Consorting with Questions: How Technical Support Manages Requests for Assistance

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ABSTRACT

SAS Institute Inc. is recognized as having one of the best technical support divisions. Many organizations use the Institute's technical support as a model of how to deliver quality support. This paper discusses how SAS Institute's technical support tracks and manages requests for assistance.

INTRODUCTION

As the scope of The SAS® System and products offered by SAS Institute Inc. expands, Technical Support must work hard to handle the increasing call volume and diversity of user requests.

Pronounced changes in the way Technical Support manages and organizes incoming calls came with the introduction of the current tracking system, known as NEWTS. This in-house application allows flexible use of screens and data tables to follow a call from its inception through resolution.

New electronic interfaces to Technical Support, the tracking system, and documentation have stemmed from the increased use of the Internet. In addition to telephone support, users now have the option of submitting and updating requests, and searching for solutions via web interfaces to Technical Support.

THE TRACKING SYSTEM

The heart of call management is our tracking system, referred to as NEWTS (from NEW Tracking System). NEWTS was developed specifically to organize and integrate commonly used tools and processes so that analysts can be more productive and decrease their response time to customers. The system is written in SAS® and runs under a Unix operating system. Everyone in Technical Support has access to the system using either a HP-720 UNIX workstation or a desktop PC running an emulator.

Since its introduction to Technical Support in July of 1993, the tracking system has undergone continuous development to further enhance its usability. Enhancements and maintenance to the system are handled by the Applications group within Technical Support.

The functionality of NEWTS revolves around its data structure, three screens, and a series of interfaces to other data and tasks commonly related to customer calls.

DATA STRUCTURE

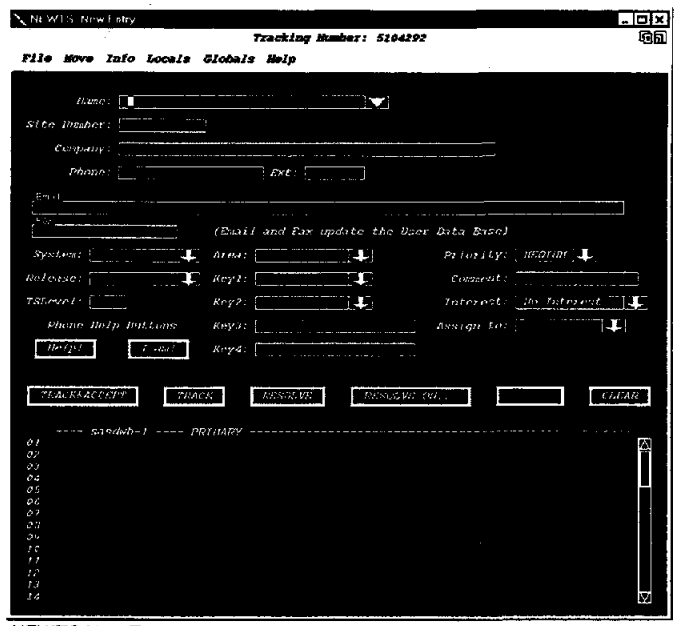
The primary SAS data set, named LOCATOR, contains information about open tracks with Technical Support. Each observation describes one user call to Technical Support. Thirty-six variables and associated indices and text files provide details about the call. This primary data set contains over 7000 observations, an indication of the number of individual help requests the system organizes for Technical Support.

```
CONTENTS PROCEDURE

Data Set Name: LOCATOR.LOCATOR
Member Type:   DATA
Engine:        REMOTE
Created:       17:12 Sunday, July 11, 1999
Last Modified: 17:12 Sunday, July 11, 1999
Protection:
Data Set Type:
Label:

Observations:          7423
Variables:             36
Indexes:               19
Observation Length:    342
Deleted Observations:  381
Compressed:            NO
Sorted:                NO
```

Partial output from PROC CONTENTS

NEW ENTRY SCREEN

The New Entry screen is the primary screen for data entry. The analyst enters details about each new call, thereby adding an observation to the LOCATOR data set. Included on this screen are fields for customer information (the customer's name, site number, company name, phone number, e-mail address, and fax number), information about their system configuration (operating system, SAS® release, and maintenance level), and tracking information (priority, product area, and keywords). Some of this data, such as the user's name and site number, is entered by the analyst during the phone call, and some, such as the company name and operating system, is queried from the customer database for license agreements. The tracking number, a unique identifier for the entry, is assigned by NEWTS.



NEWTS New Entry screen

Below this header section is a free-form text entry area of the screen. The analyst has an unlimited number of 80-character lines to enter the user's question and other pertinent information. The analyst can toggle between a basic text editor and the SAS editor, enabling cut-and-paste, word wrap, and other editing controls.

After a new call is documented in the New Entry screen the entry is placed into one of four categories, or "files", depending upon the next step required to fulfill the request. These categories are the Outstanding File, the Working File, the Inactive File, and the Resolved File.

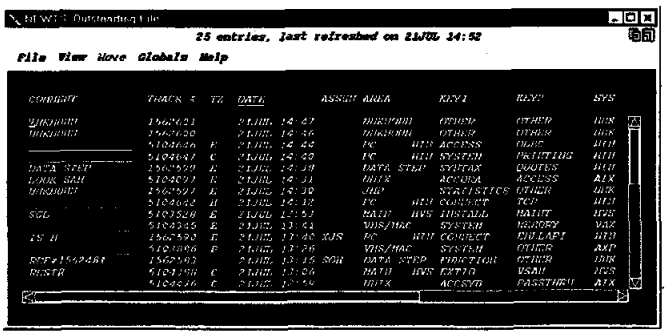
The Outstanding File contains those questions which were not answered by the primary contact. These require follow-up by another analyst more specialized in the question area.

The Working File contains those questions which are not yet answered but have already been assigned to and are being worked on by an analyst. These entries are described as being "owned" by an analyst, usually a specialist in the problem area.

The Inactive File and Resolved File also contain entries owned by an analyst. The Inactive file contains those entries that are not yet answered, but have been temporarily put on hold pending a response from a developer, the user, or some other source. These entries are often moved back to the Working file once more information is gathered. The Resolved File contains those entries that have been answered.

FILES SCREEN

The Files screen is a summarization display for all tracks in the system. Each row of the summarization describes a single entry, displaying data for a comment, the tracking number, the time zone of the caller, the caller's name, the status or last action taken, the time-date stamps for when the track was opened and when the user was last contacted, the support area of the question, related keywords to the area, and the owner of the track.



NEWTS Files screen subset for the Outstanding File

Upon opening the Files Screen, the analyst selects a subset of all entries based on one of the four categories. For example, opening the Outstanding File lists all active entries that have no assigned owner. Opening the Working File lists all active entries owned by the Technical Support analyst. By grouping all entries into a manageable subset, the analyst can quickly scan and prioritize his work load.

To accommodate differing usage preferences, rows in the Files Screen can be sorted on any of the columns by clicking on the column heading. Color identifies priority and flags entries where deadlines have been missed. Alarms can be set through an integrated notifier application to remind the analyst of a deadline. And custom subsets can be defined for any of the variables using WHERE processing to display a specific subset of entries to the analyst.

Red Tracking Number	High Priority or Call Back
Red Reverse Video Tracking Number	High Priority – SAS Rep
White Reverse Video Tracking Number	Down Priority
Red Date	Callback deadline missed. No activity within 7 or 30 days, depending on the file subset
Cyan Status	User initiated last contact

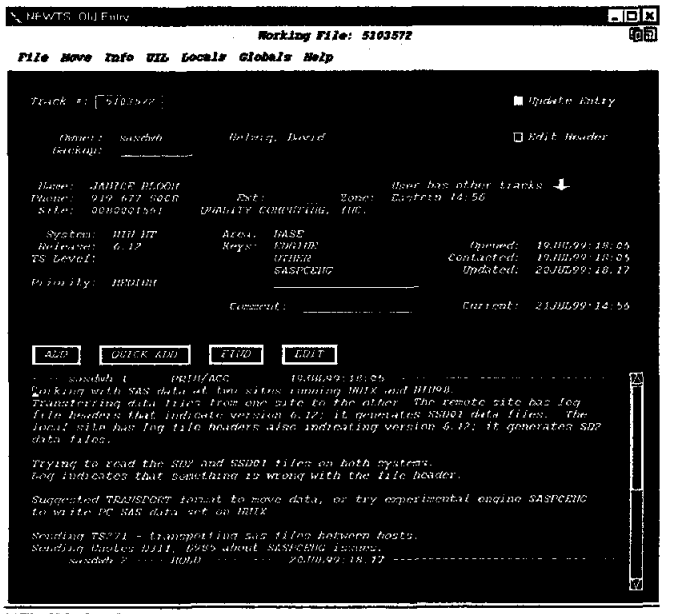
Color identification in the NEWTS Files screen

OLD ENTRY SCREEN

The Old Entry screen is used to display detail data for a track. The top half of the screen displays header information such as the track's owner and backup, user's name, phone number, operating system, SAS® release, problem area, and keywords. The bottom half of the screen displays the chronological history of every action on the problem.

For every action on the track, a "page" is added to the entry to document the action. The page is defined with a header line containing the userid of the analyst performing the action, the current status of the track, and a datetime stamp. The familiar 80-character lines are used to add a description of the action taken.

For example, an analyst may call a user back with a suggestion and sample code. The new page would contain the header line with `CALLED USER` as the status. The analyst would enter a summary of the phone conversation as well as the sample code.



NEWTS Old Entry screen

In addition to pages added by analysts, NEWTS adds pages when a change is made to any header information, when an entry is moved between files, when e-mail or fax messages are sent or received, when the user calls, and for other events that are important to document.

SAS/SHARE® administers concurrent access to the LOCATOR data set.

INTEGRATED TOOLS

Many tools and processes are integrated into NEWTS. By sharing user data between the track and these tools, analysts are able to perform common tasks more easily and quickly. These additions give analysts the ability to:

- e-mail, fax, and print pages from the track
- e-mail and fax documentation files
- e-mail requests to the Customer Service, Distribution, Education Sales, Publications, and Sales and Marketing departments
- query user and site information
- set notification conditions and alarms
- display a list of analysts who are out of the office for an

extended time

- generate call volume and area reports

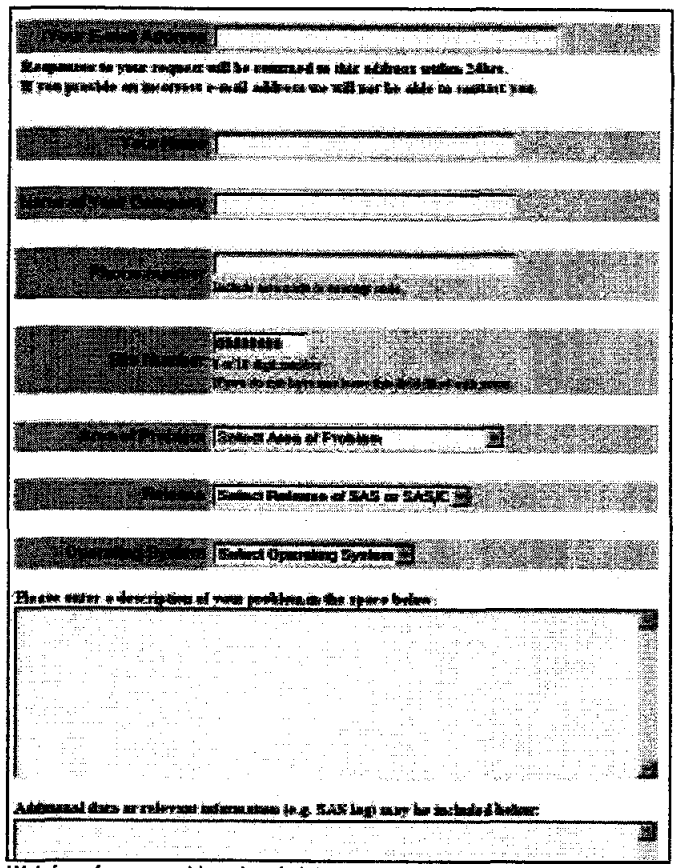
Many of these tools update the entry with a new page and status, documenting that information was sent.

EXTERNAL INTERFACE

The newest enhancement to NEWTS is the development of a web-based interface. From SAS Institute Inc.'s home page, http://www.sas.com, follow the links for:

- Technical Support
- Report Problems or Ask Questions
- Submit a problem/question on-line or add additional info to existing track

Through the use of forms, users can easily submit a new problem description or provide additional information to an existing track already open with Technical Support.



Web form for new problem description

A new request via the web interfaces with NEWTS by adding a new observation to the LOCATOR data set in a similar manner analysts do by entering data in the NEWTS New Entry screen. All new requests are placed in the Outstanding file so that an analyst in the support area can accept the problem and work on a solution.

When adding information to an existing track, the new information entered on the web form is added as a new page to the open track. NEWTS automatically notifies the owner of the track that a page has been added.

It's important to supply accurate information in all fields of the form. For new requests, the data provided is displayed in the Files Screen summary and is used by analysts to quickly identify the support area. The more complete and clear the problem description, the easier it is for an analyst to provide a relevant response.

NEWTS automatically replies to the sender with an e-mail notice confirming the receipt of the new request or updated information.

ELECTRONIC SERVICES

Technical Support is keeping pace with users' increased access to and dependence on the Internet by expanding its electronic services. In addition to the seasoned Electronic Mail Interface to Technical Support (EMITS) and FTP Access, the Technical Support web site contains:

- A search facility to know problems, common user errors, undocumented features and fixes associated with The SAS® System, SAS/C® compiler, JMP®, StatView®, and other products
- Online documentation for new features in upcoming releases of The SAS® System, Changes and Enhancements to current releases, Installation and Setinit instructions, Alert Notes, and for TS Notes
- Requests for maintenance and SAS Notes, LISTSERV subscriptions, and for updating SAS support personnel information
- Shipping dates for Release and Maintenance to The SAS® System

A comprehensive table of electronic services is available at http://www.sas.com/service/techsup/service.html.

CONCLUSION

A flexible and evolutionary tracking system assists the Technical Support Division in providing excellent service to its users by organizing and managing all incoming requests. Integrated tools and processes enable fast and easy delivery of solutions to the user. Enhanced electronic services offer users another avenue for support.

CONTACT INFORMATION

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