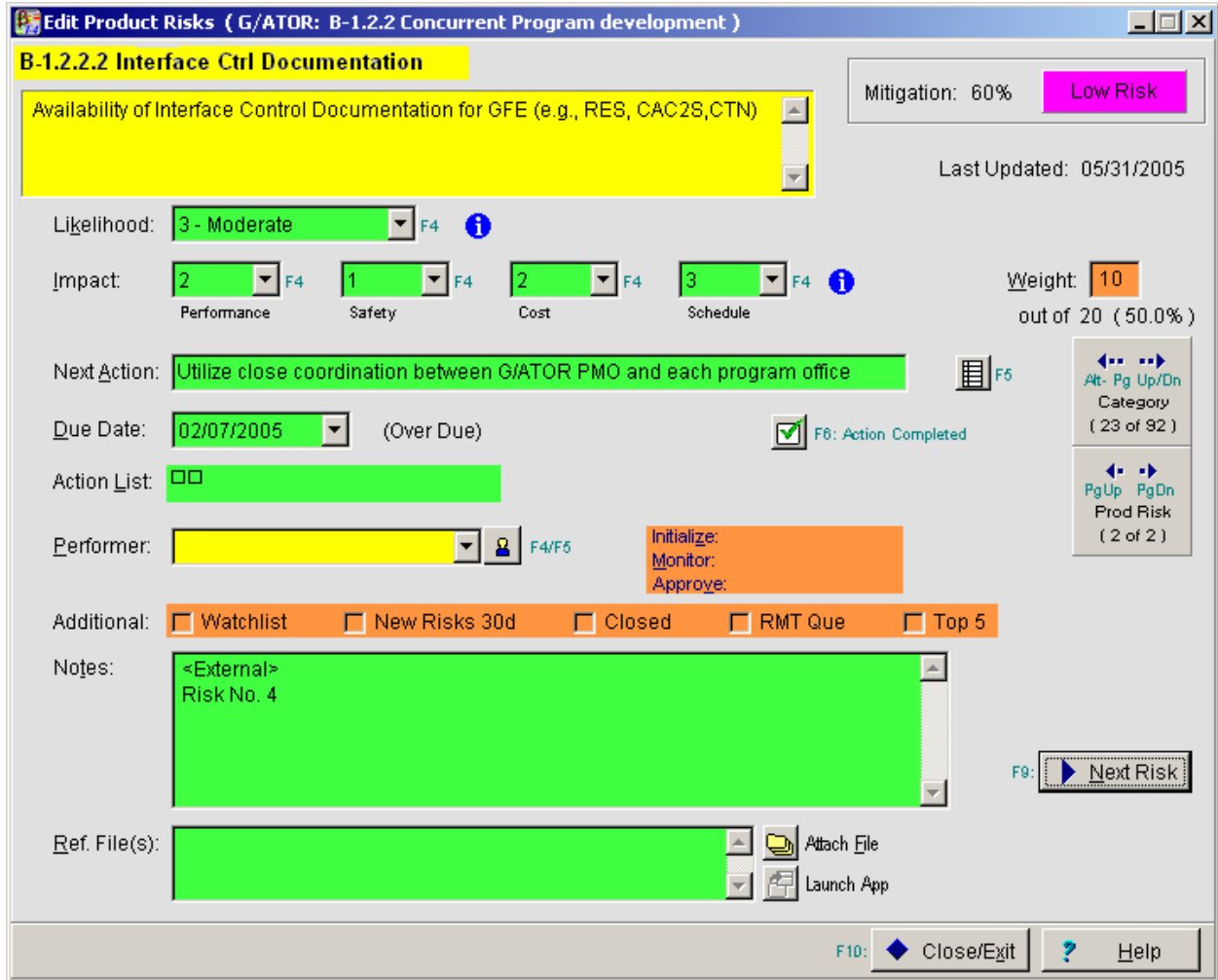
Notes: A Draft Performance Specification will be provided as part of the RFP process and Contract award. This consistent with the Acquisition Strategy.

Search: [KnowHow](#) [BMP Database](#) F3: [Why is this important?](#) F10:

**Key:**  - Edit by Performer/Manager/Admin     - Edit by Manager/Admin     - Edit by Admin Only

Rev. 1 - 1 June 2005

Figure 2: Rights Mask for Answer Questions window



**Key:**  - Edit by Performer/Manager/Admin  - Edit by Manager/Admin  - Edit by Admin Only

Rev. 1 - 1 June 2005

Figure 3 - Rights Mask for Edit Product Risk/Problem

## **Appendix C - Advanced Rollup Weighting**

TRIMS calculates the summary bars of Categories by adding up the number of Risks of each “type” (Low Risk, Medium Risk, High Risk, TBD, or N/A) and then dividing by the total number of Risks. In Advanced Rollup weighting, the user can place greater emphasis on a particular Category or Template. For example; there are two categories in an Element, Design and Funding. The Funding category contains 2 templates where the Design template has 20. In non-advanced rollup weighting, Design would occupy the majority of the summary bar, since it has more Templates than Funding. However, in reality, you might decide that Funding is more important than Design, and wish to represent this in the summary bar. With Advanced Rollup weighting, you can edit the weights for the Funding and Design Categories, and subsequently have Funding occupy the appropriate space in the summary bar. Advanced Rollup weighting is more complex since it takes more effort in Baselineing to go through and set the weights, but it allows flexibility so that you can rate Categories more accurately and have a more meaningful summary bar.