



QATrax  
Test Environment Management  
Mission Statement

## What We Do

With increased globalization, accelerated product delivery requirements, and increased testing demands, TraxStar has developed an innovative offering that enhances visibility, streamlines testing operations, and improves communication between the test environments and impacted areas throughout the organization. With the pace of new product introduction and the market penalties for poor quality, companies have increased pressure to compress test windows while delivering quality products. Test environments by nature have dynamic requirements in terms of process, timing, dependencies and coordination. These dynamics are not easily accommodated in ERP or PLM solutions, but they are by design in TraxStar's offering. TraxStar's solution excels when there is a high cost to unsatisfactory outcomes, significant uncertainty in achieving delivery dates and where available resources are finite.

TraxStar addresses the testing environment with a software solution and best practices process that balances value to management, customers, requestors and users with a lower cost for feeding the beast (i.e. the effort required).

### HOW?

1. Automate and streamline.
2. Eliminate non-value added activities:
  - Be relentless
  - Do not be bound by "we've always done it this way"
3. Improve execution:
  - Create a plan based on delivery dates. Schedule the activities and reserve appropriate resources.
  - Increase visibility. As events unfold, evaluate the impact of ripples caused by unplanned events upon the projects, the resources and the delivery dates.
  - Alert. Notify the appropriate agents (people and systems).
  - Revise the plan. Use lessons learned and alternative resource availability to suggest better schedules.

TraxStar's philosophy is to allow the users to manage their own look and feel, their own dashboards and alerts. Our software system aggregates data from various sources, monitors events (parts do not arrive, equipment goes down, people do not show up) and the ripple effects these events have on downstream activities, and suggests better solution sets (schedules, resources and activities).

The architecture combines off-the-shelf and open source components to allow users to configure the product, rather than ask TraxStar to customize. Because of the dynamic nature of tests, test environment users need increased ability to handle their own affairs in a simple manner, lessening their dependence upon IT and vendors.

For **global management**, QATrax provides:

- Visibility, resulting in the ability to act quickly and leverage resources, thereby increasing utilization and the likelihood of meeting the product goals for timing and quality,
- A means of eliminating non-value added activities,
- Alerts of key accomplishments and failures, and the downstream ripples of those same accomplishments and failures, and
- The basis for real time metrics to judge the relative performance of the labs.

For **requestors and customers**, QATrax provides:

- Visibility, resulting in the ability to act quickly, thereby increasing the likelihood of meeting the product goals for timing and quality,
- Self-service visibility into the project status and resource bottlenecks,
- Alerts of key accomplishments and failures,
- Flexibility to modify test plans, yet still track to due dates, and
- Visibility into test details and attributes to quickly identify test results that are valid for other projects.

For **lab operations**, QATrax provides:

- Significantly improved lab operations,
  - Improves scheduling, focuses resources on test execution, and enhances visibility and agility
  - Simplifying communication of real-time product test information
  - Meeting industry quality standards (ISO 17025 and so forth)
  - Effortlessly producing billing, metric and other specialized reports
- Self-service, reducing the burden on lab operations of providing real-time visibility into the current state of play of their activities,
- Documents, by resource (who, what and when) in a single source historical repository,
- Standardized process and procedures in compliance with managerial, legal and operational requirements, and
- A catalyst for and means of eliminating non-value added activities

## What Are Test Environments?

Test environments are often differentiated as to their purpose (e.g. reliability, validation, R&D, failure analysis, analytical), revenue generating system and infrastructure testing or by the product line they support. These test labs perform a broad spectrum of tests for internal and external purposes. Internal requirements often center on reliability and failure analysis. External requirements are often driven by governmental regulations, which tend to differ globally from region to region, or driven by industry guidelines (for example, the U.S. auto industry). Common tests include various types of safety,

climatic, electromagnetic compatibility, acoustic, vibration, etc. Trained personnel using test workstations comprised of calibrated pieces of equipment typically perform tests to a documented standard. Large manufacturing facilities tend to have internal product test labs. Service providers also have internal infrastructure test labs. There are also a few large commercial test labs (e.g. UL and ITS) and many smaller labs as well.

Test lab customers may be external to the company or represent internal engineering or product/program managers who think in terms of projects, programs and products. These projects are often broken down into a series of jobs or work requests, where a single work request can represent a single test or activity or hundreds of them. The products which are to be tested may be prototypes or fully functional, while the samples, on which tests are performed, may number in the hundreds of units, although one to forty is typical. Test reports may be simple data dumps or formal reports in a predefined format as determined by the relevant authority or agency (e.g. FCC).

## **Test Environment Management – Problems**

### **Managerial Perspective**

- **Tests are variable by design, but are frequently on the critical path to delivering quality products on time** – Meeting marketing and sales product delivery dates is of the utmost importance but high quality must be maintained. As things go awry, tools are needed to make management aware of the immediate concerns, the ripples that have a significant impact on subsequent activities, and opportunities for improvements.
- **Integrated Enterprise Planning** – Management needs improved scheduling, reserving finite resources for all significant activity in a practical timeframe (not just for this week).
- **Visibility into a single lab or over a group of labs** - Both Customers and Lab Management cite a need to know a project's current state of play, to know if they are on schedule and to be apprised of changes as they occur. When needed, visibility across all labs and schedules fosters rapid schedule refinement and recovery and streamlines communication to all impacted parties.
- **Managing resources** - Test workstations and test personnel are the key resources managed. What is available? When is it available? Where are the bottlenecks? QATrax' approach to managing resources is centered on scheduling work orders (tests) with the appropriate technician(s) and workstation(s). Together, we increase the utilization of test workstations and the effectiveness of lab personnel.
- **Mitigating Risk** - Product liability is an underlying theme. The cost of failure (product recall, damaged reputation, litigation and resulting awards or settlements) is escalating. Management can reduce the risk of performing tests with:
  - Increased efficiency results in increased test capacity,

- Visibility into resources available across the company improves your ability to complete tests AND meet product release requirements, and
- Scheduled maintenance of equipment during low utilization times, improves availability and reliability.
- **Metrics** - A highly visible means of setting and monitoring performance standards is a general industry requirement. For effective comparison among labs, standard processes are necessary.
  - **Labor and equipment hours** are key to billing and costing.
  - **Process bottlenecks** vary, but two common measures are the elapsed time from acceptance of a work request to the beginning of testing, and the elapsed time from completion of a test to the issuance of a test report.

### Operational Perspective

- **Managing change** – Properly rescheduling tests is often cited as a lab manager’s number one operational issue. The ramifications of change are many-fold, increasing the risk of providing services that do not comply with standards.
- **Managing resources** - Test workstations and test personnel are the key resources managed. What is available? When is it available? Where are the bottlenecks? QATrax’ approach to managing resources is centered on scheduling work orders (tests) with the appropriate technician(s) and workstation(s).
- **Managing communication** - All constituencies, customers, management and lab personnel are driven by a need to know basis. The high frequency of change, driven by customer requirements, missed deliverables, discoveries, and moving priorities drives a need for frequent customer communication and notification to the technicians performing the test. Communicating with all constituencies can be a tremendous time sink if not handled expeditiously.
- **Special requests** - Another huge time sink that is often phrased as a request for an audit (internal or external), support to legal, underlying information to support management metrics, support for the time spent meeting a customer’s needs, or addressing a particular product issue. Consistent capture of relevant data greatly reduces time spent gathering and reviewing information requests.

### Commercial Solutions?

Products that provide broad visibility such as ERP do not have the granularity and flexibility required to manage test environments. Products that are sufficiently granular do not scale well to provide enterprise visibility.

There are products that target labs that are sample centric, focused on extracting and analyzing sample data from test workstations, but do not address finite scheduling. Pharmaceuticals, chemicals, and foodstuffs are the core verticals served. These solutions are known as LIMS (laboratory information management solutions). In test

environments whose primary operational requirements are scheduling and communication to requesters, QATrax can function effectively as your LIMS.

QATrax is the commercial software solution focused on discrete manufacturers and infrastructure test labs that addresses global finite resource scheduling as core functionality.

Additionally, our software development philosophy encompasses user configurable commercial software to eliminate non-value added activities and automate as many other activities as is practical. We reduce the users dependence on traditional IT or vendor (TraxStar) support, empowering uses to simply manage their own affairs.

### **About TraxStar Technologies**

TraxStar develops configurable commercial off-the-shelf solutions (QATrax) for environments where there is a high cost to unsatisfactory outcomes, significant uncertainty in achieving delivery dates and where available resources are finite. TraxStar products vastly improve efficiency and scheduling reliability. These products are high performance, scalable solutions.

Information about TraxStar and its products can be found on the World Wide Web at <http://www.traxstar.com>. Contact TraxStar Sales at (800) 943-7759 or [info@traxstar.com](mailto:info@traxstar.com) for additional information.