625-EED-002, Rev. 02

EOSDIS Evolution and Development (EED) Contract

Training Material for the EED Contract Volume 2: Problem Management

Revision 02

September 2013

Raytheon Company
Riverdale, Maryland

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Training Material for the EED Contract
Volume 2: Problem Management

Revision 02

September 2013

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Preface

This document is a formal contract deliverable. It requires Government review and approval within 45 business days. Changes to this document will be made by document change notice (DCN) or by complete revision.

Any questions should be addressed to:

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Abstract

This is Volume 2 of a series of lessons containing the training material for the EED Contract. This lesson provides a detailed description of the process required for submitting and updating trouble tickets as well as investigating problems and identifying and implementing solutions.

***Keywords**:* training, instructional design, course objective, problem management, trouble ticket, Help Desk, Problem Review Board, Non-conformance Report, NCR, TestTrackPro.

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Introduction

Identification

Training Material Volume 2 is part of Contract Data Requirements List (CDRL) Item 23, which is a required deliverable under the EED Contract (NNG10HP02C).

Scope

Training Material Volume 2 describes the process and procedures by which trouble tickets are submitted and updated. In addition, the lesson describes in general terms the processes by which problems submitted on trouble tickets are investigated and solutions are identified and implemented. This lesson is designed to provide the operations staff with sufficient knowledge and information to satisfy all lesson objectives.

Purpose

The purpose of this Student Guide is to provide a detailed course of instruction that forms the basis for understanding problem management. Lesson objectives are developed and will be used to guide the flow of instruction for this lesson. The lesson objectives will serve as the basis for verifying that all lesson topics are contained within this Student Guide and slide presentation material.

Status and Schedule

This lesson module provides detailed information about training for the current baseline of the system. Revisions are submitted as needed.

Organization

This document is organized as follows:

Introduction:	The Introduction presents the document identification, scope, purpose, and organization.
Related Documentation:	Related Documentation identifies parent, applicable and information documents associated with this document.
Student Guide:	The Student Guide identifies the core elements of this lesson. All Lesson Objectives and associated topics are included. The slide Presentation is reserved for all slides used by the instructor during the presentation of this lesson.

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Related Documentation

Parent Documents

The parent documents are the documents from which the EED Training Material's scope and content are derived.

	Statement of Work for EOSDIS Evolution and Development Contract
423-CDRD-002	Contract Data Requirements Document for EED Tasks 01, 02 & 03

Applicable Documents

The following documents are referenced within this EED Training Material, or are directly applicable, or contain policies or other directive matters that are binding upon the content of this document:

423-46-01	Goddard Space Flight Center, Functional and Performance Requirements Specification for the Earth Observing System Data and Information System (EOSDIS) Core System (ECS) Science Data Processing System (EMD F&PRS)

Information Documents

Information Documents Referenced

The following documents are referenced herein and amplify or clarify the information presented in this document. These documents are not binding on the content of the EED Training Material.

609-EED-001, Rev. 02	Release 8.2 Operations Tools Manual for the EED Contract
611-EED-001, Rev. 02	Release 8.2 Mission Operation Procedures for the EED Contract

Information Documents Not Referenced

The following documents, although not referenced herein and/or not directly applicable, do amplify or clarify the information presented in this document. These documents are not binding on the content of the EED Training Material.

305-EED-001, Rev. 02	Release 8.2 Segment/Design Specifications for the EED Contract.
311-EED-001, Rev. 02	Release 8.2 INGEST (INS) Database Design and Schema Specifications for the EED Contract.
311-EED-002, Rev. 02	Release 8.2 Order Manager Database Design and Database Schema Specifications for the EED Contract.
311-EED-003, Rev. 02	Release 8.2 Spatial Subscription Server (SSS) Database Design and Schema Specifications for the EED Contract.
311-EED-005, Rev. 02	Release 8.2 Archive Inventory Management (AIM) Database Design and Schema Specifications for the EED Contract.

Problem Management Overview

Lesson Overview

This lesson will provide you with the complete process by which trouble tickets are submitted and updated. In addition, the lesson describes in general terms the processes by which problems submitted on trouble tickets are assigned priorities, investigated, and resolved.

Lesson Objectives

Overall Objective - The overall objective of the Problem Management lesson is for maintenance and operations personnel to develop proficiency in the procedures that apply to the trouble ticketing/problem resolution process for the Earth Observing System (EOS) Data and Information System (EOSDIS) Core System (ECS).

Condition - The student will be given a written description of an operational problem (affecting system hardware, software, documentation, or procedures), access to the trouble ticket system, a copy of 609-EED-001 Revision 02, *Release 8.2 Operations Tools Manual for the EED Contract*, and a copy of 611-EED-001 Revision 02, *Release 8.2 Mission Operation Procedures for the EED Contract*.

Standard - The student will use the trouble ticket system without error in accordance with the prescribed process and procedures to submit, update and complete the specified parts of a trouble ticket.

Specific Objective 1 - The student will perform the steps involved in submitting a trouble ticket.

Condition - The student will be given a description of an operational problem to be reported through the trouble ticket system, access to the trouble ticket system (through a workstation or terminal), a copy of 609-EED-001 Revision 02, *Release 8.2 Operations Tools Manual for the EED Contract*, and a copy of 611-EED-001 Revision 02, *Release 8.2 Mission Operation Procedures for the EED Contract*.

Standard - The student will perform without error the steps involved in submitting a trouble ticket in accordance with the applicable procedure, including entry of information sufficiently accurate and complete to permit correct assignment of severity.

Specific Objective 2 - The student will perform the steps involved in making a change to an existing trouble ticket.

Condition - The student will be given a description of a change to be made to an existing trouble ticket, access to the trouble ticket system (through a workstation), a copy of 609-EED-001 Revision 02, *Release 8.2 Operations Tools Manual for the EED Contract*, and a copy of 611-EED-001 Revision 02, *Release 8.2 Mission Operation Procedures for the EED Contract*.

Standard - The student will perform without error the steps involved in making a change to an existing trouble ticket in accordance with the applicable procedure.

Specific Objective 3 - The student will describe the general steps in the routine trouble ticket problem resolution process, including the differences that result from assignment of the various priority levels.

Condition - The student will be given a description of a routine operational problem to be resolved through the problem resolution process, a copy of 609-EED-001 Revision 02, *Release 8.2 Operations Tools Manual for the EED Contract*, and a copy of 611-EED-001 Revision 02, *Release 8.2 Mission Operation Procedures for the EED Contract*.

Standard - The student will state without error the general steps involved in the routine trouble ticket problem resolution process in accordance with the applicable procedure.

Importance

This lesson applies to students who are internal users or operators of the system (including support staff). The lesson will provide them with the knowledge and skills needed for submitting trouble tickets and making additional entries on trouble tickets in the course of investigating system problems reported on trouble tickets. They need the knowledge and skills on the job when they encounter system hardware, software, documentation or procedural problems that they cannot readily fix, that affect other users/operators, or that are system-wide problems. The lesson describes why and how trouble tickets are submitted and updated. In addition, it describes in general terms the processes by which problems submitted on trouble tickets are assigned priorities, investigated and resolved. Consequently, the students will become aware of what happens to the trouble tickets they submit and how clear and complete inputs to the DAAC Support Help Desk ensure the greatest effectiveness of support in problem resolution.

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Slide Presentation

Slide Presentation Description

The following slide presentation represents the slides used by the instructor during the conduct of this lesson.

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Problem Management

September 2013

Overview of Lesson

- Problem Resolution Concepts
  - System Overview
  - Defects Priority and Severity
  - Defects Unique Identifiers
- Problem Management
  - Procedural Guidelines
  - TestTrack Pro (for EED) Architecture
  - TestTrack Pro Requirements
  - TestTrack Pro Access
- TestTrack Pro GUI Functionalities
  - Accessing the Clients
  - Server Connection(s) Setup
  - Logging into the System
  - Defect List Window

Overview of Lesson (cont.)

- **TestTrack Pro Functionalities (cont.)**
  - **Setting User Options**
  - **Navigating the Defect Add Window**
  - **Entering New Trouble Ticket**
  - **Lifecycle – From Open to Close State**
  - **Creating Browse Filters**
  - **Column Filters**
  - **Creating Folders**
  - **Adding Tabs**
  - **Inserting Stamps**
- **Appendix A. Severities Defined**

Problem Resolution Concepts

- Develop proficiency in monitoring and controlling problem reporting through a defined defects lifecycle resolution process.
- Administer EED problem management through system-level and site-level control boards and reviews.
- Use of one automated centralized system (TestTrack Pro) to manage; store; track; assess and fix; notify users of resolution progress; and generate reports and metrics for EED Trouble Tickets (TTs) and Non-Conformance Reports (NCRs).
- Submit TT (operational system problem) with concise and complete data to enable correct assignment of severity.
- Manage and track, to closure, NCR (system-level problems and configuration baseline changes) to prevent additional system-level issues.
- Important to implement problem management tools and procedures to problem occurrences with system hardware, software, technical documentation or procedures.

Problem Resolution Concepts
System Overview

- The TestTrack Pro (TTPro) COTS product is a consolidated, centralized automated defect tracking system tailored for EED used by the DAACs and EDF.
- TTPro stores problem descriptions, assessments and fixes; notifies Users of resolution progress; and generates reports for metrics.
- Allow operational ECS sites (DAACs) CM Administrator to serve as a TTPro System Administrator.
- TTPro defect tracking system can be configured to meet site's local needs.
- Allow DAACs trouble tickets and EDF NCRs to be stored as separate Projects in a single system. Each project is distinct, can be configured separately and has its own local Administrator.

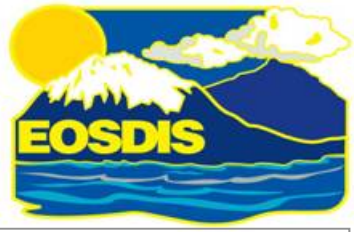
Problem Resolution Concepts
System Overview (cont.)

- **TTPro moves TTs and NCRs through a lifecycle of states (workflow milestones/events). A defect lifecycle starts with its submission and generally ends with its resolution. This lifecycle concept manages bugs using a state transition tracking mechanism.**
- **The five key data elements that drive the flow of defect tracking:**
  1. **Defect Number:** Every problem entered into the TTPro system contains an unique identifier. This numeric identifier is generated by the system for all projects.
  2. **Severity:** Used to capture the impact (scaled 1 – 5) on operations.
  3. **Project:** Categorizes defects according to affected subsystem or other classification.
  4. **Summary:** A concise statement of the problem.
  5. **State:** A workflow milestone achieved in the lifecycle of the reported defect. States has associated events that perform a specified action within the state, called events. States change when triggered by specific events.

Problem Resolution Concepts
Trouble Ticket Priority | NCR Severity

As Documented in NASA 420-05-03	As Used/Interpreted by the EED Project
Category 1: System/Service cannot perform critical function or imposes major safety hazard. (Priority 1) Presents an immediate impact to development, operations, services, or data processing functions; imposes major safety hazard to personnel, systems or space mission resources; or results in loss of one or more essential mission objectives.	**HIGH (Severity 1):** Any NCR which causes: − Inability to perform a mission-critical function (i.e., Ingest/Pre-Processing/Archiving of Science Data, Planned Processing, Browse/Order/Distribute); − Performance of a mission-critical function to be so degraded that production minimum goals cannot be achieved; − A mission-critical function to be performed improperly, resulting in permanent loss of data; **and** for which no workaround exists **or** for which no workaround can be accommodated by DAAC operators given a detailed workaround procedure is documented but the procedure is inadequate based upon the complexity of the procedure, the abilities of an adequately trained and experienced operator, or both.
Category 2: System/Service substantially impaired. (Priority 2) Substantially impacts development, operations, services, or data processing functions; fails to operate within critical performance specifications; or cannot effectively or efficiently fulfill baseline requirements	**MEDIUM (Severity 2):** An NCR with the consequence that: − The performance of a mission-critical function is degraded and may prevent achieving production minimum goals; − A mission-critical function can only be partially performed, or performs improperly, resulting in temporary loss of data or incorrect data results; − A situation (actually or potentially) severely compromises ECS mission readiness or operational integrity; − A condition exists to produce a severely degraded mission-critical function, but a workaround will allow operations to continue temporarily without permanent loss of data or severely impaired performance/workload/schedules.
Category 3: System/Service slightly impaired. (Priority 3) Causes minor or no substantial impact to development, operations, services, or data processing functions. Support may be degraded, but mission can still be accomplished.	**Severity 3:** An NCR with the consequence that: − A non-critical mission function (e.g., Advertising) cannot be performed, or yields incorrect results; − Unexpected events occur which can be corrected using normal operational procedures with minimal impacts to performance/workloads/schedules − A condition exits to produce a degraded mission-critical function, but a workaround will allow operations to continue indefinitely without severely impaired performance/workload/schedules.
	Severity 4: Improvement (Nuisance; e.g., a typo).
	Severity 5: Enhancement (Identified for next release.)

Problem Resolution Concepts
Defects Unique Numeric Identifiers



- **Trouble Tickets (TTs) are organized by project and are numbered sequentially, using unique 2-3 digit project prefixes:**
  - **LaRC** **20**xxxxx – 2099999
  - **LPDAAC** **30**xxxxx – 3099999
  - **NSIDC** **40**xxxxx – 4099999
  - **Riverdale** **50**xxxxx – 5099999
  - **ECHO** **120**xxxxx – 12099999
  - **ECHO Team** **140**xxxxx – 14099999
  - **LPDAAC_Internal** **350**xxxxx - 35099999

- **Non-Compliance Reports (NCRs) are organized by project and are numbered sequentially, using unique 2-3 digit project prefixes:**
  - **DEV** **70**xxxxx – 7099999
  - **OPS** **80**xxxxx – 8099999
  - **ECHO OPS** **110**xxxxx – 11099999

Problem Management
Procedural Guidelines

- **The following guidelines provide steps to take in managing defect tracking and submissions:**

1. **Open a TT (submit via Web or PC Clients):**
   - Users and Operators with TTPro access.
   - Users without access through DAAC's User Services Desk.
2. **Evaluate problem severity and determines assignment of on-site responsibility:**
   - Local Review Board conducts evaluation and makes assignment.
   - TTs locally resolved are tracked at the local center.
3. **Review TT's priority and description for resolution:**
   - Review conducted by Operations Supervisor.
   - Assigned Technician or Engineer performs work on TT, recording through its nominal lifecycle:
     - Open.
     - Open (Assigned).
     - Solution Proposed.
     - Solution Implemented.
     - Closed (**Note:** Escalate TT to EDF or ECHO possible).
     - Re-Opened.
   - CM Administrator closes TT after determine satisfactory resolution or forwards TT to EED PRB for tracking as a NCR.

Problem Management
Procedural Guidelines (cont.)

- **The following guidelines provide steps to take in managing defect tracking and submissions: (cont.)**

4. Start work to resolve reported problem and records TT progress.

- Assigned Technicians and Engineers perform work on TT, recording through its nominal lifecycle:
  - Open.
  - Open (Assigned).
  - Solution Proposed.
  - Solution Implemented.
  - Closed (**NOTE:** Escalate TT to EDF or ECHO possible).
  - Re-Opened.

5. EED PRB conducts discussion and disposition of escalated external or system-level issues, i.e., repair requiring system baseline changes.

6. Close defects:

- CM Administrator closes TT after determination of satisfactory resolution or forwards TT to EED PRB for tracking as a NCR.

Problem Management
TestTrack Pro (for EED) Architecture

- **DAACs and EDF…**

  use local TTClient or a web browser to submit, browse, edit, query and report TTs/NCRs.

- **The TestTrack Client (Windows, Linux, Mac)…**

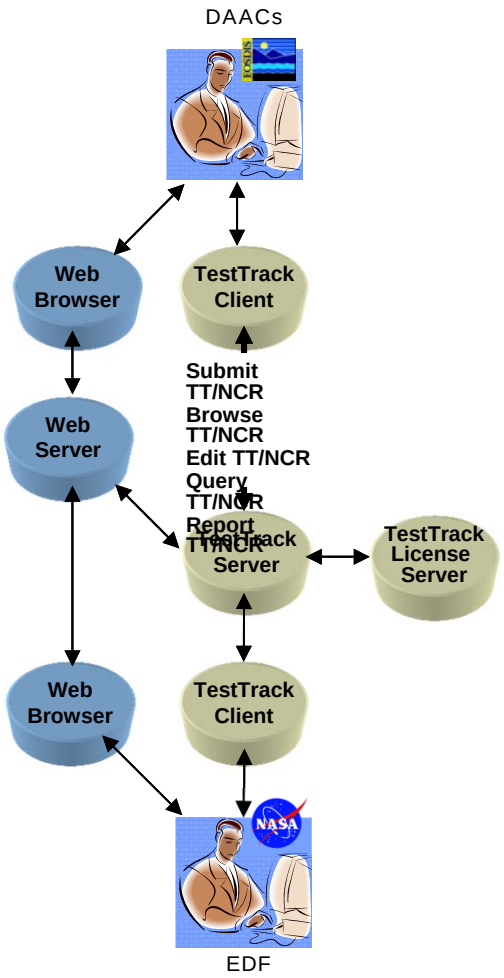
  connects directly to a centralized TestTrack Server (Linux) at EDF.

- **The TestTrack Server (Linux)…**

  processes client requests and interacts with the TestTrack License Server.

- **The TestTrack License Server (Linux)…**

  controls system licenses and maintains a centralized repository of information about users with authorized access to TTClient.



Problem Management
TestTrack Pro Requirements

❑ What's Required

System Elements:

- Provides a Linux, Windows, Mac or Web-based graphical user interface (GUI)
- If on server, should run on Windows or Linux.
- IE 8.0+ or Firefox 12.x+ standard software, to access based interface. Also supports Opera 10.x, Safari 6.x, Google Chrome 21 or later.
- Username, password, server info (name, address and port) – see local CM Administrator.
- Read/Write permission to database (see local CM Administrator).

Client Components:

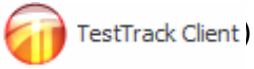
- Hardware:
  - Server: x86 Linux (Intel CPU)
  - Client: 700MHz Pentium PC (minimum for Windows XP, Vista, Windows 7)
    - 256 MB Memory (1GB min)
    - 300 MB hard data space
- Several external dependencies are email, non-native web server (i.e., Oracle iPlanet Web Server 7.0.17) and firewall configuration.
- RedHat Enterprise 5.0 OS or later
  - 1.5GHz CPU
  - 512MB RAM

Problem Management
TestTrack Pro Access

- **TestTrack Pro users access the system using two methods:**
  1. **Web using supported internet browsers:**
     - Internet Explorer 8.0+
     - Firefox 12.x – 23.x
     - Also supports Opera 10.x; Safari 6.x; Google Chrome 21 and later
  2. **Locally installed clients (GUI):**
     - Microsoft Windows
     - Linux
     - Mac
- **Functionality is largely the same across all the clients, although the look and feel of the web client slightly differs than that of the others.**
- **All Users must obtain access privileges from local CM Administrator in order to access the system.**

TestTrack Pro
Accessing the Clients

- **TestTrack Client is accessible via a PC (Windows) or the Web:**
  - **To access via a PC Client:**

1. Call the **Help Desk** to install the Client.
2. From **start**, **All Programs**, **Seapine Software, TestTrack**
3. Select **TestTrack Client** [or click the **TestTrack Client** icon () from the Start Menu.

The Seapine TestTrack Studio Login screen appears.

NOTE: First time users must setup/configure server connections!

- **To access via the Web client:**

1. Activate **internet browser** i.e., IE, Netscape, Firefox
2. Enable "**pop-ups**" on browser, then enter **URL:**
   - https://links.gsfc.nasa.gov:<port> (external)
   - http://links:<port> (internal)

The Seapine TestTrack Studio Login screen appears.

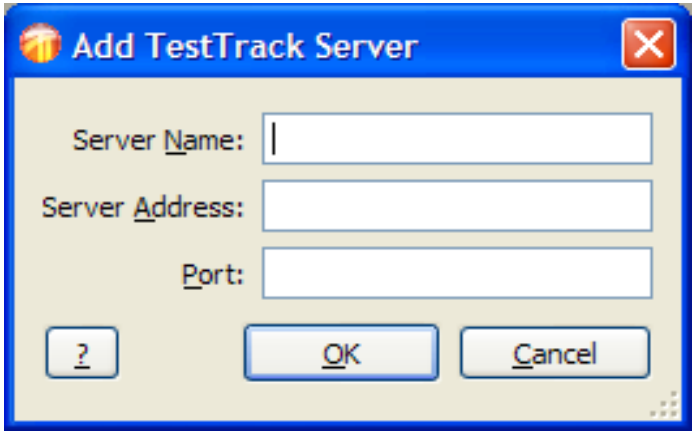
NOTE: First time users must setup/configure server connections!

NOTE: This document (text and displays) will reference the TestTrack Pro PC Client version. For related documentation using the Web Client, refer to technical document: Release 8.2 Mission Operation Procedures for the EED Contract, Chapter 8. Problem Management.

TestTrack Pro
Server Connection(s) Setup

- **TestTrack Pro first-time Users must configure one or more TestTrack Server connections. Users can configure connections for both the Windows (PC Client) and UNIX/Linux (Web Client) environments, as follows:**

  NOTE: If a first-time User, the Seapine Add (Edit) TestTrack Server screen appears or the Seapine TestTrack Studio Login screen appears.



- **Configure your connection(s), as appropriate:**

  1. Enter **Server Name**: ttpro-ops (or create your own server name; syntax: <connection-name>)
  2. Enter **Server Address**: links.gsfc.nasa.gov (DAACs and other users) -or- links (EDF users)
  3. Enter **Port**: 1566 (see Port Mapping Baseline; syntax: <TTPro_server_port_#>)
  4. Click **OK**

  The Seapine TestTrack Studio Login dialog box appears.

- **Login to TTPro:**

  1. Select **Server** (or your own server name from list)
  2. Enter **Username**
  3. Enter **Password**
  4. Click **Connect**

  The Seapine TestTrack Project Selection dialog box appears.

TestTrack Pro
Logging into the System

- **At this point, User should ensure one or more working configured server connections.**
- **Logging In:**

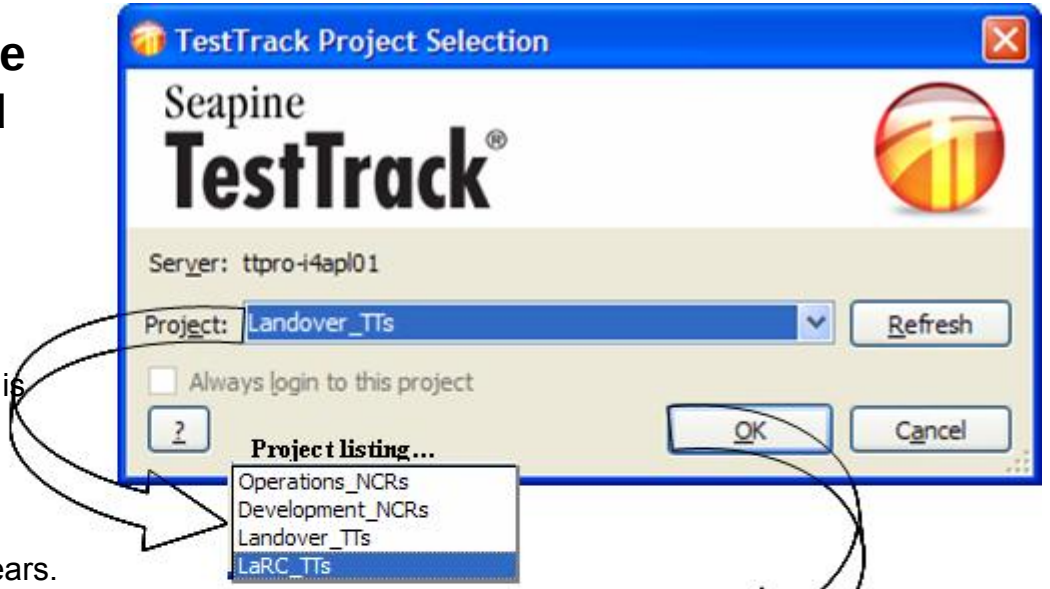
NOTE: Users are NOT allowed multiple logons.

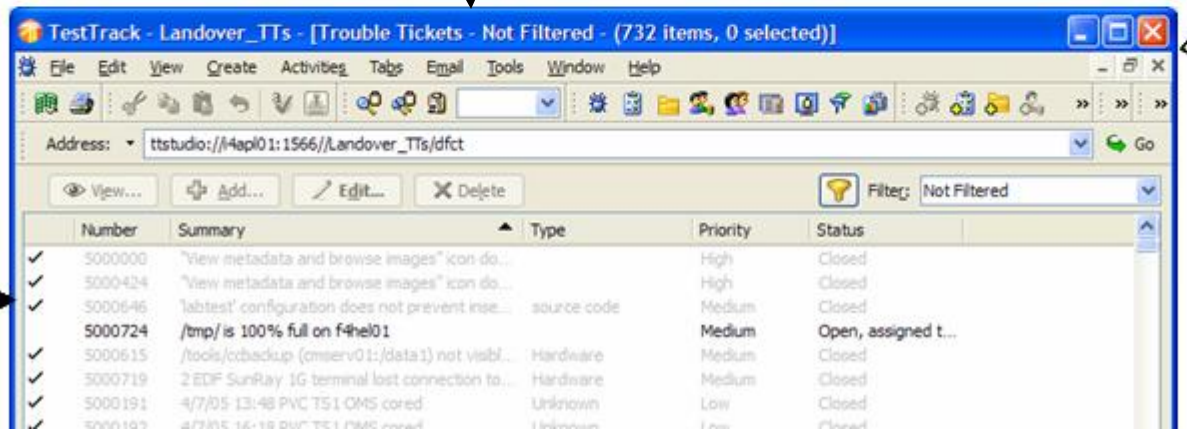
1. Select **Project** from list box.

NOTE: Project listings will vary in content. The list is derived from the assigned security group's list.

2. Select **OK** – The selected Project's window displays the list of its defects.

The Seapine TestTrack Project Window appears.

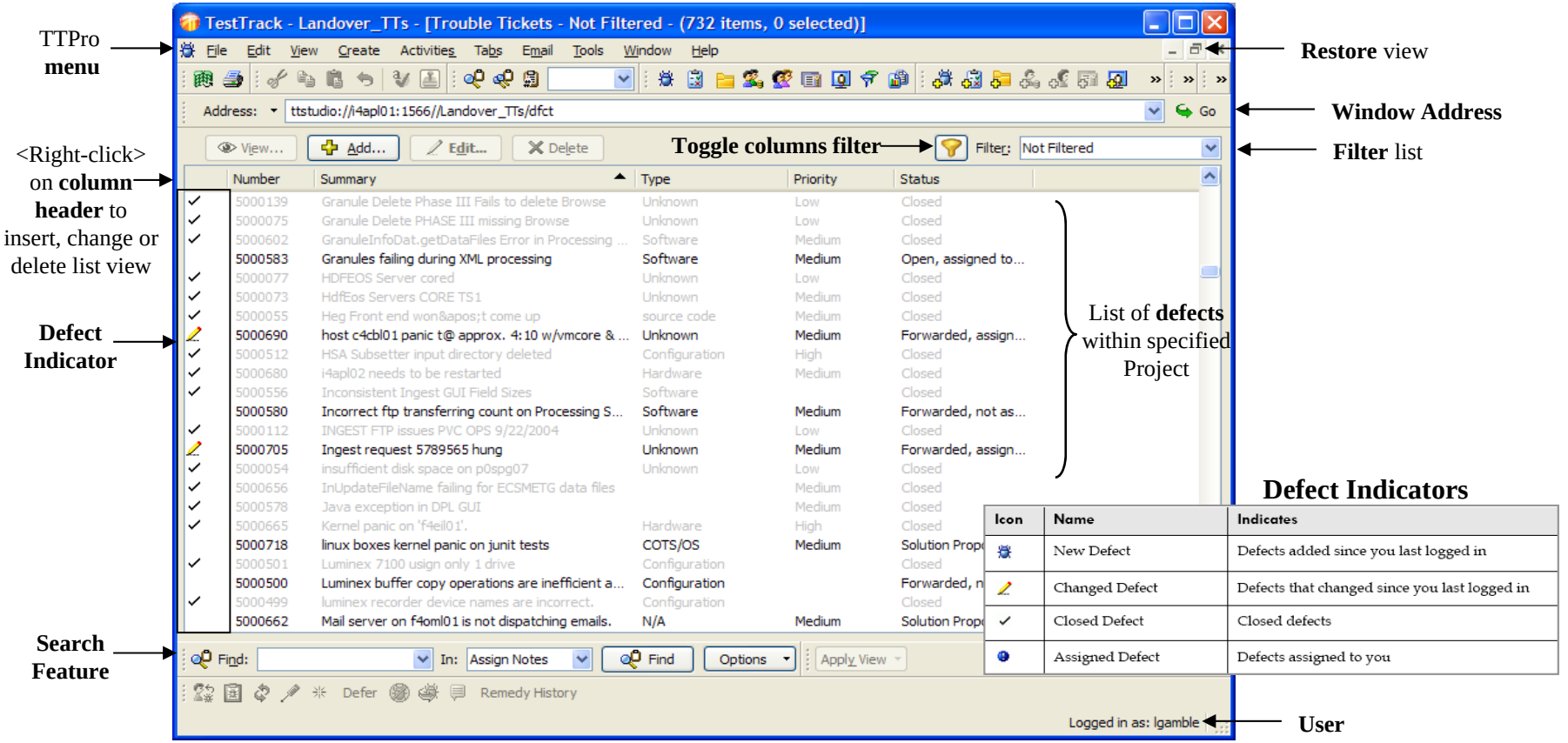




TestTrack Pro Defects Project Window (PC Client view)

TestTrack Pro
Defects List Window

- **Provides access to <u>all</u> TTPro defects' records.**
- **Users control what defects displays by using the Filter command.**



TestTrack Pro
Setting User Options

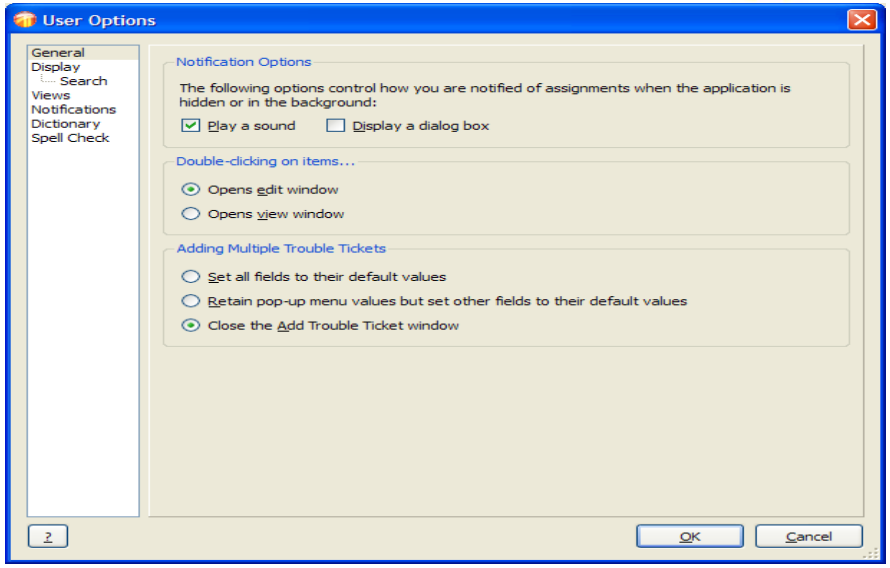
- **User Options lets User specify password and personal preferences.**
- **It is highly recommended that All Users set the "Adding Multiple Trouble Tickets window" options before creating or editing defects. Your local Administrator can not perform this function.**

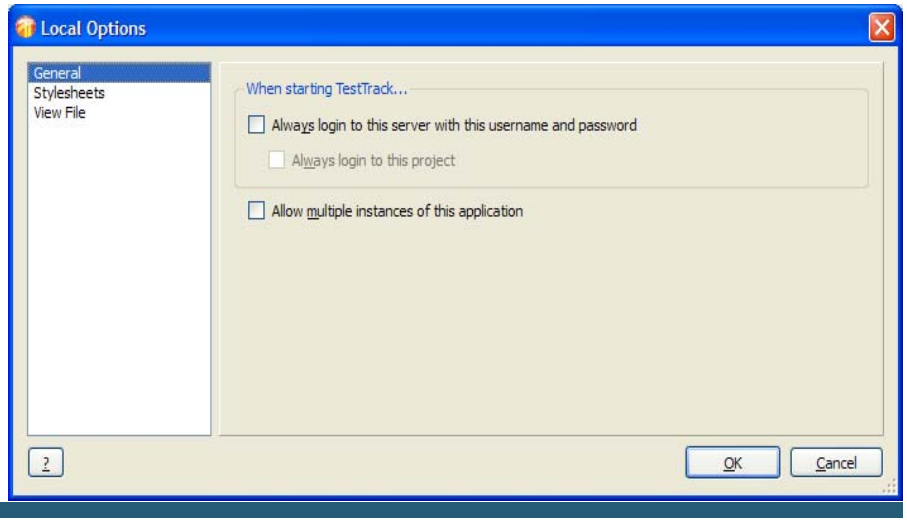
1. **Set User Options**:
   - Select **Tools** from the menu
   - Select **User Options**

The Seapine TestTrack Client "User Options" (or Local Options) dialog box appears.

2. Under, **Adding Multiple Trouble Tickets**, select **Close the Add Trouble Ticket window** option.

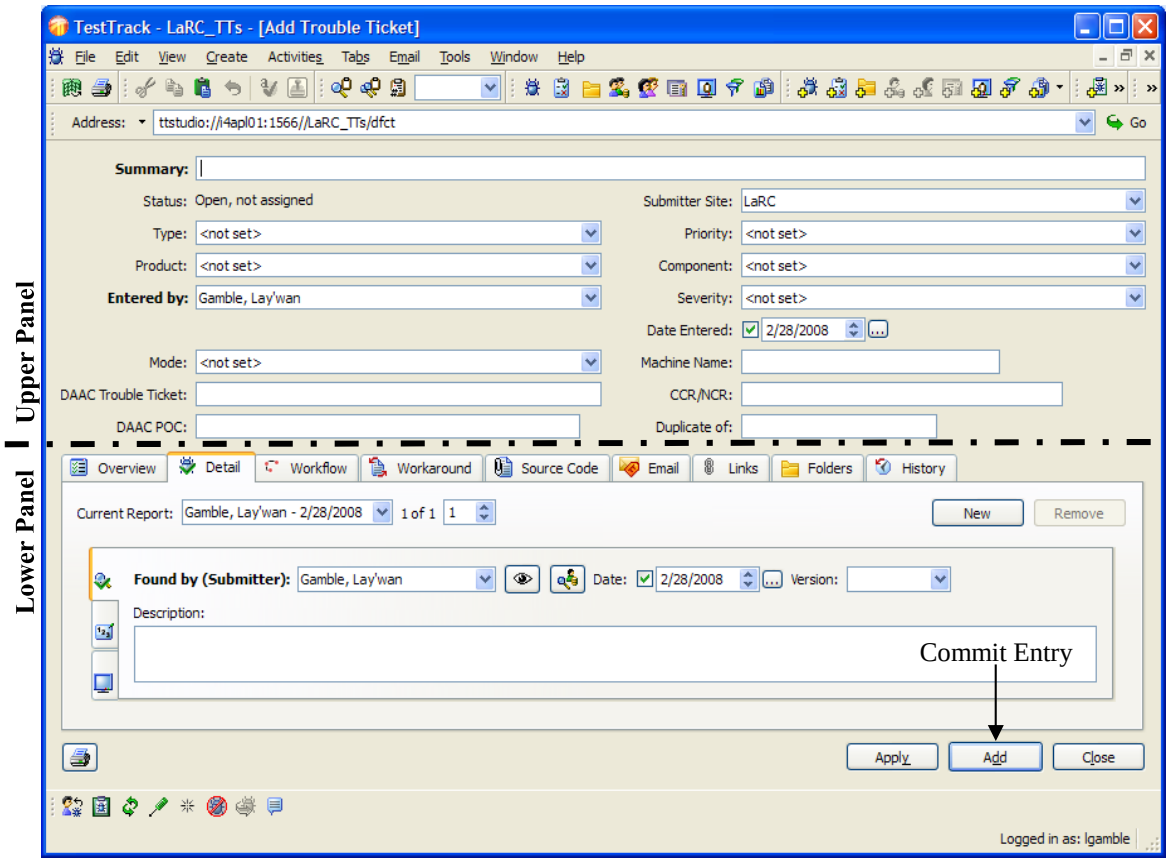
- **Local Options lets User specify how they would like to format TestTrack Pro on login to the application, i.e. password saves within a specific project, multiple instances (not recommended), report printing styles, and views.**





TestTrack Pro
Navigating the Defect Add Window

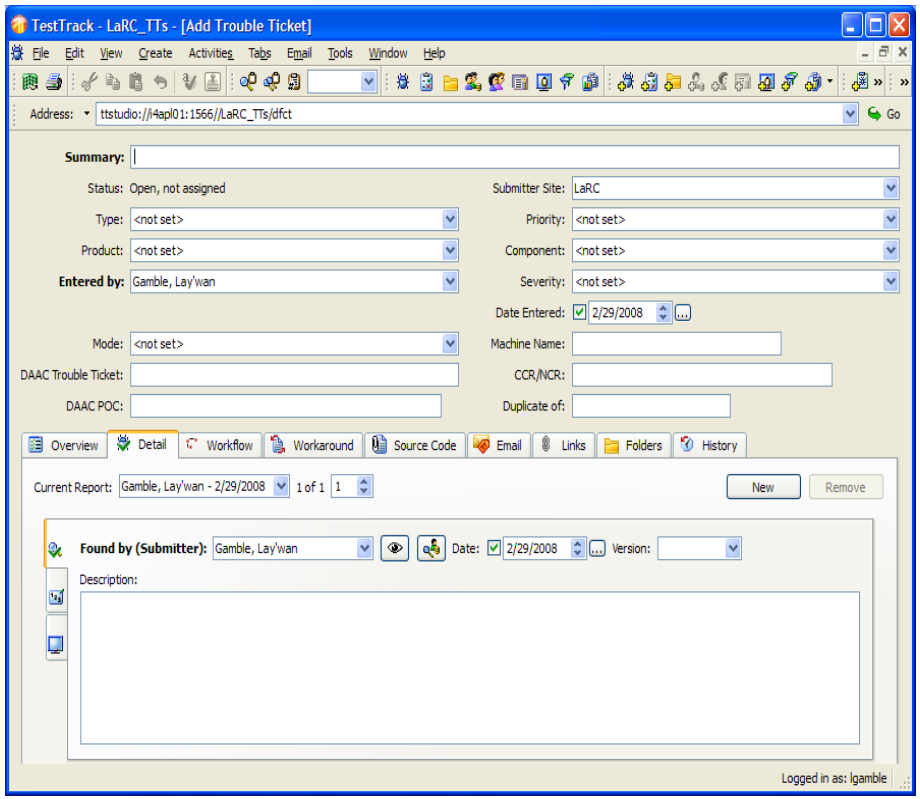
- **Upper Panel** – Generally, defines all related parts of the TT or problem.
- **Lower Panel** – display tabs that support TT series of events or lifecycle flow. There are several events that elevates the problems to NCR status (or triggers other workflow features).
- **Field names in bold text** are "required" entry, although all related fields should be input.
- **Trouble ticket numbers** are assigned after data entry of problem is committed. To commit, depress Add button in lower panel of window
- Use the "**restore**" button to show scroll bars.



NOTE: Several Legacy fields are noted as either "Read-Only" or "Not Used."

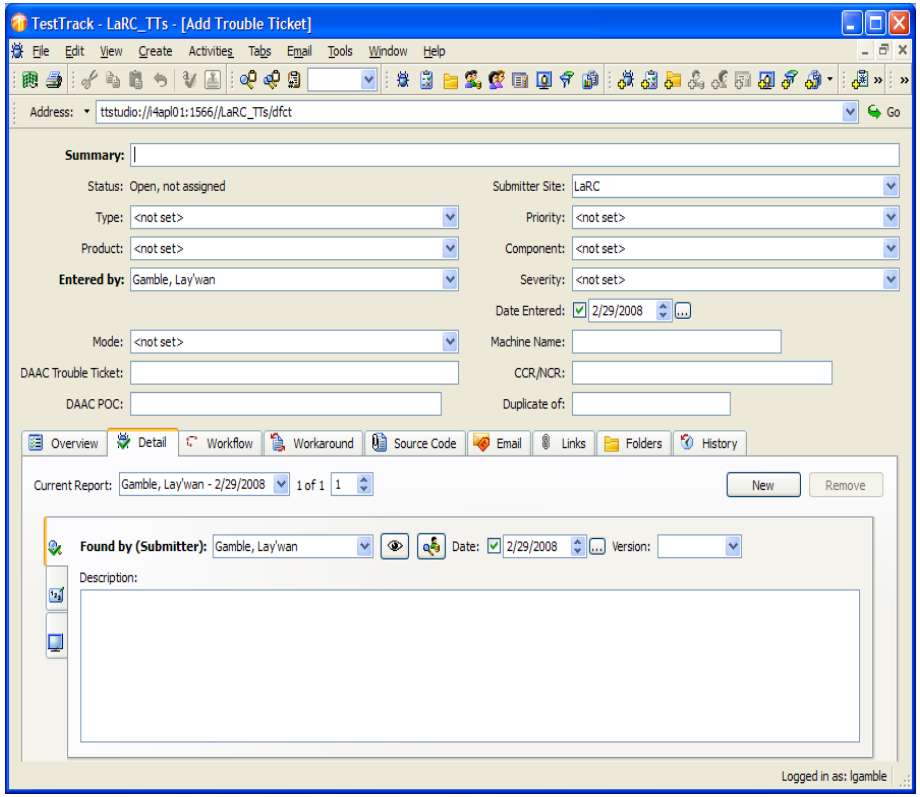
TestTrack Pro
Entering New Trouble Ticket

- **Summary:** A concise description of the problem, but not a solution – which appears in Project Window – Mandatory field.
- **Status:** A non-editable field, indicating "state" and "event" of Trouble Ticket.
- **Type (list box):** Identifies Trouble Ticket or problem documented by the discrepancy. The Type of Problem can take on values: not a bug, un-reproducible, design, language tools, configuration, test data, documentation, process, HW, SW, Security, builds, scripts, procedure, or unknown.
- **Product (list box):** Describes the affected subsystem or product.
- **Entered by (list box):** Identifies who entered the problem. Populated by system, but can be changed to identify the submitter – Mandatory field.
- **Mode (list box):** Mode in which the problem was found.
- **DAAC Trouble Ticket:** Local TT number.
- **DAAC POC:** Identifies the person at the DAAC who is to be contacted regarding the problem.



TestTrack Pro
Entering New Trouble Ticket (cont.)

- **Submitter Site:** Identifies the site at which the problem occurred (originating site).
- **Priority (list box):** Used by DAAC personnel to record the defect priority relative to others.
- **Component (list box):** Identifies the software or hardware CIs.
- **Severity (list box):** A digit from 1 to 5 representing the severity of this problem – Mandatory field.
- **Date Entered:** Creation date of the problem. System-populated, but can be changed using the list box.
- **Machine Name:** Identifies on what hardware CI the problem occurred.
- **CCR/NCR:** Identifies a different ID of a related CCR(s) or NCR(s).
- **Duplicate of:** Identifies the trouble ticket in which the same problem is being tracked.
- **Current Report:** Submitter and date problem or issue occurred.

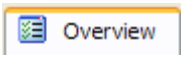


TestTrack Pro
Entering New Trouble Ticket – Tab Descriptors

- **TestTrack Pro Tab Descriptors**:
  - The tabs provide input of additional information as it relates to the information associated with advancing trouble tickets through their lifecycle states.

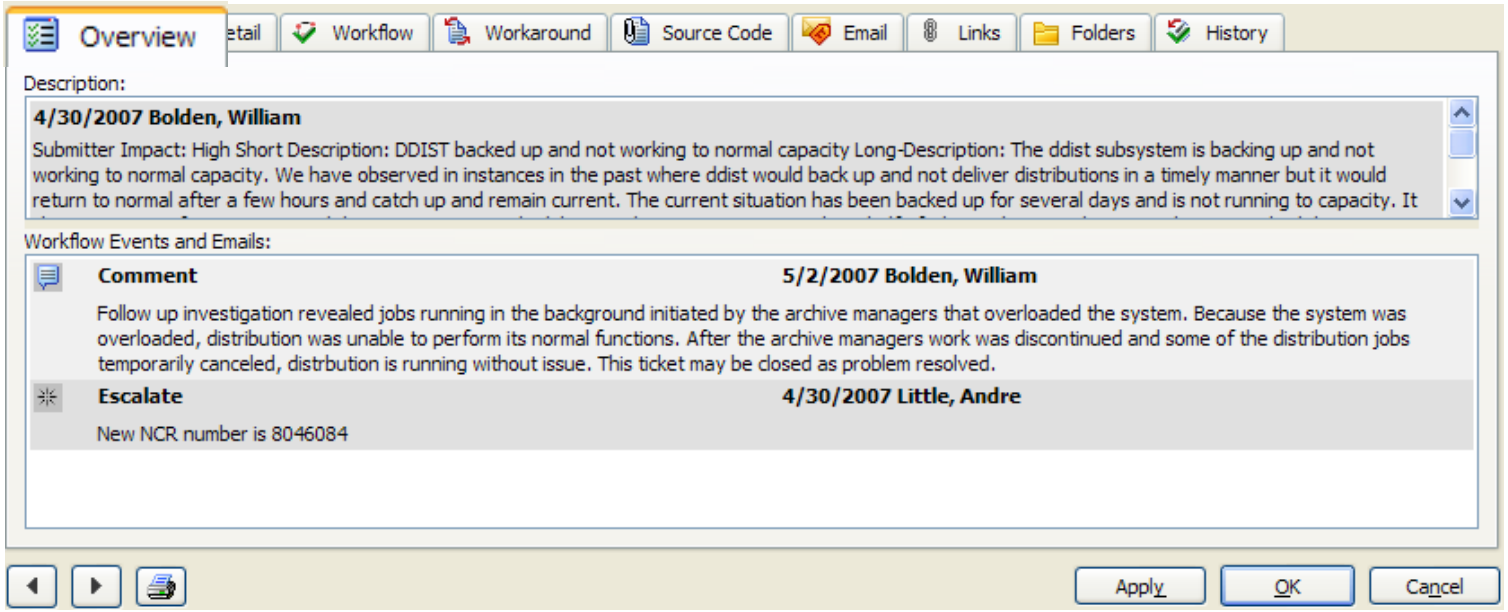
Tab Name	Description
Detail	Contains the details about one or more occurrences of the problem that was found. Information recorded on this tab includes who detected the problem (*Found By* (*Submitter)*, date the problem was detected (*Date)*, *Version* of the version of the product that had the problem *(Version)*, and a description of the problem sufficient for an Engineer to perform an analysis *(Description)*.
Workflow	This tab automatically captures identified series of events or activities associated with the trouble ticket's workflow. This listing is populated after the User continues to move through the lifecycle of the defect. Fields displayed data of this tab includes the flow of the *Event*, *Date* of change or input, *Who* activated the event, *Other Information* about the event.
Workaround	This tab contains a description of how to workaround the problem (or feature request) until a permanent fix can be implemented.
Source Code	Not in use.
Email	Optional.
Links	Not in use.
Folders	Provides access to TTPro folders, a feature to help TTPro users organize their trouble tickets.
History	Displays the trouble ticket's change history.

TestTrack Pro
Entering New Trouble Ticket – Overview

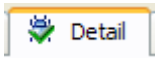
❑ Overview Tab 

- Overview features automatically captures details that summarizes the information found on the Detail and Workflow tabs, including any Emails associated with the trouble ticket.
- **Description:** Identifies the Date and Found by (Submitter), with details captured in the "Description" section of the "Detail" tab.
- **Workflow Events and Emails:** Identifies the series of events or activities associated with the TT and associated notes or email.

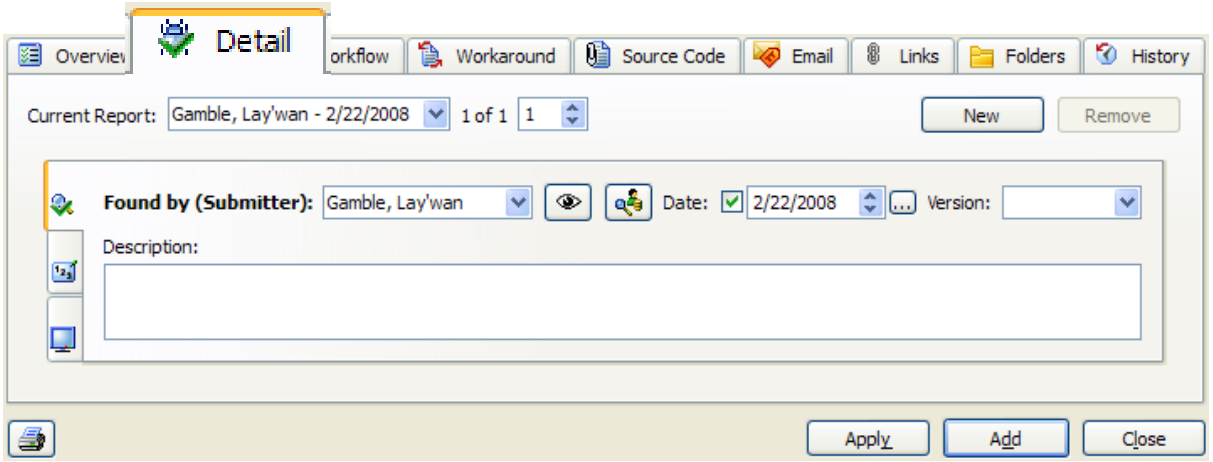
NOTE: Use the User Options menu to hide the Overview tab: Tools, User Options, Display.



TestTrack Pro
Entering New Trouble Ticket – Detail

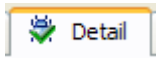
❑ Detail Tab 

- **Found by (Submitter):** Identifies the submitter of the problem. System-generated, but changeable name of the person who found the problem – Mandatory field
- **Date:** Identifies the date the problem was found.
- **Version:** Identifies the version of the software the problem was found.
- **Description:** Detailed, but concise description of the problem sufficient for an Engineer to analyze. Description should include:
  - when the problem occurred.
  - what server was affected.
  - what logs are available.
  - what processes or servers were running.
  - associated hardware problems observed.
  - how often the problem occurs.
  - what steps were taken to alleviate the problem and their results (if any).
  - current state of the system.
  - operational system impact.

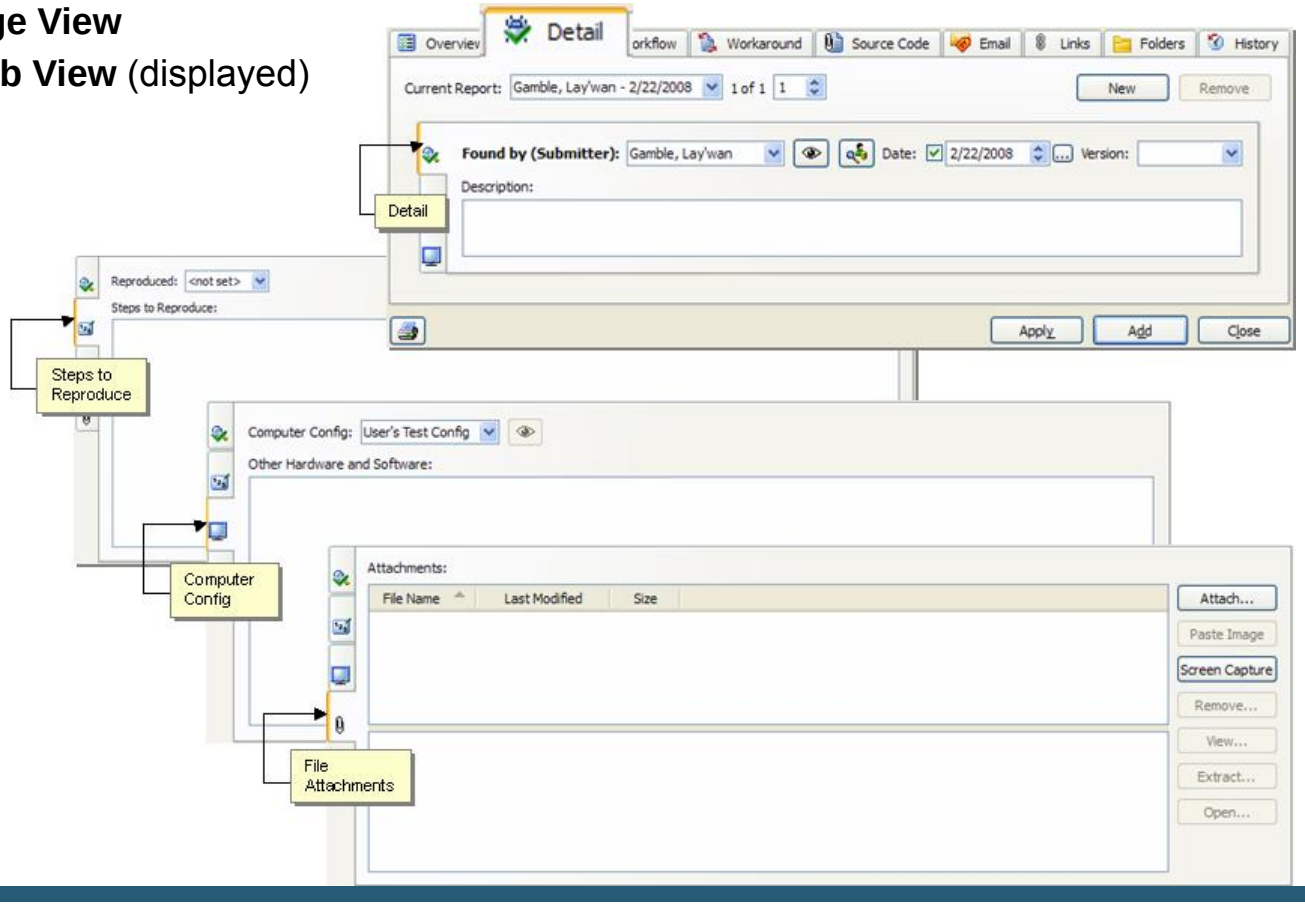


- **New (button):** Click to add additional occurrences of the same problem.
- **Add:** Click to Add (commit current) and reset (new TT) TT.

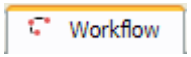
TestTrack Pro
Entering New Trouble Ticket – Detail (cont.)

- **Detail Tab** 

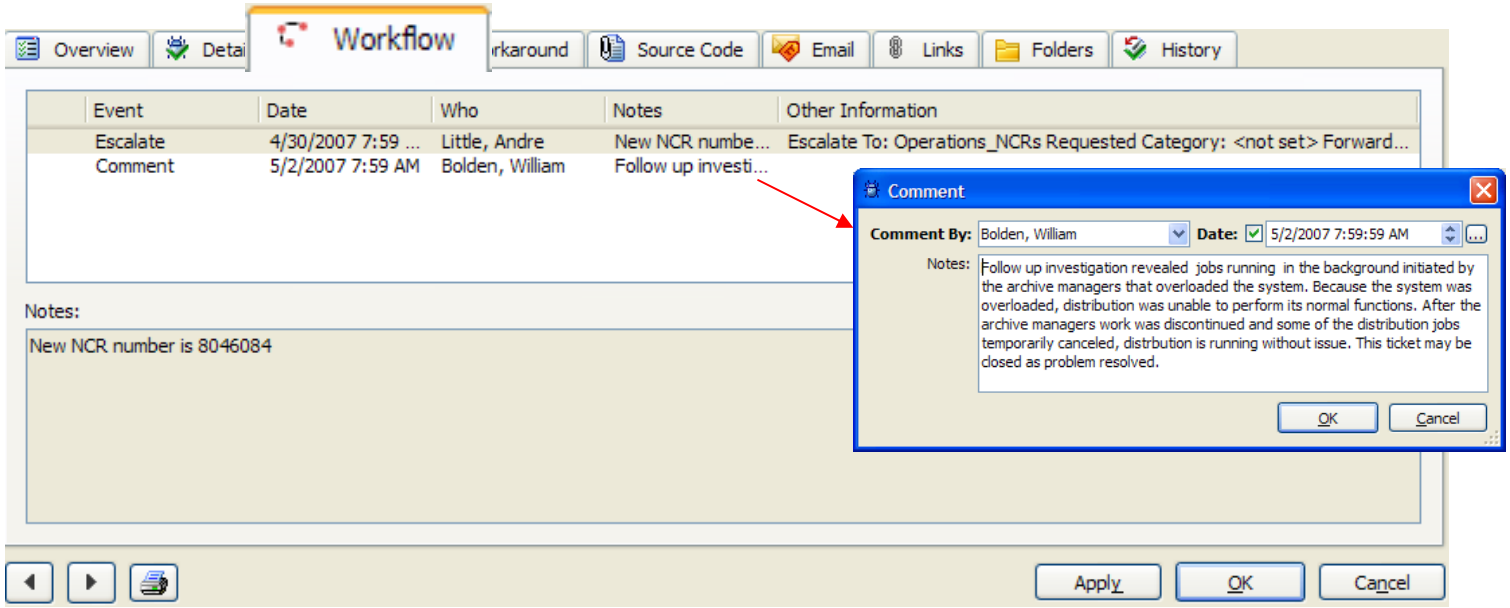
  - The **layout of the Detail tab** data fields can be displayed in two views using the **Tools**, **User Options, General** display menu options:
    1. **Single Page View**
    2. **Vertical Tab View** (displayed)



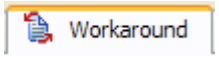
TestTrack Pro
Entering New Trouble Ticket – Workflow

❑ Workflow Tab 

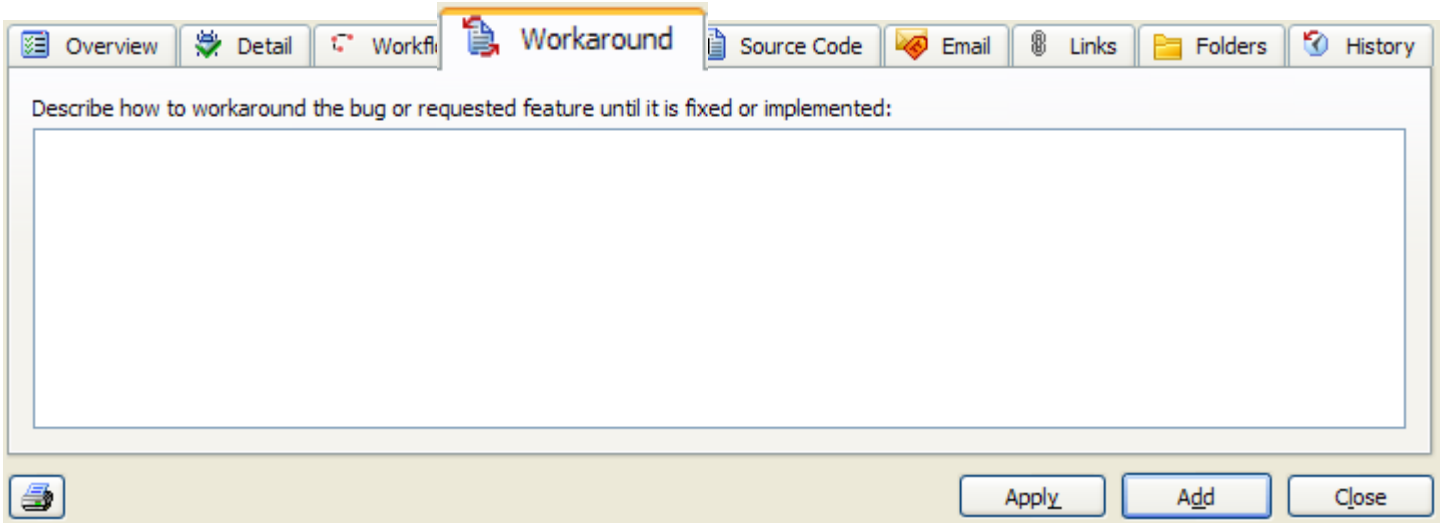
- Workflow tracks the lifecycle of events of the defect. This feature displays a listing of every event or state change for the defect. It provides information on: Event, Date of update, Who made the change, and Other information related to the defect that the system captures/tracks.
- **Notes:** The input captured during the associated event's workflow. Display the **Notes** information by selecting an event from the workflow list. Double-click the event to display that event's input window.
- **Add:** Click to save changes to Workflow entry fields.



TestTrack Pro
Entering New Trouble Ticket – Workaround

- **Workaround Tab** 

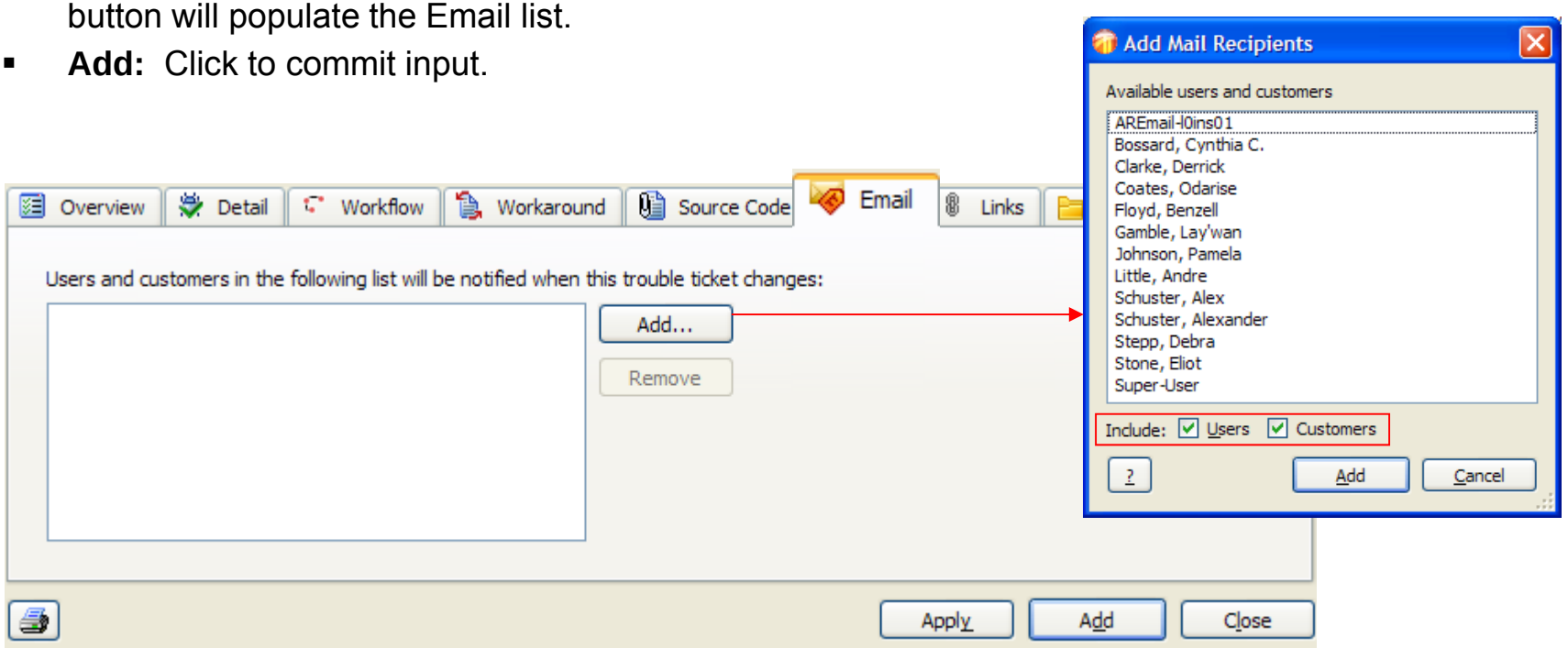
  - **Describe how to workaround the bug or requested feature until it is fixed or implemented** provides a thorough, but concise plan (details) of how to workaround the bug or recommended details to fix or implement the defect.
  - **Add:** Click to commit input.



TestTrack Pro
Entering New Trouble Ticket – Email

- **Email Tab** 

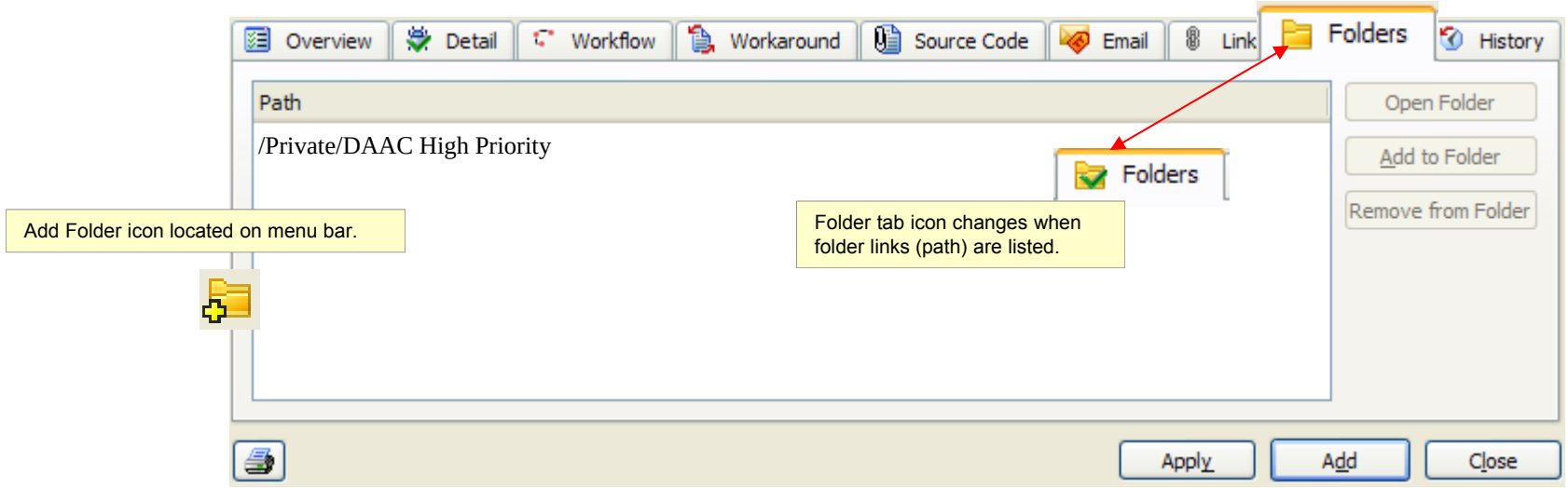
  - **Users and customers in the following list will be notified when the trouble ticket changes** via the “Email” notification and tracking feature.
  - **Add…** button displays the “Add Recipients” dialog box for the selection (or multiple selection by holding the <ctrl> key) of available system-generated Users and/or Customers. Selecting “Add” button will populate the Email list.
  - **Add:** Click to commit input.



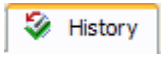
TestTrack Pro
Entering New Trouble Ticket – Folders

- **Folders Tab** 

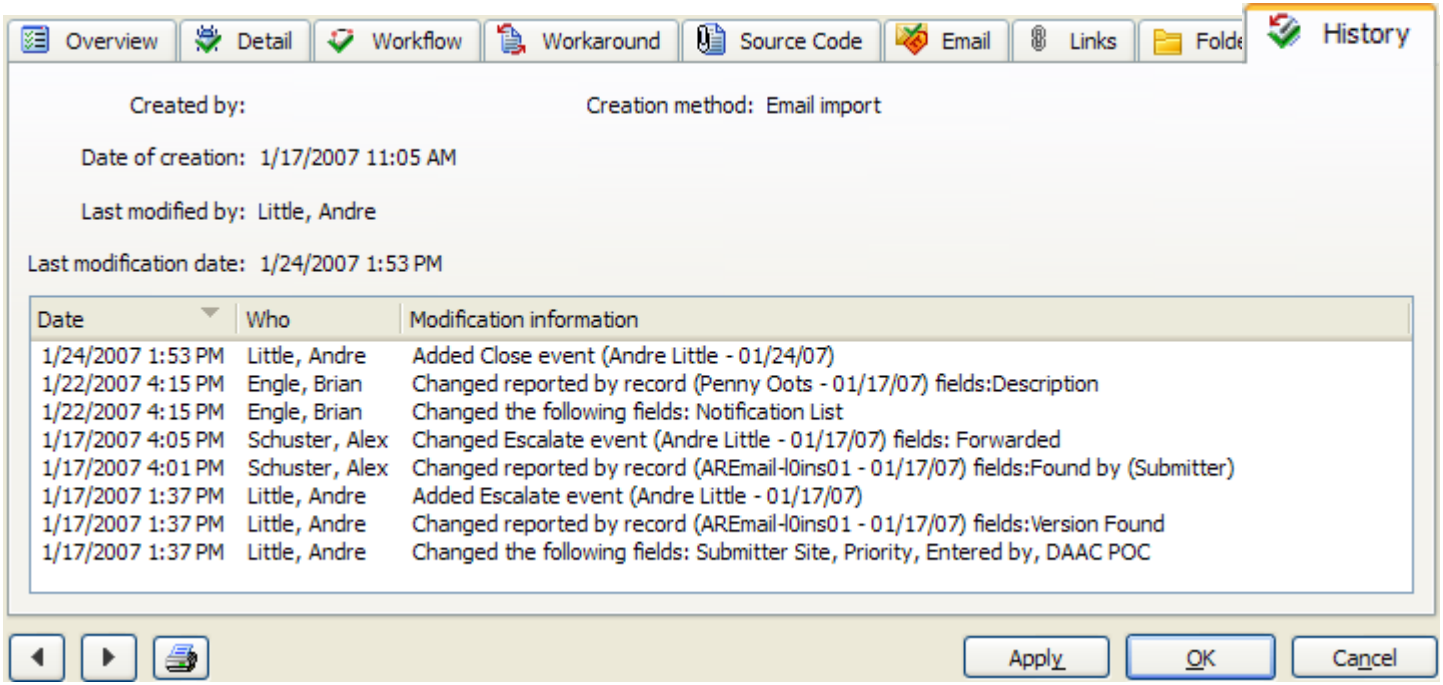
  - Users and Customers in the following list will be notified when the trouble ticket changes via the "Email" notification and tracking feature.
  - **Add:** Click to commit input.



TestTrack Pro
Entering New Trouble Ticket – History

- **History Tab** 

  - The History feature captures the changed history information of the Trouble Tickets, the date of the activity, who made the modifications and location of the change.
  - **OK:** Click to close the History (read-on) tab and Trouble Ticket window.



TestTrack Pro
Lifecycle – From Open to Close State

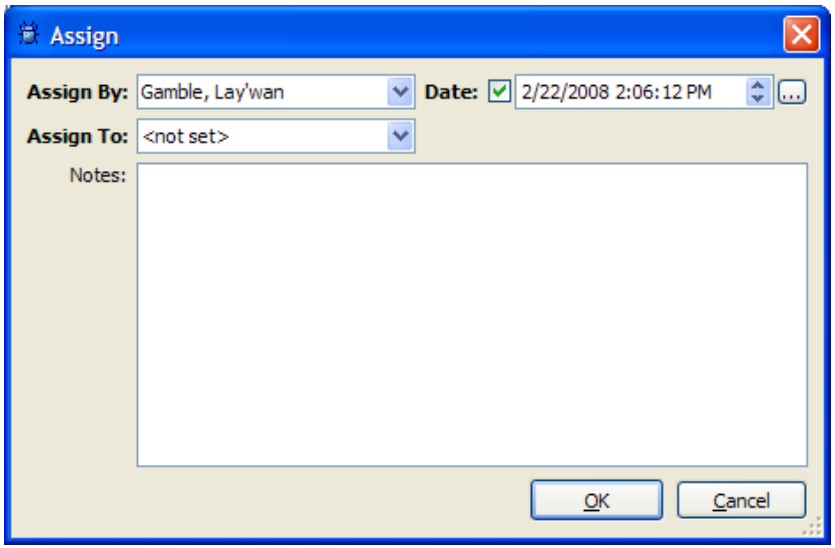
❑ **Trouble Tickets are advanced (workflow of events) through lifecycle stages called states. Defects need not advance through all states or in any particular sequence.**

Event	Description	Resulting State	Data Added to Defect	Assignment Change
Assign	Assign ticket to one or more team members	No Change	Assigned to	New
Propose Solution	Identify fix	Solution Proposed	Due date; Version; Effort to fix	None
Escalate	Elevate ticket to PRB or ECHO for advice or resolution	Forwarded	Requested Category	None
Start to Implement	Notify submitter and others that work on fix has begun	Implement Solution	Work start date	None
Fix	Move trouble ticket to fixed state and capture resolution	Fixed	Effort, Affects Documentation, Affects Test Plan, Resolution, Version	None
Close	Move ticket into Closed state	Closed	Resolution	Clears
Re-Open	Re-open currently closed Trouble Ticket	Open (Re-Opened)	None	New
Comment	Add a comment to a Trouble Ticket	No Change	Comment	None

TestTrack Pro
Lifecycle – Assigning a Trouble Ticket

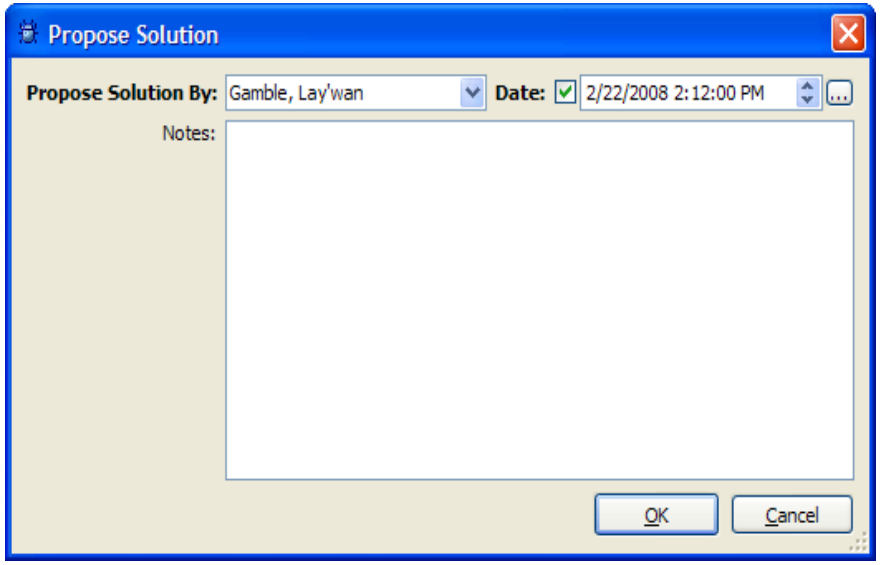
- **New Trouble Tickets** are automatically placed in the Open state by default. The next step – **Assign** the TT to an Engineer. **To assign a Engineer to a Trouble Ticket**, select **Assign…** from the **Activities** menu. The following information should be provided for this transition:
  - **Assigned By:** This field auto-populates with the Submitters name. Name can be changed using list box options. – Mandatory field.
  - **Date:** Date assignment was conducted – Mandatory field.
  - **Assigned To:** Identifies the name of the person that is going to work on the problem – Mandatory field.
  - **Notes:** This message displayed in the emailed TT assignment notification to the Assignee — Use to document any information pertinent to the Assign event.

    NOTE: Automatic Email notification of assignment will be generated to the Assignee.
  - Select **OK** to save (or **Cancel** to discard).



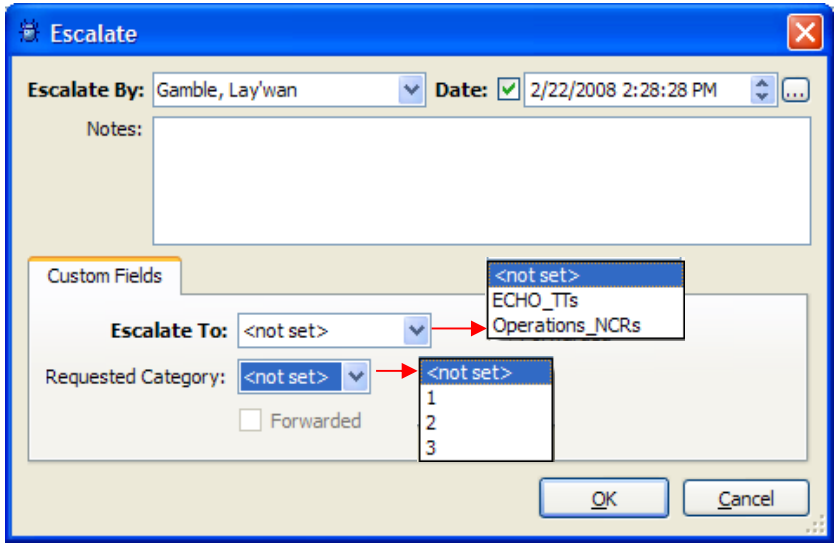
TestTrack Pro
Lifecycle – Proposing a Solution

- The **Propose Solution transition** is performed by the assigned Engineer. The next step - Select **Propose Solution**… from the **Activities** menu. The Propose Solution dialog box appears… The following information should be provided for this transition:
  - **Propose Solution By:** [formally, Evaluation Engineer]: Person who will be this performing the analysis. This field auto-populates with the current user, but can be changed. – Mandatory field.
  - **Date:** Date solution was proposed. – Mandatory field.
  - **Notes:** Use to document any information pertinent to the Estimate event.
  - Select **OK** to save transition (or **Cancel** to discard).



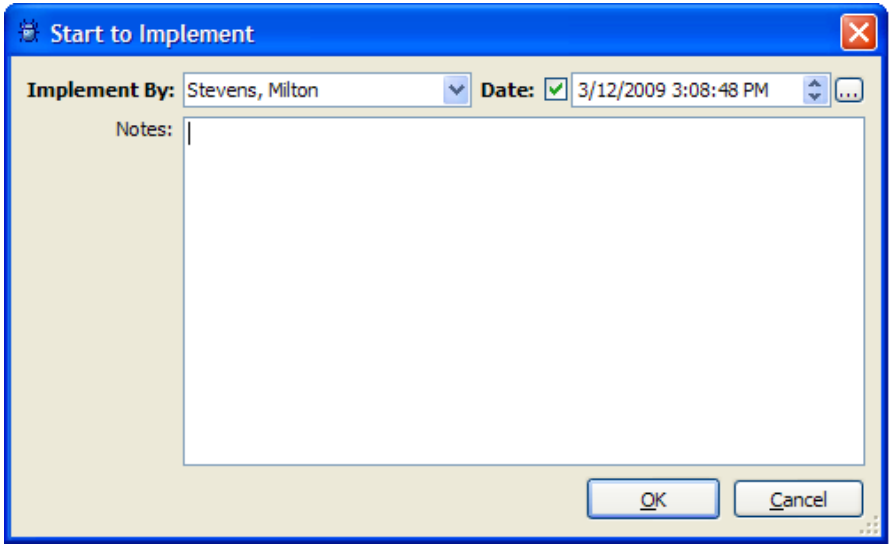
TestTrack Pro
Lifecycle – Escalating a Trouble Ticket

- The **Escalate Event** is used to identify what Trouble Tickets need to be forwarded to EDF NCR system. Select **Escalate…** from the **Activities** menu bar. The following information should be provided for this transition:
  - **Escalate By:** Identifies the User who escalated the Trouble Ticket. It auto-populates with the current user.
  - **Notes:** Details related to the escalation of the Trouble Ticket.
  - **Date:** This field identifies the date the TT was escalated. It auto-populates with current date.
  - **Escalate To:** Identifies the TTPro Project to which the TT should be escalated.
  - **Requested Category:** Indicated the priority recommended for delivery of this fix.
  - **Forwarded:** Do not check this box, if available. It will automatically set after creation of the OPS NCRs or ECHO TTs. It indicates that the TT was forwarded and escalated successfully.
  - Save the record by pressing the **OK** key.



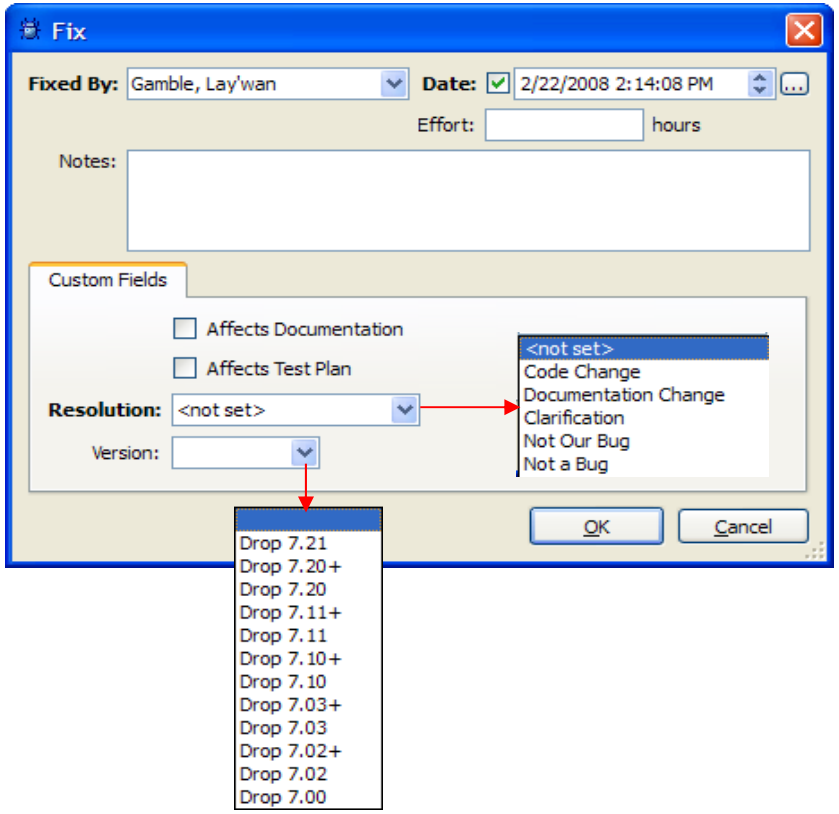
TestTrack Pro
Lifecycle – Start to Implement

- The **Start to Implement transition** is performed by the evaluating Engineer. The next step - Select **Start to Implement** from the **Activities** menu. The following information should be provided for this transition:
  - **Implement By:** Identifies who will be implementing the fix for this TT – Mandatory field.
  - **Date:** Date the work on the TT will start – Mandatory field.
  - **Notes:** Used to document any information about the start of the work for this TT.
  - Select **OK** to save transition (or **Cancel** to discard).



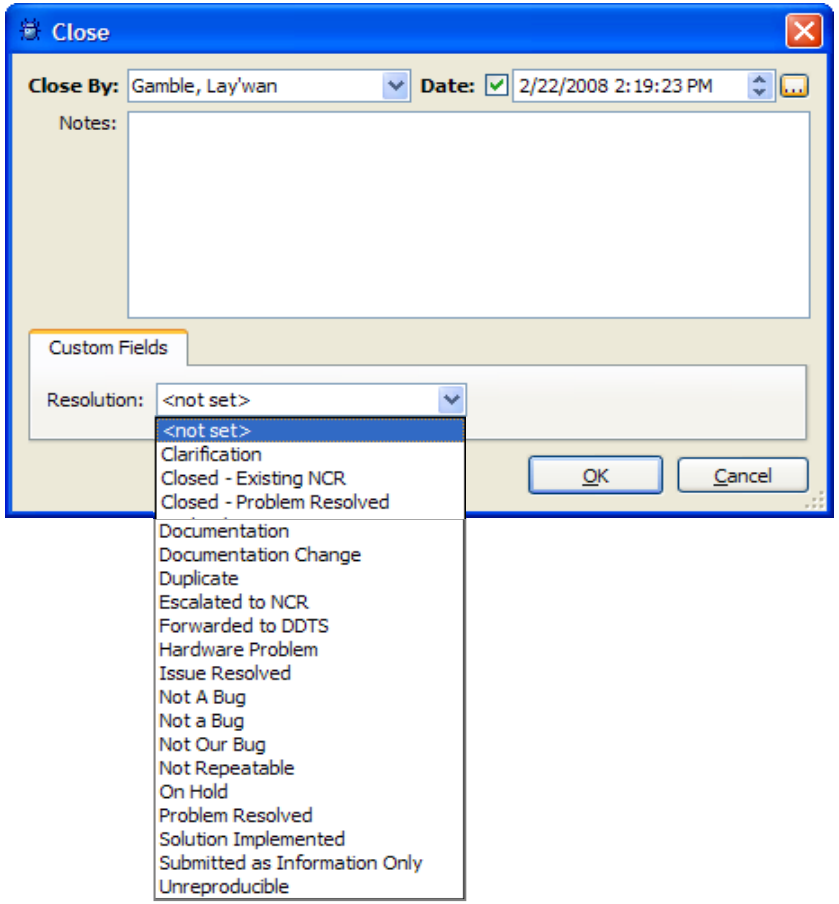
TestTrack Pro
Lifecycle – Implementing the Solution (Fix)

- The **Solution** transition is performed by the evaluating Engineer. The next step - Select **Fix**… from the **Activities** menu. The Fix dialog box appears… The following information should be provided for this transition:
  - **Fixed By:** Engineer assigned to find a fix for the problem – Mandatory field.
  - **Date:** Date the fix was implemented – Mandatory field.
  - **Effort (hours):** Number of hours to fix discrepancy.
  - **Notes:** Document a detailed resolution log. Details that describe the implemented resolution that was used to fix the problem. Use to document any information pertinent to the Fix event – Mandatory field.
  - **Affects Documentation:** Are there documentation changes required with the fix?
  - **Affects Test Plan:** Is there a test plan?
  - **Resolution**: Classification type of fix – Mandatory field.
  - **Version:** Release version on which the problem was fixed.
  - Select **OK** to save (or **Cancel** to discard).



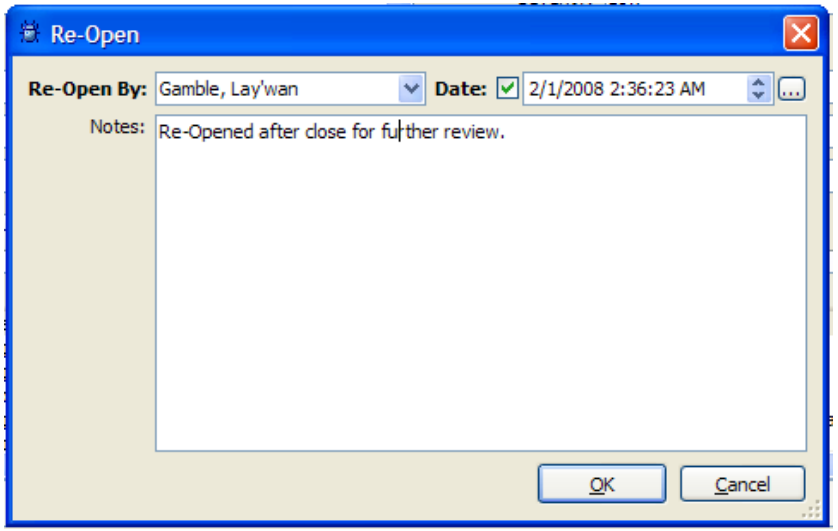
TestTrack Pro
Lifecycle – Closing the Trouble Ticket

- Select **Close** …from the **Activities** menu bar. The **Close** dialog box appears… The following information should be provided for this transition:
  - **Closed By:** Identifies the User who closed the TT. It is auto-filled with the current user, but can be changed – Mandatory field.
  - **Date:** Identifies the date the TT was closed. It is auto-filled with the current date – Mandatory field.
  - **Notes:** Details of related close activities.
  - **Resolution:** Closing reasons, from defined list, that is the best fit option.
  - Save the record by pressing the **OK** key.



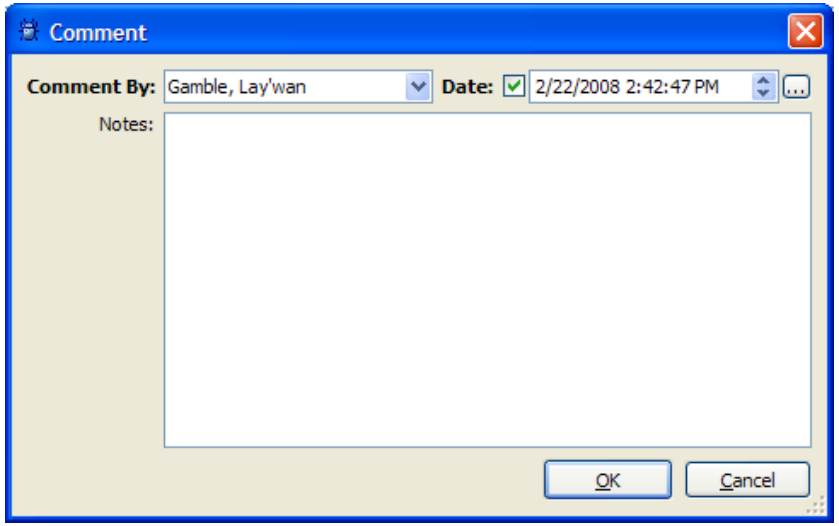
TestTrack Pro
Lifecycle – Re-Open a Trouble Ticket

- The **Re-Open** transition is performed by the evaluating Engineer. The next step - Select **Re-Open…** from the **Activities** menu. The following information should be provided for this transition:
  - **Re-Open By**: Identifies who re-opened the closed TT – Mandatory field.
  - **Date:** Date the TT was re-opened – Mandatory field.
  - **Notes:** Details that describe reason to re-open this TT.
  - Select **OK** to save transition (or **Cancel** to discard).



TestTrack Pro
Lifecycle – Adding Comments

- **Comments** can be added to Trouble Tickets at any time. The activity to add additional comments - Select **Comment…** from the **Activities** menu. The following information should be provided for this entry:
  - **Comment By:** Identifies who added comment notes to this TT – Mandatory field.
  - **Date:** Date the comments was added to TT – Mandatory field.
  - **Notes:** Information related to this TT that is considered relevant to its transitions.
  - Select **OK** to save (or **Cancel** to discard).



TestTrack Pro
Creating Browse Filters

- **Filters** are used to sort defect records and list only those defects that meets a User specified criteria.
- **To create a Filter (Private, by default):**

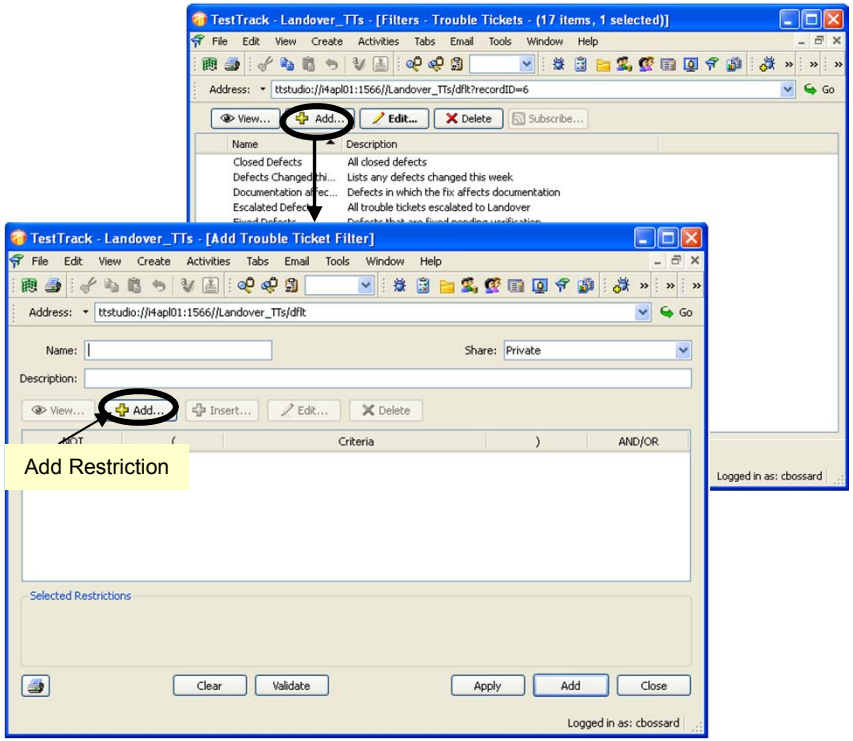
1. Select the **View**, **Filters** from the main menu.

   The Filter List Window displays…

2. Select the **Add** button on the Filters window to display the **Add Trouble Ticket Filter** criteria window.

3. **Name and define the filter criteria** for your private Filter:
   - **Name** – filter's name displays under name column in filter list window.
   - **Description** – brief explanation of filter.
   - **Add** a Restriction (or Criteria) to filter.
   - — **Share:** This field determines who has access to the field. Valid values include private, shared with everyone, shared with users, shared with customers. Non-privileged users can create private filters only. TTPro Administrators can create "shared" filters.

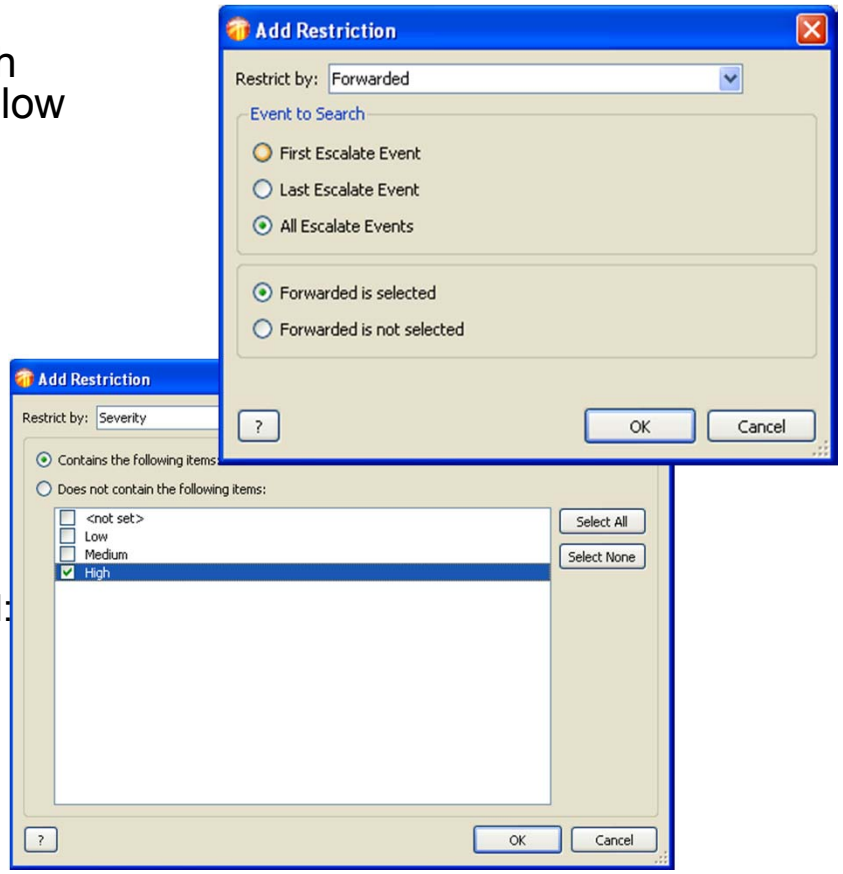
4. Click **Add** button (bottom of dialog box) to add restriction.



TestTrack Pro
Creating Browse Filters (cont.)

The Add Restriction dialog box displays…

- The **Restrict by** (list box) identifies a list of defect fields that can be used to build filter criteria.
- **Example:** To display only the defects with "High Level of Severity" that have been escalated, follow these steps as shown in the display:
  1. Select **Forwarded** from the Restrict by list box.
  2. Choose to search through **All Escalate Events** in the **Event to Search** pane.
  3. Click **Forward is selected** option.
  4. Click **OK** to **Add Restriction** into dialog box.
- **Add** another field restriction from the Add Restriction dialog box.
  1. Select **Severity** from the Restrict by list box.
  2. The following **range selections** will be displayed:
     - **Does not contain the following items.**
     - **Contains the following items.**
  3. Click the **Contains the following items** options.
  4. Select **High** from the list.
  5. Click **OK** to add restriction (or **Cancel** discards).



The Edit Trouble Ticket Filter dialog box displays…

TestTrack Pro
Creating Browse Filters (cont.)

- The **Add/Edit Trouble Ticket Filter** window allows modification to the filter's criteria and validation.
- **Change the argument of the criteria And validate filter:**

1. Select **And** as the logical operator connecting the two restrictions.
2. **Validate** filter to ensure accuracy in the compilation of the criteria.

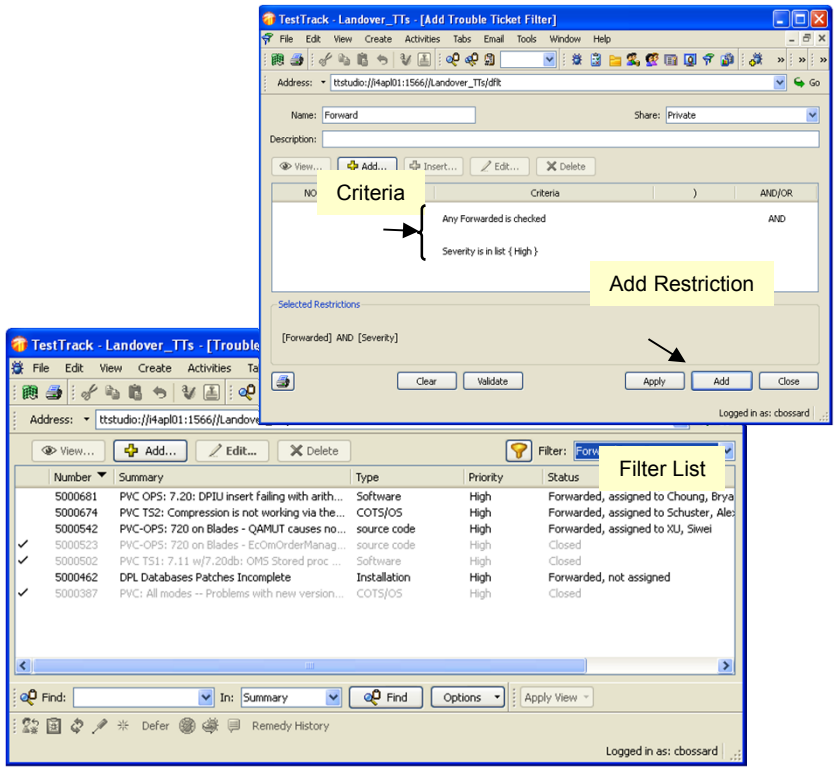
Clear removes all defined criteria listed In the dialog box, if desired.

3. Select **Add** to commit the filter (or **Close** to discard).

Filter saves and the "Filters" window appears…

4. Select the **Filter from the filter list** on the TT defect list Window.

NOTE: The filter automatically activates/runs when selected.



Column Filters

- **Filters or Column Filters** can be applied on specific columns on the defect window. This feature provide multi-sorting/filtering functions on columns.
- **To apply filtering on columns:**

1. Select **Column Filter** symbol, next to the Filter list box.

The Filter icon appears…

1. Click the **filter symbol** next to the column you wish to filter.
2. Choose **Filter** from the list provided (or **create a Custom filter** for the column).

NOTE: Each filtered column will have a red dot on the column symbol and the column header will be the color defined in the search section of the user options dialog box. (The default color is blue.)

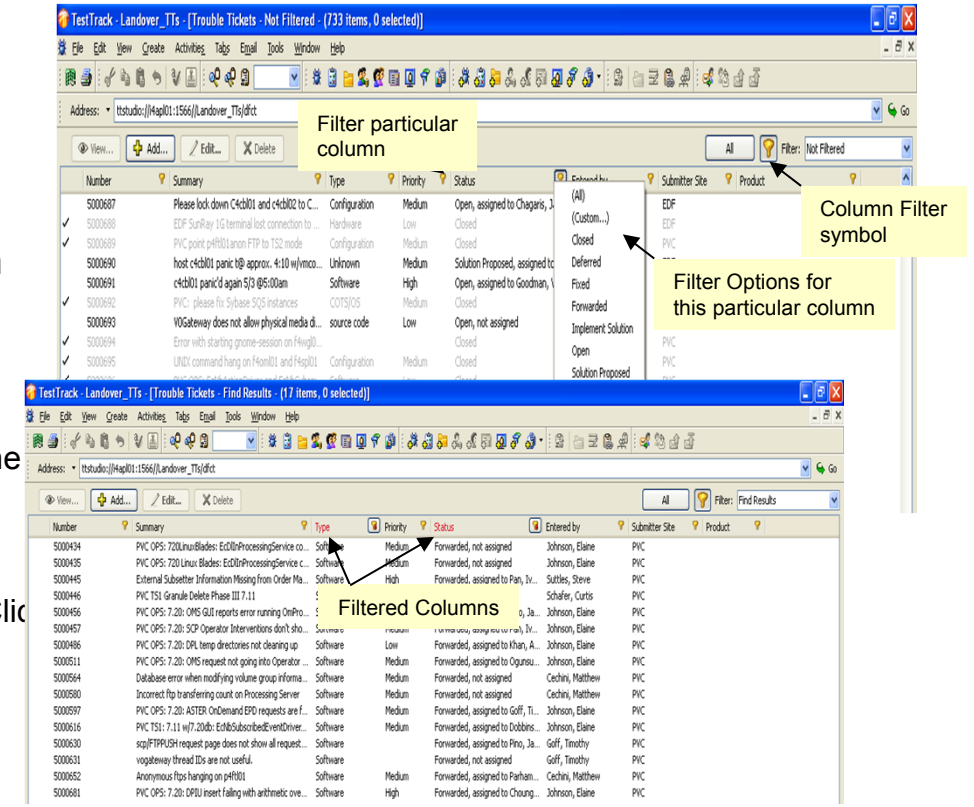
4. To **clear** column filters, click **All**.

NOTE: Column filters view can be made into a filter: Clic

Edit, Advanced Find, the click Make Filter button. The column view filter criteria will already be in the criteria window.

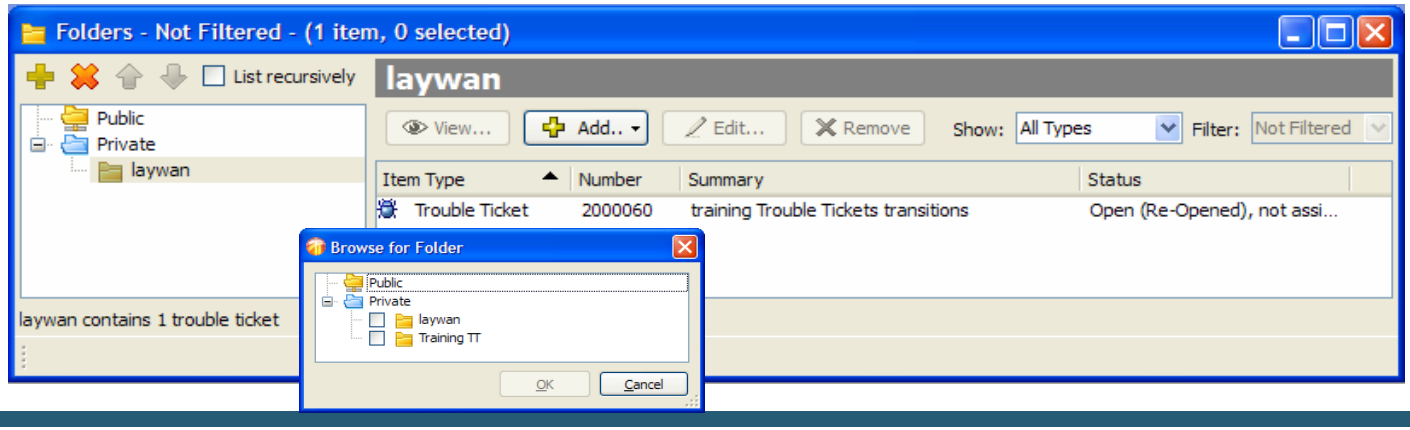
Give a name and description to the filter. Validate the filter.

Click the Find button to save this filter.



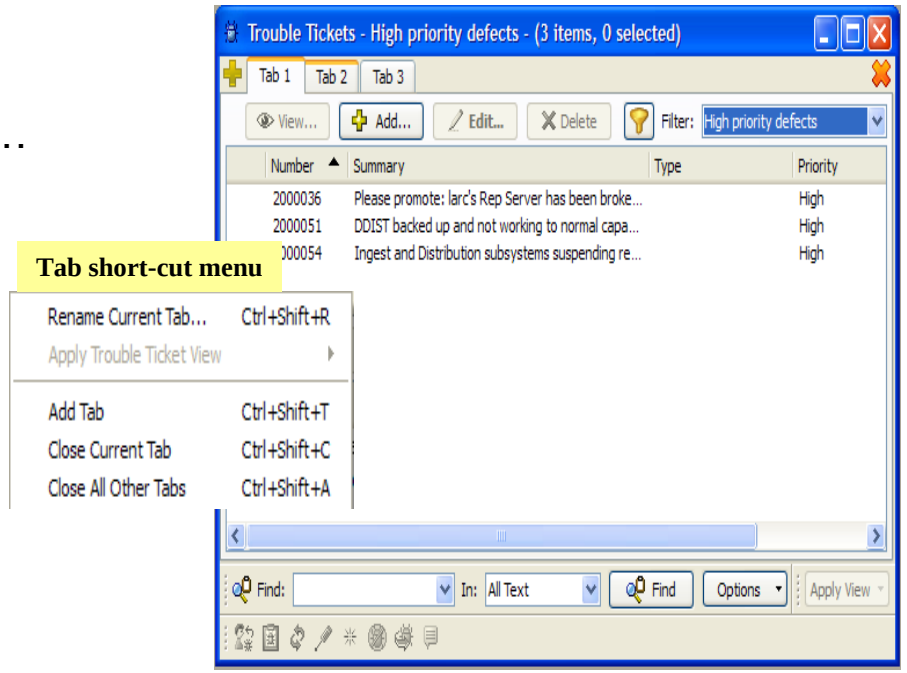
Creating Folders

- **Folders is a feature used to help organize the Users defects, much like the functions of the folder window in MS Explorer.**
- **To create a Folder:**
  1. Select **Create, Folder** from the main menu.
  2. Enter the **Name** and **Description** for the folder.
  3. Click **Browse**, to set the path (folder location).
  4. Click **Add**, then **Close**.
  5. Click **View**, **Folder** from the main menu to view the folder.
- **To quickly add Trouble Tickets to Folders:**
  1. From the Defect List Window, **right-click on any defect** listed in the window.
  2. From the short-cut menu, select **Add to Folder**… to display the Browse for Folder dialog box.
  3. Click **checkbox** to **select the folder from the Browse for Folder list** to add the defect (link).



Adding Tabs

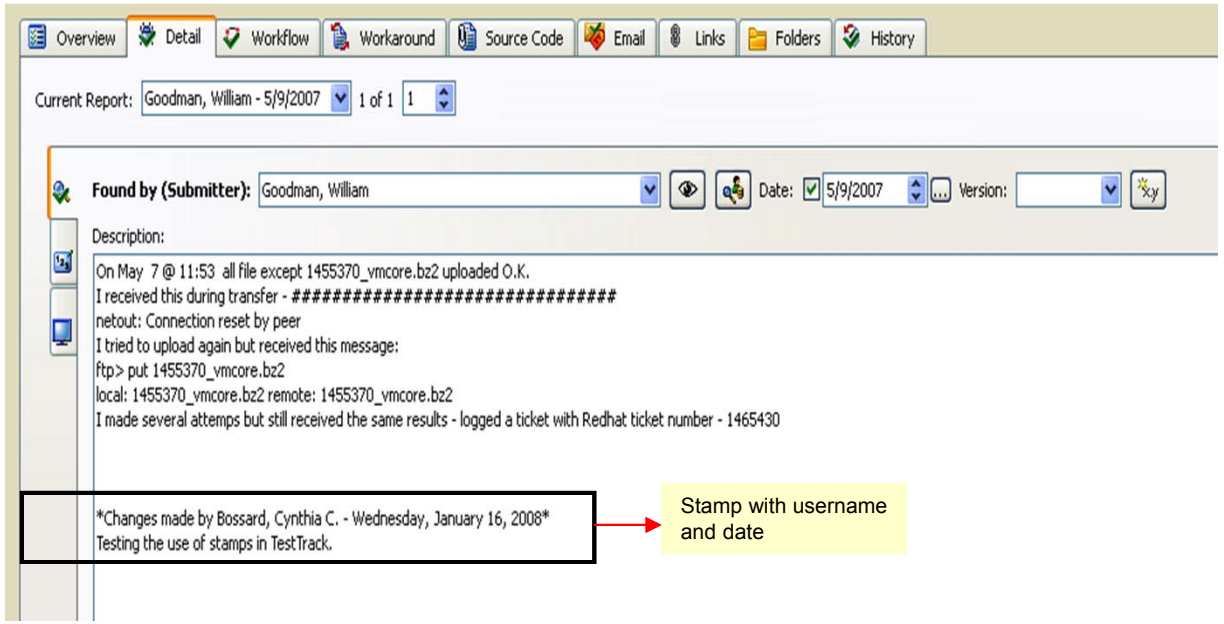
- **Tabs** is a feature used to open multiple instances of the list window within a particular view. Users can choose to display the tab bar in the by setting the Display Options: **Tools, User Options, Display**.
- **To create a Tab** to display as "Tab 1, Tab 2… on the active defect window:
  1. Select **Tabs**, **Add Tab** from the main menu.
- **To rename the Tab:**
  1. Right-click the **Tab to activate its short-cut menu.**
  2. Select **Rename Current Tab…**
  3. **Rename** the Tab.
- **To Apply a Filter to the Tab:**
  1. From the Filter list, Select **Filter**.



Inserting Stamps

- **Stamps** is a feature used to indicate changes to/in multiple-lined text fields, i.e., description, notes. Stamp details consist of the User's name and the current date. Stamps can be used to identify who (and when) added/entered text to a defect.
- **To insert a Stamp to display in any text field:**
  - **Place the cursor** where the Stamp is to be inserted within the text field of a defect.
  - Choose **Edit, Insert Stamp** from the main menu (or right-click in the **text field**, then select **Insert Stamp** from the short-cut menu).

NOTE: Stamped information can be changed. The format of the information is configured by The Project Administrator.



Q&A

Appendix A. Severities Defined

❑ Severity 1

- Inability to perform a mission-critical function (i.e., Ingest/Pre-Process/Archive Science Data, Planned Processing, Browse/Order/Distribute).
- A mission-critical function performed improperly, resulting in permanent loss of data.

NOTE: The above two problems are Severity 1's if no workaround exists or if a workaround can not be accommodated by DAAC operators. If a detailed workaround procedure is documented but the procedure is inadequate based upon the complexity of the procedure, the abilities of an adequately trained and experienced operator, or both, then the problem should be categorized as a Severity 1.

❑ Severity 2

- The performance of a mission-critical function is degraded, which may prevent the system from achieving production's minimum goals.
- A mission-critical function can be only partially performed or performs improperly, resulting in temporary loss of data or incorrect data results.
- A situation (actually or potentially) severely compromises ECS mission readiness or operational integrity.
- A condition exists to produce a severely degraded mission-critical function, but a workaround will allow operations to continue temporarily without permanent loss of data or severely impaired performance/workload /schedules.

Appendix A. Severities Defined (cont.)

❑ Severity 3

- A non-mission-critical function (e.g., Advertising) cannot be performed, or yields incorrect results.
- Unexpected events occur which can be corrected using normal operational procedures with minimal impacts to performance/workloads/schedules.
- A condition exists to produce a degraded mission-critical function, but a workaround will allow operations to continue indefinitely without severely impaired performance/ workloads/schedules.

❑ Severity 4

- Minor Functional Errors, typographical errors, and documentation errors are noted.
- This is a defect of minor significance such as errors in documentation or incorrectly aligned icons on a GUI or perhaps a GUI takes three seconds to appear on the screen and it should only take two seconds. A workaround exists or if not, the impairment is slight. The software could be released with such a defect, and most customers would be unaware of the defect's existence or only slightly dissatisfied.

  Example of a Severity 4 NCR: Alphanumeric heading on page one truncated.

❑ Severity 5

- A request for an enhancement to the system.