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Bellcore Practice
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GDSR

Generic Dispatch System (GDS) User Guide

User Manual

CONTENTS

1.0 INTRODUCTION

1.1 BACKGROUND

The IC (Installation Center) and the MC (Maintenance Center) are responsible for local loop installation and maintenance, and are primarily concerned with POTS (Plain Old Telephone Service) services. The SSC (Special Service Center) and the SSDAC (Special Service Dispatch Administration Center) have similar responsibilities for special service circuits.

In the course of installing and maintaining POTS and special service circuits, a center must dispatch field technicians to work locations at various points along a local loop facility. The dispatch process involves evaluating a number of factors (i.e., type of work, location of work, availability of technicians, required technician skills, etc.). This process is predominantly a manual effort and is extremely labor and paper-intensive.

1.2 PURPOSE OF THE GENERIC DISPATCH SYSTEM (GDS)

The GDS (Generic Dispatch System) provides the mechanized work and force administration tools for the automation of the local loop dispatch process.

GDS supports installation, maintenance, POTS, nondesigned and special service center operations of any combination or subset.

1.3 PURPOSE OF DOCUMENT

This document has a threefold purpose:

1. To provide an explanation of GDS functions, features, and interfaces.
2. To provide the step-by-step methods for building a work center in GDS.
3. To provide a detailed description of how to use the system and a quick and easy reference to fields, formats, and features.

1.4 STRUCTURE OF DOCUMENT

This document combines both the GDS User Guide information and the format field directory.

The GDS User Guide is divided into the following major sections:

Section 2.	A high level overview of the system.
Section 3.	A detailed description of each of the system features.
Section 4.	The steps for establishing a work center in GDS.
Section 5.	A detailed description on how to use the GDS on-line screens.
Section 6.	A detailed description of the miscellaneous system features.
Section 7.	A directory of format fields.

1.5 GDS DOCUMENT REFERENCES

In addition to this User Guide, there are other Bellcore Practices (BRs) to help the user understand and use GDS. These documents can be obtained from the Bellcore Distribution Service Center, 60 New England Avenue, Piscataway, New Jersey 08854, or by calling the Hotline, (201) 699-5800.

190-539-001	GDSR Database Administrators' Guide
190-539-002	GDSR Format to Transaction Cross-Reference Table
190-539-003	GDSR Security Administrators' Guide
190-539-004	GDSR Installation Guide
190-539-007	GDSR Reference Data TTS Encyclopedia
190-539-008	GDSR Reference Data TTS Field Directory
190-539-009	OI Administrator's Guide
190-539-100	TTS Position Guide
190-539-102	C-1 Location Group Information Format (GCRLOC)
190-539-300	TIRKS® Query System (TQS) User Manual
190-539-301	TIRKS® Communication Module (TCM) Overview
190-539-302	TCM Route Administration (RA) User Manual
190-539-303	TCM Message Administration (MA) User Manual
190-539-304	TCM Network Administration (NA) User Manual
190-539-305	TCM Translation Administration (TA) User Manual
190-539-308	F.C.I.F. Description and Syntax
190-539-312	GDSR Electronic Mail (MAIL) User Manual
190-539-314	How To Use TQS For GDS
190-539-315	GDSR Database Modifier User Manual
190-539-400	Generic Dispatch System (GDS) On-Line Message Directory
190-539-401	Operations Interface (OI) On-Line Message Directory
190-539-402	TIRKS® Table System (TTS) On-Line Message Directory
190-539-404	TIRKS® Communication Module (TCM) On-Line Message Directory
190-539-405	Circuit Inventory Reference Data Module (C-1/REF) On-Line Message Directory

The GDS Format/Field Directory, BR 190-539-005, has been incorporated into the GDS User Manual.

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CONTENTS

2.0 SYSTEM OVERVIEW

This section provides an overview of the Generic Dispatch System (GDS). Figure 2-1 is the GDS architecture. It will allow the user to follow the system process flows which are presented in the system overview. Section numbers are shown for each process.

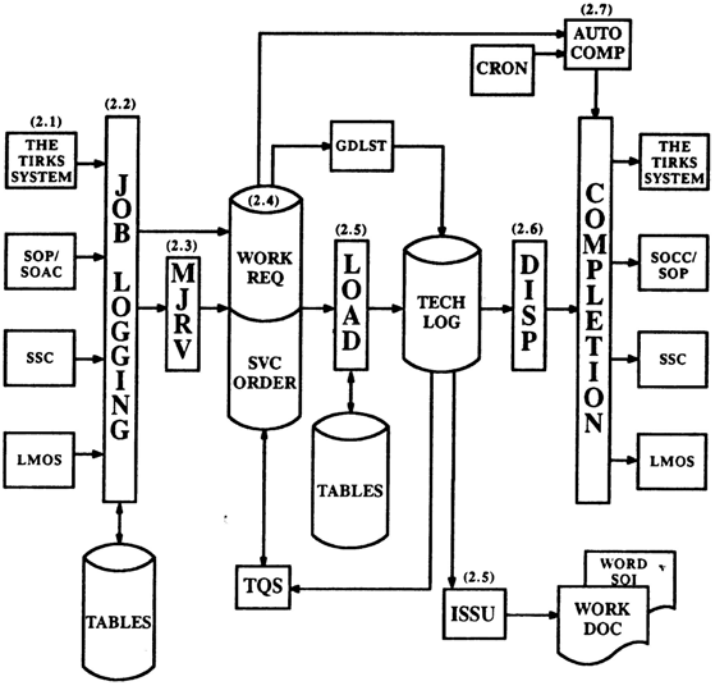

Figure 2-1. GDS System Architecture

2.1 SYSTEM INTERFACES

Work is input to GDS through mechanized interfaces from other operations support systems, and by manual input through the GDS on-line screens. The mechanized interfaces are separated into provisioning and maintenance. The provisioning interface consists of the Bellcore TIRKS System and the Service Order Analysis and Control System (SOAC), and the Circuit Installation and Maintenance Assistance Package (CIMAP). The maintenance interfaces consist of CIMAP for Special Service Centers (CIMAP/SSC), and the Loop Maintenance Operations System (LMOS).

2.1.1 Provisioning Interfaces

The SOAC interface supplies service order work details in the form of a planning message (NET1), an assignment message (NET2), and a service order image. The mechanized interface from the TIRKS System provides designed circuit installation work details. The Status Reporter in CIMAP/SSC controls communication between the TIRKS System and GDS.

For non-designed services, GDS requires only the service order information from SOAC to perform a dispatch. For designed services, GDS matches the service order work details from SOAC with the designed circuit work details from the TIRKS System to dispatch. Engineering work orders are dispatched from the circuit work details received from the TIRKS System and do not require service order information.

2.1.2 Maintenance Interfaces

The mechanized interface to CIMAP/SSC provides the means for automated hand-off of special service trouble tickets to GDS. The LMOS interface provides for the automatic input of trouble ticket data and test results to GDS for circuits stored in LMOS.

2.2 JOB LOGGING PROCESS

Work entered into GDS moves through a job logging process which consists of the following:

- Routing
- Mapping, Zoning
- Pricing
- Screening
- Job Type, Priority
- Date Calculation
- SOP Determination (POTS Installation only)

The job logging process utilizes a series of user-built tables called GDS tables. If job logging is successful, the work request is given a job status of pending load (PLD). If job logging is unsuccessful, the work request is assigned a job status of pending screen (PSC) and an appropriate handling code.

The mechanized job review process can be used to correct work requests with job logging errors.

2.2.1 Routing

The routing function of the job logging process consists of determining and routing a job to the work center responsible for a particular type of work. The system enables the user to build the logic for routing different types of work to different work centers. The routing of work is based on the Class of Service/Service Code and Modifier, order type, wire center, and Carrier Name Abbreviation. Jobs which do not meet the user-defined criteria are routed to a user-defined default center. Work may also be routed to the center "TRASHCAN". Work requests routed to TRASHCAN are discarded and are not entered into GDS.

2.2.2 Mapping, Zoning

The mapping function derives the circuit work location from the serving Wire Center (WC), and the Local Loop Facility assignment (Cable/Pair). Locations are defined as sets of Allocation Areas (AA) which reside within a Dispatch Administration Area (DAA) along a Route. DAAs and AAs are used in calculating travel time.

Combinations of DAA/AA are defined by the GDS user as an Appointment Zone. Appointment Zones are used in work and force time calculations, and for setting appointments.

Figure 2-2 is a sample of a dispatch control center area broken down by wire centers, DAAs and AAs.

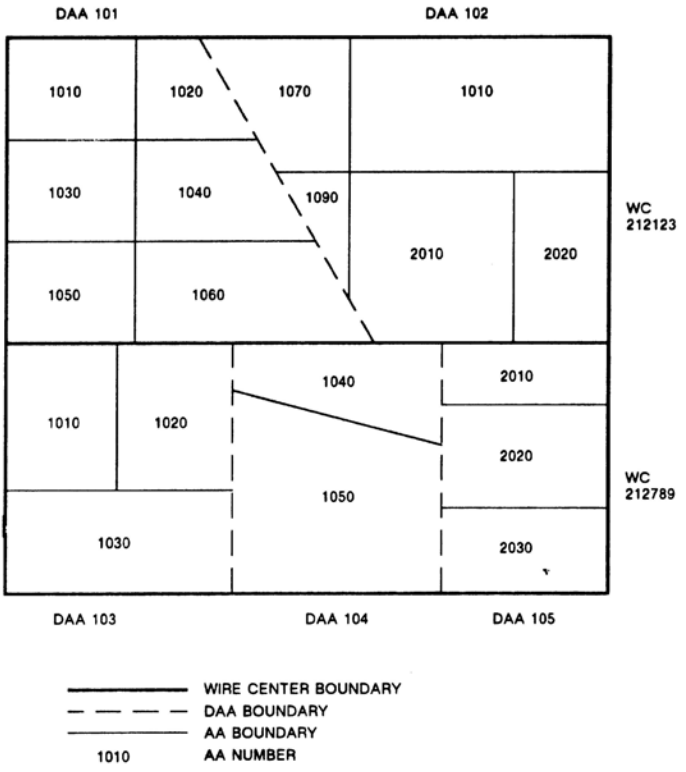

Figure 2-2. Dispatch Control Center Area

2.2.3 Pricing

Pricing is the summing of the estimated amount of time to perform particular work functions at a circuit work location. Work functions for GDS are defined as wiring, which is connecting and disconnecting wires to local loop facilities and field equipment, and testing, which is performing circuit tests. Wiring and testing work is derived from information received from SOAC and the TIRKS System for circuit installation work, and from LMOS and SSC for circuit maintenance work. The price for each work function is derived from user input values to GDS Pricing tables.

The estimated price of each component of a work function can be unique for each work center. A work center can further break down the pricing geographically into Pricing Groups.

2.2.4 Screening

Screening is the process of determining if an installation order requires a field visit (FV) or no field visit (NFV) to complete. Jobs which are "FV" flow to the mapping process, while the "NFV" jobs are identified for "Auto Complete".

2.2.5 Typing And Prioritizing

Job typing is the process of categorizing each job for the purpose of assigning a technician, for prioritizing jobs relative to each other, and for report generation. There are three main job types: I - Installation, M - Maintenance, and R - Routine. The main job types are predefined; however, subsets of the three main categories are defined by the BCC.

2.2.6 Date Calculation

GDS will calculate the early and late job start dates and times based on the installation order critical dates minus user-defined offset for special service, the commitment date for POTS and maintenance, and the estimated time to perform the work.

2.2.7 Job Status and Handling Codes

The system assigns a three-character alpha job status code to each job as part of the job logging process. The status code of a job changes each time a status change is made to the job. A record of all changes for the life of a job are kept in the job status log. Job status codes are used by GDS to trigger automatic processes for loading and are used in report generation. Job status codes are predefined in GDS.

In addition to the job status codes, a set of handling codes is provided to further define a job status. Some handling codes are defined by GDS. The user can also establish an additional set of handling codes. Handling codes are used in combination with a job status. An example would be a job status of "JEP" (jeopardy) and a handling code of "NAS" (no access).

2.3 MECHANIZED JOB REVIEW

Jobs which fail at any point in the job logging process will be identified by a special job status code and handling code. A mechanized job review process allows the GDS user to sequentially display and manually correct each job.

2.4 WORK REQUESTS

Jobs are stored as work requests in the Work Request database by work center. Every work request has a unique job ID. For installation jobs, it is the service order number. For maintenance jobs, it is the trouble ticket number.

Work request information is stored at three levels in the Work Request database. The following figure illustrates the database structure within GDS:

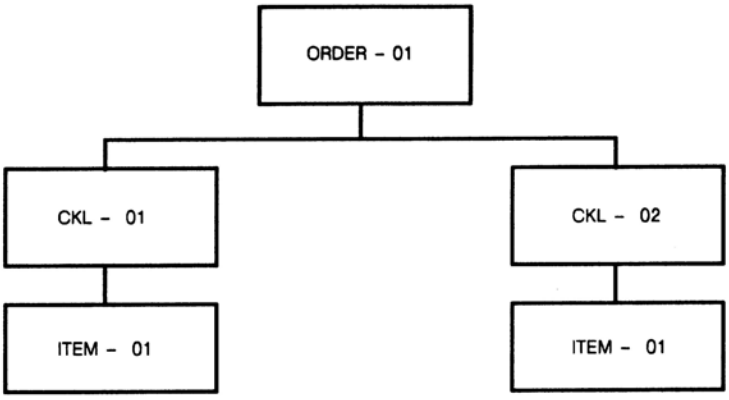

Figure 2-3. GDS Database Structure

Each level, or segment, contains information related to a different part of the work request. The first segment contains information at the ORDER level and is keyed to the CENTER and JOBID (Order Number/Trouble Ticket Number). The second level contains information at the circuit work location (CKL or TERMINATION) level along with technician data. The third segment contains circuit and facility information (ITEM level) and is keyed to the CIRCUIT ID.

A circuit with multiple work locations will generate a work request with a single JOBID and multiple CKLs. Multiple circuits at the same work location are built to a work request with a single JOBID with multiple ITEMs.

Work requests are retained in the Work Request database until they are archived or purged.

2.5 LOADING AND ISSUE

Bulk loading is the mechanized process of selecting a number of jobs from the Work Request database, considering the available field technicians, and performing a "best match" of work to technician. The load process considers such factors as job priority, critical dates, access windows, appointments, skill level, etc.

Technicians may be loaded (PREassigned) with either a full or partial day's work (BULK), only a "first-job" (FIRST), or a single next best job (DYNAMIC). Loads may be run for an entire work center, by supervisor's group, or by technician. Loads are run "TRIAL" until the user is satisfied with the load matching. Then the load is made permanent (PERM).

GDS also allows the user to select the type and number of work documents to be sent to the field for each job. Route sheets, WORD documents, service order images, and work requests may be issued to remote printers in field locations.

2.6 DISPATCH

Once a load has been run and made permanent, technicians can be dispatched. When the dispatch function is invoked, GDS dispatches the first preassigned job on the technician's log for bulk and first-job loads, or if the technician is on dynamic load, it selects the best job from a pool of pending work for that technician.

A technician may be assigned as a helper, or as part of a team in a "two tech area".

2.7 COMPLETIONS

GDS allows jobs to be partially or totally completed. Separate completion screens are provided for installation and for maintenance work, and Specials and POTS. When the completion process is invoked, completion notifications are sent to the appropriate Operations Support System (OSS). Installation CKL completions are automatically sent to GOC for Special Services. A service order completion notice is printed at a designated Service Order Completion Center (SOCC) printer upon the completion of the order, or is sent to a designated SOP for the autocompletion process. Maintenance completion notifications are sent to LMOS or CIMAP/SSC.

For work requests which do not require a field visit, GDS will automatically complete the job on the due date and generate the appropriate completion notification.

CONTENTS

performed. Whenever there is a return to the GDLST screen, the system will recall the last screen display for the logical terminal.

In addition, SMART JUMP/FINDs are provided between GDS and CIMAP/SSC. The section entitled GDS-CIMAP/SSC Interface provides detailed information.

The JUMP PREVIOUS feature for the GDLST screen is explained in greater detail in Section 5 of this document.

IMS QUEUES

There are instances when an IMS queue will be returned during work on a screen. For example, if a new work request is being added, and as a result of pressing the PF4 key, a totally different screen is returned, this unrequested screen is referred to as a "queue". Normal IMS procedures allow the user to press the PA2 key to eliminate the queue. If a blank screen is returned as a result of pressing the PA2 key, press the PF11 key HELP. When the HELP menu is returned, press the ENTER key to obtain the original screen. Following this procedure will prevent the user from re-typing all the original data if an error was made on the original screen input.

3.1.2 Standard Table Features

GDS utilizes two types of tables into which the GDS user enters and maintains data:

— GDS tables

— TTS tables

The following are the descriptions of each table type:

A. GDS Tables

From a user perspective, the GDS tables look much like other GDS screens; they contain a TITLE, COMMAND field, /FOR, DATE, and TIME. In addition, GDS tables contain a C (COMMAND line) at the left margin of the screen. The COMMAND line is used for selecting a record or group of records of a table for an activity, e.g., add, delete, update.

GDS tables are separated into two functional groups: LOAD tables, which are referenced by the load program, and JOB LOGGING tables, which are used in the job logging process.

Each GDS table and its use are shown and explained in detail in Sections 4 and 5 of this document.

B. TIRKS Table System (TTS)

TTS tables are different from GDS tables in the way they are displayed and maintained.

Each TTS table is identified by a table name, and, optionally, a Table Key. The Table Key allows the user to create multiple versions of the same table, each with a unique Table Key.

Each table is comprised of one or more entries or table records. Each table record can contain one or more data fields. Each data field is identified in the table record by a FIELD NAME and an associated FIELD VALUE. For each record, one or more of the data fields can be designated as the Table Record Key. The table record key is used to identify and retrieve a table record for display.

The TTS Position Guide, BR 190-539-100, provides greater detail on the use of TTS tables.

3.1.3 GDS Security

Security is set by the Bellcore Client Company (BCC) at three levels: systems, screens, and functions and commands. For each GDS Center, a security administrator, together with managers and supervisors, must set up security tables and grids, user IDs, and passwords. A detailed description of the action required when setting up security for GDS can be found in Section 4.2 of this document, and in GDSR Security Administrator's Guide, BR 190-539-003.

3.1.4 TIRKS Query System (TQS)

The TIRKS Query System (TQS) is a subsystem of the Generic Dispatch System (GDS). TQS is an on-line facility that allows users to query certain databases of the GDS. It provides a variety of pre-defined model queries and procedures and allows the user to define their own queries.

TQS is a very powerful subsystem that provides the user with real-time query and report capability. The end user can do the following:

- define the information they want to see
- create English-like queries to extract the data from the database, and
- format the output report as they desire.

Detailed information on the capabilities and use of TQS is found in the following documents:

- TIRKS Query System (TQS) User Manual, BR 190-539-300
- How To Use TQS For GDS, BR 190-539-314

3.1.5 Archive and Retrieval

The GDS Archive and Retrieval process allows the BCC to establish intervals for purging and archiving completed data records from the work request, service order image, technician log, personnel availability (GDPAD) databases. Predefined selective data items from each database are either purged or archived. Records which have been archived may be retrieved as predefined output reports. Retrieval reports are scheduled as required by the GDS user and are run BATCH.

Section 6.1 contains a detailed description of the capabilities and use of this process.

3.1.6 Table Checker

The Table Checker is a utility in GDS that checks certain data entries between GDS tables for inclusion and consistency. The Table Checker supports the GDS system administrator or manager in building and maintaining GDS tables for a work center in GDS.

In addition to data item validation, the Table Checker can merge data items from different tables into a single output report.

A detailed description of the Table Checker and its use can be found in Section 4.5 of this document.

3.1.7 Mail

The GDS MAIL feature is used to send and receive messages. Messages can be sent to either one or more user IDs or to one or more terminals. The detailed description and use of MAIL is provided in Section 6.3 of this document and in GDSR Electronic Mail (MAIL) User Manual, BR 190-539-312.

3.1.8 CRON

The CRON feature is used to schedule certain transactions to be run immediately or on a periodic basis. CRON allows the GDS user to specify certain dates, days of the week, start and end times, as well as run intervals for individual requests in specific work centers.

A complete description of CRON and its uses can be found in Section 6.4 of this document.

3.1.9 TIRKS Communication Module (TCM)

TCM is a set of modules that comprise a subsystem in the GDSR application. It provides the means for a component system residing with a TCM in one "IMS copy" of an IBM® computer to communicate with a component in another external TCM System or external non-TCM System in another IMS copy.

TCM is used in the GDS - SOAC interface and the GDS - SOP interface for autocompletion. Details of the GDS - SOAC interface can be found in Section 3.1.13. Details of the GDS - SOP interface can be found in Section 3.1.14. The following related documents describe TCM in greater detail:

- TCM Overview, BR 190-539-301
- TCM Route Administration (RA) User Manual, BR 190-539-302
- TCM Message Administration (MA) User Manual, BR 190-539-303
- TCM Network Administration (NA) User Manual, BR 190-539-304
- TCM Translation Administration (TA) User Manual, BR 190-539-305
- F.C.I.F. Description and Syntax User Manual, BR 190-539-308
- TCM On-Line Message Directory, BR 190-539-404

3.1.10 Feature Authorization Module (FAM)

The Feature Authorization Module (FAM) provides the automatic means of restricting access to specific features of the GDSR software application. In GDSR, the FAM restricts the use of certain POTS features for nonparticipating BCCs. The restrictions are set at a company level.

The following POTS features are restricted in this release:

- Denied use of the Service Order Entry Format (GDSOT)
- Denied use of the Trouble Ticket Entry Format (GDTTE) based on class of service
- Denied use of the Installation Work Request Format for POTS (GDIWR)
- Limited LMOS interface functionality
  - * Denied use of PST/MLT testing
  - * Restrict maintenance trouble ticket reports with POTS classes of service across interface
- Denied use of the Autocompletion to the Service Order Processor (SOP)

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3.1.11 Database Partitioning

In systems where large databases span multiple DASD (Direct Access Storage Device), a hardware failure can result in slow recovery and cause very long system downtime. One method of reducing the outage time is to split a large database into a number of smaller databases (partitions). GDS has applied this methodology and has partitioned three of the GDS databases, the Work Request, the Service Order Image, and the Log History databases.

Work Request Database

The Work Request database is separated into ten partitions by GDS work center. As work centers are added to the system, they may be distributed among the ten partitions. The work center to partition relationships are maintained in a database called the "Partitioning Matrix database". The work request partition matrix information may be displayed on-line using format GDPMD (see Section 6.6 for format use). Note that it is not necessary for the GDS user to know which partition a work center resides in to use the system, since GDS automatically translates the work center ID to the correct partition.

Service Order Image Database

The Service Order Image database like the work request database is separated into ten partitions, however, it is not separated by work center since a service order can span multiple centers. To provide an even spread across partitions, service orders are automatically distributed across partitions by the last character of the service order number as they enter the system.

Log History Database

The Log History database is separated into ten partitions by work center using the same matrix as the Work Request database.

3.1.12 GDS - TIRKS Interface

A. Information Flows from the TIRKS System to CIMAP and GDS at Issue (RID) as of CIMAP 3.2

The standard flow for receiving special service, message and carrier WORD documents and special service, message and carrier orders (A, D, R, RN,....) into CIMAP is via the mechanized interface with C1/DIST-EDIIS. A special service, message or carrier order is logged into GOC. The TIRKS System (C1/INV, C1/PREP, E1, F1) is used to assign, design, and inventory both the circuit and the equipment/facilities. At RID (Record Issue Date) the WORD is issued by C1/DIST. At this time C1/DIST via EDIIS checks whether the WORD and the order should be sent to CIMAP. This decision is made using information from the C1DIST CO OPTS and C1DIST SSC INFO tables (see Appendix D of the CIMAP/SSC User Manual, BR 190-582-305 for more details). The EDIIS System is used to send the information to CIMAP. Tables needed to set up the EDIIS to CIMAP interface are described in Appendix J of the CIMAP/SSC User Manual, BR 190-582-305. To receive message and carrier orders and WORD documents, CIMAP Release 3.2 and the companion TIRKS Release 15.1 must be installed. If CIMAP is to receive the order, the following steps take place as shown in Figure 3.2.

- EDIIS sends the WORD document to the CIMAP WORD databases. These databases contain the latest version of the complete WORD for all in-effect circuits and WORD documents for each pending order. To have WORD documents issued to CIMAP WORD DB for GDS and CIMAP/CC controlled orders, the GDS or CIMAP/CC OCO, MCO or OCO must be in the C1DIST SSC INFO table. WORD documents are issued by EDIIS by either MCO, OCO or CCO based on the setting of a flag in the C1DIST CO OPTS table.
- EDIIS also sends CIMAP/SSC information which is used to prime the Installation Administration (Order) database and the Circuit History database. Table 3-1 contains the mapping of the data that CIMAP/SSC receives at issue time with its source in the TIRKS System, and the TIRKS Release in which the data is available.
- EDIIS updates GOC with the External System Switch (EXSYSW) and System Identifier Code (SIC) using data values in the C1DIST SSC INFO table. GOC now knows that an external system, namely the Operations Status Reporter, wants to know of any future Updates or Post/Complete functions on this order by GOC. The Status Reporter notifies the appropriate OPS system (e.g., CIMAP/SSC, CIMAP/CC, GDS) of the GOC updates. Updating the EXSYSW followed by the completion of RID, triggers GOC to send CIMAP the latest order information which includes all the GOC CKLs/CWLs that have been logged on the order.

C1/DIST notifies CIMAP/DOC when an order has been issued. CIMAP/DOC formats the work location information from the WORD document into CIMAP, DFWO, and ESD documents for each CWL/CKL work location. In addition, CIMAP/DOC passes work location information to the following Operations subsystems:

- CIMAP/DOC passes CIMAP/CC order and CWL information for all message, special service, and, in a future TIRKS Release, carrier orders.. See Table 3-2 for information passed to CIMAP/CC. CIMAP/DOC uses the CC Admin Code tables in the TIRKS System to generate eight or eleven-character location codes that are sent to CIMAP/CC. CIMAP/CC takes the information and uses the STEP tables to build work requests for the order. The CWL locations are then passed to CIMAP/SSC via the Status Reporter to be logged in the Order database.
- CIMAP/DOC passes GDS order and CKL information for all special service orders. GDS uses this information to build Work Requests and notifies the Status Reporter of the CKL locations that GDS is tracking. See Table 3-3 for the information passed to GDS from CIMAP/DOC.

- CIMAP/DOC passes OPS/INE order and CWL information for all orders involving Intelligent Network Transmission Elements.
- CIMAP/DOC updates the EXSYSW and SIC code in GOC for orders sent to GDS and CIMAP/CC that were not issued to CIMAP/SSC.

B. Information flows between the TIRKS System and Operations for orders that exist in GDS and CIMAP/CC but are *not* tracked in CIMAP/SSC (See Figure 3-3).

EDIIS issues the WORD document to CIMAP if the MCO/OCO/CCO of a GDS or CIMAP/CC controlled order is in the C1DIST SSC INFO table. The CIMAP/SSC software receives the WORD and logs it in the CIMAP pending WORD database. The software checks the "NON SSSC CLLI" code table to see if the OCO/CCO/MCO for the order exists. If found, the CIMAP/SSC software knows that this is a non-SSC controlled order. No worklist entries are created and, at this point, the order is not logged in the Order (IA) and Circuit History databases.

CIMAP/DOC sends an order to CIMAP/CC or GDS and the modules determine ownership either by OCO, MCO or CCO depending on the setting of the flag in the C1DIST CO OPTS table which is sent to them by CIMAP/DOC. An ownership flag is set "on" when GDS or CIMAP/CC sends their order logging information to the Status Reporter. At this point, the order is logged in Order and Circuit History databases with an owner of either CIMAP/CC or GDS.

For CIMAP/CC or GDS controlled order, the user can view the order information using the OSSOI and OSSCWL formats. On these formats the CIMAP/CC or GDS control office will be populated in the "SSC" field. This field will have a variable FID name (SSC, CCS, GDS or GOC) depending on the ownership of the order. A log will be maintained during the processing of the order and can be viewed using OSSLOG. Circuit history information can also be displayed using OSSCHI and OSSHMD.

If GOC is the first system to log information on an order as a result of EDIIS updating the EXSYSW in GOC, the temporary owner will be GOC until an Operations module claims ownership. If no module claims ownership, the owner remains GOC until the order/WORD are archived.

The Status Reporter handles posting and supplement information between the TIRKS System and Operations, although CIMAP/SSC is not involved with the order. However, the CIMAP/SSC software must be turned up.

For GDS and CIMAP/CC orders that are not in CIMAP/SSC, the Status Reporter notifies those systems of all GOC:

- Cancels
- Deletions
- Reschedules
- Data Updates
- GOC completions/jeopardies (GDS only).

The Status Reporter will send to GOC from GDS, CIMAP/CC, and OPS/INE the following:

- CWL/CKL completions/jeopardies
- Item level completions/jeopardies (For CIMAP/CC and GDS controlled orders).

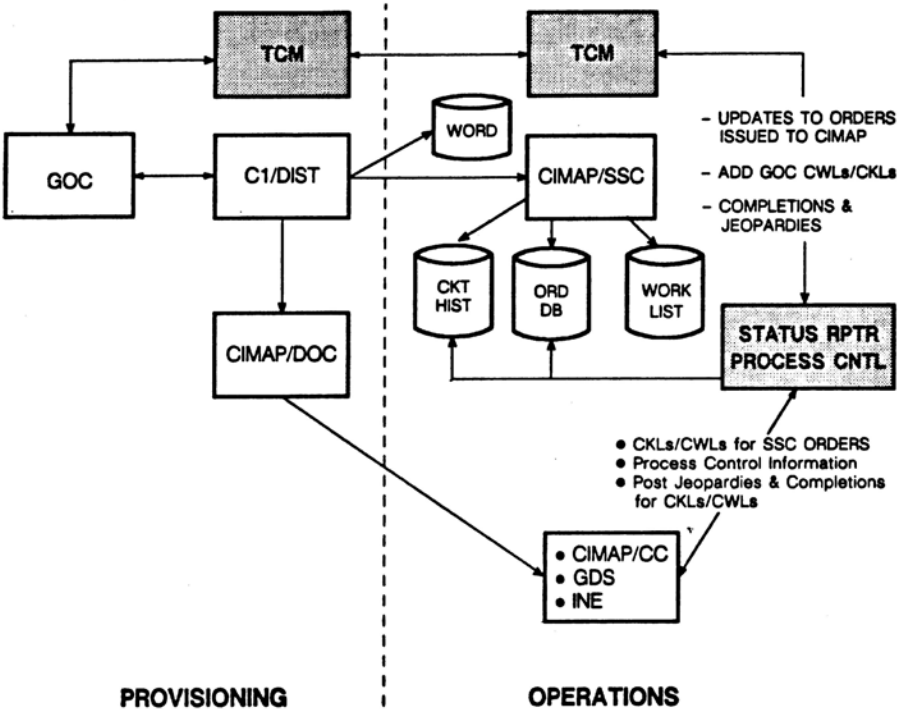

Figure 3-2. Data Flow From Provisioning to GDS & CIMAP At Issue Time for CIMAP/SSC Controlled Orders

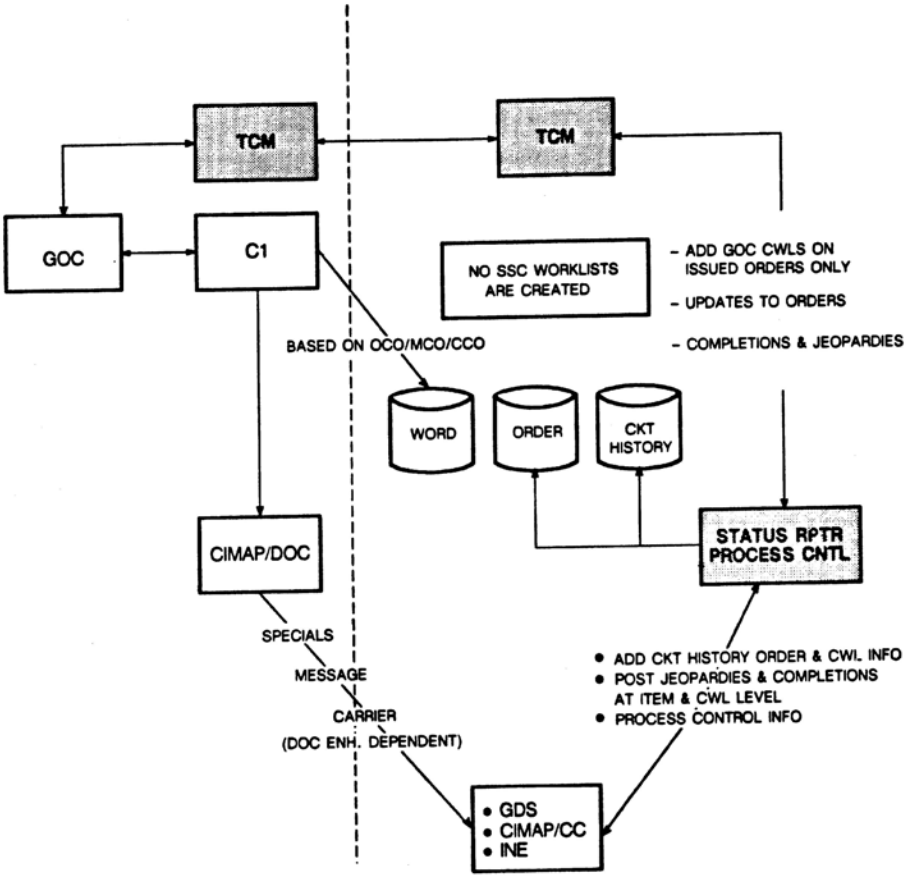

Figure 3-3. Data Flow Between Provisioning and CIMAP for Non-SSC Controlled Orders

Table 3-1. Fields Available in CIMAP/SSC - TIRKS Issue Interface

FIELD NAME (SSC)	*FIELD NAME/SOURCE (TIRKS System)*	*TIRKS Release*
CLO (OSSOI)	CLO (GCOCS1, M1, C1)	Pre 14.1
ACT (OSSOI)	ACTN (GCOCS1, M1, C1)	Pre 14.1
A (OSSOI)	*LOC A (GCOCS1, C1)	Pre 14.1
Z (OSSOI)	*LOC Z (GCOCS1, C1)	Pre 14.1
ORD (OSSOI)	ORD (GCOCS1, M1, C1)	Pre 14.1
CKT (FMT)(OSSOI)	FMT (GCOCS1, M1, C1)	Pre 14.1
CKT (ID) (OSSOI)	CID (GCOCS1, M1, C1)	Pre 14.1
OLD CKTFMT (OSSOI)	FMT (OLD)(GCOCS1, M1, C1)	Pre 14.1
OLD CKTID (OSSOI)	OLD ID (GCOCS1, M1, C1)	Pre 14.1
RO (OSSOI)	REL ORD (GCOCS1, M1, C1)	Pre 14.1
CUS (OSSOI)	CUS (WA)	Pre 14.1
CUST (N) (OSSOI)	CUST (GCOCS1, M1, C1)	Pre 14.1
CUST (N) ADDRESS (OSSOI)	SA (WA)	Pre 14.1
CUST (N) TEL (OSSOI)	CCON TEL	Post 14.1
BTN (OSSOI)	BTN (WA)	Pre 14.1
RID (not displayed)	RID (GCOCS1, M1, C1)	Pre 14.1
PTD (OSSOI)	PTD (GCOCS1)	Pre 14.1
DVA (OSSOI)	DVA (GCOCS1, M1, C1)	Pre 14.1
DD (OSSOI)	DD (GCOCS1, M1, C1)	Pre 14.1
CAC (OSSOI)	CAC (GCOCS1, M1, C1)	Pre 14.1
STAT (OSSOI)	CSTAT (GCOCS1, M1, C1)	Pre 14.1
MCO (OSSOI)	MCO (WA, LOOP)	Pre 14.1
RRI (OSSIMD)	RRI (WA)	Pre 14.1
RSP (OSSOI)	RSP (WA, LOOP)	Pre 14.1
RTI (OSSOI)	RTI indicator (not displayed)	Pre 14.1
ACNA (OSSOI)	ACNA (GCOCSA, MA, CA)	Pre 14.1

* Indicates those fields which are also updated on WA and LOOP.

Table 3-1. Fields Available in CIMAP/SSC - TIRKS Issue Interface (cont'd.)

(For O3.0 and Beyond)

FIELD NAME (SSC)	*FIELD NAME/SOURCE (TIRKS System)*	*TIRKS Release*
OCO (OSSOI)	OCO (WA)	Post 14.1
CCO (OSSOI)	CCO (WA)	Post 14.1
CUST A (OSSOI)	STA LCTN A (LOOP)	Post 14.1
CUST Z (OSSOI)	STA LCTN Z (LOOP)	Post 14.1
P1 Name (OSSOI)	LCON: NAME A (LOOP)	*Post 14.1 (LOOP II)
P1 Address (OSSOI)	STA ADDR A (LOOP)	Post 14.1
P1 TEL (OSSOI)	LCON TEL A (LOOP)	*Post 14.1 (LOOP II)
P2 Name (OSSOI)	LCON NAME Z (LOOP)	*Post 14.1 (LOOP II)
P2 Address (OSSOI)	STA ADR Z (LOOP)	Post 14.1
P2 TEL (OSSOI)	LCON TEL Z (LOOP)	*Post 14.1 (LOOP II)
CRO (OSSOI)	CRO (WA)	14.1
RCLO (OSSOI)	RCLO (WA)	14.1
PROJ (OSSOI)	PROJ (GCOCS1, M1, C1)	Post 14.1
WOT (OSSOI)	WOT (GCOCS1, M1, C1)	Post 14.1
IAD (OSSOI)	IAD (GCOCS1, M1, C1)	Post 14.1
FCD (OSSOI)	FCD (GCOCS1)	Post 14.1
SWC (MSG & CXR)	SWC (GCOCS1, C1)	Post 14.1
ASD (MSG)	ASD (GCOCMA)	Post 14.1
CTA (not displayed)	CTA (GCOCSA)	Post 14.1
CCR (OSSOI)	CCR (GCOCS1, M1, C1)	Post 14.1
DOP (not displayed)	DOP (GCOCS1, M1, C1)	Post 14.1
SEC (not displayed)	SEC (GOC not displayed)	Post 14.1
ORD TYP (not displayed)	ORD TYP (GCOCS1, M1, C1)	Post 14.1
MCN (OSSOI)	MCN (CLODET)	Post 14.4
TD (Fielded Data)	TD	Pre 14.1
DOC (OSSOI)	DOC (GCOCS1, M1, C1)	15.1
CCNA (OSSOI)	CCNA (GCOCSA, MA, CA)	15.1
ASSOC ORD (OSSOI)	ASSOC ORD (GCOCSA, MA, CA)	15.1
PON (OSSOI)	PON (GCOCSA, MA, CA)	15.1
TGAC (OSSOI)	TGAC (GCOCM1)	15.1

* indicates that this data is available only with LOOP II.

Table 3-2. Fields Available in CIMAP/CC - TIRKS Issue Interface

FIELD NAME (CC)	*FIELD NAME/SOURCE (TIRKS System)*
CLO* (CCOE)	CLO (GCOCS1, M1)
ORDER ACTIVITY (CCOE)	ACTN (GCOCS1, M1)
	LOC A (GCOCS1)
	LOC Z (GCOCS1)
ORDER NUMBER (CCOE)	ORD (GCOCS1, M1)
CIRCUIT ID (CCOE)	CID (GCOCS1, M1)
RELATED ORDER (CCOE)	REL ORD (GCOCS1, M1)
CUSTOMER NAME (CCOE)	CUST (GCOCS1, M1)
DVA DATE (CCOE)	DVA (GCOCS1, M1)
WOT DATE (CCOE)	WOT (GCOCS1, M1)
FCD DATE (CCOE)	FCD (GCOCS1, M1)
PTD DATE (CCOE)	PTD (GCOCS1, M1)
ASD DATE (CCOE)	ASD (GCOCMA)
DUE DATE (CCOE)	DD (GCOCS1, M1)
	CTA (GCOCSA)
IAD DATE (CCOE)	IAD (GCOCS1, M1)
ACNA (CCOE)	ACNA (GCOCSA)
CCO (CCOE)	CCO (WA)
OCO (CCOE)	OCO (WA)
MCO (CCOE, CCXREF)	MCO (WA)
PROJECT CODE (CCOE)	PROJ (GCOCS1, M1)
CCR (CCOE)	CCR (GCOCS1)
	DOP (GCOCS1, M1)
	SEC (GOC not displayed)
ORDER TYPE (CCOE)	ORD TYP (GCOCS1, M1)
JOB ID (CCOE)	JOB ID (GCOCS1, M1)

NOTE: 1. CIMAP/DOC also sends EQP, FRM, PLUG and JMPR counts for each CWL location to CIMAP/CC.

2. Blank fields under CC column indicates TIRKS fields are not displayed in CIMAP/CC.

3. CIMAP/DOC also passed to CIMAP/CC all fields passed by C1/DIST to CIMAP/SSC. These fields are not used by the CIMAP/CC software but they will be used to populate fields in the order DB when that order is controlled by CIMAP/CC. Examples of the data are Customer Address, Billing Telephone Number and Premise Information.

* CLO is first nine characters of GOC CLO used as tracking key on CCXREF.

Table 3-3. Fields Available in GDS - TIRKS Issue Interface

FIELD NAME (GDS)	*FIELD NAME/SOURCE (TIRKS System)*	*DEFINITION*
CLO (GDISWR)	CLO# (GCOCS1)	CLO NUMBER
CLO (GDISWR)	CLO# (GCOCS1)	BASE
ITM (GDISWR)	ITEM (GCOCS1)	ITEM NUMBER
CLO (GDISWR)	CLOS (GCOCS1)	SUPPLEMENT
ACT (GDISWR)	ACTN (GCOCS1)	CIRCUIT ACTION
	DOP (GCOCS1)	DISC ORD FLAG
CAC (GDISWR)	CAC (GCOCS1)	CIRCUIT ACCESS CODE
CKTID (GDISWR)	CKTTP (GCOCS1)	CIRCUIT TYPE
CKTID (GDISWR)	CKTID (GCOCS1)	CIRCUIT ID
ISS# (GDISWR)	CDISS# (DIST)	CD ISSUE NUMBER
	SEC (TCM table)	SYSTEM ENTITY CODE
OCO (GDISWR)	MCO (GCOCS1)	MAINTENANCE CONTROL OFFICE
DD (GDISWR)	DD (GCOCS1)	ORDER DUE DATE
PTD (GDISWR)	PTD (GCOCS1)	PLANT TEST DATE
DVA (GDISWR)	DVA (GCOCS1)	DVA DATE
APP (GDISWR)	APP (GCOCS1)	APP DATE
RID (GDISWR)	RID (GCOCS1)	RID DATE
WOT (GDISWR)	WOT (GCOCS1)	WOT DATE
FCD (GDISWR)	FCD (GCOCS1)	FCD DATE
	IAD (GCOCS1	IAD DATE
BILLNAME (GDISWR)	CUST (GCOCS1)	CUSTOMER NAME
JOBID (GDISWR)	ORD (GCOCS1)	ORDER NUMBER
CO (GDISWR)	ALOC (GCOCS1)	"A" LOCATION
CO (GDISWR)	ZLOC (GCOCS1)	"Z" LOCATION
	PCLO (WA)	PREVIOUS IE CLO
RCLO (GDISWR)	RCLO (WA)	RELATED CLO
	ERO (WA)	ENG REPORT OFFICE
	ERTN (WA)	ENG REPORT TELEPHONE#
CRO (GDISWR)	CRO (WA)	COMPLETE WITH RORD
	PRQ (WA)	PROTECTION
TSP (GDISWR)	RESP (WA)	RESTORATION PRIORITY
DOC (GDISWR)	DOC (GCOCS1)	DOCUMENT CODE
OCO (GDISWR)	OCO (WA)	OVERALL CONTROL OFF
TEL (GDISWR)	BTN (WA)	BILLING TELEPHONE #
CNA (GDISWR)	ACNA OR CCNA (GCOCSA)	ACNA OR CCNA
COMM (GDISWR)	WANOT (WA)	360 BYTES OF WA NOTES
CKLID (GDISWR)	CKLA (LOOP 2)	A-END CKL ID
CKLID (GDISWR)	CKLZ (LOOP 2)	Z-END CKL ID
RO (GDISWR)	RORD (GCOCS1)	RELATED ORDER #
	RELNO	RELEASE NUMBER
	CCR (GCOCSI)	CIRCUIT CONTROL RECORD #
CKL ADDR (GDISWR)	STA ADDR (LOOP 2)	CUSTOMER ADDRESS
LOC (GDISWR)	STA LCTN (LOOP 2)	CUSTOMER LOCATION
PROJ# (GDISWR)	PROJ (GCOCS1)	PROJECT NUMBER

NOTE:

1. Blank fields under the GDS column indicates TIRKS fields are not displayed on any screen in GDS. CIMAP/DOC also sends cable, equipment, and network interface information to GDS.
2. MCO is displayed in "OCO" when the value of MCO/OCO flag in GDS CO OPTS is set to 'M'.
3. Additional fields are passed to GDS by CIMAP/DOC that are only used when GDS, as owner of the order, logs the order in the IA DB.

C. Information Flows from the TIRKS System to CIMAP and GDS at Log Time for Disconnects

An option is available for receiving disconnect orders into CIMAP/SSC, OPS/INE and CIMAP/CC at order log time. To exercise this option a switch must be set to "yes" in the OPTS LINK SSC, OPTS LINK INE, and OPTS LINK CC tables. The alternative flow is shown in Figure 3-4 and is as follows:

- GOC logs a disconnect order in the TIRKS System. C1/INV is notified and notifies CIMAP/DOC.
- CIMAP/DOC retrieves the in-effect view of the circuit from C1/PREP and extracts the MCO/OCO/CCO. Using the MCO/OCO/CCO as the key to the OPTS LINK SSC, CIMAP/DOC determines whether CIMAP/SSC is "on", whether the flag to receive disconnect orders at log time is "on", and the release level. CIMAP/DOC updates GOC with the External System Switch (EXSYSW) and the System Identifier Code (SIC) from the C1DIST SSC INFO table in addition to message switching order information to CIMAP/SSC.

  Updating the EXSYSW field notifies GOC that an external system wants to know about future Updates or Post/Complete functions on this order.

  CIMAP/SSC receives the order from CIMAP/DOC. If the OCO/CCO/MCO is not found in the NON SSC CLLI code table and CIMAP/SSC has the IE view of the circuit, the disconnect order information is entered in the Installation Administration database and the Circuit History database and worklist entries are created. This implies that an A, R, or RN order has already been issued to CIMAP/SSC before the disconnect is logged.
- A similar option is available for CIMAP/CC, OPS/INE and GDS to receive disconnect orders at order log time. To exercise these options, a switch must be set to "yes" in the OPTS LINK CC, OPTS LINK SSDAC, and OPTS LINK INE tables. If this switch is on, CIMAP/DOC extracts CKL/CWL information from the IE view of the circuit in the TIRKS System, GOC order information including critical dates, and the MCO/OCO/CCO flag from the C1/DIST CO OPTS table. This information is then sent to CIMAP/CC, OPS/INE, and GDS, as applicable for the order.
  - — Based on the setting of the MCO/OCO/CCO control flag, CIMAP/CC determines whether they are in control of the disconnect order. If so, an ownership flag will be set to "yes" when CIMAP/CC logs the order via the Status Reporter, and CIMAP/CC will be able to post item level completions/jeopardies to GOC.
  - — CIMAP/CC and GDS build work requests for each CWL/CKL location based on the IE view of the circuit and pass the appropriate CWL/CKL information to CIMAP/SSC.
  - — INE work is built on orders involving Intelligent Network Transmission Elements based on the IE view of the circuit.
- No WORD document for the disconnect order exists at this point. The user could access the in-effect WORD for the information needed to work the order.

Regardless of whether an order is sent to CIMAP/SSC, GDS or CIMAP/CC, GOC is notified to send Update and Post/Complete information on that order to the Status Reporter. It is recommended that the disconnect options in OPTS LINK SSC, OPTS LINK CC, OPTS LINK SSDAC, and OPTS LINK INE be set to the same values.

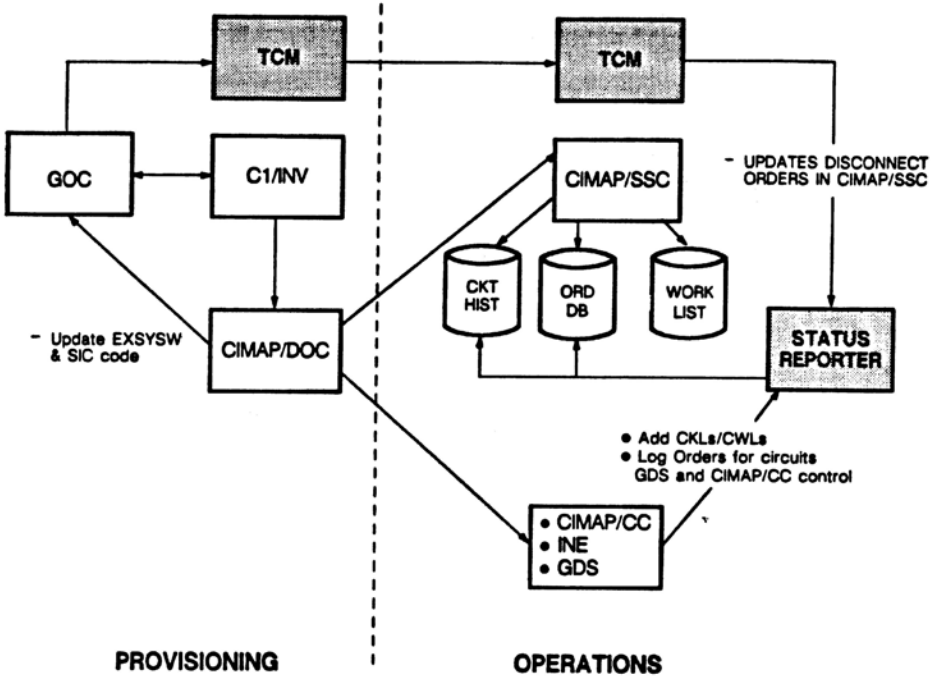

Figure 3-4. Data Flow From Provisioning To CIMAP At Log Time For Disconnect Orders

D. CKL/CWL Logging into CIMAP/SSC via Status Reporter

CKL/CWL information will be logged (added) in CIMAP/SSC from GOC, CIMAP/CC, GDS and OPS/INE. Since the logging and matching of CKLs/CWLs from GOC with CIMAP/CC, INE and GDS is complex, the details provided in this section are necessary to understand the process. The information that these systems provide to the Status Reporter is as follows.

- GOC CKL/CWL Logging into CIMAP/SSC - GOC will transmit to CIMAP/SSC via the Status Reporter all CKL/CWL information currently logged in GOC for a particular order/item at issue time. This information could have been logged in GOC at order entry time, mechanically generated by CDA or manually added in GOC at circuit design time. Any additional CKLs/CWLs logged in GOC downstream will be sent to CIMAP/SSC. This CKL/CWL information for each location includes the following:

  — COMMON LANGUAGE® (CLLI) code.

  — CKL/CWL ID which is a 1-4 A/N code that *uniquely* identifies a work location on a circuit. CKLs/CWLs can be logged with identical CLLI codes; it is the CKL/CWL ID that uniquely identifies the work location for reporting purposes. These codes are determined by methods established by each individual operating company.

  — GOC Indicator (optional) which is a one-character code for distinguishing between CKLs and CWLs on the circuit. The implementation of the CKL/CWL distinction for GOC was shipped in Release 14.1.2. The indicator codes and the critical reporting dates associated with the indicator values are as follows:

IND	*CKL/CWL*	*CRITICAL REPORTING DATES*
W	CWL	RID,DVA,WOT,DD (IAD if applicable)
K	CKL	RID,DVA,DD (IAD if applicable)
L	CKL	LAM,RID,DD
E	CKL	RID,DD
⌀	no distinction	Any critical reporting date applicable to the CKL/CWL level and having objective date in GOC at the order level.

For all indicators (W,K,L,E), PTD is a critical date but not a critical reporting date in GOC. This same information is available in CIMAP/SSC in the OPS GOC IND table. The critical reporting dates for each GOC indication are stored in this table (rather than hard-coded) so that operations can easily respond if GOC rules are changed. The table setting for tracked events will be shipped populated by Bellcore in accordance with current GOC criteria.

CIMAP/SSC matcher gives the users the option of using the GOC Indicator to build intelligence into the matcher algorithm. The added intelligence will result in more accurate matching of GOC CKLs/CWLs with those from CIMAP/CC and GDS. The algorithm could be directed, for example, to match CIMAP/CC locations with GOC locations only if the GOC Indicator is "W" or to match GDS locations with GOC locations only if the GOC Indicator is "L". To use this

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intelligence, the BCC must implement the GOC Indicator (in the TIRKS System) to allow for CKL/CWL distinctions and not as a mechanism for selecting a particular critical reporting date stream for a location without regard to whether it is a CKL or CWL. The GOC Indicator information is stored in the OPS GOC IND TTS table in CIMAP/SSC. See Appendix D of the CIMAP/SSC User Manual, BR 190-582-305, for details.

— The objective dates at the CKL/CWL level for the events are the dates logged in GOC and sent to CIMAP at the order/level. If an objective date was not received from GOC for a particular event, the objective date field will be blank for that event.

— CIMAP/SSC will then set the GOC Tracking Flag to "yes" or "no" depending on whether the event for a particular CKL/CWL is a critical reporting date at the level in GOC. This will be determined by using a combination of the following:

  — The value of the Tracked Events flags (e.g., DVA-T, DD-T) in the OPS GOC IND table.

  — Whether the objective date for the event was received from GOC at the order/item level and was entered in the OSSIC table in CIMAP/SSC.

- CIMAP/CC CWL Logging into CIMAP/SSC - At issue time or at order log time (for disconnects), CIMAP/CC will send to CIMAP/SSC via the Status Reporter all the CWL information generated by CIMAP/DOC and CIMAP/CC in determining what work has to be done at which work locations on the given circuit. The CC ADMIN CODE tables in provisioning and the STEP tables in CIMAP/CC are used to perform translations that result in work requests being built at CWL locations that match GOC. Additions/changes in CWL information downstream, as a result of a reissue, for example, will also be passed to CIMAP/SSC. The information for each CWL location includes the following:

  — COMMON LANGUAGE (CLLI) code. CIMAP/CC will never send more than one CWL for the same location.

  — CWL ID of "blank". The importance to the matching process will be discussed in the section on CKL/CWL Matching.

  — Objective dates for each event. These dates will be the GOC objective dates, CIMAP/CC calculated dates based on table entries if GOC dates are not provided, or "blank" if neither date exists.

  — Tracking Flag for each event of "yes" or "no". This flag indicates whether CIMAP/CC will be posting completions of the CWL event.

  CIMAP/CC sends CIMAP/SSC CWL information for any order (e.g., message, special,....) that CIMAP/CC is working. CIMAP/SSC will store the information in the IA database. The Status Reporter will notify GOC of any CWL completions/jeopardies posted from CIMAP/CC.

- GDS CKL Logging into CIMAP/SSC - When GDS receives order information from the TIRKS System, it will send to CIMAP/SSC via the Status Reporter all CKL information generated by GDS in the process of determining what outside work is to be done at which work locations on a given circuit. Additions/changes to this information downstream will also be passed to CIMAP/SSC. The information for each CKL location includes:

  — COMMON LANGUAGE (CLLI) code. GDS may pass two CKLs with identical CLLI codes.

  — END LOC code of "A", "Z", or "D". For CIMAP/SSC to uniquely identify two GDS CKLs with the same CLLI code, GDS will indicate whether the work at the CLLI code is at the "A" end, "Z"

end or "D" disconnect end of the circuit.

— CKL ID as populated on the LOOP2 format. This same CKL ID will be logged either manually or mechanically in GOC.

— Objective dates for each event if they exist in GDS, otherwise "blank".

— Tracking Flag for each event of either "yes", or "no". This flag indicates whether GDS will be posting a completion of the CKL event.

GDS sends CIMAP/SSC CKL information for any order issued from the TIRKS System that GDS is working. CIMAP/SSC will store information in the IA database. The Status Reporter will, however, notify GOC of any item level or CKL level completions/jeopardies posted by GDS.

- OPS/INE CWL Logging into CIMAP/SSC - At issue time OPS/INE will send to CIMAP/SSC via the Status Reporter the OPS/INE locations involving Intelligent Network Transmission Elements that are being worked by INE.

The information for each INE location includes:

— COMMON LANGUAGE (CLLI) code. An eleven-character code with the ninth character a "K" followed by a frame number. The code will be unique to OPS/INE.

— CWL ID of "blank".

— Objective dates for each event.

— Tracking Flag for each event of "yes" or "no". This flag indicates which critical report date OPS/INE will be posting. The date (e.g., DVA, WOT, DD) is selected by the user in the INE AUTO RELEASE (TTS) table in OPS/INE. OPS/INE posts only one critical date. The CIMAP/CC users should coordinate with the OPS/INE system administrator if CIMAP/CC has critical date dependencies involving INE locations in the CC STEP tables.

E. CKL/CWL Matching

The matcher algorithm in CIMAP is responsible for matching OPS CKLs/CWLs with GOC CKLs/CWLs. This task is complicated for the following reasons:

- GOC and OPS CKLs/CWLs are generated by separate processes and at different times. In most companies, CKLs/CWLs are manually logged into GOC either at order log time or at circuit design time. CDA can also be used to mechanically log CWLs in GOC at design time. CIMAP/CC uses information from the WORD document and translation tables to generate CKLs/CWLs that match those logged in GOC when CIMAP/CC posts jeopardies and completions. GDS builds work at locations passed by CIMAP/DOC.
- GOC CKLs/CWLs carry an ID which uniquely identifies work locations in GOC. No foolproof mechanism currently exists in Operations for generating CKL/CWL IDs that would correctly match those in GOC. The result is that one or more Operations centers may be completing work back to GOC using identical CLLI codes. For example, a circuit could have both inside CO work controlled by CIMAP/CC at the same CLLI code location that also has the outside plant work. The matcher may have to make a choice for completion purposes about which CIMAP/CC locations match which GOC locations without the benefit of the CKL/CWL ID. However, GDS is passed the CKL ID as populated on the LOOP2 screen. If entered manually, this field should be populated with the same CKL ID as appears in GOC. If the SOAC/TIRKS Interface is available, SOAC will populate both the CKL ID in the GOC and PREP databases with the same value.

F. GOC-CIMAP/CC CWL Matching

To make the most accurate choice of CKL/CWL matches, given these difficulties, the following matching rules and assumptions are used by the matcher. See Table 3-4 for examples.

- If no additional intelligence is built into the matching algorithm using the OPS SUB field in the OPS GOC IND table or the CMULTLOC field in the SSC-OPTION table, the following rules are used by the CIMAP/SSC Matcher. See Example 1 in Table 3-4.
  - — If GOC logs one CKL/CWL with a CLLI code that matches one CWL CLLI code logged by CIMAP/CC, they will be matched by the algorithm. This is a unique match since no other matching choices exist.
  - — If GOC logs more than one CKL/CWL with the same CLLI code (but different CWL IDs) that matches one CWL CLLI code logged by CIMAP/CC, the algorithm will match the CIMAP/CC CWL with the first GOC CWL with the same CLLI code regadless of the CWL ID. The matcher assumes that CIMAP/CC will *never* send more than *one* CWL for the same location. This is a non-unique match since other matching choices exist. The user has the option to change the system generated match using commands on OSSCWL.
- If the OPS SUB field is set to "C" for a particular GOC IND value (e.g. W), then the following rule applies as in Example 2.
  - — The GOC Indicator field with valid values of W,K,L,E, or ∅ was added in GOC as of Release 14.1.2. The GOC Indicator is used to distinguish between CKLs and CWLs and determines the critical reporting dates for the CKL/CWL locations. CIMAP/SSC has an OPS GOC IND table which sets critical reporting dates for each GOC Indicator value. The tracked event flag fields in this table are shipped populated by Bellcore in accordance with current GOC criteria. This table contains an additional field, OPS SUB. For each value of the GOC Indicator, the user can specify the OPS subsystem that can match a CKL/CWL location with that indicator. For

example, if the OPS SUB field is set to "C" (for CIMAP/CC) for the GOC Indicator of "W", then a GOC CWL location with a GOC Indicator value of "W" can only be matched with a CIMAP/CC CWL.

- If the CMULTLOC field is set to "Y" in the SSC-OPTIONS table, then the following rule applies. See Example 3.
  - — If GOC logs more than one CKL/CWL with the same CLLI code that matches one CWL CLLI code logged by CIMAP/CC, then the one CIMAP/CC CWL is matched with all the GOC CKLs/CWLs with the same CLLI code regardless of the CWL ID.

G. GOC-GDS CKL Matching

GDS is passed the CKL ID from the LOOP2 screen by CIMAP/DOC. GDS software requires that this field be populated before the CKLs are passed to the Status Reporter. This CKL ID will be guaranteed to match the CKL ID in GOC if:

- A company uses LOOP2 without the SOAC Interface but methods require that the same CKL ID be used in GOC and LOOP2 formats.
- The TIRKS/SOAC Interface is available. SOAC will log the CKL ID in both GOC and the LOOP2 screen.

When the matcher receives GDS CKLs with CKL IDs, the GDS CKLs will be matched with the GOC CKLs with the same CKL ID. This matching rule takes precedence over all other matching rules. See Example 4 in Table 3-4. The OPS SUB field in the OPS GOC IND table is available to CIMAP/CC to build added intelligence into the matching algorithm since the CWL ID is not available to CIMAP/CC. With the CWL ID being required by GDS, the added intelligence is not needed by GDS.

H. GOC-OPS/INE Matching

The OPS/INE locations can be logged into GOC either manually after the CPC designs the circuit or mechanically by the Circuit Distribution Analysis (CDA) module in the TIRKS System. The logging must be coordinated in either instance to ensure that the eleven-character CLLI code location logged in GOC is the same as OPS/INE is sending to the Status Report. This will guarantee a unique match between INE locations and GOC CWLs. No Operations system other than OPS/INE should attempt to post the same eleven-character location. Example 4 shows this unique match of the OPS/INE location with GOC. The BCC user could choose not to track OPS/INE locations in GOC; however, operations will track the INE locations.

Table 3-4. GOC-CKL/CWL Matching Examples

1. Matching without additional intelligence built-in via table entries.

   - OPS SRC = "blank" in OPS GOC IND table for GOC IND of 'blank' means match any OPS CWL.
   - CMULTLOC = "N" in SSC-OPTION table.

   The algorithm matches the CIMAP/CC CWL with the first GOC CWL with the same CLLI code.

ID	GOC CLLI	CIMAP/CC
CWL1	ALBQNMSM	ALBQNMSM (unique match)
CKL2	ALBQNMMA	ALBQNMMA
CWL3	ALBQNMMA	
CWL4	ALBQNMNO	ALBQNMNO
CWL5	ALBQNMNO	

2. The same matching with the following setting in OPS GOC IND table.

GOC IND	*OPS SCR*
W	C (match with CIMAP/CC CWL)
K, L	D (match with GDS CKL)
E	

ID	GOC CLLI	IND	CIMAP/CC
CWL1	ALBQNMSM	W	ALBQNMSM
CKL2	ALBQNMMA	L	
CWL3	ALBQNMMA	W	ALBQNMMA
CWL4	ALBQNMNO	W	ALBQNMNO
CWL5	ALBQNMNO	W	

3. The same matching with the addition of CMULTLOC = "Y"

ID	GOC CLLI	IND	CIMAP/CC
CWL1	ALBQNMSM	W	ALBQNMSM
CKL2	ALBQNMMA	L	
CWL3	ALBQNMMA	W	ALBQNMMA
CWL4	ALBQNMNO	W	
CWL5	ALBQNMNO	W	ALBQNMNO

4. The matching algorithm will *always* match the GOC GDS CKL locations with the *same CKL ID* regardless of the CWLs logged by CIMAP/CC. INE locations should be unique.

ID	GOC CLLI	CIMAP/CC	GDS	INE
CWL1	ALBQNMSM	ALBQNMSM		
CKL2	ALBQNMMA		CKL2 ALBQNMMA	
CWL3	ALBQNMMA	ALBQNMMA		
CWL4	ALBQNMMAK01			ALBQNMMAK01

I. Information Flow between GOC and the CIMAP Status Reporter

As previously stated, order information is sent to CIMAP/SSC, GDS, OPS/INE and CIMAP/CC by either CIMAP/DOC or EDIIS. These modules also notify GOC that a particular order has been sent to Operations. GOC will then notify the CIMAP Status Reporter of any updates or postings on that order in GOC, and the Status Reporter will inform CIMAP/SSC, CIMAP/CC, GDS and INE, as appropriate. In turn, the Status Reporter will notify GOC of all Post/Complete functions on the order, performed in Operations (See Figure 3-5).

The information passed between GOC and the Status Reporter is as follows:

Table 3-5. Information Passed between Status Reporter and GOC

GOC TO STATUS REPORTER	STATUS REPORTER TO GOC
• ADDS — CKLs/CWLs	• DATE COMPLETIONS
• SUPPs/UPDATES — CANCELS — DATE RESCHEDULES — CHANGES IN OTHER DATA	• JEOPARDY POSTING • JEOPARDY REMOVAL • MISSED FUNCTION CODES
• DATE COMPLETIONS	• AT DD COMPLETION, GCNOTE IS UPDATED USING COMMENTS ON OSSOI.
• JEOPARDY POSTING/REMOVAL	
• IAD DATES FOR DISCONNECTS AFTER DD COMPLETION.	

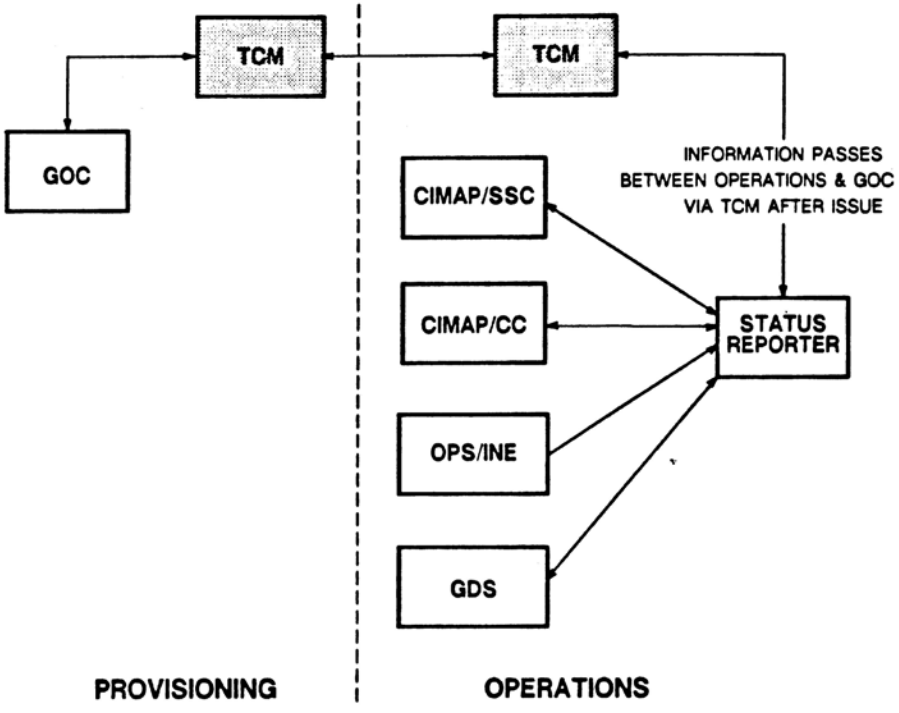


Figure 3-5. Information Flow Between CIMAP & GOC via TCM

J. Critical Date Handling

The following critical dates can be received from the GOC: DVA, WOT, FCD, PTD, DD, IAD, SWC, CTA (not displayed on OSSOI) and ASD.

- The Order Information format (OSSOI) is a variable format that displays the critical dates appropriate for each order class-message, carrier and special. The Installation Configuration tables (OSSIC) can be set up to calculate objective dates for any event as offsets of other critical dates. However, if the actual objective dates are received from GOC, they will supersede the calculated dates. Prior to screening being completed, additional GOC objective dates can be added to an order/item in the IA database. After screening, additional GOC objective dates can be accepted only if a calculated date, based on an OSSIC offset or a CIMAP/CC calculated offset, exists in CIMAP for the event. For DOP orders, IAD and optionally DVA are scheduled in GOC at DD completion. If CIMAP is to receive these dates from GOC, calculated dates must exist in CIMAP for IAD and DVA based on an offset of DD.

  NOTE - If the user wants GOC critical date information on dates not tracked by SSC (e.g., WOT), that date must be in OSSIC with a tracking flag of "N". This includes postings back to GOC at the CKL/CWL level.

- CIMAP/CC receives all critical dates from GOC via CIMAP/DOC and displays them on the Cross Reference (CCXREF) format. CIMAP/CC posts only to GOC the Report Dates that appear in the REPORT field in the STEP tables. If a date is used in the STEP table but was not received from GOC, that date is calculated based on an interval designated in the *CC REPORT DATE* Table.

- GDS receives all critical dates from GOC via CIMAP/DOC and displays them on the Installation Special Work Request (GDISWR) format. GDS posts DD and optionally DVA back to GOC via the Status Reporter.

The posting of jeopardies, jeopardy removals and critical report date completions (POST RID) will be sent from GOC to Operations or Operations to GOC depending on which system did the posting. If the posting fails in the other system, the Operations Error Handlers will inform the user if action is to be taken. This is discussed in detail in the section on Error Handling. GOC will also notify the Status Reporter of any reschedules of critical dates. When *item* level DD is completed, the Status Reporter will send the comment field on OSSOI to GOC as an update to GCNOTE in GOC.

K. Disconnect Processing

GOC supports two types of disconnect processing: regular and DOP for short interval disconnects.

- For regular disconnect processing, GOC supports the following:
  - — IAD date entry by the user when the disconnect order is logged.
  - — Or GOC will generate the IAD date for all order/items when DD is completed on the last disconnect item on the order. The IAD date is calculated based on an offset interval from DD; the interval is defined in the GCINTU table.
  - — GOC also has an IAD COMPL FLAG in the OPTION FLAGS table in provisioning. If set to "N", there is no IAD Processing. If "M", there is IAD processing with manual completion of IAD. If "A", there is IAD processing with GOC auto-completing IAD. The auto-completion of IAD is done via a nightly BMP run. If the option that uses a batch run to complete IAD is selected, the

GOC Interface will inform the Status Reporter of the completion.

— If there is IAD processing and DD is completed, the order status goes from P to PX. When IAD is completed, the status becomes IX. If there is no IAD processing, the order status goes from P to IX on DD completion.

- For DOP processing, GOC also supports the following:
  — A DOP field on the order entry screen set to "Y" indicating a DOP order.
  — The order can not be logged with a RID date or any dates post RID except for DD. When the *first* DD (even a CWL DD) is completed on the order/item, the order status goes from P to PX and GOC schedules IAD, RID (optional) and DVA (optional). However, as of TIRKS Release 15.0, IAD, RID and DVA will not be scheduled until DD is completed on the last item on the order, similar to regular IAD disconnect processing. These dates are calculated using the same GCINTU table, this time for DOP orders. This rule will be changed in a future TIRKS System release to parallel regular disconnect processing.
  — When IAD is completed, the order status becomes IX.
- The following action is taken in CIMAP/SSC to handle the two types of disconnect processing in the TIRKS System:
  — First, it is strongly recommended that
    a. IAD tracking in CIMAP reflect GOC tracking of IAD in the TIRKS System so that the order status in both systems remains in sync.
    b. If IAD processing is used, the offset used to calculate IAD (and optionally DVA) from DD in OSSIC be the same as found in the GCINTU table in the TIRKS System for both disconnect and DOP orders.
  — If GOC schedules IAD based on intervals at DD completion, CIMAP/SSC will not receive the IAD date when the order is logged in CIMAP/SSC but only at DD completion. Dates (DVA, IAD) that GOC sends to the Status Reporter after DD completion will be handled like reschedules. CIMAP/SSC can only handle these "reschedules" if objective dates were scheduled for these events when the order was logged in CIMAP/SSC using calculated dates in the OSSIC tables.
  — For special processing associated with DOP orders, there is a separate OSSIC table other than the one used for regular disconnects for DOP orders. The action key in this table is "P". On DD completion, the software will not back complete DVA on DOP orders.
- The following action is taken by CIMAP/CC to handle disconnect processing at order log time:
  — If IAD date appears in a STEP table for disconnects not present in GOC, it is calculated based on an interval in the CC Report Date Table.
  — CIMAP/CC supports a separate STEP table for DOP orders. If a STEP table for DOP is not found, the STEP table for regular disconnects is used. Note: CIMAP/CC cannot support a DVA date that is after DD as allowed on DOP orders; it is recommended that DVA not be used in the DOP Step table.
  — GOC generates IAD dates when DD is completed and the dates are sent to the Status Reporter. The Status Reporter handles this situation like date reschedules and notifies CIMAP/CC.
- GDS does not post the IAD date back to GOC and is not impacted by GOC's disconnect processing.

L. Order Cancellation

After orders are logged in the TIRKS System and received by Operations, they can be cancelled.

- The following action takes place in GOC in processing cancellations:
  - — The cancel is logged in GOC as an order supplement with a supplement type of C (cancel).
  - — The order status goes to EK or PK depending on whether the order status was Entry (E) or Pending (P) at the time of cancellation.
  - — Completion of all uncompleted critical dates is blocked except for Due Date (DD).
  - — On DD completion, the order status goes to In-Effect Cancel (IK).
  - — GOC has an auto-completion flag on GCRR02. If this flag is set to "yes", GOC will auto-complete DD at the time the cancel supplement is logged if the order status is E or P with no RID date (as in DOP orders). If either of these conditions is met, the Order Status will go from E or P to IK directly when the cancel supplement is logged. This feature can potentially affect CIMAP/SSC for disconnect orders that are received at order log time. Currently GOC sends this auto-completion over to CIMAP with a status of PK rather than IK placing CIMAP and GOC out of sync until the order is completed in CIMAP.
  - — GOC can cancel a disconnect order after DD has been completed if there is an IAD date. The order status goes from PX to PK and DD completion is backed out.
- The following action takes place in Operations when an order cancellation supplement is received from GOC by the Status Reporter.

  NOTE - Operations *CANNOT* support a cancel of a cancel implemented by updating STAT on GCDBC.

  - — The Status Reporter will notify CIMAP/SSC, CIMAP/CC, and GDS as appropriate.
  - — In CIMAP/SSC, the system will place an entry on the LOG, and a calendar entry will be made on today's worklist of the position that has the next scheduled event. The entries will state "Pending Cancel Rec'd".

    As in GOC, CIMAP/SSC will block completions on any uncompleted events except for DD. For disconnect orders where DD is already completed, the system will back out the completion and put DD back on the objective dates worklist of the tester who was previously assigned DD.

    Depending on company methods,

    a. The person who had the next uncompleted event on their worklist could be responsible for completing DD on the PK order after determining that all work done on the order is backed out or stopped.

    b. GOC, rather than CIMAP/SSC, would complete the cancel, and the work on the order could be backed out or stopped.

    CIMAP/SSC will support the cancellation of a disconnect order after DD is completed if the order status is PX, that is, if there is also IAD processing. CIMAP/SSC will back out DD complete, and put the DD event back on a worklist. The order status will go from PX to PK. Regardless of which system completes DD, CIMAP/SSC would take the following action:

c. The Order Status goes from PK to IK.

d. The pending cancel worklist entries and all calendar events would be removed.

e. The WORD would be voided.

f. All Circuit History information would be removed.

g. The Order and the LOG would remain in the IA and TRACE databases until archiving for audit purposes, then removed.

— CIMAP/CC will receive a notice of a pending cancel from the Status Reporter and will

- Cancel the order in CIMAP/CC if no work has started.
- Otherwise, review steps will be generated.

— GDS will receive a notice of a pending cancel from the Status Reporter and take the following steps:

- If the order is an Engineering Service Order (ESO), and the work request(s) are pending load (PLD) or pending screen (PSC), GDS will allow the order to be cancelled.
- If the order is not an ESO and job status is either pending screen or pending load, GDS will change the handling code to pending cancel (PCN).
- If the order is not an ESO and has a conflicting job status (e.g., preassigned or dispatched), GDS will send an exception notice to a printer and place a comment on the work request. GDS inhibits any further dispatch processing. To resolve the conflict, the work request must return to a job status of pending screen allowing the order to be cancelled.

M. Error Handling

Using the GOC Interface, jeopardies and date completions can be posted either in GOC or in Operations. The posting information is then passed to the other system. Error conditions may occur in the receiving system causing the posting to fail for the following reasons:

- An Operations Posting Fails in GOC - If a posting of a date is completed in CIMAP/SSC, CIMAP/CC or GDS but fails in GOC, the provisioning TCM sends the GOC error message to one of the Operations Error Handlers. Each operations system has its own Error Handler. The CIMAP/SSC Error Handler enters the GOC error message on the LOG. The user has an option to set the error option flags in the SSC-OPTIONS table to have a

  — Calendar entry placed on an appropriate worklist (GCCAL)

  — Message sent to the SSC LTERM printer (GPRINT)

  — Message sent to the originating LTERM (GCLTERM).

  For errors in CIMAP/CC postings to GOC, TCM will send error messages to the CIMAP/CC Error Handler for action.

  For errors in GDS, the GDS Error Handler will send an exception notice based on the entries in the GDS Exceptions table.

  For errors in INE postings to GOC, TCM will send error messages to the OPS/INE Error Handler which sends an exception notice to the PCO LTERM as specified in the DCS Administration Record (DCS ADM).

The major reasons an operations posting would fail in GOC are as follows:

— For jeopardy and MFC postings - GOC has an internal table to validate jeopardy/MFC codes posted in GOC. If a code is not in this table, the posting will fail. CIMAP/SSC has an option (VALJEOP) in the SSC-OPTION table to validate jeopardy/MFC codes before sending them to GOC. If set to "Y", the system validates the code against the CIMAP/SSC internal table which is loaded to CIMAP/SSC using the same data as GOC. If the users select this option and keep the internal tables in both systems in sync, then all jeopardies/MFC codes should post successfully in GOC. CIMAP/CC does not support a validation option. GDS has its own TTS jeopardy validation table (GDS HDLGCODE) which should be kept in sync with GOC.

— For Critical Date Posting - To successfully post critical date completions in GOC, certain rules set in the TIRKS Date Rules Update table (GCDRU) must be met. This table is keyed by Event name (DVA, WOT,....) Order Class, Admin. Area, and Reference Date. The reference date is the calendar date when a set of rules apply. Not all rules are user modifiable, but an example of how a company could modify date rules is:

  a. As of December 30, a company could change the DVA MFC REQUIRED flag from "N" to "Y". The result is that all overdue DVA dates would require an MFC code for posting after December 29. If not present, the posting would fail.

Given all the possible posting rules that can be changed by the user, Table 3-6 shows the actions taken by the Status Reporter to prevent Operations systems from posting date completions that might fail in GOC.

- A GOC Posting Fails in CIMAP/SSC - If a date completion is posted successfully in GOC but fails in CIMAP/SSC, the CIMAP/SSC Error Handler will react to this error within the CIMAP System. *No* notification of the failure will be sent to GOC. The error message generated by the failure will be placed on the LOG and a message will be sent to the SSC LTERM printer. The major reason why a completion would fail in CIMAP/SSC is if the IMD EDITS have not been met at DD completion. CIMAP/SSC will *not* block item level completions from the GOC if there are outstanding CWLs on the order.

  CIMAP/CC is not impacted by this possibility since CIMAP/CC does not accept date completions from GOC.

Table 3-6. Status Reporter (SR) Date Rule Handling

- CIMAP WILL MINIMIZE ERROR FALLOUT BY PROVIDING A SUBSET OF GOC DATE RULES IN CIMAP.
- CIMAP/SSC MAINTAINS OPTIONAL VALIDATIONS FOR JEOPARDY AND MFC CODES. NO VALIDATION IS DONE BY CIMAP/CC. GDS HAS ITS OWN TTS VALIDATION TABLE.

DATE RULE	HANDLING BY STATUS REPORTER (SR)
ACTUAL DATE REQUIRED (Y/N)	SR WILL ALWAYS SEND GOC THE ACTUAL COMPLETION DATE AS POSTED IN CIMAP OR GDS.
BY REQUIRED (Y/N)	SR WILL ALWAYS SEND GOC THE INITIALS FOR ALL CRITICAL REPORT DATES.
GRACE DAYS (0-99)	GOC IMPACT ONLY
MFC REQUIRED (Y/N)	CIMAP/SSC MAINTAINS A "MFC EVENT EDITS" TABLE MIRRORING THE GOC RULE. THE TABLE WILL INDICATE WHETHER AN MFC CODE IS REQUIRED FOR PAST DUE EVENT COMPLETIONS. CIMAP/CC AND GDS DO NOT. GDS DOES REQUIRE A MFC FOR PAST DUE DD.
ALLOWED ON HOLIDAY (Y/N)	IMPACT ON GOC WHEN LOGGING ORDERS. SR WILL ACCEPT AND COMPLETE ALL GOC DATES AS RECEIVED.
AUTO_JEP BY LEVEL	SR DOES NOT RECEIVE AUTO_JEPS FOR GOC BECAUSE THEY ARE GENERATED BY A BMP RUN.

N. Tracking Levels

- There are four levels of tracking for GOC:
  - — Order level
  - — CCR level - For multipoint circuits
  - — Circuit level (item level)
  - — CKL/CWL level.

  In GOC, a user can post jeopardies/completions at all levels. There are also rules in the TIRKS Date Rules (GCDRU) that govern whether there will be upward propagation of completions to the next tracking level for each event. For example, when the last CWL location completes WOT, GOC will propagate that completion upward to the item level WOT date.

- For CIMAP/SSC - Because orders are received in CIMAP/SSC at RID one item at a time the only completions that make sense in this environment are item level completions. CIMAP/SSC can not guarantee that all items on an order were issued to SSC or that any one SSC would have all the items associated with a particular order.

  However, CIMAP/SSC does have an Installation Grouping feature (OSSGI) which allows the user to group order/items by Project, RO, TGAC, or Base CLO. The OSSGI format allows the user to bulk process date completions. An order level FIND on OSSGI will initiate a bulk completion of all items in an order for a given event. The same holds true if the user did a FIND using CCR; there would be a bulk completion of all items on the CCR FIND. For more details see Section 4 where OSSGI is explained in detail.

  CIMAP/SSC relies on GOC upward propagation rules to propagate item level completions to the Order or CCR level. For example, if CIMAP/SSC did not have all the items on a particular order and OSSGI was used to bulk complete Due Date for all items on the order, then when GOC completed processing the last item level DD from CIMAP/SSC, GOC would propagate the DD completion upward to the Order level.

  DVA is the only date where this processing does not apply. GOC does *not* upward propagate completion from one level to another for DVA at any level. CCR and Order level DVA completions must be posted in GOC.

- GDS and CIMAP/CC do not support four level tracking.

O. CIMAP-GDS-TIRKS Machine Architecture

The CIMAP-GDS-TIRKS Interface architecture fully supports multiple TIRKS machines feeding the same CIMAP-GDS machine, but only partially supports one TIRKS machine feeding multiple CIMAP machines.

- Multiple TIRKS machines - One CIMAP-GDS machine can receive orders from multiple TIRKS machines. To track which orders came from which TIRKS machine, a circuit source field is stored in the CIMAP databases, as defined in the SEC TO SOURCE table. This code identifies the originating TIRKS machine for each circuit. It is used by the Status Reporter when posting jeopardies and completions on an order to identify which TIRKS machine should receive the posting message.

  — If GDS is on a separate processor, the GDS machine can also receive orders from multiple TIRKS machines. GDS is sent the TIRKS SEC code for each order it receives. This SEC code is used by the Status Reporter to post back to the correct TIRKS machine.

- Multiple CIMAP machines - As of TIRKS Release 14.2, the C1DIST SSC INFO and OPTS LINK SSC tables are keyed by MCO/OCO/CCO rather than being company level tables. This allows the user to specify different MSC links for different MCOs/OCOs/CCOs; that is, orders can be distributed to different CIMAP machines based on MCO/OCO/CCO. The following cases are *not* supported by the present architecture:

  — C1DIST *cannot* distribute the *same* order to more than one CIMAP machine. If an operating company has circuits whose installation is tracked by SSC1 on CIMAP machine A and the maintenance of that circuit is controlled by SSC2 on CIMAP machine B, the WORD and circuit history information must be in both machines. Currently the only available procedure for handling this is, that once the circuit is IE, the CPC must update the MCO field on WA and reissue the IE order to SSC2 and then change the MCO field back to allow subsequent orders (D, RN, R) to flow to SSC1.

  — Multiple CIMAP machines are only supported for installation activities. Maintenance activities are *not* supported; that is, a mechanized hand off can not be done by SSC on CIMAP machine A to a central office on CIMAP machine B.

  — On one TIRKS machine, CIMAP/DOC can only send CIMAP/CC and GDS orders and location information to *one* CIMAP machine, one GDS machine, and one NIS machine for OPS/INE. OPTS LINK CC, OPS LINK INE, and OPTS LINK SSDAC are company level tables so only one MSC link can be specified. The CIMAP/CC machine need not be the same as the machine on which CIMAP/SSC resides. However, the CIMAP/CC machine must have some of the CIMAP/SSC modules and tables turned up so that the Status Reporter is available for passing posting information to GOC. If CIMAP/CC does reside on a different machine, the mechanized maintenance interface is *not* supported.

  — Like CIMAP/CC, OPTS LINK SSDAC is a company level table thus CIMAP/DOC can send orders to only one GDS machine. However, GDS need not be on the same processor as CIMAP and both installation and maintenance interfaces to CIMAP/SSC are supported including JUMP/FIND capabilities between systems.

- CIMAP to GDS - One GDS machine cannot support an architecture consisting of multiple CIMAP machines, nor can CIMAP support a multiple machine architecture to GDS.

- CIMAP to NIS (OPS/INE) - One NIS machine cannot support an architecture consisting of multiple CIMAP machines; nor can CIMAP support a multiple machine architecture to NIS.

3.1.13 GDS - SOAC Interface

A. Introduction

One of the innovative features of the Generic Dispatch System is its ability to facilitate the receipt, dispatch, close, and tracking of service orders. The purpose of this section is to provide a high level description of the flow of data between the Service Order Processor (SOP), Service Order Analysis and Control System (SOAC), TIRKS Communication Module (TCM), and GDS. This user guide will contain a summary of the interface as described in the document titled "SOAC-GDS Interface Requirements and FCIF Specification: Pots, Non-Designed and Designed Special Services". If more detail is needed concerning the message structures, aggregate and TAG values, or formats of these data messages, refer to this document.

The following paragraphs discuss the major functions of the components of the SOAC/GDS interface.

B. Service Order Analysis and Control System (SOAC)

Service orders are distributed by the SOP to SOAC. Upon receiving service orders and during the life of the order, SOAC will perform several functions. Some of these GDS specific functions are described below:

- Determine GDS involvement and create the needed message structures to send to GDS. GDS involvement is determined by the type of order, order pass, presence, or absence of the ADSR FID, the class of service USOC, and the GDS conversion status of the wire centers on the order. To be considered GDS involved, an order must meet all five conditions.
- Perform the service order parse. In this step of the process, SOAC will copy the data fields from the service order that are needed by GDS in order to build a work request.
- Create the planning message (NET1) and send to TCM.
- Upon completion of automatic assignment, create the assignment message (NET2) and send to TCM.
- Process positive and negative responses from TCM.
- Provide inquires and reports related to SOAC GDS activities.

During the process of sending messages to TCM/GDS, SOAC formats all the data needed by GDS into a structure known as Flexible Computer Interface Format (FCIF). This structure, consisting of sections, aggregates, and TAGs, is arranged in a format similar to an outline. FCIF is a standard method of formatting data in order to build the preliminary interface between two computer systems. The data, after being placed into this preliminary arrangement, simplifies TCMs task of editing the content of the message and reformatting the data into the final format (DSECT) that will be processed by GDS.

C. TIRKS Communication Module (TCM)

The TIRKS Communication Module (TCM) resides within GDS. TCM allows communication between one application residing with TCM in one IMS copy of an IBM computer and another external TCM System or another non-TCM System (SOAC). TCM receives the input message in the GDS scenario from SOAC in a format known as FCIF, and prepares and formats the data in a manner that is acceptable to GDS programs.

TCM provides the following features within the GDS environment:

- Places data in formats that are acceptable to remote system (SOAC).

- Places data in formats that are acceptable to target systems (GDS).
- Automatically determines the communication path over which to route the messages.
- Stores the transmitted messages until the receiving system has acknowledged (positive or negative).
- Ensures that the related messages are sent in proper sequence by holding the later messages until the earlier message has been transmitted and a positive acknowledgement has been received.
- Message queuing upon link failures.
- Automatically resends messages upon link restorals.
- Stores errors during processing of incoming messages and stores negative acknowledgements from target applications.
- TCM provides an on-line capability to correct, resend, or delete messages that error during processing.
- TCM provides statistical data on processed messages that can be viewed on-line via TQS reports.

TCM contains databases that are used to process messages. They are as follows:

- Transaction Log Database (TLOG)
  This database is used to log messages that must be retained while awaiting a positive acknowledgement from the target application. Messages are also stored here when the initial processing caused an error or the messages are awaiting a positive acknowledgement from the target application.
- Deferred Message Queue Database (SENDQ)
  This database is used to store messages when processing is deferred because of link failures. Messages that are deferred and stored in the SENDQ database can be removed in one of two ways. The first method is an automatic check of the deferred message counters for each link in the SEC database when the link becomes available. The messages that are queued are resent to the Route Administration module for processing and subsequent deletion from database. The second method of deletion of queued records from the SENDQ database is from the format GMPMSG screen. From this screen, the user can move non-acknowledgement messages to the TLOG database for subsequent resubmittal or deletion.
- Network System Entity Code Database (SEC)
  This database is used to contain information about each of the operational systems that TCM must communicate with. Each of the operational systems is defined with a unique system entity code (SEC). Information about the communication links to and from the various SECs is stored here also. The SEC database can be accessed using the GMPNET and GMPSTS screen formats.
- Terminal Database
  This database provides a method by which the user can update records in the TLOG database. Whenever format GMPMSG is used to retrieve a record from the TLOG database, the record is placed in the Terminal Database. While a copy of a message is stored simultaneously in the TLOG and Terminal Database, the message is "protected" in that other users will not be able to access the message in the TLOG database. This will eliminate the possibility of duplicate updates by two users at the same time.

D. Acknowledgement Messages

Acknowledgements from GDS to TCM are referred to as class 2 messages. They are either positive or negative. Positive acknowledgements may or may not contain "Warnings". Messages that are acknowledged without warnings are deleted from the TLOG database. For those acknowledgements that do contain warnings, a positive response is sent in FCIF format to the originating system (SOAC) and an exception notice is printed for the user's analysis.

When GDS receives a message from TCM that is unacceptable for processing, an exception notice is printed for the user and a negative acknowledgement is sent back to the originating system (SOAC). The user then initiates steps for error processing.

E. Error Processing

Errors during processing of messages can occur on class 1, class 2, or class 3 messages. Class 1 messages or class 3 are application to application messages (SOAC to GDS).

Class 2 messages are acknowledgement messages (GDS/TCM to SOAC). Errors encountered can be of six possible varieties. They are as follows:

- TCM header validation errors
- TPAM parsing errors
- TPAM translation errors
- TPAM mapping errors
- TPAM general errors
- Application errors due to negative acknowledgements.

For more information concerning error reconciliation or general administration of TCM, refer to BR 190-539-301, BR 190-539-302, BR 190-539-303, BR 190-539-304, BR 190-539-305 and BR 190-539-404.

F. Generic Dispatch System (GDS)

On most service orders, GDS receives two messages from SOAC. The first message is called a precompletion planning message, sometimes referred to as the NET1, which contains service order image minus the assignment section. The purpose of the planning message in GDS is to initiate basic pricing for long range load forecasting, as well as for routing to determine work center. The second message type GDS will receive for each order is called an assignment message, sometimes referred to as the NET2. This message is created in SOAC upon receipt of the LFACS assignment data and is passed to GDS along with the assignment section of the Service Order Image. The purpose of the assignment message is to produce the assignment section of the work request. When GDS receives the assignment message, the work request is subjected to the logging process of screening, mapping, zoning, typing, and pricing. After these functions are successfully completed, the work request is either a candidate for automatic completion within GDS and subsequent closeout to the SOP or placed in the dispatch pool with a jobstatus of "PLD" or "PWD". If job logging was not successful, the work request will have a jobstat of "PSC". In this case, manual assistance from the ICC/SSDAC personnel will be necessary in order to determine the proper status of the work request.

There are times when GDS will not have enough data from SOAC to completely flow the order through job logging. To aid the end user in analysis of these types of orders, GDS will automatically set handling codes identifying these order passes.

Handling codes that will be set as a result of job logging messages from SOAC that are unique are as follows:

CALL FOR ASSIGNMENT - "CFA"

GDS will occasionally receive an assignment message without the FCIF assignment section. This assignment message will contain the CFA TAG set to "Y". This TAG tells GDS management that the technician being dispatched must call the LFACS personnel and inform them of the necessary data, i.e., terminal address, cable and count, that is needed to complete the facility assignments. To help the analysis of the order flow between SOAC and GDS, an additional system generated Handling Code of "CFA" will be created when the CFA TAG is received by GDS.

OUTER LOOP FLAG - "TDO"

Certain order types cannot be assigned by LFACS. When these orders are received by SOAC, they are manually assigned "outer loop", which sets the TDO flag in the OCTL and WCTR aggregates. Orders assigned using the outer loop method do not create the assignment section in FCIF. Therefore, GDS will not job log the order pass completely. To help the analysis of TDO orders, GDS will automatically populate the HDLGCODE field with a system-generated handling code of "TDO".

NO ASSIGNMENT SECTION FLAG - "NA"

The No Assignment Section Flag may appear in the OCTL of the planning message or the OCTL and WCTR aggregates of the assignment message. The TAG is set in the OCTL of the assignment message only when *all the WCTR aggregates* contain the NA TAG set to "Y".

If the NA TAG is set to "Y" in the OCTL of the planning message, SOAC will not send an assignment message to GDS.

On some orders, GDS will receive planning messages without the NA TAG set but the assignment messages will have the NA TAG set to "Y" in the OCTL and WCTR aggregates. This will occur when the assignment involvement is for touch tone and custom calling features. The NA TAG is set on these orders because the assignments appear in the Service and Equipment section of the service order, not the assignment section.

To help analysis of orders containing the NA TAGs, GDS will automatically populate the HDLGCODE field with a system-generated handling code of "NA".

FACILITIES NOT AVAILABLE FLAG - "FNA""

The Facilities Not Available Flag appears in the OCTL and CTL aggregates. The purpose of the FNA flag is to indicate to the receiving system that facility assignments are not available at the present time.

In the OCTL aggregate, the value of the FNA TAG will be "C" or "U". The FNA TAG will be set to "C" if the CFA TAG is set to "Y" for any circuit termination in the LFACS Assignment Request Response.

The FNA TAG will be set to "U" in the OCTL aggregate if an unsolicited assignment response from LFACS is received by SOAC and facility assignments are not yet available. This will occur on small business customers when there is a disconnect order due at a location and a New connect order for a different customer is due at the same location. If the due dates are compatible, LFACs

will assign the "N" order with the "D" order's cable and pair. However, if the "D" order customer changes the due date for disconnecting service, and LFACS cannot find facilities for the "N" order customer, an unsolicited assignment response from LFACS is sent to SOAC with the FNA TAG set to "U".

In the CTL aggregate, the value of the FNA TAG is "C" if the CFA TAG is set to "Y" on any circuit termination in the LFACS Assignment Request Response. The FNA TAG will not be set in the CTL aggregate if an unsolicited response is received from LFACS and assignments are not available.

To help in the analysis effort, GDS will automatically populate the JOBSTAT field with "PFA" and the HDLGCODE field with a system generated handling code of "FNA" if the FNA TAG is set to "U" in the OCTL aggregate only.

MANUAL ASSISTANCE - "MA"

If GDS receives a planning message from SOAC with the MA TAG set to "Y", GDS will automatically set a handling code of MA.

INCOMPLETE MANUAL ASSISTANCE -"MAI"

If GDS receives a planning message from SOAC with the INCP flag set to "Y", and the MA flag set to "Y", GDS will automatically set a handling code of "MAI".

G. Precompletion Planning Message

When a planning message is sent to GDS by SOAC, it will contain a copy of the service order image as well as certain fields from the service order that are needed by GDS as explained above. These fields are referred to as equipment and testing USOCs and FIDs. Examples of FIDs on data items that are parsed from the service order and sent to GDS are defined below:

FID	DEFINITION	S.O. SECTION
TN	Main TN	IDENT.
CLS,CLT,CKT,PSM	Common Language Circuit	S&E
SIT,SIS,DID,CKR	Identification; Service	S&E
OGO,PX,TER,TLI	Code and Modifier;	S&E
ORD	Order Type (N,T,D,F,C)	IDENT.
ORD	Order Number	IDENT.
ORD	Correction Suffix	IDENT.
CS	Class of Service	IDENT.
SCS	Circuit Class of Service	S&E
DD	Due Date/Access Info	IDENT.
SD	Sub Date/Access Info	IDENT.
SLS	Sales Origination Code	IDENT.
SLSN	Sales Origination Code	Control
NCON	Sales Origination Code	Control
ACNA	Abbreviated Access Carrier Name	INDENT.
CCNA	Customer Carrier Names Abbreviation	IDENT.

FID	DEFINITION	S.O. SECTION
ADSR	Administration of Designed Services Review	IDENT/S&E
SPO	Official Company Services Indicator	IDENT.
TDD	To Due Date	IDENT.
FDD	From Due Date	IDENT.
APP	Service Order Application Date	IDENT.
DVA	Design Verified Assigned Date	Control
FCD	Frame Continuity Date	Control
PTD	Plant Test Date	Control
RID	Records Issue Date	Control
WOT	Wired and Office Tested Date	Control
PCS	Participation Customer Status	Billing/IDENT
CRO	Complete with Related Order	IDENT.
RO	Related Order	IDENT.
SA	Service Address	LIST
ACA	Service Address	LIST
LA	Listed Address	LIST
LOC	Location	LIST
AHN	Service/Listed Address	LIST
PON	Purchase Order Number	BILLING
OCO	Overall Control Office CLLI	CONTROL
LN	Customer Name	LIST
NLST	Customer Name	LIST
NP	Customer Name	LIST
LNC	Customer Name	LIST
ACN	Customer Name	LIST
SGN	COMMON LANGUAGE Segment Number	S&E
DPA	Facilities Address and Circuit Location Number	S&E
CKL	Facilities Address and Circuit Location Number	S&E
LTI	Circuit Location Number	S&E
POI	Point of Interface	S&E
ACTL	Access Customer Terminating Location	LIST
SN	Service Name	S&E
LCON	Local Contact Name and Telephone Number	S&E
MCO	Maintenance Control Office	S&E
DSG	Design Contact Name and Telephone Number	CONTROL
BTN	Billing Telephone Number	BILLING/S&E

H. Assignment Message

The assignment message is created in SOAC after processing the service order through LFACS and COSMOS. The assignment message or NET2 consists of the facility assignments in FCIF with a copy of the assignment section of the Service Order Image. Unless an order falls out for Manual Assistance (MA) during NET1 processing, the assignment message will be received by GDS soon after receiving the planning message. When GDS receives the assignment message from SOAC, job logging begins. Job logging consists of service order screening, routing, mapping, zoning, typing, and pricing. Refer to Section 3.2 of this manual for further information concerning the job logging functions.

There are no FIDs parsed from the service order for the assignment message as is done for the precompletion planning message. There are, however, "TAGs" or data items associated with the outside plant assignments that are sent to GDS from SOAC. Some of those data items received by GDS in the assignment section are defined below:

FID	DEFINITION	S.O. SECTION
RSP	Restoration Priority	S&E
SSM	Safeguard Measures	S&E
SSP	Safeguard Measures	S&E
NCI	Network Channel Interface Code	S&E
SA,LA ACA,CKL DPA	USOC Address, i.e., the address SOAC determines to be associated with equipment or testing USOCs	LIST/S&E

DATA ITEM	DEFINITION
"CA"	Cable Identifier
"PR"	Pair Identifier
"TERM"	Terminal Address
"ENC"	Encapsulated Flag
"BP"	Binding Post Number
"BPCL"	Binding Post Colors
"WI"	Work Instructions
"WOL"	Wired Out Of Limits
"WOLD"	Data Associated with WOL Facility
"BCT"	Indicates a Broken Connect Through Facility
"BCF"	Indicates a Broken Connected Facility
"PGST"	Pair Gain System Type
"ADE"	Air Dryer Flag
"CPC"	Cable Pressure Contactor Flag
"CPT"	Cable Pressure Transducer Flag
"LST"	LST number
"LSTF"	LST flag
"ITM"	LST item number
"ACT"	Indicated Action to be Taken on Circuit Termination
"SSM"	Special Safeguarding Measures Flag
"SSP"	Special Service Protection Flag
"RTF"	Transmit/Receive Flag

The data items defined in this document are only the items either derived from FIDs from the service order or produced within LFACS. There are, however, several other data times or "TAGs" involved in the interface. For more information, refer to the SOAC/GDS interface specification document mentioned in the beginning of this section.

3.1.14 GDS-SOP Interface

A. Introduction

The GDS-SOP interface provides the link by which both corrected and noncorrected POTS installation orders may be completed or returned on the GDS completion screen and the completion information automatically sent back to the Service Order Processor (SOP). Corrected orders are defined as orders that require changes to the body of the service order (i.e., S&E, BILL). Noncorrected orders are those orders, both field-visit and nonfield-visit, that do not have changes to the body of the service order (i.e., S&E). Information between the two systems is transmitted via TCM. Autocomplete supplements the former completion process, requiring the manual input of a completion message retrieved from a printer into the SOP.

B. Required Table Entries

To utilize this feature the following must be available:

1. Appropriate entries must be made in the following TTS tables:
   a. **GDS OPTIONS** - The ACMP-ON field will be populated with an entry of "Y" indicating that order completion information from this center should flow to the SOP. ACMP-ON is controlled by the Feature Authorization Module (FAM), which was described earlier in Section 3. An entry in an optional field, ACMPPATH, will divide messages (in TCM) to the SOP by GDS center. This field would be useful if all messages from one center (and only that center) needed to be held.
   b. **GDS SOP EDITS** - This table will be built with the SOP as the Table Key and the FID# (01-30) as the Table Record Key. Through the information built into this table, the user-defined field names found in the Order Stat section of the completion screen can have certain characteristics assigned to them. These edit rules must be followed to result in a successful completion message flow to the SOP. This table also contains default values for non-field visit orders.
   c. **GDS SOP OPTIONS** - This table defines interface options for each SOP. Entries in this table are used to determine the TCM SEC (System Entity Code) for a SOP. The determination to send or not to send PAC orders to a SOP is also made in this table. Options for the autocompletion of corrected orders are also defined in this table.
   d. **GDS SOI PARSE** - This table will be built using the SOP as the Table Key and the parse option "AC" (AutoComplete) as the Table Record Key. The center should be blank. GDS SOI PARSE is used to determine which sections of the service order may be viewed on GDCMP2 during the completion process.
2. Entries in the GDSOP (GDS Service Order Processors) table will determine to which SOP completion information for a wire center and CSC should be sent. The "DELMIN" and "DELOFF" entries determine, respectively, the length of time a message should be held in TCM before being passed to the SOP if the order is delayed and the time of day at which completion information should be sent immediately, regardless of the DELMIN entry.

C. Completion Process

Several fields relating to the autocompletion process on the GDCOMP screen will need the appropriate entry to allow the autocompletion to occur.

1. The SOP flag determines whether a message will automatically be sent to the SOP. An entry of "Y" is required for the autocompletion process. If "N," nothing will be passed to the SOP; the completion message will be sent for manual completion. This flag defaults to the value of ACMP-ON in the GDS OPTIONS table. SOP will be "N" for manually added orders, orders that have been uncompleted, multi-term orders, and orders with NOTIFY set to no. If SOP is "Y," it can be updated to "N"; however, system generated values of "N" cannot be updated to "Y."

2. The PR flag determines whether the completion message will be printed. If PR is "Y," the completion message will be printed at the printer designated in the GDS SOC PRINTER or GDS OPTIONS table so that the order can be completed manually. This flag defaults to the opposite of the SOP flag. If the SOP flag is updated, however, the PR flag must also be updated (i.e., if SOP is updated to "N," PR must be updated to "Y" if a printed completion message is wanted for a manual completion).

3. The SOI flag determines whether the service order image will be printed with the completion message. If SOI is "Y", the service order image will be printed with the completion message. SOI defaults to "N."

4. The DELAY field entry is dependent upon the user's desire to have completion messages held in the TCM before passage to the SOP, and applies to an order only if the user indicates that it should. A "Y" entry will then take the "DELMIN" value previously established in the GDSOP table as its hold period. If an "N" is entered in the DELAY field, the completion message will be transmitted immediately. The default for this flag is "N".

5. A "Y" entry in the EDIT field will invoke the edit process (as established in the TTS table, GDS SOP EDITS) when the "COMPLETE" or RETURN command is executed. Edit errors will block completion and the field(s) in error will be highlighted. This flag defaults to "Y", and can only be changed to "N" if SOP is "N".

6. The POP (autopopulate) field is not currently being utilized.

7. A maximum of ten CHANGES flags will be displayed on the screen, one for each section defined in the GDS SOI PARSE table in the "AC" entry. If there are corrections to the service order, the sections requiring changes must be marked with a "Y." If any of the marked sections is listed in the DELAY field of the GDS SOP OPTIONS table, the message will be delayed by the number of minutes specified in the DEL MIN field in the GDSOP table. If SOP is "Y" and any of the marked sections are listed in the PG2 field in GDS SOP OPTIONS, corrections to the service order will be entered on GDCMP2.

After entering the required information on the GDCOMP screen and executing the "COMPLETE" command, the completion process begins. If all the user-defined edit rules are met, noncorrected orders will be completed at this point and ORDER STATs will be passed back to the SOP. If a corrected order is being processed, however, GDCMP2 will now be displayed providing the appropriate flags were set. Corrections must be entered for all selected sections which are also defined in PG2. After all of the required correction information is entered, the order will be completed and the order statistics and correction information will be passed to the SOP.

If a job was RETurned in GDS, it will not be completed in the SOP, but ORDER STAT information may be passed to the SOP. Edit rules will be invoked for those ORDER STAT fields that are to be passed to the SOP on a RETurn, and for any other fields that are populated. These rules must be passed before the job will be RETurned. Corrections may not be entered at the time of a RETurn.

Since an order with multiple TERMS is viewed as multiple jobs in GDS, it will not be autocompleted in the SOP. When all TERMS are complete, a completion message consisting of the JOBID and ORDER STATS for all the jobs will be sent to a printer. The completion message will be produced when either the last TERM is completed or the last open TERM is cancelled. The order must then be completed manually in the SOP.

D. Completion Information from GDS

When a job is completed or returned, GDS will pass to SOP the following information:

JOBID (order number)
Completion Date/Time (in GDS)
TN/CKTID
#CKTS (number of non-cancelled lines)
Handling Code
CMP/RET indicator
SOP Code
Correction Flags (indicate what, if anything, is corrected)
Security Code
ORDER STATS field names
ORDER STATS field values
CORRECTED flag
The first ninety characters of the COMMENTS field
Appropriate correction information.

The information that is passed to the SOP will be in FCIF (Flexible Computer Interface Format). The SOP will then have to process this information to complete the order.

E. Messages

1. An Autocompletion message is sent by GDS to SOP via TCM when the user executes a successful "COMP" command. This will be a message class of 3 with a scenario type of A (TCM to non-TCM).

2. SOP will send an acknowledgment message to TCM. Every Class 1 or Class 3 message passing through TCM must be acknowledged and the acknowledgment can be either positive, negative, or warning. The acknowledgment here should always be positive if SOP will provide another message back to GDS (see 3).

3. For companies wishing to maintain completion status information in GDS, an optional response message is sent from SOP to GDS via TCM. This message is sent at the same time or shortly after the acknowledgment message to TCM. The message contains the SOP's completion date and time, order status, and some descriptive text. This message will be a class 1 and scenario type of Z, which is non-TCM to TCM.

4. A TCM Acknowledgment message is generated by GDS when the SOP response message is received. The message sent will be class 2 with a scenario type of A. A negative acknowledgment will be produced by GDS if the SOP response message is missing key data or a database error is encountered. The SOP can choose whether or not to receive this acknowledgment based upon its population of control fields (EPATHID and PPATHID) in its response message.

F. Responses from SOP

Once all required data is present and valid, GDS will receive and store a status code and up to forty characters of information from the SOP. This information will be stored as an IIN event in the Log History database. Both the status code and the accompanying information will be accessible via TQS (TIRKS Query System). This message will include the following fields:

Order Number (GDS JOBID)
SOP code
Completion Date/Time (in SOP)
SOP status
Message text

The SOP status code is a one character code and indicates what actions are to be taken with regard to the order by GDS and the status of the order in the SOP. The following values are valid:

SOP Status	SOP Action	GDS Action
1	Order Completed	Nothing
2	Order Open	Nothing
3	Order Open	Print Exception Notice
4	Order Open	Resend Completion Message
5	Order Open	Print Exception and Resend
6	Order Rejected	Print Exception

3.1.15 Data Matching in GDS (GDS Designed Data Interface)

This section describes the GDS designed data interface receiver matching algorithm. One of the primary functions of the designed data interface receiver module in GDS is to match the service order data to the design data by using a matching algorithm. GDS builds a work request from job data received off the Service Order Image from either SOAC or the SOP. The Work Request data includes order level information (customer name, billing telephone number, due date, etc.), CKL information (address, USOCS, etc.), and item information (circuit ID, facilities, etc.). GDS also receives design data (circuit end, critical dates, CLO, etc.) for special service circuits from CIMAP/DOC.

The work request database contains a work request record consisting of an order segment, multiple CKL segments, and multiple item segments. Each CKL segment is a separate work location identified by a CKL address and CKLID. Each item segment is identified by a circuit ID. The matching algorithm utilizes data in each segment type to identify the correct order-CKL-item segments to match with. The data that is involved in the matching algorithm is illustrated in the following table:

Field	Segment	SOAC FCIF TAG	TIRKS® Screen (Release 15.3)
center	order	GDS derived	GDS derived
CKL address	CKL	LA, TRAD	LOOP2 STL
CKLID	CKL	KNO	LOOP2 CKL
CKL action	CKL	ACT	LOOP2 loop A field
JOBID	CKL	ORDNO	GCOCs1 ord
circuit end	CKL		LOOP2 loop
circuit ID	ITEM	CKTID, CLT, CLS	GCOCS1 ID

The matching algorithm makes two separate attempts to identify the correct work request using the circuit ID and JOBID indices. The match process continues until a rule is met which then terminates match processing. If no match rule is met, the GDS center is identified by routing and the work request is added to the Work Request database. If a work request already exists, a new CKL/item is added to the existing order segment.

A match rule identifier has been placed in the IIN event for receipt of the data in GDLOG. The identifier consists of two characters that identify the fields used in the match process.

The match rules are presented in priority order. The name of each match rule is enclosed in parentheses.

1. JOBID, CKLID and circuit ID (W1)

   Using the entire circuit ID, the index is used to identify a possible item segment for match. If the JOBIDs are equal (order segment) and CKLIDs are equal (CKL segment), it is considered a match. The CKL action must be add or reuse for this rule. If the rule is met, the order, CKL, and item segments are updated with the design data.

2. JOBID, disconnect CKL action and circuit ID (W2)

   Since the CKLID is not provided for the disconnect end when the end has both add and disconnect activity occurring at it, an alternative match rule is used. The entire circuit ID is used. If the rule is met, the order, CKL, and item segments are updated with the design data.

3. JOBID, CKL address and circuit ID (W3)

If the CKLID is not provided, the CKL address is used as an alternative match field for the CKL segment. It must be an exact match. The entire circuit ID is used. If the rule is met, the order, CKL, and item segments are updated with the design data.

4. JOBID, circuit end, CKL action, and circuit ID (W4)

   If the incoming message does not provide a CKLID and the work request also does not have a CKLID, an attempt is made to match by the existing circuit end (A or Z) and CKL action. This reduces the number of items that may be erroneously built for that CKL if the CKLID is not involved in the match. The entire circuit ID is used. if the rule is met, the order, CKL, and item segments are updated with the design data. Communication with the Status Reporter is prevented since the CKLID is a required field for the status reporter interface.

   The circuit ID used via the index consists of two portions: a family portion and a segment portion. The family portion consists of the prefix, service code/modifier, area code, office, line, and extension for telephone formatted circuits, and a prefix, service code/modifier, serial number, and company code for serial number formatted circuits. The segment portion (segment ID) of the circuit identifies a particular segment of a circuit. Since the Service Order Interface only receives the family portion of the circuit ID, the designed data interface receiver module attempts to match first by the entire circuit ID, and secondly, by the family portion of the circuit ID.

   The same match attempts are made with the family portion of the circuit ID only. Trailing delimiters ('/') are eliminated.

5. JOBID, CKLID and circuit ID (F1)

   The family portion of the circuit ID is used.

6. JOBID, disconnect CKL action and circuit ID (F2)

   The family portion of the circuit ID is used.

7. JOBID, CKL address, and circuit ID (F3)

   The family portion of the circuit ID is used.

8. JOBID, circuit end, CKL action and circuit ID (F4)

   The family portion of the circuit ID is used.

9. JOBID and CKL address (A)

   If none of the above match rules are met, an attempt is made to add the item at the correct location (CKL). if the CKL addresses match exactly, the item is added. GDMTCH can then be used to merge the correct items.

10. Routing (R0) - If none of the above match rules are met, the message is routed to a GDS center utilizing GDICTR. If an order does not exist under that center, an order/CKL/item is added to the database. If an order already exists under that center, an additional CKL/item is added to the order segment. The CKL sequence number will be incremental from the last existing CKL segment.

If the TIRKS table is logged in GDS, the Service Order Interface will attempt to match by the following criteria (in priority order):

1. JOBID, CKLID, and circuit ID

2. JOBID, CKLID, and family portion of circuit ID
3. JOBID and CKL address
4. JOBID (a new CKL is created)

3.1.16 GDS-LMOS Interface

A. Introduction

The GDS-LMOS Interface provides the facility through which information about POTS and nondesigned special service trouble tickets, and loop testing is transferred between GDS and LMOS. The interface supports the following functions:

- Transmission of trouble ticket data from LMOS to GDS. This includes both initial and subsequent trouble reports. Note that GDS is only interested in dispatchable troubles. The LMOS screening function, used to determine dispatchability, continues to function as today. Once a ticket is identified by LMOS for outside dispatch, the trouble is sent to GDS via the RBOR transaction. The RBOR is initiated either automatically as part of an LMOS screening rule decision or manually by a user. Following BOR/MOR receipt, a DJI is requested to LMOS to obtain additional trouble data not available on the BOR/MOR.
- Transmission of status information from GDS to LMOS. This data is automatically sent "in the background" as the result of specified activities that occur in GDS. This provides the LMOS RSA with up-to-the-minute information about the status of trouble tickets. Additionally, data needed for TREAT processing is provided. GDS supports statusing for single jobs and stapled bundles.
- Transmission of closeout information from GDS to LMOS. This data is automatically sent "in the background" following the completion of a ticket. This provides LMOS with needed input for TREAT processing.
- Synchronization process to insure that GDS and LMOS maintain the same list of open troubles. This procedure is run automatically at user-defined intervals for a given maintenance center. The process will request the LMOS RCMD-DPJ (Display Pending Jobs) report and compare the active troubles in GDS and LMOS. For troubles open in LMOS but not GDS, an RBOR request is sent to LMOS to retrieve the relevant trouble data. Additionally, for cases where the subsequent counts of troubles open in GDS and LMOS do not match, an RBOR is requested to LMOS to obtain the most recent version of the trouble data. To utilize the synchronization feature, entries must be made in the GDCRON table and the TTS table GDS SYNCH OPTS.
- Testing support for MLT loop and full tests and PST (list) processing. For more information on automatic loop testing, see the section entitled "Automatic Loop Testing."

B. Interface Architecture

There are two alternative methods available for implementation of the GDS-LMOS Interface. Refer to Figure 3-6.

The first architecture involves the implementation of an IBM Series 1 Machine referred to as a Link Processor (LP) that sits between the LMOS FES and the GDS Host. The Series 1 contains IBM and Bellcore developed software that provides protocol and format conversion as well as message routing functionality.

The second architecture involves the implementation of DCOMM/TCIS software on the GDS Host. DCOMM/TCIS performs the same functions as the Link Processor, thereby eliminating the need for Series 1 hardware.

Both architectures require the use of the Operation Interface (OI) software module on the GDS Host. OI provides the means through which the GDS application can communicate with LMOS.

For more information on OI, refer to

- Operation Interface (OI) Administrative Guide, BR 190-539-009
- Operations Interface (OI) On-Line Message Directory, BR 190-539-401

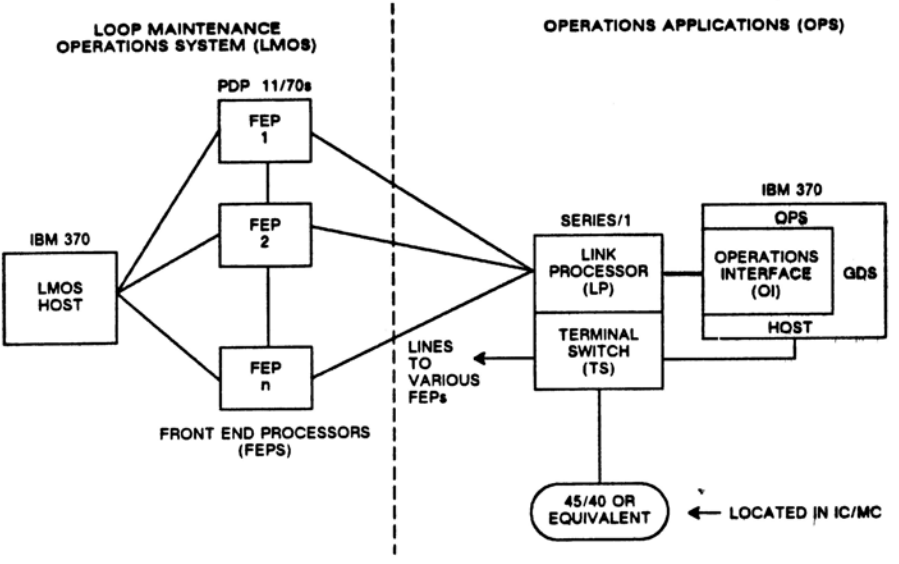


Figure 3-6. GDS-LMOS Interface Architecture

C. Trouble Ticket Data

The following lists the LMOS trouble ticket data used by GDS:

TTN #
UNIT #
TN/CKTID
CLASS OF SERVICE
SERVICE CODE
CUSTOMER NAME

CUSTOMER ADDRESS
CUSTOMER LOCATION
COMMITMENT DATE
COMMITMENT TIME
REACH CUSTOMER
REPAIR ROUTE
AFTER TIME
BEFORE TIME
ACCESS NARRATIVE
PARTY POSITION NUMBER
PRIORITY FLAGS : UP TO 5 OCCURRENCES
TROUBLE DESCRIPTION
PRIORITY RANKING
RECEIVED DATE
RECEIVED TIME
LAST 1ST CODE
LAST IST DATE
LAST IST TIME
SCREEN RESULT CODE
SCREEN NARRATIVE
SUBSEQUENT COUNT
MLT VER CODE
MLT TEST SUMMARY
OE
WC
CABLE #
PAIR # FOR F1 TO FZ
BP
COLOR
TERMINAL ADDRESS
CTTN
MESSAGES : UP TO 2 OCCURRENCES
GENERIC FIDS : UP TO 8 OCCURRENCES
OS INDICATOR
DATE RECEIVED
DATE CLEARED FOR UP TO THE LAST 3 HISTORY ENTRIES
TYPE
DISPOSITION
CAUSE
REPAIRMAN
HISTORY NARRATIVE
PSO NO
PSO DUE DATE
USOC CODES : UP TO 12 OCCURRENCES

D. LMOS Statusing and Closeouts

In GDS, whenever an LMOS-originated work request is restatused or completed, job status updates are sent to LMOS. A request is sent to LMOS through the OI (Operations Interface) subsystem. Three different OI request types, which correspond to three different LMOS transactions, are passed for these purposes:

1. EST requests are passed when an LMOS work request is restatused in GDS.
2. CEST requests are passed when the lead job of a stapled LMOS bundle is restatused in GDS.
3. FST requests are passed when an LMOS work request is completed and a user provides FST data on the GDCOMP completion screen.

After LMOS receives the request and processes it, if a processing failure of the GDS status change occurs, it will notify OI, which will then invoke a GDS transaction to inform GDS users of the processing failure. This transaction consists of two specific features:

1. Exception notice printed to the appropriate GDS work location.
2. An entry in the GDS Status Log database

An exception notice to the appropriate work center that requested the status change will be printed. It will inform GDS users of the status failure on the LMOS front end.

An entry event will be placed on the Status Log database as an Interface Error and will be displayed on the GDLOG screen.

These functions occur "in the background" in that the user does not have to wait for LMOS to receive and process the status/closeout information before executing the next transaction.

Table 3-7 presents a summary of the data transmitted. As illustrated on the table, designated GDS commands executed on GDS screens resulting in GDS status changes are to cause corresponding status changes in LMOS. When the appropriate status changes fail to be made in LMOS, the above described transaction will occur. This transaction thereby increases the likelihood that the GDS user can overcome the problem by entering the corrected data directly on the LMOS format in a more timely fashion.

E. FAM Control

The GDS-LMOS Interface functionality is controlled via the FAM (Feature Authorizations Module). For BCCs that have not funded the POTS feature set, the following are not accessible:

- Trouble tickets with designated POTS classes of service will be prohibited from entry in GDS via the LMOS-GDS Interface.
- MLT Tests and PST (list) processing are not permitted.

For more information on FAM, refer to Section 3.1.10.

Table 3-7. GDS-LMOS Intermediate Statuses

GDS SCREEN	GDS COMMAND	GDS STATUS CHANGE FROM:	GDS STATUS CHANGE TO:	LMOS STATUS CHANGE FROM:	LMOS STATUS CHANGE TO:
GDDISP	DISPATCH	(ANY)	DSP	(ANY)	DPO
	PREASSIGN	PLD	PRE	PDO	PRD
	REJECT	DSP	PLD	DPO	PDO**
	REJECT	DSP	PRE	DPO	PRD
	REJECT	DSP	PSC	DPO	HLD
	REJECT	DSP	JEP	DPO	HLD
GDCOMP	RETURN	DSP	PLD	DPO	PDO**
	RETURN	DSP	PRE	DPO	PRD
	RETURN	DSP	JEP/PSC*	DPO	HLD
	COMPLETE	(ANY)	CMP	(ANY)	(Note 1)
GDMWR	UPDATE	(ANY)	PLD	(ANY)	PDO**
	UPDATE	(ANY)	PSC	(ANY)	HLD
	UPDATE	(ANY)	JEP	(ANY)	HLD
	UPDATE	(ANY)	CAN	No LMOS Notification	
GDTLOG	ADD	PLD	PRE	PDO	PRD
	DELETE	PRE	PLD	PRD	PDO**
GDLST	UPDATE	PLD	PRE	PDO	PRD
	UPDATE	PLD	PSC	PDO	HLD
	UPDATE	PLD	JEP	PDO	HLD
GDLOAD	PERM	PLD	PRE	PDO	PRD
	CANCEL	PRE	PLD	PRD	PDO**
GDGRP					
'G' GROUPS	ADD	PLD	GRP	PDO	PDO
	DELETE	GRP	PLD	PDO	PDO
	UPDATE	GRP	PSC	PDO	HLD
	UPDATE	GRP	JEP	PDO	HLD
'S' GROUPS	DELETE	STP	PLD	PDO	PDO
	DELETE	STP	PSC	PDO	HLD
	DELETE	STP	JEP	PDO	HLD

* When using the RETURN Command and the JOBSTAT: JEP or PSC on the GDCOMP screen, the user can optionally enter data in the EST line fields. For example, if the work item is NO ACCESS SUBSCRIBER, the EST fields would show WP: 0 IST: 070. The corresponding entries on the RST for that work item in LMOS would show:

RMR (Repair Person Return)
HLD (Hold)
NAS (No Access Subscriber)

If the EST data is not entered, the corresponding RST entries would show:

RMR (Repair Person Return)
HLD (Hold)

** PDO is only one of several possible LMOS "pending dispatch out" statuses. GDS saves the original "PDO" type (PDO, PDB, PDM) and uses it whenever a status needs to revert to "pending dispatch". In the above examples, PDO is used to indicate any of the LMOS "Pending Dispatch Out" ISTs.

'L' GROUPS	UPDATE	ANY	PLD	ANY	PDO
	UPDATE	ANY	PSC	ANY	PSC
	UPDATE	ANY	JEP	ANY	HLD

Note 1: EST status used to clear a work item in LMOS.
FST status used to close a work item in LMOS.
In GDS, the EST and FST fields are user populated on the GDCOMP screen.

3.1.17 GDS - CIMAP/SSC Interface

This section covers the Interface between CIMAP/SSC and GDS for Installation, Circuit History, and Maintenance. The Interface, for both Installation and Maintenance, provides a mechanized link between the Special Service Centers on CIMAP/SSC and the Dispatch Centers on GDS.

A. GDS CIMAP/SSC - Installation Flows

The CIMAP/SSC - GDS Installation Interface provides for the passing of CKL tracking information from GDS to the SSCs. Figure 3-7 shows the flow of information between the two systems.

1. Information Flows for a Circuit Order Issue

   - CI/DIST at ISSUE passes order issue information to CIMAP/SSC. This information includes passing the WORD document to the CIMAP WORD databases and data to prime Circuit Installation and History databases. At RID completion GOC sends GOC CKL information to the Status Reporter.
   - C1/DIST then notifies CIMAP/DOC which formats the information on the WORD into CIMAP documents for each CKL/CWL work location. CIMAP/DOC then passes the order issue information and CKL information to GDS. The information is matched with the data provided by SOAC. If it is an ESO/DSO, the data is used to build work requests.
   - On receipt of this information, GDS transmits the following CKL information to CIMAP/SSC via the Status Reporter:

     — CKL location CLLI codes for all CKLs on GDS

     — CKL ID

     — Objective report dates

     — Tracking Flag setting indicating whether GDS will be completing work at a particular work location for DVA and Due Date.

   - The users on CIMAP/SSC can view this information and make status checks via the OSSCWL screen. This format displays all CWL/CKL locations that are logged in the IA database by GOC, CC, and GDS. The CKL information is placed on the CIMAP/SSC LOG if the option is set to "Yes" in the SSC-OPTIONS table.

2. CWL/CKL Matching

   — The matcher algorithm in CIMAP is responsible for matching GDS CKLs with GOC CKLs/CWLs. See section D for details on this algorithm. As a result of the matching process, the Status Reporter knows which GOC CKL to post when a CKL completion is received from GDS.

   — The GDS users must make sure that the CKL ID logged on LOOP2 is the same as the CKL ID logged in GOC if matching of GOC/GDS CKLs is to function correctly.

3. Posting Information for CKL level dates

   — The OSSCWL screen displays the CKL jeopardies, jeopardy removals, and date completions passed by GDS to both CIMAP/SSC and GOC via the Status Reporter. After logging the CKL locations in the IA database, GDS autocompletes DVA at the CKL locations for jobs with a status of pending load (PLD) or pending auto complete (PAC). Work Requests are built in GDS and placed in a dispatch work pool. When the dispatch work is completed, GDS posts the

CKL DD completions to the Status Reporter. The Status Reporter informs CIMAP/SSC of the completion which is displayed on OSSCWL and also sends the completion to GOC if the GDS locations are matched with a GOC CWL. LOG entries for all postings are made if the option is set to "Yes" in the SSC-OPTIONS table.

— CIMAP/SSC can manually add CKL locations on the OSSCWL format. Completions and jeopardies can be posted for these manually added locations from OSSCWL, and for GOC CKLs/CWLs that are *not* tracked by GDS.

— The SSC will post item level date completions after all work at the CKL/CWL level has been completed. Item level date completions will be blocked if there is outstanding work at the CKL/CWL level. The final step is posting DD completions after all work associated with installing the circuit is finished and the service is accepted by the customer.

— The Status Reporter notifies GDS that the circuit is In-Effect (IE). GDS then passes Circuit History information for the circuit end locations to CIMAP/SSC. This information is placed in the Operations Circuit History database. This activity is explained in detail in the next section.

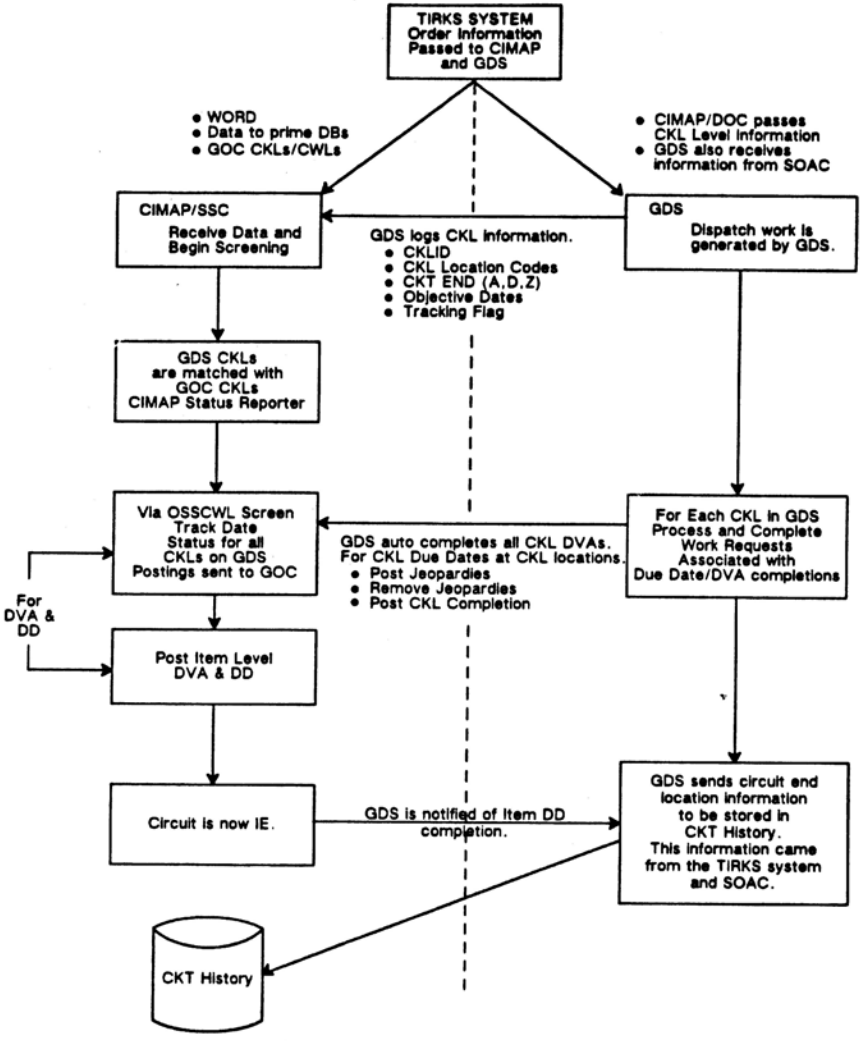


Figure 3-7. GDS-CIMAP/SSC Installation Interface

B. GDS CIMAP/SSC - Circuit History Flows

GDS receives designed special service information from both the TIRKS System and SOAC. This information is combined to produce dispatch work details for each circuit termination. When the circuit is completed in GDS and goes in-effect (IE) in SSC, GDS will pass circuit and CKL dispatch information to CIMAP/SSC. The information will be stored in the Circuit History database. GDS will perform validation to insure that the required fields are populated. These fields can be displayed on the CIMAP/SSC: Circuit History Update (OSSCHU).

When a Trouble Report is handed off to GDS, the MT in the SSC will identify the CKL (circuit termination - A or Z) at the time of the handoff. CIMAP/SSC will retrieve the appropriate circuit termination information needed by GDS for dispatch from Circuit History and append the information to the Trouble Report before sending the trouble to GDS. If any fields required for dispatch are missing, an error message will be returned to the user's terminal. HELP (PF9) lists for the user all required fields. The missing data can be updated on OSSCHU or OSSTR and the handoff can then take place. At the time of the completion of the handoff by GDS, circuit history information is returned to CIMAP/SSC with all the required fields populated. Included are any updates on the information done while the trouble was dispatched. The information is again stored in the Circuit History database.

Table 3-8 lists all the circuit history fields that are passed between CIMAP/SSC and GDS. The table includes the FID names in each system, the data source at the time of order completion, and a field description.

Table 3-8. Circuit History Fields and Primary Data Source.

SSC (OSSCHU)	GDS (GDMSWR/GDISWR)	SYSTEM SOURCE(1)	DESCRIPTION
CKT	CKTID	TIRKS	Circuit ID
CSC	CSC	(2) GDS (SOAC)	Class of Service Code (SVC/MOD)
CAC	CAC	TIRKS	Circuit Access Code
CUS NAME	BILL NAME	TIRKS	Billing Customer Name
TEL	TEL	TIRKS	Billing Telephone Number
CKLLOC	CO	TIRKS	Local Serving Office CLLI Code
RSP/TSP	TSP	TIRKS	Restoration Priority
ACNA	CNA	TIRKS	Access Carrier Name Abbr.
WC	WC	GDS (SOAC)	P1-P2 Wire Center
* CKL NAME	CKL NAME	GDS (SOAC) or TIRKS	CKL Customer Name
CKL TEL	CKL TEL	GDS (SOAC) or TIRKS	CKL Customer Telephone Number
* CKL ADDR	CKL ADDR	GDS (SOAC) or TIRKS	CKL Customer Address
LOC	LOC	GDS (SOAC)	CKL Customer Location
NCI	NCI	GDS (SOAC)	Network Channel Interface
DAA/AA	DAA/AA	GDS Area/Allocation Area	Dispatch Administration
RTE	RTE	GDS	Route Code
* FAC	FAC	GDS (SOAC)	Local Facility Identifier
* CABLE	CABLE	GDS (SOAC)	Local Facility Cable
* PAIR	PAIR	GDS (SOAC)	Local Facility Cable Pair
BP	BP	GDS (SOAC)	Local Facility Binding Post
COLOR	COLOR	GDS (SOAC)	Local Facility Pair Color
TERM ADDRESS	TERM ADDRESS	GDS (SOAC)	Local Facility Terminating Address

* Fields required in SSC to perform a handoff to GDS.

Note (1): The Source Column indicates those system(s) which are responsible for the fields that are required to build a circuit record within circuit history at time of Service Order Completion.

Either system can be the primary data source. The source is determined by the information which was received last.

(2): GDS (SOAC) indicates that the information stored in circuit history was received from GDS and GDS obtained the data from SOAC.

C. GDS CIMAP/SSC - Maintenance Flows

The GDS CIMAP/SSC - Maintenance Interface provides the means for a mechanized handoff of Special Services Trouble Reports for field dispatch. It supports a fully automated trouble handoff, update, and completion process between CIMAP/SSC and GDS. (see Figure 3-8)

This maintenance interface uses the information stored in the Circuit History database. Upon completion of a service order, a circuit record is built containing all the CKL (circuit termination location - A or Z) information necessary to perform a field dispatch.

When a handoff for dispatch (HDD) is performed by CIMAP/SSC, the CKL information is automatically retrieved from the CKT HIST database and passed to GDS, along with selected information from the customer Trouble Report.

This interface will support an automatic handoff process which includes the following:

- Passing of intermediate and final status of dispatched trouble tickets from GDS to SSC.
- A complete mechanism for trouble ticket tracking in either of the two systems.
- Mechanized closeout from either CIMAP/SSC or GDS.

The following interface message types are passed between CIMAP/SSC and GDS:

HANDOFF - Indicates a trouble report is being handed off for a field dispatch from SSC. GDS responds back to SSC with a negative or positive acknowledgement.

UPDATE - Used when a trouble has already been passed to GDS and an addition or change to the delayed maintenance or no access fields is made. GDS uses the update message to inform SSC of changes in job status (i.e., DSP).

REMARK - Remarks are passed to GDS from SSC on a handoff or a DM/NA. GDS can also pass remarks to SSC by using the update function on the GDCOMM screen.

CANCEL - Used to inform the other system of the cancellation when a trouble has been handed off to GDS for dispatch and it is cancelled by CIMAP/SSC or GDS.

TRANSFER - Used to update information in CIMAP/SSC when a trouble ticket is moved from one GDS center to another.

COMPLETE - Used when a trouble ticket has been completed in GDS, or completed by SSC.

D. Trouble Report Handoff (HDD)

When a special service trouble has been tested and it is determined that a field dispatch is required, the MT populates the following information on OSSTR (or OSSTGM):

1. FCT HDD	Handoff to dispatch
2. DESTINATION	The CLLI code location (e.g., center or work location) of the work group to receive the handoff. If the CLLI code is in the VALID SSDAC LOC table in CIMAP/SSC, then the HDD is a mechanized handoff to GDS.
3. END	The CKL end needed for dispatch (e.g., A/P1, Z/P2)
4. SDATE/STIME EDATE/ETIME	Start and End Dates/Times (Defaults are available).

CIMAP/SSC sends the trouble to GDS with the appropriate circuit history information for the circuit termination. GDS will first check to see if a work request exists for the JOBID and end (A or Z).

If no such work request exists, GDS checks to see if circuit history fields needed for dispatch are missing. If so, the handoff will be blocked until the fields are updated. GDS receives the trouble and builds a maintenance work request. A positive acknowledgment is returned to CIMAP/SSC with the SSDASC center responsible for fixing the trouble and the CKLW assigned within the center (either "O1" or "O2"). The center appears in the "HO Center" on the OSSTR screen. If the work request fails job logging it is placed in pending screen status (PSC); otherwise, it is placed in pending load status (PLD). For a

negative acknowledgment, no center or CKL is assigned and no work request is built. A message explaining the reason that the handoff failed is placed on the OSSLOG, and the handoff is cancelled.

If a previous work request exists for the JOBID and end, GDS will check to see if CKT FMT, CKTID, or SSC differ between the existing work request and the fields in the handoff message. If any of these fields differ, GDS will reject the handoff and send a negative acknowledgment to SSC. The negative acknowledgment will specify which field, CKTFMT, CKTID, or SSC that is different. A GDS exception notice number 311 will be sent to the printer or lterm specified in the "GDS EXCEPTIONS" TTS table for the GDS center owning the existing work request.

If CKT FMT, CKTID, and SSC match, the existing GDS work request is cancelled or completed, and the handoff destination is a different GDS center, it is treated as a new handoff and processing will continue as if GDS does not have a work request for this JOBID/end combination. If CKT FMT, CKTID, and SSC match, the existing GDS work request is cancelled or completed, and the handoff destination is the same GDS center, then all fields in the handoff message are moved to the appropriate fields in the existing work request and the "REPEAT-REPORT" flag for the work request is set to yes. The date and time received by GDS are NOT updated. The work request is job-logged using the new data values, and a normal positive or negative acknowledgment to an SSC handoff attempt is sent to SSC and displayed on OSSLOG.

If CKT FMT, CKTID, and SSC match, but the existing GDS work request is not cancelled or completed, and the work request was added manually in GDS, the "NOTIFY" flag is set to yes to enable further GDS-SSC communication, and the message "SSC HANDOFF ESTABLISHED ON MANUALLY-ADDED JOB" is placed in the work request comments field. If the work request was previously handed off, the message "SSC REESTABLISHED HANDOFF MADE PREVIOUSLY" is placed in the comments field. In both cases (a manually added or previously handed off work request), all values from the handoff message fields are moved into the work request, with the exception that the wire center and route field are only moved in when the message fields are non-blank and the work request fields are blank. Since the work request might be in any status at this time (e.g., DSP, PRE, etc.), a positive acknowledgment is sent to SSC with one of the following messages as appropriate:

"PREVIOUS SSC HANDOFF REESTABLISHED"
"HANDOFF ESTABLISHED ON JOB ADDED MANUALLY IN GDS"

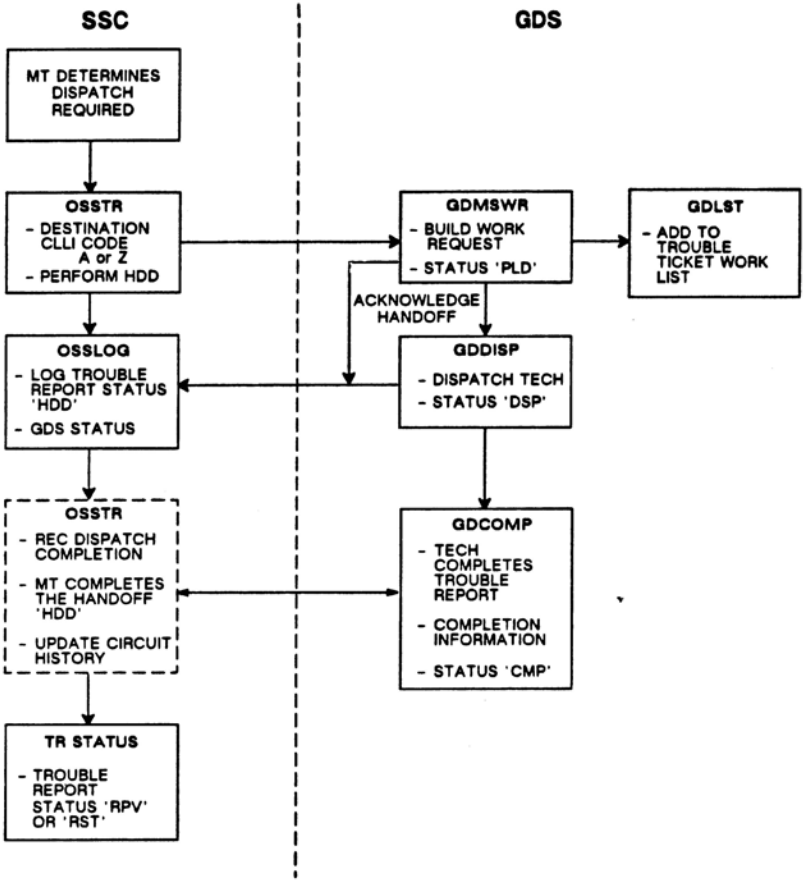


Figure 3-8. GDS CIMAP/SSC - Typical Interface Maintenance Work Flow

1. Remarks and DM/NA Information

Remarks and DM/NA information are passed between CIMAP/SSC and GDS during a handoff.

a. **Remarks** - At the time of the handoff, CIMAP/SSC sends up to 200 characters of remarks with the use of the "RMK" or "DMK" (Dispatch Remarks for GDS) function. Once the handoff to GDS has been accomplished, the "RMK" function will no longer pass remarks to GDS. Additional remarks may be passed to GDS using the "DMK" function. This function will pass remarks as long as the handoff of the Trouble Report has not been completed. When a DM/NA is performed in CIMAP/SSC during the handoff, the remarks associated with the DM/NA will only be passed when using the "DMK" function. These remarks will be sent to GDS and will be added to the work request comments field provided the size of that field is not exceeded. Remarks can be sent to CIMAP/SSC from the GDS format GDCOMP. The GDS users can send up to 40 to 50 characters of narrative in the RET JOB NARR field, depending on the command being performed. Only 40 characters of remarks are sent to CIMAP/SSC when performing the commands of COMP or RET on the GDCOMP format. When using the UPDATE command a total of 50 characters of remarks are sent to CIMAP/SSC. CIMAP/SSC will place the GDS remarks in the Log.

b. **DM/NA Information** - CIMAP/SSC will send GDS the DM or NA start and end times if a DM/NA is active at the time of the handoff. If a DM/NA is not currently active but there is a DM/NA that will start in the future, those start and end times will be sent. Any subsequent updates or cancels of the DM/NA in CIMAP/SSC will also be sent to GDS. On the GDMSWR format, a DM/NA interval may be established by a GDS user through an add or cancel of a work request or an update of the interval fields. On the GDMSCP format, a DM/NA interval may be established or modified by a GDS user when a job is returned or completed. The DM/NA interval may also be modified when a job is dispatched to a technician on GDMSDP.

   It is recommended that CIMAP/SSC users not add both a DM and an NA on a Trouble Report, although the timers do not overlap, as GDS only has room to store one interval at a time.

   While a DM/NA interval specified by a "FROM-TO" date and time pair restricts automatic dispatch, the presence of any DM/NA interval will not prevent a manual dispatch.

   In order to provide better user analysis of key maintenance duration intervals of SSC jobs in GDS, the following six calculated duration fields are provided in TQS:

TQS NAME	DESCRIPTION
1. RCP_T_DSP_NA	DM time from receipt in GDS to first dispatch
2. DSP_T_CLR_NA	DM time from first dispatch to restoral
3. TOT_DMNA_TM	Total DM time from receipt in GDS to restoral
4. RCPT_TO-CLR	Time from receipt to restoral minus the TOT_DMNA_TM value
5. RCPT_TO_DSP	Time from receipt to first dispatch minus the RCP_T_DSP_NA value
6. DSP_TO_CLR	Time from first dispatch to restoral minus the DSP_T_CLR_NA value

The following No-Access Interval fields are used in calculating the previously described duration fields:

TQS NAME	DESCRIPTION
DM_NA FLAG	Flag indicating "DM" or "NA"
NA_FROM_DT	DM/NA "From" Date
NA_FROM_TM	DM/NA "From" Time
NA_TO_DT	DM/NA "To" Date
NA_TO_TM	DM/NA "To" Time

The four fields listed below are used as Interval Endpoints in the calculations of the duration fields:

TQS NAME	DESCRIPTION
GDS_RCVD_DT	Date first handoff received in GDS
GDS_RCVD_TM	Time first handoff received in GDS
RESTORED_DT	Date service restored to customer
RESTORED_TM	Time service restored to customer

Several other TQS fields are involved in the calculations:

TQS NAME	DESCRIPTION
#DSP	# times job dispatched out
RETURN_DATE	Date technician returned job
RETURN_TIME	Time technician returned job
BEGIN_DATE	Date technician started work on job
BEGIN_TIME	Time technician started work on job

The methods used for calculating and populating the SSC duration fields are detailed below. In all instances, if a DM/NA interval ends before the first handoff of a job from SSC is received in GDS, no DM/NA time will be accrued and all DM/NA interval fields will be blanked out.

When a Job is Dispatched

Several different processes occur which affect the population of the SSC maintenance duration fields.

— No DM/NA time will be accrued if the interval start time is later than the CURRENT time of the dispatch. All interval fields will be left as they are on the work request.

— If this is the first dispatch (#DSP field = 1), any portion of the interval which falls between the time the handoff was first received in GDS and the CURRENT time will be added into the RCP_T_DSP_NA field. If this is the second dispatch or greater, any DM/NA between the time the handoff was received in GDS and the time that service is restored will be put into DSP_T_CLR_NA.

— Any portion of the interval which extends past the CURRENT time will be left intact. A revised DM/NA interval results when an interval overlaps the CURRENT time because the "FROM" date/time is replaced with the CURRENT date/time, while the "TO" date/time remains the same.

— If this is a first dispatch, the RCPT_TO_DSP value will be calculated as CURRENT time minus the time the handoff was received in GDS minus any DM/NA that occurred between the receipt and the first dispatch:

RCPT_TO_DSP = CURRENT - GDS_RCVD (_DT/_TM) - RCP_T_DSP_NA

It is possible that RCP_T_DSP_NA may have a value from a previous rejected dispatch. RCPT_TO_DSP will not be allowed to be a negative value and will be zeroed in this case.

When a Job is Rejected

RCPT_TO_DSP will be zeroed if this was the first dispatch (#DSP = 0).

When a Job is Returned

Several processes occur that affect the population of the SSC calculated duration fields if a DM/NA interval is present.

— No DM/NA time will be accrued if the interval starts after the job return date/time and the interval will be left intact.

— On the first dispatch, any portion of the DM/NA interval that falls before the BEGIN_DATE/TIME will be added into the RCP_T_DSP_NA field.

— Any part of the interval that falls between the time that work is begun on the job and the time the job is returned will be added into the DSP_T_CLR_NA field.

— Any portion of the interval after the RETURN_TIME will be left on the job, with the RETURN_TIME replacing the previous "FROM" date/time, thus creating a new interval which begins at the time the tech returned the job.

When a Job is Completed by a Technician

Several processes occur that affect the population of the SSC calculated duration fields.

— As previously described under a returned job, on the first dispatch any portion of the DM/NA interval that falls before the date/time that the technician begins work on the job will be added into the RCP_T_DSP_NA field.

— The DSP_T_CLR_NA field will include any part of the interval that falls between the time that the technician begins work on the job and the time that the service is restored to the customer.

— Any portion of the DM/NA interval which falls after the RESTORED_TM will not be accrued. However, in the event that a job is reopened by SSC, this interval will be left on the job.

— The following fields will be set:

- The total amount of DM/NA time on a job will be equal to the sum of the DM/NA time accrued between the receipt and the first dispatch and the DM/NA time accrued between the first dispatch and the restoral time.

  TOT_DMNA_TM = RCP_T_DSP_NA + DSP_T_CLR_NA

- The RCPT_TO_CLR value will be set to the restoral time minus the handoff receipt time minus the total amount of DM/NA time between the receipt and the restoral.

  RCPT_TO_CLR = RESTORED_TM - GDS_RCVD_TM - TOT_DMNA_TM

- The DSP_TO_CLR value will be set to the RCPT_TO_CLR value minus the RCPT_TO_DSP value.

  DSP_TO_CLR = RCPT_TO_CLR - RCPT_TO_DSP

When a Non-Dispatched Job is Completed or Cancelled (via GDCOMP, GDMSWR, or an SSC interface request)

Several processes occur that affect the population of the maintenance duration fields if a DM/NA interval is present.

— If a job was never dispatched, any part of the DM interval between the handoff receipt time in GDS and the CURRENT time will be added to the TOT_DMNA_TM field. (If completed via GDCOMP, RESTORED_TM will be used instead of CURRENT time.)

— If a job had been previously dispatched, any part of the same interval will be added to the DSP_T_CLR_NA field.

— Any portion of the interval which falls after the CURRENT time will be left intact in the event that the job is reopened by SSC. (Again, if completed via GDCOMP, RESTORED_TM will be used instead of CURRENT time.)

— If the job was previously dispatched, the following fields will be set:

  RCPT_TO_CLR = RESTORED_TM - GDS_RCVD_TM - TOT_DMNA_TM
  (use CURRENT instead of RESTORED_TM if not from GDCOMP)

  TOT_DMNA_TM = RCP_T_DSP_NA + DSP_T_CLR_NA

  DSP_TO_CLR = RCPT_TO_CLR - RCPT_TO_DSP

— If the job was never dispatched, any time in RCP_T_DSP_NA (from a rejected dispatch) will be added to TOT_DMNA_TM and RCP_T_DSP_NA will be zeroed out. The RCPT_TO_CLR field will be set in this case exactly as above, using CURRENT time in its calculation if it is other than a completion from GDCOMP.

  RCPT_TO_CLR = RESTORED_TM - GDS_RCVD_TM - TOT_DMNA_TM
  (use CURRENT instead of RESTORED_TM if not from GDCOMP)

When an Update is Received Through the SSC Interface

Several processes occur that affect the population of the SSC duration fields if a DM/NA interval is present.

— The interval fields on GDMSWR will be populated with the new DM/NA interval values if no interval is present on the work request at the time of the update receipt. No other fields will be updated.

— When an interval already exists, if the update DM/NA flag value matches that of the current interval (i.e., previous interval was a DM condition and update is a DM condition or previous interval was an NA condition and update is an NA condition), the new interval values will replace the existent values in the work request interval fields. This situation could effectively cancel the previous DM or NA interval if the update contains all blanks. No other fields will be updated.

— When an interval already exists and the updated DM/NA flag value is different from the previous (e.g., old = DM and new = NA), several different processes will occur depending on whether or not the old interval has expired.

- When the old interval has expired and the job has not yet been dispatched, any portion of the old interval that falls between the handoff receipt time and the CURRENT time will be added to the RCP_T_DSP_NA field. If the old interval has expired and the job has been dispatched, that same portion of the old interval will be added to the DSP_T_CLR_NA field. The new interval fields will then be moved into the interval fields on the work request.
- In the situation where the old interval has not yet expired, the old interval will be left as is. A narrative describing the new interval will be placed in the work request COMMENTS field. The system message flag will be set to "Y" to ensure that a GDS user sees the comments by automatically jumping to the GDCOMM screen upon an attempt to dispatch or complete the job.

** When the first interval is no longer operational, the user **must manually update** the interval fields on GDMSWR with the values shown in the COMMENTS field. **However, to ensure that the first interval is accounted for in the appropriate duration field(s),** it is important that the first interval be processed using normal methods - i.e., handled at the time of dispatch, reject, return, etc. as described above.

2. **Cancellation of Handoffs**

Trouble Reports handed off to GDS may be cancelled by CIMAP/SSC or GDS. After CIMAP/SSC performs a handoff to GDS, SSC can cancel it by using the "ACN" function on the OSSTR screen. The status of the Trouble Report in SSC will revert to the status it had prior to the handoff. A message will be printed in SSDAC informing the center of the pending cancellation. When GDS receives this cancellation message and the trouble ticket has a status of PRE/PLD, the job is automatically cancelled and removed from the GDS work list. If the job is dispatched (job status of "DSP") the work request will remain in dispatch status until the job is complete and the technician's time applied to the job. GDS will send a completion message to SSC which will not be acknowledged.

When the SSC user needs to re-establish a handoff on a GDS trouble ticket with a status of "DSP" (dispatched), the SSC user should perform another handoff (HDD) on the Trouble Report dispatched in GDS. GDS will acknowledge the handoff and match the existing GDS (dispatched) trouble ticket with the new request. GDS adds a message to GDCOMM indicating that the handoff was re-instated by SSC. GDS returns to CIMAP/SSC a positive acknowledgement of the handoff which is placed in the Trouble Report's log.

GDS can cancel a handoff from SSC when it performs the cancellation message of "CAN". The handoff will be completed in SSC. The status of the Trouble Report will be its status prior to handoff. SSC will place an entry on the OSSLOG of "SDX" meaning GDS cancellation.

The third type of cancellation happens when CIMAP/SSC sends a handoff message to GDS. GDS does not accept this message and sends back to SSC a negative acknowledgement message. Upon receiving the negative response, SSC cancels the handoff to GDS. The status of the Trouble Report reverts to the status prior to handoff. The Trouble Report will be either placed in the pool for pickup or returned to the MT performing the handoff to GDS. The OSSLOG entry will be "HCN" indicating an automatic cancellation of the handoff.

E. Move to Another Center

GDS can transfer a trouble ticket from one GDS center to another GDS center after receiving it from SSC. This transaction is accomplished when a user performs a "MOVE" command on a trouble ticket. A message is sent to SSC containing the Old and New center. When SSC receives this message it

displays the new center in the "HO Center" field on the OSSTR screen, SSC will also place an entry on the OSSLOG of "SDT" indicating a transfer of centers in GDS.

F. Grouped Trouble Reports

Trouble Reports (TRs) which are grouped in CIMAP/SSC will be passed to GDS as individual trouble tickets. CIMAP/SSC will maintain the group but, due to the following reasons, the group must be unbundled before GDS will accept the handoff message:

- GDS may or may not be able to dispatch all the tickets as a group.
- Each trouble ticket has different circuit termination information. When handing off a group of TRs for dispatch, the CKL termination information must accompany each individual TR in the group.

CIMAP/SSC passes the Group ID for every grouped trouble to GDS where it is placed in the comment field of its trouble tickets for reference.

G. Handoff Completion

When the technician completes the trouble ticket, the completion information is given to the dispatcher for input on the completion format GDCOMP. The GDS work request is completed (job status = "CMP").

When GDS completes a handoff, a number of conditions exist concerning the completion process between GDS and CIMAP/SSC. The conditions are as follows:

- The trouble ticket is completed in GDS, job status becomes "CMP", a completion message is sent to SSC, and the Restored To (RST_TO) field on GDCOMP screen *is blank*. SSC completes the HDD and makes it available for pickup in the pool.
- The trouble ticket is completed in GDS, job status becomes "CMP", a completion message is sent to SSC, and the Restored To (RST_TO) field on GDCOMP screen *is not blank*.
  - — There is an automatic restoral option (AUTO-RST) in the TTA OPTIONS table in CIMAP/SSC.
  - — If the AUTO-RST switch is set to "Yes", indicating that an automatic restoral is allowed, the Trouble Report is restored in CIMAP/SSC, with the restoral information provided by GDS.
  - — If the switch is set to "no", the handoff is completed, the TR is *not* restored, and is made available for pickup in CIMAP/SSC.
- If the field technician closes out the Trouble Report while working with a MT via a telephone call, CIMAP/SSC allows the MT to complete the handoff and restore the Trouble Report although it has a HDD status in CIMAP/SSC and a job status of DSP in GDS. The technician must still provide completion data to the dispatcher and return the job. This restoral will complete the HDD; however, CIMAP/SSC will accept any subsequent completion message from GDS and perform any required CKT/HIST updates.

H. Smart JUMP/FINDs

The Smart Jump/Find feature allows the GDS user the accessibility to both systems, CIMAP/SSC and GDS. This feature is allowed through the format access, transaction definition, and S1 security of both CIMAP/SSC and GDS software. The GDS users will have to be added to the CIMAP S1 security database using VOS1ADM before CIMAP/SSC will allow access to its format library. The GDS user will sign onto the GDS system using VGS1SIGN. The user must then sign on to CIMAP/SSC System using VOS1SIGN. The user now has access to both CIMAP/SSC and GDS. Only those fields located on

the SSC's formats which are pertinent to a GDS user will be passed to GDS. See Table 3-9 for those SSC formats accessible to the GDS user.

Table 3-9. CIMAP/SSC Formats Which A GDS User May Request Using the SMART JUMP/FIND Feature

SSC FORMAT	DESCRIPTION
OSSEVT	Event Definition
OSSAVL	Maintenance Work List
OSSWPS	Work Position Entry
OSSLAC	LMOS Work Activity
OSSCCP	CIMAP/CC Pool Work List
OSSLOG	Work Log
OSSLST	Installation Work List
OSSPND	Pending Trouble List
OSSOI	Order Information
OSSCWL	Order-CWL Information
OSSOID	Order Item Display
OSSCHI	Circuit History
OSSHMD	History Measurement Data
OSSML	Multipoint Circuit List
OSSPID	Administration Partial Circuit ID
OSSTRE	Trouble Report Entry
OSSLTR	LMOS Trouble Report/Activity
OSSIMD	Installation Measurement Data
OSSTR	Trouble Report/Activity
OSSCL	CLO Lost by Order
OSSTGS	Trouble Group Scan
OSSTGM	Trouble Group Maintenance
OTRI01	Test Details Results- Intra-LATA CKTs
OTRL01	Test Details Results- LATA Access CKTs
OTOL01	Test Details Objectives- LATA Access CKTs
OTOI01	Test Details Objectives- Intra-LATA CKTs
OSSBOR	LMOS Basic Output Report
OSSRST	LMOS Trouble Report Status
OSSCPR	Circuit Purification Reconciliation
ORAPDS	Access Point Data
OWDDOC	WORD Display
OSSCN	Circuit Notes
OSSGI	Grouping Information
OSSCHU	Circuit History Update

3.2 JOB LOGGING FEATURES

This section provides the detailed features of the GDS job logging process. It provides the names of the tables used in each part of the process, as well as the input and output data.

Figure 3-9 is the job logging process data flow.

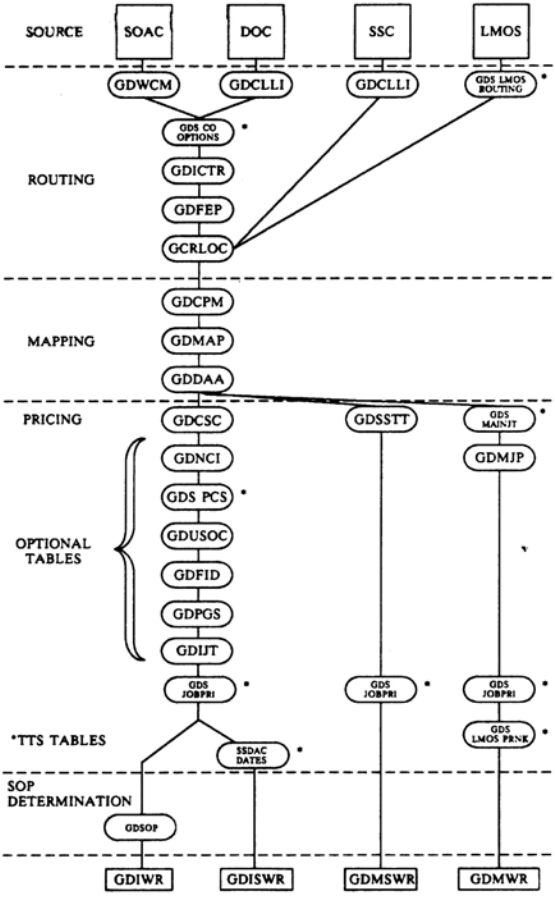


Figure 3-9. Job Logging Process

3.2.1 Auto Routing

Routing is the feature that allows the GDS user to direct work to a GDS work center based on the user entries in GDS tables. Routing differs for installation and maintenance jobs. The following paragraphs explain the process in greater detail.

Table 3-10 provides the GDS/TTS tables, and the input and output data for job routing.

Table 3-10. Job Routing

TABLES	INPUT	OUTPUT
INSTALLATION		
GDWCM	NPANNX	WIRE CENTER
GDICTR	WC, CSC/SCM, CNA, ORDTYP	POSSIBLE INSTALLATION CENTERS
LMOS MAINTENANCE		
GDS LMOS ROUTING	UNIT#	CENTER
SSC MAINTENANCE		
GDCLLI	CLLI	MAINTENANCE CENTER WIRE CENTER

A. Installation Work Routing

Routing of circuit installation work is based on four selection categories: Wire center (WC), Class of Service Code (CSC/Service Code and Modifier), Carrier Name Abbreviation (CNA), and Order type (C,N,P,D, etc.). The installation work centers that can perform work for each of the entries in a category are listed in the GDS INSTALLATION ROUTING table (GDICTR). A list of centers is retrieved for each category based on the ROUTING priorities set in the TTS table "GDS CO OPTIONS". After each retrieval the two lists are compared and a new list of centers is created from the centers in both retrieval lists. This continues for all categories or until the intersected list contains only 1 center. If the resulting center is the center TRASHCAN, the work is not placed in the database.

> **NOTE -** TRASHCAN must be placed in GCRLOC.

Jobs which fail to match to a work center are put into the work request database in a pending screen status (PSC) or pending Facility Assignment status (PFA), with a handling code of failed routing (FRT) against the default center as defined in the GDS CO OPTIONS table.

B. Maintenance Work Routing

There are two methods for routing maintenance jobs in GDS, one for jobs received from LMOS, and another for jobs received from CIMAP/SSC.

- LMOS Maintenance

  For maintenance jobs received from LMOS, the UNIT# from the Basic Output Report is used to route trouble tickets to the proper CENTER in GDS. The LMOS UNIT number is validated on the GDS LMOS ROUTING table to determine the CENTER. If this process fails, the GDS CO OPTIONS (CENTER field) is used to determine the default CENTER.

- CIMAP/SSC Maintenance

  For maintenance jobs received from CIMAP/SSC, the Destination CLLI code passed from CIMAP/SSC is mapped to the GDS MAINTENANCE CENTER entered in the GDS CLLI-WC MAPPING table (GDCLLI), and the CO CLLI code is mapped to the WIRE CENTER in GDCLLI. Two calls are made to GDCLLI for each handoff from CIMAP/SSC. If the CO CLLI code is not found in GDCLLI, the Wire Center passed in the handoff message is used. If the Destination CLLI code is not found, the work request is not put in the database and a negative acknowledgment is sent.

3.2.2 Auto Mapping, Zoning

The mapping process follows routing and provides the geographical mapping of a job. The mapping tables provide the means of deriving the key mapping information from each of a number of inputs.

The wire center (WC) and the cable and pair information are mapped to a route in GDS CA/PR - ROUTE table (GDCPM). The route plus the WC will provide the dispatch administration area, the allocation area (DAA/AA), the pricing group, and two-tech area through the GDS DAA/AA MAPPING table (GDMAP). An appointment zone (a user defined combination of DAA/AA's) is derived from ctr, and the DAA, through the GDS CENTER DAA table (GDDAA).

For maintenance jobs, where the route is provided at the time of handoff, GDS will use the route and proceed to the GDMAP table. For LMOS maintenance jobs and POTS installation jobs, the wire center is mapped back to the LMOS PST unit#, and the front end processor ID through the GDFEP table.

Table 3-11 provides the GDS tables and the input and output data for job mapping.

Table 3-11. Job Mapping

TABLES	INPUT	OUTPUT
INSTALLATION & MAINTENANCE		
GDCPM	WIRE CENTER, CABLE/PAIR	RTE
GDMAP	WIRE CENTER, ROUTE	DAA, AA, PRICING-GRP, TWO TECH AREA
GDDAA	CENTER, DAA	ZONE, LIST OF AA'S
GDFEP	WIRE CENTER	LMOS ID, PST UNIT#

3.2.3 Auto Pricing

The job pricing feature provides an automated method for calculating the amount of time (in hours and minutes) it takes to perform a work function, or a set of functions. There are five different pricing fields with which the GDS user should become acquainted. The following is a description of the pricing fields and the rules for field population:

Wiring Price - The wiring price is the time it takes to perform the wiring task for POTS and special service installation jobs. The wiring price is the summation of the individual wiring prices from GDCSC, GDNCI, GDS PCS, GDUSOC, GDFID, and GDPGS tables.

Wiring price is found in the first field after PRICE on the following screens, GDIWR, GDISWR, GDDISP. The TQS field name is WRG_PRICE.

Testing Price - The testing price is the time it takes to perform testing tasks for installation specials and the time to repair a maintenance trouble for POTS and specials. The testing price for installation specials is the summation of the individual testing prices from GDCSC, GDNCI, GDUSOC tables. For installation, POTS price is always zero. The testing price for POTS maintenance is taken from the GDMJP, and the price for maintenance specials is obtained from the GDSSTT table.

Testing price is found in the first field after PRICE on the following screens: GDMWR, GDMSWR, GDMDP, GDMSDP, GDTTE and in the second field after PRICE on GDISWR, and GDSOT. The TQS field name is TST_PRICE.

Technician Price - The technician price is the price which the field technician provides when different from the estimated price. The default for technician price is the sum of the wiring price and the testing price for installation specials, the wiring price for installation POTS, and the testing price for POTS and special maintenance and is independent of changes in the wiring and testing price.

The technician price is found in the TECH PRICE field on the following screens: GDMWR, GDMSWR, GDIWR, GDISWR, GDMDP, GDDISP, GDMSDP, & GDISDP. The TQS field name is TECH_PRICE.

Calculated Price - The calculated price is the summation of the individual prices determined from the job logging process. Calculated price is not affected by changes or updates outside of the job logging process and is retained for analysis via TQS. The TQS field name is CALC_PRICE.

Estimated Price - The estimated price is used only for Net 1 joblogging of SOAC orders when a work request is statused Pending Screen (PSC), Pending-Auto-Complete (PAC), or Pending Facility Assignment (PFA). It provides partial pricing of pending jobs as input for appointment control and forecast reports via TQS. The TQS field name is EST_PRICE.

Table 3-12 provides a list of the GDS Pricing tables, and the input and output data for each.

Table 3-12. Job Pricing

TABLES	INPUT	OUTPUT
INSTALLATION		
GDCSC	CENTER, CSC/SCM DOC CODE, ORDER TYPE	VISIT, PST, JT, PRESVY THRES, ESTIMATED PRICING, WIRING PRICING, TESTING PRICING
GDNCI	CENTER, PRICING GRP, NCI	LAST CHAR OF JT, WIRING PRICE, TESTING PRICE
GDS PCS	CENTER, PCS	VISIT, PRICE
GDUSOC	CENTER, PRICING GRP, ACT, USOC	VISIT, PST, WIRING PRICE TESTING PRICE
GDFID	CENTER, PRICING GRP, ACT, FID	VISIT, PST, WIRING PRICE
GDPGS	CENTER, PRICING GRP, ACT, PGS	VISIT, PST, WIRING PRICE, PGS CAT
SSC MAINTENANCE		
GDSSTT	CENTER, PRICING GRP, CLCI/CS, WORKTYPE	JT, PRICE
LMOS MAINTENANCE		
GDMJP	CENTER, PRICING GRP, JT, SCRN RSLT	PRICE

3.2.4 Auto Screening

The automatic job screening feature mechanizes much of the manual screening process for installation jobs. It is a sub function of the pricing process and will determine if a field visit. is required (FV/NFV), if the work is on the customer premises or not (IN/OUT), and if an automatic program scan test (PST) is to be performed. The comparison is based on entries made to GDCSC, GDS PCS, GDUSOC, GDFID, and GDPGS tables (see Table 3-12). (PST and MLT testing is available only to BCC's who subscribe to the POTS functionality of GDS.) Field visit determination is based on the class of service/service code and modifier, customer, USOCs, FIDs, and pair gain system associated with an installation job.

Determination of inside (IN) or outside premise (OUT) work is based on USOCs, FIDs, and pair gain systems.

The need for a PST test is based on class of service/service code and modifier, USOCs, FIDs, and pair gain system.

3.2.5 Auto Job Typing and Priority

A. Typing

The job type is a four-character, alphanumeric code generated in the logging process during pricing. The method of determining the job type differs for installation and maintenance work. For installation jobs, the first three characters of the job type are determined by the service code and modifier portion of the CLCI code (COMMON LANGUAGE CIRCUIT IDENTIFICATION), the DOC code, and the ORDER TYPE as defined in the GDS CLCI/CSC INSTALLATION OPTIONS table (GDCSC). The service code and modifier will be used if the ADSR value is "Y". If there is no ADSR TAG, the class of service will be used.

The fourth character of an installation job type is determined by the NCI code as defined in the GDS INSTALLATION NCI OPTIONS table (GDNCI), or from the Pair Gain System (PGS) category as defined in the GDS INSTALLATION JOB TYPES table (GDIJT). The fourth character can be overridden based on order type as defined in GDCSC.

The method of determining the job type for maintenance jobs differs between jobs received from LMOS and jobs handed off from CIMAP/SSC. Job typing of LMOS jobs is determined by the LMOS class of service, and the LMOS intermediate status code (LMOS IST) as defined in the GDS MAINT JT table. Job typing for CIMAP/SSC jobs is determined by the CSC, pricing group, and work type as defined in the GDS SPECIAL SERVICE TROUBLE TICKET OPTIONS table (GDSSTT).

Table 3-13 provides the GDS/TTS tables, and the input and output data for job typing.

Table 3-13. Job Typing

TABLES	INPUT	OUTPUT
INSTALLATION		
GDIJT	CENTER, PGS CAT, IN/OUT IND	LAST CHAR OF JT
LMOS MAINTENANCE		
GDS MAINT JT	CENTER, LMOSIST, LMOSCS	JOBTYPE

Table 3-14 represents the job type definitions.

Table 3-14. Job Types

First Character (Predefined)

I - Installation
M - Maintenance
R - Routine

Second Character (BCC-Defined)

Recommended use:

R - Residence
B - Business
V - Voice
D - Data

Third Character (Partially Defined)

Recommended use:

P - POTS
S - Designed Special
N - Nondesigned Special
O - Official Company Business

Fourth Character (BCC-Defined)

B. Prioritising

The job priority is a numeric value which indicates the relative priority of individual jobs for loading. Job priority can be any value from 0 to 9, where 9 is the highest priority and 0 the lowest. A numeric value is entered for each priority flag setting in the GDS JOB PRIORITY table. Each priority flag is associated with a value; multiple priority flags will cause the numeric values to be summed, with 9 being the maximum value possible. For LMOS maintenance jobs, an additional prioritizing factor is used. The PRNK value from LMOS is rescaled to a value range usable in GDS through the TTS-GDS LMOS PRNK table. The job priority value derived from the GDS LMOS PRNK table is then added to the job priority value derived from PFS evaluation in the TTS-GDS JOBPRI table. This process results in a total priority not to exceed the highest possible value of 9. Table 3-15 provides the TTS tables and the input and output data associated with job prioritizing.

Table 3-15. Job Prioritization

TABLES	INPUT	OUTPUT
INSTALLATION		
GDS JOBPRI	CENTER, PFS	JOBPRI
SSC MAINTENANCE		
GDS JOBPRI	CENTER, PFS	JOBPRI
LMOS MAINTENANCE		
GDS JOBPRI	CENTER, PFS	JOBPRI
GDS LMOS PRNK	CENTER, FRM_PRNK, TO_PRNK	JOBPRI

3.2.6 Auto Date Calculation

The early start date (ESD) and the late start date (LSD) for installation jobs is automatically calculated during the job logging process. For special service installation, the critical order dates and date offsets entered in the SSDAC DATES table will generate the ESD, LSD, and the COMM date. The calculated ESD, LSD, and COMM cannot fall on weekends or holidays for special service installation orders. The START TIME is further offset by the estimated time to complete the job (PRICE). This allows the job to be started and completed in adequate time to make the critical date.

For POTS installation orders, the COMM date/time minus the estimated time to complete the job (PRICE) provides the job START TIME.

The time calculation for maintenance jobs is similar to the POTS installation. The COMM date/time minus the PRICE provides the START TIME.

3.2.7 Job Status and Handling Codes

A. Job Status

The job status is a system-generated, predefined, three-character alpha code used to denote the generational status of a given work request. It is used to trigger processes, loading, and report generation. All status codes, with the exception of CANcelled, and CoMPleted may be changed by the user through the on-line GDS screens.

Figure 3-10 represents the job status flows.

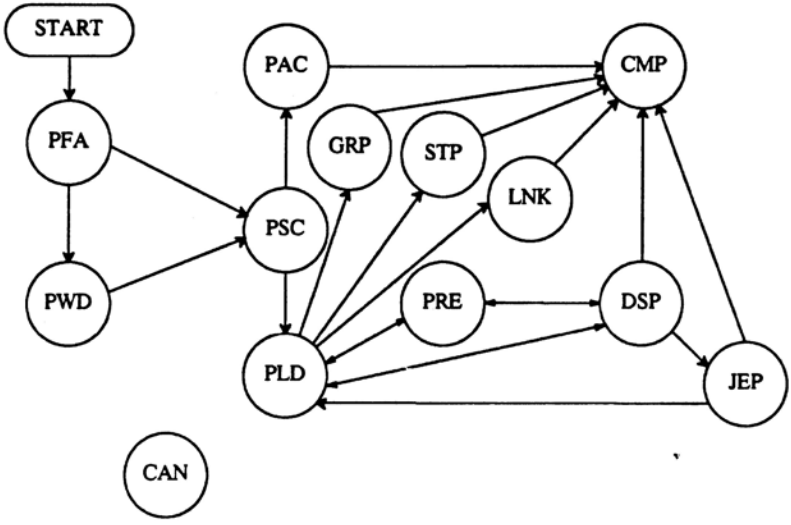


Figure 3-10. Job Status Flow

Table 3-16 is a listing of the status codes and their descriptions.

Table 3-16. Job Status Codes

STATUS	NAME	DESCRIPTION
PWD	Pending WorD	Job is waiting issue of a WORD document.
PFA	Pending Facility Assignment	Job is waiting issue of the Net 2 order.
PSC	Pending SCreen	Failed the job logging process or awaiting human attention.
PAC	Pending Auto Complete	Job is a Non-Field-Visit order awaiting automatic complete.
PLD	Pending LoaD	Job has passed job logging and is in the dispatch work pool.
PRE	PREassigned	The job is preassigned to a technician but not dispatched.
DSP	DiSPatched	Job has been dispatched to a technician and is being worked.
JEP	JEoPardy	Job is removed from dispatch pool and is non workable.
LNK	LiNKed	Job is the pseudo lead work request of an "L" (linked) group.
STP	STaPled	Job is a member of an "S" (stapled) group.
GRP	GRouPed	Job is a member of a "G" group.
CMP	CoMPlete	Job has been completed in GDS.
CAN	CANcelled	Job has been cancelled in GDS.

B. Handling Codes

Handling codes are provided to further define a job status and are used to notify other operations support systems. A set of predefined handling codes are supplied in the TTS-GDS HDLGCODE table. GOC handling codes are added to the subsystem via ISO initiated batch runs. Additional handling codes are user defined through the GDS HDLGCODE table.

Table 3-17 represents the predefined handling codes and their descriptions.

Table 3-17. Handling Codes

CODE	NAME	DESCRIPTION
FCM	Failed Commitment	Failed commitment date calculation. Critical date has passed, or table error.
FFE	Failed Front End	Job failed to map wire center to LMOS front end ID
FFV	Failed Field Visit	Failed to identify if job required a field visit
FGC	Failed GOC	Circuit ID has been changed in GOC, Circuit ID must be updated in GDS.
FJT	Failed Job Type	Failed job type during job logging process.
FMP	Failed Mapping	Failed job mapping during job logging process.
FPR	Failed Pricing	Failed job pricing during job logging process.
FRT	Failed Routing	Failed job routing during job logging process.
FSP	Failed SOP Determination	Failed SOP determination during job logging process.
FVL	Failed Validation	Non-Critical, but useful data items were missing on SSC handoff.
FZN	Failed Zoning	Failed to zone job during job logging process.
MSO	Missing Service Order	WORD has been received, service order missing.
MWD	Missing WORD Document	Service order received, and WORD is missing.
PCM	Pending Complete	Used by the GOC interface when a cancellation has been received for the last open item for a CKL with completed items. Used in conjunction with a job status of "PRE" or "DSP".
PCN	Pending Cancellation	Cancellation notice received from GOC prior to SOAC.
SVY	Field Survey Required	Presurvey threshold was exceeded, field survey required.
TOK	Test Okay	PST/MLT test completed ok

Table 3-17. Handling Code (cont'd)

CODE	NAME	DESCRIPTION
MFC	Missed Function Code	Work Request missed the DVA objective date.
MA	Manual Assistance	GDS received manual assistance planning message from SOAC.
MAI	Manual Assistance (INCP)	GDS received an Incomplete Manual Assistance planning message from SOAC.
TDO	Track and Distribute Only	Indicates that assignments were made outer loop.
CFA	Call for Assignment	Assignments were not available at the time the order was being processed by FACS. The technician must be dispatched and call FACS with the assignments.
NA	No Assignment	FACS has determined by certain criteria that no assignments are necessary.
FNA	Facilities Not Available	Indicates that facilities are not available at the time of assignment and action.
FPS	Failed PST	TN on order failed program SCAN TEST on Due Date.
NHC	No Handling Code	A handling code of NHC is assigned to a lead work request when *all* of the following occur: • Lead work request jobstat = JEP • All member work request jobstats = JEP • CKL PROP = Y for all member work requests.
NAS	No Access Subscriber	User-defined Bellcore shipped handling code.
RET	Return	User-defined Bellcore shipped handling code.
JEP	Jeopardy	User-defined Bellcore shipped handling code.

3.3 WORK FORCE ADMINISTRATION

To establish and maintain the work force for a given GDS work center, the user must populate three tables. These are

- GDSUPV: field supervisory group attributes
- GDTECH: field technician attributes
- GDPAD: technician availability schedules.

3.3.1 Supervisory Group Attributes

The GDSUPV table is used to define the field supervisory groups within a GDS work center. For each supervisory group, the following characteristics are delineated:

- Group ID — This is a unique three-character code used to identify the field supervisory group within a GDS work center.
- Supervisor's Name — This is the name of the supervisor and is used for information purposes only.
- Garage Location — This is the DAA/AA where the supervisory group's garage is located. It is used in the job selection process to determine travel distance between the garage and various candidate jobs. The DAA/AA entered here must exist in the GDDAA table.
- Garage Printer — This is the identification of the printer located in the garage where hard copies of work documents are to be routed. When the ISSUE process is initiated on the GDISSU screen, the destination printer for each supervisory group is retrieved from here.
- DAA — This is the list of DAAs (maximum of 24) that comprise the turf of the supervisory group. Each field technician assigned to the group works this turf unless modifications are made on an individual technician basis on the GDTECH screen. Any DAAs entered on GDSUPV must already exist in the GDDAA table.
- Job Type — This is the list of job types (maximum of 24) that a field supervisory group can handle. Like DAA, each technician in the group works these job types unless modifications are made on an individual basis on GDTECH. Entries in this field must already exist in the GDJTW table. Generic job types are allowed.

For details on how to maintain data entries in the GDSUPV table, refer to Section 4.0.

3.3.2 Technician Attributes

The GDTECH table is used to define the attributes of technicians assigned to each Supervisory group. Entries in this table can be entered after establishing the group data on GDSUPV. Note if a find by supervisor group is performed the group data will be displayed on the top of GDTECH screen for reference purposes so the user is aware of the group characteristics when establishing those of the technician.

For each technician, the following characteristics are delineated:

- Employee Code — This is a unique three-character code used to identify a technician within a GDS work center. If the technician is receiving work from and returning status to LMOS, this code must be numeric.

- Group ID — This is the three-character code of the technician's field supervisory group. This supervisory group code must exist in the GDSUPV table.

- Technician Name — This is the name of the technician and is used for information purposes only.

- Loadtype — This one-character code identifies how a technician is to be treated when assigning jobs through the bulk load process.

  — A "B" ('Bulk') entry will cause the technician to receive work consistent with his/her availability schedule established in the GDPAD table.

  — An "F" ('First Job') entry will result in the assignment of 1 job at the start of the schedule.

  — A "D" ('Dynamic') entry will prohibit the technician from receiving work through the bulk load process.

- Load Factor — This field is used to 'adjust' the price of candidate jobs being considered for a given technician. This adjusted price displayed on the TLOG as technician consistent with his/her skill level. The formula for calculating the FACTR PRICE is:

$$\frac{100}{\text{LOAD FACTOR}} \times \text{PRICE} = \text{FACTOR PRICE}$$

  The baseline entry is 100%. This causes no price adjustment. An entry greater than 100% results in a downward adjustment of the price. For example, 150% would cause a 60 minute job to be considered a 40 minute job for loading to that technician. Alternatively, 50% would cause an upward price adjustment such that a 60 minute job would be loaded as a 120 minute job for a given technician. This upward adjustment is useful for loading new technicians where more time may be required to complete the job.

- Loan to Group — This field is used to loan a technician to another supervisory group. This is handy when a large influx of work is found in a given geographic area and additional technicians are required. The loaned technician then takes on the turf of the group to which they are loaned. The technician's job types remain the same since generally job skills are viewed as a characteristic of the technician that are not affected by the turf they are assigned. Note that once a technician is loaned to another group, they remain loaned until the user removes the LOAN TO GROUP entry from the GDTECH table. A supervisory group code entered here must exist in the GDSUPV table.

- DAA — This is the list of DAAs that comprise the turf to which the technician is assigned. Entries are only necessary here if the technician works a turf other than the turf established for the technician's supervisory group in GDSUPV. With this field, the user has the ability to add or exclude DAAs relative to the supervisory group or alternatively to assign a whole unique set of DAAs. (Maximum of 12 DAA exceptions per technician.) DAAs entered here must exist in the GDDAA table.

- Job Type — This is the list of job types that a technician can handle. Like DAA, entries are only made here when the technician's job types differ from the group characteristics set in GDSUPV. Job types can be added, excluded, or uniquely defined for a given technician. (Maximum of 12 job type exceptions per technician.) Job types entered here must exist in the GDJTW table. Generic job types are allowed.

For details on how to maintain data in the GDTECH table, refer to Section 4.0.

3.3.3 Personnel Table

In order to assign work to a technician either via the bulk or the dynamic load, an availability schedule must exist in the GDPAD table. This schedule, established for each technician on a daily basis, defines what hours are to be considered productive/nonproductive working time for job assignments. Technicians must exist in the GDTECH table prior to entry in GDPAD.

Additionally, the GDPAD table is used to estimate the amount of available future productive time for appointment control. Since appointment control aims to compare the amount of received work relative to available work force for short range forecasting, it is recommended that GDPAD be maintained for at least 1 week into the future. This is easy to do using the copy feature. See Section 4.0 for more information.

For each technician, the following characteristics are delineated:

- Employee Code — A unique three-character code used to identify a technician in a supervisory group of a GDS work center.
- Time — Time entry (HHMM [A or P]) designating the beginning of a productive/nonproductive time slot. (Maximum of 12 per technician.)
- Time Type — A user-defined, three-character code that describes the time slot. For example, LUN (lunch), BLK (productive bulk load time), DYN (productive dynamic load time), or MTG (meeting). The time types are defined in the TTS table GDS TIME TYPES prior to entry here.

A sample entry might look like the following:

TECH

EC	TIME	TYP	TIME	TYP	TIME	TYP	TIME	TYP	TIME	TYP	TIME	TYP
101	0800A	BLK	1200P	LUN	0100P	DYN	0400P	UNI	0500P	OFF		

According to the availability schedule, technician 101 is able to receive work through the bulk or dynamic load from 8AM until 12 noon. From noon until 1PM, the technician is at lunch. Following lunch, productive time for dynamic loading is available until 4PM. From 4PM until 5PM, the technician is at a union meeting and at 5PM, the technician is off for the day.

For details on how to maintain data entries in the GDPAD table, see Section 4.0.

3.4 INSTALLATION AND MAINTENANCE SUPPORT

3.4.1 Mechanized Work List

The mechanized work list feature (GDLST) provides the ability for the GDS user to generate a variety of work lists. Work lists may be displayed by job type (JT), geographical area (DAA), job status (JOBSTAT), start date and time, and loading priority (LOADPRI). In addition, whenever a trial load is performed, an automatic list of jobs is generated. These jobs were candidates for loading but were not loaded; they were "BYPASSED" or "LEFTOVER." A "bypassed" job is a job that was considered by the load process, but was not loaded to a technician. A "leftover" job is a job that was not considered by the load process for a technician.

Section 5 provides greater detail on the use of GDLST and the mechanized work list feature.

3.4.2 Mechanized Job Review

The mechanized job review (MJRV) feature provides an automated process for screening and correcting jobs which require manual intervention before they can be dispatched.

The mechanized job review screen (GDMJRV), is the online support tool for performing this function. Section 5 provides the detailed use of this screen.

In the course of screening and correcting jobs through MJRV, a number of conditions may be encountered. Table 3-18 provides a model set of job status, and handling codes and the recommended action to be taken.

Table 3-18. Mechanized Job Review Aid

INSTALLATION JOBS			
JSTAT		HDLGCODE	ACTION TO BE TAKEN
Net one service order			
PFA			NO ACTION REQUIRED
PFA		FPR	CHECK PRICING TABLE, GDCSC, TO ENSURE ORDER ACTIVITY, CSC, CLCI CODE OR DOC IS IN TABLE
PFA		SVY	INDICATES SURVEY OF WORK REQUEST NEEDED SINCE JOB EXCEEDED PRESURVEY THRESHOLD ESTABLISHED IN GDCSC
PFA		FRT	CHECK GDICTR FOR ALL FOUR CATEGORIES WIRE CENTER, ORDER TYPE, CSC AND CNA
Net two service order/word receipt			
	PWD		NO ACTION REQUIRED
PSC		FRT	CHECK GDICTR FOR ALL FOUR CATEGORIES WIRE CENTER, ORDER TYPE, CSC AND CNA
PSC	PWD	FFV	CHECK GDCSC TO ENSURE ORDER ACTIVITY, CLCI, CSC OR DOC IS IN TABLE AND THAT FIELD VISIT IS SET TO "Y" OR "N"
PSC	PWD	FMP	CHECK GDCPM, AND GDMAP TO ENSURE CABLE/PAIR INFO, WIRE CENTER, ROUTE, DAA/AA IS CORRECT
PSC	PWD	FZN	CHECK GDDAA TO ENSURE ZONE INFO IS BUILT
PSC	PWD	FPR	CHECK PRICING TABLE, GDCSC, TO ENSURE ORDER ACTIVITY, CSC, CLCI CODE OR DOC IS IN TABLE.
PSC	PWD	FCM	CHECK VGTDSO, SSDAC DATES, FOR PROPER ENTRIES. (COMMITMENT DATE AND TIME, AND ORIGINAL OR SUBSEQUENT DUE DATE MUST BE POPULATED.)
PSC	PWD	FFE	CHECK GDFEP FOR WIRE CENTER LMOS ID CORRELATION
PSC		FSP	CHECK GDSOP TO ENSURE WC AND MAIN CS ARE ENTERED.
	PSC	MSO	RESEND SERVICE ORDER
PLD	PLD		WORK REQUEST READY TO BE LOADED
PAC	PAC		NO ACTION REQUIRED

Table 3-18. Mechanized Job Review Aid (cont.)

JSTAT	HDLGCODE	ACTION TO BE TAKEN
PSC	FPS	THIS HANDLING CODE IS ASSIGNED WHEN THE TEST RESULTS OBTAINED FROM LMOS DO NOT MATCH ENTRIES IN THE GDPST TABLE OR THE NEW JOBSTATUS TO BE ASSIGNED IS EITHER PSC OR JEP.
SSC TROUBLE TICKETS		
PSC	FRT	CHECK GDCLLI TO ENSURE CLLI CODE TO WIRE CENTER CORRELATION
PSC	FVL	CERTAIN DATA FIELDS WERE NOT HANDED OFF FROM SSC
PSC	FMP	CHECK GDCPM, AND GDMAP TO ENSURE CABLE/PAIR INFO, WIRE CENTER, DAA/AA IS CORRECT
PSC	FZN	CHECK GDDAA TO ENSURE ZONE INFO IS BUILT
PSC	FPR	CHECK GDSSTT FOR CLCI CODE AND JT
PLD		WORK REQUEST READY TO BE LOADED
PAC		NO ACTION REQUIRED

Table 3-18. Mechanized Job Review Aid (cont.)

MAINTENANCE JOBS

JSTAT	HDLGCODE	ACTION TO BE TAKEN
LMOS TROUBLE TICKETS		
PSC	FRT	CHECK GDS LMOS ROUTING FOR GDS LMOS UNIT#
PSC	FMP	CHECK GDCPM, AND GDMAP TO ENSURE CABLE/PAIR INFO, WIRE CENTER, DAA/AA IS CORRECT
PSC	FZN	CHECK GDDAA TO ENSURE ZONE IS BUILT
PSC	FPR	CHECK GDS MAINT JT AND GDMJP TO ENSURE JT AND PRICE BUILT
PSC	FJT	CHECK GDS MAINT JT AND GDJTW TO ENSURE JT IS BUILT
PLD		WORK REQUEST READY TO BE LOADED
PAC		NO ACTION REQUIRED

3.4.3 Automatic Loop Testing

NOTE: POTS FEATURE RESTRICTIONS AS DEFINED IN SECTION 3.1.10 (FAM) APPLY TO THIS FEATURE.

The automatic testing feature provides a number of loop tests which may be started automatically by the system or manually by the user. All tests are performed by the Mechanized Loop Test System (MLT), through the GDS - LMOS interface.

Automatic test options are defined by the user on a work center basis in the GDS Job Type Weights table (GDJTW), and in the TTS table GDS Options. The user determines the job types that require test, selects the type of test to be performed ("Full" or "Loop"), and determines if an automatic test is to be performed predispatch, precompletion, or both.

In addition, the GDS user may initiate a test at any time, through the on-line screen GDTEST.

For installation, the user has the option to invoke PST (list) processing.

A. Automatic Testing

Two tables control the initiation of automatic MLT tests:

GDS OPTIONS: Contains two master switch settings by GDS work center that determine whether automatic testing is initiated prior to dispatch and completion. These are "MLT-DISP" for the GDDISP screen, and "MLT-COMP" for the GDCOMP screen. An "F" (full) entry causes a full test to be run automatically, an "L" (loop) entry initiates an automatic loop test, and an "N" (none) entry prohibits automatic testing.

GDJTW: Contains switch settings by job type for each GDS work center that control whether automatic testing is initiated prior to dispatch and completion. A "Y" entry turns on automatic testing for the specific job type where an "N" entry turns automatic testing off. Note that the entries in the GDS OPTIONS table override the settings in GDJTW.

If the automatic test feature is being utilized, a test will be initiated following the dispatch of a job on GDDISP, and prior to the completion on the return of a job by a technician on GDCOMP. By issuing a "DTR" command, the user can view a summary version of the test results on the bottom of their screen.

If the user needs access to the detailed test results, he/she can jump to the GDTEST screen where the most recent set of test results are displayed.

B. Demand Testing

The user has the ability to request that a loop test be run at any time during the life cycle of a job. This can be accomplished in either of the following ways:

- Following the display of a job on GDDISP or GDCOMP, issue a "TEST" command followed by a "DTR" command to view the test results summary at the bottom of the screen. The detailed test results can be displayed on the GDTEST screen. A full test will always be executed regardless of the settings of the MLT-DISP and MLT-COMP flags in the TTS table GDS Options or the PREDISP TEST?/PRECOMP TEST? in GDJTW.

- Initiate the test directly from the GDTEST screen using the "TEST" command followed by PF2 to view the test results.

C. PST Testing

The automatic PST process applies to installation jobs only. It enables the user to submit both field visit and non-field visit jobs to PST and (for non-field visit orders only) to interpret the test results received.

To effectively utilize this feature, the following must be available for each work center:

(1) Appropriate entries must be made in the GDFID, GDUSOC, and GDPGS tables. During job logging, these tables are accessed to determine whether the presence of specified FID, USOC, and PGS data indicate the need for PST.

(2) The GDCRON table must be populated to indicate when the PST lists are to be submitted. Generally, this is done during off-hours when systems utilization is reduced. Two types of lists are submitted - one for non-field visit jobs and one for field visit jobs. The rules used in determining which PST list a job is to be placed under are as follows:

Non-Field Visit	**Field Visit**
Start Date <= Today	Start Date <= Today
Job Status = PAC	Job Status = PLD, PRE or PSC
Visit Flag = No	Visit Flag = Yes
PST_TEST = Y	PST TEST = Y
Job Type = I...	Job Type = I...
PST Unit ≠ Blanks	PST Unit ≠ Blanks
FEPID ≠ Blanks	FEPID ≠ Blanks
Valid CKTID (10 N)	Valid CKTID (10 N)

If a Work Request violates <u>any</u> rule, it will not appear on the PST List.

(3) An entry must be made in the PST-SIZE field of the TTS table GDS QPTIONS. This field is equal to the number of telephone numbers sent to LMOS per invocation of the VGGDTEST (PST) transaction.

Example 1: PST-SIZE = 10; in one running of VGGDTEST, 10 TNs can be processed (one list of ten, two lists of five, etc.).

Example 2: PST-SIZE = 50; maximum sent to LMOS in one list is 45, so in one invocation of VGGDTEST, 50 TNs can be processed (one list of 45 and one list of five, four lists of ten and two lists of five, etc.).

(4) When the test results are received, they are stored with the job in the work request database for subsequent user display. For non-field visit orders only, the user has the option to determine 'interpretation rules'. These rules, entered in the GDPST table, specify actions to be taken based on the test results returned from PST. Jobs can be flagged for automatic completion, screening, jeopardy, retest via PST, or pending load.

3.5 LOADING

One of the major system features of GDS is the ability for users to select automatically the "best" job for the best technician at a given time. This can be done either in a bulk load, which involves multiple job assignments, or in a dynamic load, i.e., one job assignment at a time, or for first job assignment.

In selecting a job, GDS takes a number of factors into account, e.g., what types of work is the technician qualified for, where is the job located, and if the work can be completed prior to the time promised to the customer. The user can influence the outcome of the selection process through numerous table settings.

3.5.1 Overview of the Job Selection Process

The goal of the job selection process is to analyze all of the pending load jobs available for the technician(s) involved in loading, and assign the highest numeric technician/job combination. To do this, GDS calculates what is referred to here as "job suitability". The total job suitability is a measure of a job's weight relative to other potential jobs for a given technician.

For Dynamic dispatch, each job within the dispatch pool has a suitability factor for the technician being dispatched, provided the job is in the correct supervisor group, correct job type, etc.

For Bulk loading, all jobs (within the pool defined by the GDS LOAD PARMS table for B_#WRMAX) have a suitability for all technicians (providing turf, job type, etc. qualify) available for loading. The bulk load analyzes the suitability factors for all the technician/job combinations, and selects the technician/job combination with the highest suitability for the first job assignment.

After the first job is assigned through bulk loading, the system replaces the assigned job with a job from the secondary pool defined by the B_WR#AVL field in the GDS LOAD PARMS table. After the assigned job is replaced, the suitability of the new job is calculated with respect to the first technician assigned (he is now in a different location within the supervisor group) and the remaining unassigned technicians. The suitability values for the unassigned technician/job combinations do not change after the first assignment. This is because nothing has changed with respect to the unassigned technicians and the unassigned jobs.

JOB SUITABILITY = (DIST TO TECH) + (TIME TO COMMIT) + (JOB PRIORITY) + (MISSED COMMIT) + (BULK LOAD EVENLY) + (DIST TO GARAGE) + (MEET APPOINTMENTS) + (OUT OF SERVICE) + (SUBSEQUENT REPORTS) + (REPEAT REPORTS) + (JOB TYPE)

We will discuss in detail how each of the above components is determined.

To understand the process, we can follow a three step procedure:

1. Determine what jobs are potential candidates for a given technician.
2. Calculate the job suitability for each, using the above formula.
3. Assign the most suitable job/technician combination.

Before the job selection process is examined in more detail, the user may wish to examine the following brief abstracts of the available tables.

3.5.2 User Control of the Load Selection Process

The user can influence the outcome of the job selection process through the use of table options. There are three primary tables of interest:

1. GDADW: This table allows the user to specify the relative importance of various job components to the job selection process. This is done by assigning a dispatch weight (a numeric between 0 and 99 -- 0 representing least importance, 99 representing most importance) to each parameter. Parameters are established on a work center basis and can, at user option, be differentiated on the basis of "pricing group". Four separate tables are built via GDADW corresponding to a LOAD KEY of "I"nstallation or "M"aintenance and a LOAD TYP of "B"ulk or "D"ynamic. All four tables (I/B, I/D, M/B, M/D) must be built for each GDS Work Center. A pricing group is a unit of geography defined to be one or more DAAs and is determined during mapping. If the user opts to utilize this feature, the pricing group for a given job is determined at job entry time. The user can then establish different dispatch weights based on the location, i.e., the pricing group of the job. A default pricing group (designated by the "*") must also be established in the ADW table. This is accessed when the user opts not to utilize the pricing group feature, as well as cases where the feature is being utilized but the pricing group could not be established at job entry time due to a problem encountered during job entry.
2. GDJTW: This table allows the user to specify the importance that the job type should play in the job selection process. Again, a weight (0-99) is assigned to each job type. The table is set up on a work center basis.
3. GDS LOAD PARMS: This table allows the user to define a number of parameters used in the job selection process, such as the number of candidate jobs to consider when picking a job for a technician and the number of days into the future to select work from. This table is also defined on a work center basis.

The role of each of the above tables in the job selection process is discussed further in subsequent sections.

3.5.3 STEP 1: Determine the Candidate Jobs

As outlined earlier, there are three basic steps in the job selection process. The first is to establish the pool of candidate jobs.

To be considered for assignment to given technician, a job must first meet the following set of criteria:

1. The DAA of the job must match at least one of the DAAs defined for the technician in the GDTECH table.
2. The job type of the job must match at least one of the job types for the technician as defined in the GDTECH table.
3. The job must have a job status of "PLD" (pending load) indicating that it is ready to be assigned to a technician.
4. The job must have a commitment date equal to or less than the date on which the job is to be assigned. If future work is to be considered, it must have a commitment date equal to or less than the boundary established in the #DAYSFWD field of the GDS LOAD PARMS table. For example, if #DAYSFWD is '2', then work due the day the work is to be assigned or earlier plus two days into the future will be considered as part of the candidate job pool. See the discussion on the LOAD PARMS table for more information.
5. A routine maintenance job (identified by an "R" in the first character position of the job type) will only be considered for selection when the DISP TYPE field on the GDDISP/GDCOMP screen is populated with an "R" prior to initiating the dynamic dispatch function. Routine jobs are never considered when bulk loading.

6. The technician must have a schedule in the GDPAD table for the date in which the job is to be assigned.

7. The technician must be able to receive work. That means that relative to the technician's current location, whether it be a garage or another work location, the technician must be able to travel to the location of the candidate job and arrive within a user defined period of time in relation to the access window. These formulas for determining the access windows are discussed in the section on GDS LOAD PARMS. This section defines access windows when there is an APPT on the work request or the A and B fields are populated.

A. Preferred Craft

The preferred craft feature allows the user to RETURN work requests and automatically re-load the returned work requests to the technicians who were dispatched originally.

To utilize the preferred craft feature, the user executes an UPDATE on the work request to populate TECH EC field. Once the TECH EC field is populated, the load algorithm will select the job for the technician for the next load date.

This feature is very beneficial and efficient, particularly on delayed maintenance or no accessed jobs. In the manual environment, the ICC/SSDAC personnel must take returned jobs and "save" them manually for the original technicians to do the following day. With GDS, when the job is returned to pending load, for example, at 0500p, and GDLOAD is executed at 0530p, the load process will select the returned jobs and assign them to the original technicians' TLOGs for the load date. Preferred technicians are selected if the work request meets the technician's normal loading conditions, i.e., DAA, SUPV GRP, JOBTYPE and PRODUCTIVE TIME on GDPAD. The selection of preferred technicians occurs before the normal bulk load algorithm begins. It is therefore recommended that technicians have no more than one work request that will be assigned on a preferred basis.

Another function this feature provides allows the user to accomplish the re-loading of returned work without manually preassigning the work for the next day. The preferred craft feature eliminates the manual task of preassigning deferred work while insuring the deferred work is reassigned to the original craft along with the remainder of the next day's work.

3.5.4 STEP 2: Determine the "Job Suitability"

The next step is to determine the job suitability. To understand this process, the reader is referred to the worksheet in Table 3.19 in conjunction with the following discussion. The user is also encouraged to use the worksheet as a tool in the calculation of the suitability for a given job.

As noted earlier, a number of components must be analyzed for each job and a numeric value assigned to each.

The following components are considered:

1. Travel distance from the technician to the candidate job.
2. The time left relative to the commitment time of the candidate job.
3. The priority of the candidate job.
4. Whether the job is a missed commitment.
5. Whether the candidate jobs are to be distributed evenly across the available work force.
6. Travel distance between the potential job(s) and the garage location.

7. Whether the work request has an APPT.
8. For LMOS maintenance only, whether the customer associated with the candidate job is out of service.
9. For LMOS maintenance only, whether subsequent reports have been received against the candidate job.
10. For both LMOS and SSC maintenance, whether the candidate job is repeat report.
11. The job type of the candidate job.

Each component is assigned a component value. This section provides an in depth discussion of how each component is analyzed to determine the component value. The component value is then multiplied by a "normalization coefficient". The normalization constant was determined by Bellcore and the operating companies as part of the GDS development and testing process. It is the "reasonable maximum" that could ever be expected for the given item. It is used to insure that each component contributes equally to the total job suitability. The product of the component value and normalization coefficient for each component is then multiplied by the corresponding weight from the GDADW table. The individual component suitabilities are then summed. The sum of the component suitabilities is then added to the jobtype weight. The final factor in this formula is the addition of an arbitrary value of "1000". This addition of 1000 is mathematically needed for internal processing. The final sum represents the "total suitability" of the job and for a given technician.

The following provides a discussion of how the value of each component is determined.

A. Distance To The Technician

This factor represents how important it is to the user that travel time between jobs be minimized. This is accomplished by determining the travel time between the technician's current location, whether it be a garage or a job, and the location of the candidate job.

The travel time information is derived from the GDDATR (inter-DAA travel times) and the GDAATR (inter-AA travel time within a DAA) tables. If the two locations are in the same DAA, then the GDAATR table is referenced to get the inter-AA travel time. The travel time is assumed to be zero if the two locations are in the same AA. If the two locations are in different DAAs, then the GDDATR table is consulted to get the inter-DAA travel time. If one or both of the locations are not in the GDDATR/GDAATR tables, then the maximum travel time of 4 hours (or 240 minutes) is assumed.

The value of the travel time component is expressed in terms of whole and fractional hours. For example, if the travel time to the job is 45 minutes, the component value is .75. If the time is 1 hour and 20 minutes, the component value would be 1.33. The component value is then multiplied by the normalization coefficient of .25, and the product of the two is then multiplied by the weight in the ADW table for DIST TO TECH.

It makes sense that as the travel time decreases, the job becomes more suitable. To account for this, the travel time component is viewed as a negative contributor to job suitability.

Therefore, the product arrived at through the calculation will always be converted to a negative number. The smaller the travel distance, the smaller the product, and subsequently the smaller the number that is subtracted from the job suitability.

As an example, let's assume we are comparing two jobs that are equal in all respects except for travel time. For Job 1, travel is 0 minutes. For Job 2, travel is 60 minutes. With a weight in the ADW table of 90, we get the following results:

JOB	VALUE	NORM CONSTANT	ADW WEIGHT	COMPONENT SUITABILITY
1	0	.25	90	0
2	1.0	.25	90	-22.5

Everything else being equal, Job 1 would be more suitable relative to Job 2, since it results in a smaller decrement to the total job suitability.

B. Time to Commitment

This component indicates how important it is for the user, in job selection, to consider the time left until the customer commitment. The closer the current time gets to the commitment date and time, the more the component suitability will be increased.

The VALUE for this component is calculated using the following formula:

```
----
|
|  - MAX
|  + COMMITMENT TIME
|  - FACTORED TECH PRICE
|  - AVAILABLE TIME FOR TECH
|  - TRAVEL TIME TO JOB
|  - (N X 24) DAYS DIFFERENCE ;  N MAY BE POSITIVE OR NEGATIVE
-----
```

The above components are defined as follows:

- Reasonable Maximum for the interval, always expressed as a **negative 8.** (The negative 8 represents the 8 hr. shift.)

+ Commitment time. (A **positive value,** i.e., 0120p expressed as +13.33.)

- FACTORED TECH PRICE x LOAD FACTR (A **negative** value, 0230 expressed as -02.50.)

- Technician available time. (A **negative** value. If the technician is dispatched at 0930A, the value is expressed as -09.50.)

- Travel time to the job. (A **negative** value. A travel time to a job of 30 minutes would be expressed as -.50.)

- The number of days difference between the commitment date and the dispatch date, multiplied by 24 hours. Note the values illustrated below:

  a. Commitment date is equal to Dispatch/Load Date: If the dispatch date and the commitment date are equal, the formula is calculated as -(0 x 24) = 0. In this case, this calculation is not used in determining the component suitability for Time to Commitment.

  b. Commitment date is greater than Dispatch/Load Date: If the dispatch date is 04/23/88 and the commitment date is 04/24/88, the formula is expressed as -(-1 x 24) = +24.

c. Commitment date is less than Dispatch Date: If the dispatch date is 04/23/88 and the commitment date is 04/22/88, the formula is expressed as -(+1 x 24) = -24.

The component value that is ultimately derived is multiplied by the normalization constant of .125. The product is subsequently multiplied by the weight in the GDADW table for the TIME TO COMMIT.

As an example, one can consider a Dynamic dispatch where two jobs are equal in all respects except for the time to commitment.

For purposes of Illustration, assume that the dispatch date and the commitment date are equal, and the D_#CR value is 0.

	JOB 1	JOB 2	
Maximum	-8	-8	
Commitment	+12.00	+15.00	
Tech Price	-2.00	-2.00	(Assume LOAD FACTR = 100%)
Available Time of Tech	-08.00	-08.00	
Travel Time	-.50	-.50	
Days Difference	-(0 x 24)	-(0 x 24)	

The result of the above calculations is as follows:

JOB 1	JOB 2
-(-6.5) = +6.5	-(-3.5) = +3.5

The result (e.g., 6.5 and 3.5), whether positive or negative, it is multiplied by the norm constant and the weight in the GDADW table to determine the suitability component for time to commitment.

For DYNAMIC LOADING, the algorithm steadily increases the amount of component suitability beginning three days before the COMMITMENT date and time, and stops increasing the value three days after the COMMITMENT date and time. The component value for time to commitment does not drop to zero for the technician being dispatched. However, if the D_#CR field has a value of greater than 1, the value for time to commitment will drop to zero for the competing craft. By dropping to zero for competing craft, this prevents jobs whose commitments are in jeopardy of being missed from being "held" for other qualified technicians.

For BULK loading of technicians with LOAD TYPE of B, time to commitment is handled differently. The algorithm determines whether the technician is capable of traveling to the job and completing the work. If the technician is unable to complete the work before the commitment time, the value for time to commitment is reduced to zero. To determine whether to drop the value of time to commitment to zero, the following formula is used:

Load Time + Travel Time + Tech Price - ACC+/- = "X "

If "X" is greater than the commitment time, the value is dropped to zero. If it is less than the commitment time, begin the formula for time to commitment. The use of ACC+/- is only used to determine whether to drop the value for time to commitment to zero. If, by the use of this calculation, it is determined not to drop time to commitment to zero, continue with the normal calculation for time to commitment.

For BULK loading of technicians with LOAD TYPE of F, a third scenario is used. The algorithm will load the earliest shift of technicians on GDPAD (e.g., 0700a) before loading next shift of technicians (e.g., 0800a). For LOAD TYPE F technicians being loaded via the GDLOAD screen, the time to commitment continually increases from three days prior to three days after the commitment.

JOB	VALUE	NORM CONSTANT	ADW WEIGHT	COMPONENT SUITABILITY
1	6.5	.125	90	64.1
2	3.5	.125	90	39.3

Since Job 1 adds the most weight, it is a more suitable choice.

C. Job Priority

Each candidate job is given a "job priority" represented by a numeric value between 0 and 9 (0 being lowest priority, 9 being highest priority). For maintenance jobs, the priority is set automatically at the time of initial job entry based on the presence of priority "flags" (i.e., AMR, CH, I, FE, etc) on the trouble ticket and the corresponding value set in the GDS JOBPRI table. For LMOS maintenance jobs, an additional prioritizing factor is used. The PRNK value from LMOS is rescaled to a value range usable in GDS through the TTS-GDS LMOS PRNK table. The job priority value derived from the GDS LMOS PRNK table is then added to the job priority value derived from PFS evaluation in the TTS-GDS JOBPRI table. This process results in a total priority not to exceed the highest possible value of 9. Note that job priority will not be reset on subsequent reports for the same trouble ticket. The user also has the ability to update the priority via the GDMSWR screen. For installation jobs, the priority is set to "0" upon job entry unless the restoration priority flag is set. The GDISWR may be used to manually set the priority for installation jobs.

In considering a job for assignment, the priority component will be set to a value between 0 and 9, corresponding to the job priority. The component value is then multiplied by the normalization

constant of 1.0. The product is then multiplied by the weight for JOB PRIORITY in the ADW table.

As an example, assume we have two jobs equal in all respects excluding job priority. One has a priority of 0 and the second a priority of 9, and the weight for the ADW table is 50. The calculations would be as follows:

JOB	VALUE	NORM CONSTANT	ADW WEIGHT	COMPONENT SUITABILITY
1	0	1.0	50	0
2	9	1.0	50	450.0

Therefore, all else equal, Job 2 has a greater suitability relative to Job 1.

D. Missed Commitment

This component represents how important it is to the user that missed jobs be selected for assignment. Determination of a "miss" is done in either of the following ways.

- For bulk loading, the algorithm compares the start date and time of the work request to the earliest GDPAD start time for the selected technicians being loaded via the GDLOAD screen. If the start date is greater than the commitment date and time, the work request is considered a missed commitment.

  For dynamic loading, when an installation or maintenance job is being considered for selection, if the current time is after the start time of the job, then it is considered a miss.

  Note: The start time does not include travel time for the calculation of the missed commitment. At the time of determining the missed commitment, travel times are not accessible to the algorithm.

- A job can also be considered a miss if the missed appointment flag is set to "Y". This flag is populated differently for installation and maintenance jobs. For maintenance jobs, the flag is set automatically based on the following rules: If a subsequent report with a new commitment date/time is received after the current commitment date/time, the job is considered to be a miss for dispatch and the missed appointment flag is set to "Y". Alternatively, if the subsequent report is received prior to the commitment date/time, the job is not a miss and the flag is left blank regardless of a change received in commitment date/time. For installation jobs, the flag is set by the user when returning the job via the GDCOMP screen.

If a miss is detected by either of the above rules, the value of the missed appointment component is set to 1. The component value is multiplied by the normalization constant of 1.0 and then multiplied by the weight for MISSED COMMITMENT from the ADW table.

As an example, if two jobs are being considered for assignment and they are equal in all respects but one is determined to be a miss and the other is not, then the calculations are as follows. Assuming an ADW weight of 80,

JOB	VALUE	NORM CONSTANT	ADW WEIGHT	COMPONENT SUITABILITY
1	0	1.0	80	0
2	1.0	1.0	80	80

Job 2 would be selected prior to Job 1, since its contribution to the job suitability is larger.

E. Bulk Load Evenly

This factor represents how important it is to the user that work be distributed in equal amounts among the available work force. The net effect aims to prevent one technician from receiving all of the "hot" jobs. This component will always be taken into account when the bulk load is performed. Note, however, that this component will have no effect on dynamic selection if the D_#CR field in the GDS LOAD PARMS table is set to "0" or "1".

The effect of this component is evaluated differently relative to the other components discussed up to now. Previously, we were interested in comparing weights for different jobs for a given technician. Here we are interested in comparing weights of the same job but for more than one equally qualified technician.

The component value is determined by calculating the amount of time left on a technician's schedule, expressed in terms of whole and fractional hours. The component value is then multiplied by the normalization constant of .1094, and the product of the two is then multiplied by the weight for BULK LOAD EVENLY in the ADW table.

As an example, if two technicians determined to be equal in all respects are being compared, and a weight of 80 in the ADW table is established, and additionally technician 1 has 1 hour left on his/her schedule and technician 2 has 6 hours left on the schedule, the calculations would be as follows:

TECH	VALUE	NORM CONSTANT	ADW WEIGHT	COMPONENT SUITABILITY
1	1.0	.1094	80	8.752
2	6.0	.1094	80	52.512

In this case, all else equal, technician 2, who has more time left relative to technician 1, would receive the job.

F. Distance to The Garage

This factor indicates how important it is to the user that the travel time between the technician's location and the garage be minimized as the technician approaches the end of the shift. The net effect is to draw the technician back to the garage as the day comes to a close. Here we are interested in the distance between the candidate job and the garage location. The travel time is determined in the same manner as for the component "distance to technician" using the GDAATR/GDDATR tables. Refer to that previous section for more detail.

The formula for determining the Component Value for Distance to Garage is illustrated by the following:

End of Shift − Current Time = X
X − Travel Time to Job = Y
$\frac{\text{Travel Time from Job to Garage}}{Y}$ = Component Value

Where

End of Shift = 0500p or 17
Current Time = 0100p or 13
X = 4
Travel Time to Job = 10 minutes or .166
Travel Time from Job to Garage = 15 minutes or .25

Inserted in the above formula, the following Component Value will be determined:

$17 - 13 = 4$

$4 - .166 = 3.83$

$\frac{.25}{3.83} = .065$

The Component Value is .065. You can see that as the technician gets closer to the end of his/her shift, the Component Value will increase. This gradual increase will "draw" the technician back to the garage in the afternoon.

The component value is expressed in terms of whole and fractional hours. For example, a component value of 30 minutes is .5 versus a component value of 1 hour which is 1.0. The component value is multiplied by the normalization constant of .25 and then multiplied by the weight for the DIST TO GARAGE in the ADW table. Again, it is logical that the smaller the distance, the more suitable the job. Therefore, this factor is considered to be a negative contributor to job suitability and the resulting value will be treated as a negative number in the calculation.

As an example, if two jobs equal in all respects are being compared and one has a 60 minute component value to the garage and the second has a component value of ten minutes, the calculations would be as follows with an ADW weight of 80.

JOB	VALUE	NORM CONSTANT	ADW WEIGHT	COMPONENT SUITABILITY
1	1.0	.25	80	-20.0
2	.166	.25	80	-3.32

In this case again, the smaller the negative number, the greater the suitability. Therefore, Job 2 is considered more suitable relative to Job 1.

G. Meet Appointments

This component indicates the emphasis that users place on meeting appointments. It is important to realize that the MEET APPOINTMENT component is an "appointment" factor and not a "commitment" factor. This component uses two formulas to calculate the suitability of the work request when there is an appointment time involved as well as manage the dispatch time to insure that the arrival of the technician corresponds with the window established by the algorithm. The first formula determines the "window" or technician availability. If the work request meets the edits of the first formula, i.e., the technician being dispatched is capable of arriving within the "window," the work request is subjected to the second formula, component suitability. This formula determines the additional weight to be added to the work request's overall suitability component. In calculating the formulas, segments of hours will be expressed as fractions. For example, 90 minutes is converted to 1.5 hours. This weight is in addition to any weight already added to the total suitability (distance, missed commitment, etc.).

The first formula, Technician Availability, is calculated below for both maintenance and installation work.

Technician Availability (Installation)

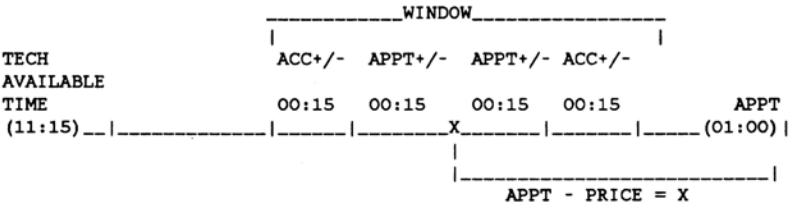
(APPT TIME) - (WIRING PRICE) + (ACC+/-) + (APPT+/-) = WINDOW

WHERE:

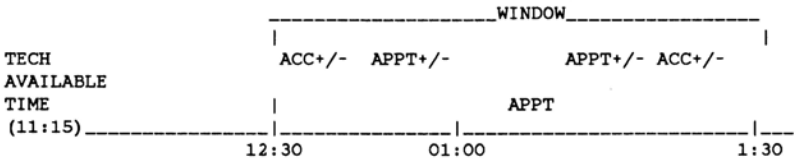
APPT	=	01:00P	OR	13.00
WIRING PRICE	=	00:45		.75
ACC+/-	=	00:15		.25
APPT+/-	=	00:15		.25

E.G. 13.00 - .75 = 12.25
12.25 +/- .5 (sum of ACC+/- and APPT+/-) = window

In this case, the "window" is from 11.75 to 12.75 OR
11:45 to 12:45. The calculations are illustrated below:



Technician Availability (Maintenance)



For maintenance work, wiring price is '00:00'. The window is established with the APPT+/- and ACC+/- on either side of the APPT on the maintenance work request. If the technician cannot arrive within the "WINDOW", the job will not be dispatched on the APPT. date.

If the technician will arrive outside the established window, the work request is not considered to be a candidate for the technician. If the technician can travel to the work location, and arrive within the "window" established by the calculation, the work request is considered to be a candidate for the specific technician being dispatched. The restriction created by the appointment window is valid on or before the appointment date. If the work request is not dispatched by the appointment date, i.e., the dispatch date is greater than the appointment date, the window restriction is removed. It must be recognized that if an APPT is missed, the user must establish a new appointment time for the work request.

Suitability Value

After the work request is determined to be a suitable job for the given technician, the suitability value must be determined. This value is multiplied by the normalization constant. The result of this transaction is then multiplied by the weight in the ADW table for MEET APPOINTMENTS. The following formula is used to arrive at the suitability value:

Normalization Constant - (Available Time - APPT Time - Wiring Price)

WHERE:

Normalization Constant =	maximum number of hours between Available Time and Appt Time (4)
Available Time =	Time when technician is being considered for dispatch (11:15)
APPT Time =	APPT field on GDISWR (01:00)
Price =	Wiring Price of work request (00:45)
ADW WT =	User defined weight on GDADW (99)

When performing the mathematical functions, the algorithm uses the "absolute value" of Available Time, APPT, and Price. The absolute value of this subtraction process is always expressed as a positive value.

To calculate the suitability value of this situation, we could substitute the factors used in the previous formula to illustrate the following:

STEP 1

4 - (11.25 - 13.00 - 00.75)

STEP 2 4 - 1 = 3

Now that the suitability value has been determined, we can use the standard formula illustrated throughout this section to arrive at the total suitability factor.

JOB	VALUE	NORM CONSTANT	ADW WEIGHT	COMPONENT SUITABILITY
1	3.0	.25	99	75.0

You can see that the closer the Available Time is to the APPT, the higher the "suitability value" is, and therefore more weight will be produced for the job in question. The more weight or component suitability a job has, the sooner it will be dispatched.

H. Out of Service

This component applies only to LMOS maintenance jobs and represents how important it is to the user that out of service jobs be selected for dispatch prior to affecting service jobs. The job will be flagged as out of service/affecting service at the time of job entry based on the first character entry in the SCRN RSLT field. If it is a "1", then an out of service flag is set to "Y". If it is a "9", the flag is set to "N". The default value is "N".

If the job is out of service, the value of the out of service component is set to "1". Otherwise, it is set to "0". The component is then multiplied by the normalization constant of 1 and the product is subsequently multiplied by the weight for OUT-OF-SERVICE in the ADW table.

As an example, if there are two jobs being compared for assignment and they are equal in all respects except that one is out of service and the other is not, the calculations would be as follows (assume an ADW weight of 60):

JOB	VALUE	NORM CONSTANT	ADW WEIGHT	COMPONENT SUITABILITY
1	0	1.0	60	0
2	1.0	1.0	60	60

Job 2 (out of service) has a greater suitability relative to Job 1.

I. Subsequent Reports

This component is applicable to LMOS maintenance jobs only and affects how the presence of subsequent reports influences a job's selection. Each time GDS receives a trouble ticket from LMOS for the same active work request in GDS, the "Pending" field on the BOR is checked. GDS increments the subsequent counter by the actual number of subsequents received in LMOS.

The component value ranges between 0 and 99 and is equal to the number of subsequent reports. The component value is then multiplied by the normalization constant of .25 and the resulting product is then multiplied by the weight for SUBSEQUENT REPORT in the ADW table.

As an example, assume there are two jobs of interest and they are equal except for their subsequent counters. Job 1 has a count of 8 while Job 2 has a count of 1. With an ADW weight of 70, the following numbers are derived:

JOB	VALUE	NORM CONSTANT	ADW WEIGHT	COMPONENT SUITABILITY
1	8.0	.25	70	140.0
2	1.0	.25	70	17.5

Job 1 has a higher suitability, in this case, relative to Job 2.

J. Repeat Reports

This component represents how important it is to the user that repeat reports be selected for assignment. A repeat report applies only to LMOS maintenance work and is defined to be a trouble report that had a previous report cleared within 30 days. It is determined at job entry time by comparing the current date to the last cleared date.

For Special Service trouble tickets from SSC, the Repeat flag is set if GDS completes the trouble ticket to SSC and SSC resends the same trouble ticket to GDS after determining that a second dispatch is necessary.

The component is given a value of 1 if it is a repeater. Otherwise, it is 0. The component value is then multiplied by the normalization constant of 1.0. The resulting product is then multiplied by the weight for REPEAT REPORT in the ADW table.

As an example, if two jobs of equal qualifications for selection are compared, and one is a repeater and the other is not, then, with a weight of 90, we would derive the following numbers:

JOB	VALUE	NORM CONSTANT	ADW WEIGHT	COMPONENT SUITABILITY
1	0	1.0	90	0
2	1.0	1.0	90	90

The second job has a greater suitability relative to the first.

K. Job Type

This factor represents how important the user considers jobs of various types to be for job selection. The value of this component carries a constant of "1". It is multiplied by the normalization constant of 1.0 and the resulting product multiplied by the weight in the JTW table.

As yet another example, two jobs of different job types would contribute the following to their respective suitability. With a weight of 40 for Job 1 and 80 for Job 2, then

JOB	VALUE	NORM CONSTANT	JT WEIGHT	COMPONENT SUITABILITY
1	1.0	1.0	40	40
2	1.0	1.0	80	80

Again, Job 2 has the greater suitability.

Following analysis, the numeric values of each component are summed. A constant of '1000' is added to the total. The end result is the job suitability.

For each technician being considered for work, the suitability for each candidate job is calculated. The job with the greatest suitability for the technician of interest is then assigned.

The reader is referred to Tables 3-20 and 3-21 for examples of job suitability calculations.

L. Summary

The GDS job assignment process is a very powerful tool. Through the use of table options, the user can control, to a great extent, how the process works for a given work center. The remainder of this section is dedicated to loading procedures and work document distribution. During the loading process, both bulk and dynamic, the previously defined algorithms are used.

Table 3-19. Job Suitability Worksheet

COMPONENT	COMPONENT VALUE	NORM CONSTANT	ADW WEIGHT	COMPONENT SUITABILITY
DIST TO TECH (HRS)		.25		
TIME TO COMMIT (HRS)		.125		
JOB PRI (0-9)		1.0		
MISSED COMMT (0-1)		1.0		
LOAD EVENLY (HRS)		.1094		
DIST TO GAR (HRS)		.25		
MEET APPOINTMENTS (HRS)		.25		
OUT OF SERV (0-1) (LMOS)		1.0		
SUBQ RPTS (0-99) (LMOS)		.25		
REPEAT RPTS (0-1) (LMOS)		1.0		
JOB TYPE (1)		1.0		

+CONSTANT +1000

JOB SUITABILITY

Table 3-20. Sample Job Suitability Calculation

TWO JOBS EQUAL EXCEPT FOR TIME TO COMMIT

COMPONENT	JOB 1	JOB 2	NORM CONSTANT	ADW WEIGHT	JOB 1 SUITABILITY	JOB 2 SUITABILITY
DIST TO TECH (HRS)	.3	.3	.25	00	0	0
TIME TO COMMIT (HRS)	1.5	3.0	.125	90	16.875	33.75
JOB PRI (0-9)	0	0	1.0	30	0	0
LOAD EVENLY	NA*	NA*	.1094	99	0	0
MISSED COMMT (0-1)	0	0	1.0	70	0	0
DIST TO GAR (HRS)	.50	.50	.25	00	0	0
MEET APPOINTMENTS	3	3	.25	99	75	75
OUT OF SERV (0-1) (LMOS)	1.0	1.0	1.0	05	5.0	5.0
SUBQ RPTS (0-99) (LMOS)	0	0	.25	15	0	0
REPEAT RPTS (0-1) (LMOS)	0	0	1.0	03	0	0
JOB TYPE (1.0)	1.0	1.0	1.0	20	20	20
+ CONSTANT					+1000	+1000
JOB SUITABILITY					1116.875	1133.75

* Assumes that on a dynamic job selection D_#CR in GDS LOAD PARMS table is set to "0" or "1".

Table 3-21. Sample Job Suitability Calculation

TWO JOBS EQUAL EXCEPT FOR MISSED COMMITMENT

COMPONENT	JOB 1	JOB 2	NORM CONSTANT	ADW WEIGHT	JOB 1 SUITABILITY	JOB 2 SUITABILITY
DIST TO TECH (HRS)	.3	.3	.25	00	0	0
TIME TO COMMIT (HRS)	1.0	1.0	.125	90	11.25	11.25
JOB PRI (0-9)	0	0	1.0	30	0	0
MISSED COMMT (0-1)	1.0	0	1.0	70	70	0
LOAD EVENLY (HRS)	NA*	NA*	.1094	99	0	0
DIST TO GAR (HRS)	.50	.50	.25	00	0	0
MEET APPOINTMENTS	3	3	.25	99	75	75
OUT OF SERV (0-1) (LMOS)	1.0	1.0	1.0	05	5.0	5.0
SUBQ RPTS (0-99) (LMOS)	0	0	.25	15	0	0
REPEAT RPTS (0-1) (LMOS)	0	0	1.0	03	0	0
JOB TYPE (1)	1.0	1.0	1.0	20	20	20
+ CONSTANT					+1000	+1000
JOB SUITABILITY					1181.25	1111.25

* Assumes that on a dynamic job selection D_#CR in GDS LOAD PARMS table is set to "0".

3.5.5 Loading Procedures

There are two methods of loading technicians in GDS - dynamic and bulk. Dynamic loading consists of loading technicians with one job at a time. This usually occurs during the day after the first jobs are completed in the maintenance environment and after the bulk loads are completed in installation. Bulk loading is the process of loading technicians with a "first job" or an entire load for the next day. This section will describe the processes involved to accomplish loading technicians with work using both methods.

3.5.5.1 Bulk Loading

A. Bulk Loading Procedures

To initiate the bulk load process, the user will request the GDLOAD screen. The bulk load is generated via two commands - TRIAL and PERM. The trial segment of the load process allows the user to view the loads that are generated and make any necessary changes before making the loads permanent if "DEBUG" field in the GDS LOAD PARMS table is set to "Y". When the TRIAL command is executed, a screen providing the user with information concerning the technicians that had productive time in the GDPAD table, the number of hours of work they were loaded with, and the total travel time for loaded technicians will return. After viewing this screen, press the ENTER key. The GDLOAD screen will return with a message, giving "total" information concerning the trial load. At this point, the JOBIDs that were rejected may be viewed by requesting the GDLST screen. The view of the "BYPASSED"/"LEFTOVER" work requests may only be seen from the terminal that created the trial load. From the loading terminal, the user may "JUMP/FIND" to the GDLST screen to view the "BYPASSED" JOBIDs, or from a clear screen, request the GDLST format and execute the "previous" transaction via the PF7 key. If the first trial load is not acceptable, additional TRIAL loads may be created. The new TRIAL load will overwrite the original trial load. When the new trial load is considered acceptable, the command "PERM" may be executed on the GDLOAD screen (Figure 3-12). The command "PERM" changes the JOBSTAT from "TRL" to "PRE" on the TLOGS of technicians that were loaded. Non-productive time is indicated by a "JOBSTAT" of "***" following the PERM command. If, after the bulk load is permanent, the user is not satisfied with the load, it can be cancelled by the "CANCEL" command. This command cancels the load and returns all preassigned jobs made "pre" through a trial load to the "PLD" JOBSTAT.

> **NOTE** - CANCEL will cancel all trials for the specified center.

By selecting or rejecting supervisor groups and individual technicians, the user can specify who is to be loaded. Jobs can be selected or rejected by DAA and jobtype. These select/reject options are used together. For example, a load that consists of specific jobtypes can be built for all of SUPV GRP A except TECH EC OD1 (who is in SUPV GRP A). Note that if the user does not specifically select or reject a factor, all of that factor is selected. If the reject option is used for a factor, then all but those specifically rejected are selected. If the select option is used for a factor, then ONLY those specifically selected are considered. So if SUPV GRP A is selected, a TECH EC from SUPV GRP B cannot be rejected.

B. Tables

When executing the bulk load process on the GDLOAD screen, the load algorithm visits several tables in order to create a bulk load desired by the user. The following lists the functions provided by the user defined tables:

- **GDPAD**

The GDPAD table is used to input the technician's available hours. These hours are subdivided into productive and non-productive times. The technician must have productive time (time type "B") to be considered available for bulk loading.

- **GDS Time Types**

The purpose of this table is to allow the user to define which time types will be used by the system, and whether they will be productive or non-productive. Any time type may be used in the GDPAD table if it is a valid time type in the GDS TIME TYPES table. There are three valid entries in the PROD/NON field of the GDS TIME TYPES table. They are as follows:

B - An entry of "B" will allow the time type associated with it to be selected for either bulk or dynamic load. For instance, if a technician has a time type that is to 12:00, he is capable of being bulk loaded or dynamically loaded during this time.

D - An entry of "D" will allow the time type associated with it to be selected for dynamic loading only. For instance, if a technician has a time type that is associated with a "D" on his GDPAD schedule for 08:00a to 12:00, he is capable of dynamic loading only (one job at a time).

N - An entry of "N" will not allow the time type associated with it to be selected for bulk or dynamic dispatch. These time types are usually expressed as "LUN", "VAC", "OFF".

- **GDTECH**

The GDTECH table is used in the bulk loading process to determine the DAAs, JOBTYPEs, SUPV groups, and LOAD TYPES for technicians with productive time in the GDPAD table. When the users create a "bulk" load via the GDLOAD screen, the GDTECH table is accessed by the algorithm to insure the technician is loaded in the proper DAA, in the proper SUPV group, and with the correct JOBTYPEs. Another important function the GDTECH table performs is determining LOADTYPE. The LOADTYPE determines whether the technician will be loaded via the GDLOAD process with one job, an entire day's work, or not loaded at all. The entries for LOADTYPE are "F", B, and D. They are defined as follows:

F - A technician can be loaded via GDLOAD for one job only if the technician has a LOADTYPE of "F" in the GDTECH table and bulk time available on GDPAD.

B - A technician can be loaded for an entire day's work providing the technician has a LOADTYPE of "B" and bulk time available on GDPAD. If the technician's last entry on GDTLOG is "PRE," their remaining productive hours will also be bulk-loaded.

D - A technician with LOADTYPE of "D" is never considered for the bulk load via GDLOAD process. If the LOADTYPE of "D" is used, the technician can be loaded through the dynamic (one job at a time) process only.

- **GDS LOAD PARMS**

— The B_WR*AVL field specifies the total amount of candidate jobs to be considered when bulk loading, with a system maximum of 3000 candidate jobs per load. The number in this field is multiplied by the total number of available technician hours to get the total number of jobs. For example, if 10 technicians are being bulk loaded and each works an 8 hour shift, and the value in B_WR*AVL is 10 then 10 * 8 * 10 or a maximum of 800 jobs will be considered when bulk loading. The default is "10". The user must always set the value of B_WR*AVL to "99".

— The B_#WRMAX field specifies number of candidate jobs (1-999) to be considered simultaneously during the bulk load when assigning work to one technician. The default is "0". The user must always set the value of B_#WRMAX to '999'. After every job assignment, the job pool specified here is replenished with a new job. The value for the new job and the technician assigned work are recalculated.

— The #DAYSFWD field (0-9) specifies the number of days to look forward when selecting jobs for evaluation by either the bulk or dynamic load. A "2" entry extends the candidate job pool to jobs due two days beyond the load date. The default is "0".

— The APPT+/- field is used to expand the "start time" of work requests when there is an APPT on the work request. The algorithm uses this formula:

APPT time - wiring price + (APPT+/-) = window

This window is the time period in which the technician must be capable of arriving at the work location. Remember, there is no wiring price on maintenance work (wiring price = 00.00).

— The ACC+/- field is used on four occasions. The first occasion, when there is an APPT time on the work request, the ACC+/- time is added to the APPT+/- time to further expand the "window". In the example above, if the ACC+/- field is populated on the GDS LOAD PARMS table, the formula would be calculated as follows:

APPT time - wiring price + (APPT+/-) + (ACC+/-) = window.

The second occasion is on work requests where there is not an APPT and the "A" and "B" fields are populated. In this instance, the time in the ACC+/- field is simply subtracted from the "A" field and added to the "B" field. For instance, if the A field is 01:00p, the B field is 03:00p, and the ACC+/- field is 00:30, the window in which the technician could arrive at the customer's premises is between 12:30p and 03:30p. If there is an APPT time and populated A and B fields, the algorithm overwrites the A and B windows and uses this formula to recalculate the window.

The third occasion is when there is a delayed maintenance or no-access condition on the work request. In this instance, the ACC+/- field is used to reduce the DM/NA window. For instance, if the DM/NA field is from 0100p to 0300p, and the ACC+/- field is populated with 00:30, the work request will not be available for dispatch from 0130p to 0230p.

The fourth occasion is when the time to commitment formula is calculated (for loading for load type B only). If the current time, plus travel to the job, plus price of the job, minus the value of ACC+/- extend past the commitment date and time, the value for time to commitment is dropped to zero.

All jobs that do not meet the above qualifications are not considered for assignment to the given technician. The remaining jobs are then sorted in order of the "start time". The start time is calculated by the system at the time of job assignment to be equal to the current commitment time promised to the customer minus the estimated time needed to complete the work, i.e., the price and the travel time to the candidate job. This applies to both installation and maintenance jobs. The start time represents the latest possible time that the candidate job can be started in order that the work be completed prior to the commitment time promised to the customer.

3.5.5.2 Dynamic Loading

A. Dynamic Loading Procedures

Dynamic loading is the process of dispatching technicians on one trouble/service order at a time. To initiate the dynamic dispatch, the user will request the GDDISP screen. The command "DIS", CENTER, and TECH EC are required to initiate the dispatch. The user can "manually" dispatch a technician by typing in a JOBID in the "manual JOBID" field. Any technician can be manually dispatched on any JOBID regardless of SUPV GROUP, JOBTYPE, or access data. This feature provides flexibility for special situations that may arise during the course of the day.

GDS provides another feature in the dynamic dispatch scenario. When completing a work request on the GDCOMP screen, if the technician still has productive time on the GDPAD, and DISPATCH TYPE N is not used, GDS will automatically dispatch the technician on another work request. The user will see an automatic screen change from GDCOMP to GDDISP with a message "DISPATCH SUCCESSFUL" at the bottom. If the GDJTW table has the PREDISP TEST flag set to "Y", GDS will automatically request a MLT test at the same time. Approximately 30 seconds later, the command "DTR" may be used to view the MLT VER CODE and SUMMARY.

B. Tables

During the dynamic load process, the load algorithm visits many of the same tables used by the bulk load process. The following lists the functions provided by the user-defined tables:

- **GDPAD**

  The GDPAD table separates the work shift into productive and non-productive intervals of time. For a technician to be considered available for the dynamic process, there must be a productive time type in the GPDAD. GDS will dispatch a technician after the GDPAD and time (dynamic only).

- **GDS Time Types**

  There are three valid entries in the PROD/NON field of the GDS TIME TYPES table. They are B, D, and N. For the purposes of dynamic dispatch, entries of B and D can be used. Any interval of time on the GDPAD associated with a non-productive time type (N) eliminates the technician from being dynamically dispatched.

- **GDTECH**

  The GDTECH table is used for dynamic dispatch in basically the same way as for the bulk load process. For dynamic dispatch, the LOADTYPE can be any one of the three options, B, D, or F.

- **GDS LOAD PARMS**

  — The D_#WR field specifies the maximum number of candidate jobs (1-999) to be considered in selecting a job for dynamic assignment. The system assumes a default value of 100 if the field is not populated. The user must always use a value of "999".

  — The #DAYSFWD field (0-9) specifies the number of days forward from the date that work is to be assigned, i.e., the load date, that the system should look at when selecting the candidate jobs. A "0" entry restricts the candidate job pool to jobs due on the day work is to be assigned, or earlier than that date. The default is "0".

  — The D_#CR field is used to indicate the number of qualified technicians that should be taken into account when selecting a job for a given technician. A technician is equally qualified if he/she has at least one job type and/or one DAA in common with the technician that is receiving

work.

It is important to understand that the D_#CR field indicates the total number of craft competing for the job in question. For instance, if the D_#CR field is populated with a "1", the load program will ignore other technicians. If the D_#CR field is populated with a "3", the load program is making the load decision of best craft using the technician being dispatched, plus two additional competing technicians, for a total of 3. In some cases, the net effect is to take a job that one would think should be assigned to the technician receiving work and to "save" it for another equally qualified technician. This is desirable in situations where, for example, the equally qualified technician is "next door" to a job and is free to receive a new assignment in 5 minutes verses the technician receiving work who needs to travel 25 minutes to get to the same job.

An entry of "0" or "1" in this field will cause (1) all other technicians to be ignored in dynamic job selection and (2) the BULK LOAD EVENLY component on ADW to be non-effective on dynamic job selection. The default is "10".

— The D_HRSFWD is used in conjunction with the D_#CR field to establish an "availability range" for equally qualified technicians. In other words, if this field is set to "01:00", in order for the equally qualified technician to be considered for assignment to a particular job, he/she must be free to accept work within one hour's time. Otherwise, the equally qualified technician is not considered for assignment to that job. The field must contain a time in the format HH:MM. The default is "01:00".

— The APPT+/- field is used to expand the "start time" of work requests when there is an APPT on the work request. The algorithm uses the following formula:

APPT time - wiring price + (APPT+/-) = window

This window is the time period in which the technician must be capable of arriving at the work location. It is important to remember that maintenance work has no wiring price.

— The ACC+/- field is used on four occasions. The first occasion when there is an APPT time on the work request, the ACC+/- time is added to the APPT+/- time to further expand the "window". In the example above, if the ACC+/- field is populated on the GDS LOAD PARMS table, the formula would be calculated as follows:

APPT time - wiring price + (APPT+/-) + (ACC+/-) = window.

The second occasion is on work requests where there is not an APPT and the "A" and "B" fields are populated. In this instance, the time in the ACC+/- field is simply subtracted from the "A" field and added to the "B" field. For instance, if the A field is 01:00p, the B field is 03:00p, and the ACC+/- field is 00:30, the window in which the technician could arrive at the customer's premises is between 12:30p and 03:30p. If there is an APPT time and populated A and B fields, the algorithm overwrites the A and B windows and uses this formula to recalculate the window.

The third occasion is when there is a delayed maintenance or no-access condition on the work request. In this instance, the ACC+/- field is used to reduce the DM/NA window. For instance, if the DM/NA field is from 0100p to 0300p, and the ACC+/- field is populated with 00:30, the work request will not be available for dispatch from 0130p to 0230p.

The fourth occasion is when the time to commitment formula is calculated (for BULK loading for load type B only). If the current time, plus travel to the job, plus price of the job, minus the value of ACC+/- extend past the commitment date and time, the value for time to commitment

is dropped to zero.

3.5.6 Work Document Distribution

One of the labor-intensive work operations within maintenance and installation centers is building and distributing the next day's work loads to the outside technicians. The task of building the loads has been simplified by the bulk load procedures described in the previous section. The purpose of this section is to describe the distribution of these loads to the technicians via the GDISSU screen.

A. GDISSU

The normal scenario within a CENTER environment is to create a bulk load (complete bulk loads or individual first jobs). After completing the GDLOAD process, the user will request the GDISSU screen by entering /FOR GDISSU. An example of this screen can be seen below. Valid commands are as follows:

FIND	- Returns only ONE document for a specific job issue
ISS	- Starts the issue process
CAN	- Cancels the issue that is in progress
REFRESH	- Clears screen of existing data
HELP	- Provides the user with on-line information if there was an error message during a process
OVERRIDE	- Issues ALL documents; ignores SUPPRESS feature.

GDISSU is a center based facility which gives the user a significant amount of flexibility in determining the types of documents to be distributed as well as the printer locations.

The first step for the user is to determine which type of documents will be distributed. Documents are selected for distribution by entering an "X" in the selection fields. An example of the GDISSU screen and select document section is illustrated below:

```
COMMAND: --------          GDS:  ISSUE  (GDISSU)                    /FOR --------
                                                                  12/22/89 15:30:46
CENTER:  ----------  SOI PARSE OPTION:  --

SELECT DOCUMENTS:
  POTS INST:    IWR: -    SOI: -
  LMOS MAINT:   MWR: -

  SS INST:     ISWR: -    SOI: -     WORD: -
  SSC MAINT:   MSWR: -   WORD: -

  TECHNICIAN LOG:
  SUMMARY ROUTE SHEET: -

SPECIFIC ISSUE: JOBID: ------------ --      PRTR: --------

BULK LOAD ISSUE: ISSUE DATE: -- -- --   SEND TO GARAGE: -  PRTR: --------
  SELECT/REJECT: -
  SUPV GRP: --- --- --- --- --- --- --- --- --- --- --- --- --- --- ---

  SELECT/REJECT: -
  TECH EC:  --- --- --- --- --- --- --- --- --- --- --- --- --- --- ---
```

Figure 3-11. GDISSU

The user will select the specific documents by placing an "X" in all selection fields desired. An "X" in the WORD document fields produces the parsed WORD, while a "W" in the same field results in the unparsed/whole WORD document. If the SOI PARSE OPTION field is populated, and an SOI field is marked with an "X", the TTS table GDS SOI PARSE is checked to determine which sections of the Service Order Image are to be issued. Otherwise, the whole SOI will be issued when it is one of the selected documents.

The next part of the SELECT DOCUMENTS section allows distribution of the TECHNICIAN LOG and/or the SUMMARY ROUTE SHEET. These two documents can be requested only if the BULK LOAD ISSUE is being used. To select a document, simply type an "X" in the field being requested.

The third section of the GDISSU screen is SPECIFIC ISSUE. This section allows the user to reroute individual JOBIDs to user-specified printers. If the JOBID field is populated, the PRTR field must be populated with any user-specified printer.

The fourth section of the GDISSU screen is the BULK LOAD ISSUE. This section allows the user to distribute the bulk loads or "packages" consisting of documents selected in the first section to garages and/or a unique printer. This distribution can consist of simply the IWR, ISWR, MWR, or MSWR. However, the packages or loads can become quite complex if several document types, TECHNICIAN LOG, and SUMMARY ROUTE SHEET are selected. This section also consists of the SELECT/REJECT options on SUPV GRP and TECH EC. If an "S" is input in the SELECT/REJECT field, and a valid supervisor group number is typed in the SUPV GRP field, only that supervisor will receive loads via the GDISSU. If an "R" is typed in the SELECT/REJECT field and the SUPV GRP field is populated with a valid supervisor group number, all supervisor groups in the center but this one will receive loads via GDISSU. The same logic applies to the TECH EC field. Remember, if you use the

select option and the reject option on the same GDISSU screen, whatever item you reject must be in the originally selected group. For example, if you select SUPV GRP A, any TECH ECs that are rejected must be in the selected SUPV GRPs.

> **NOTE** - The bulk issue process is used in conjunction with the SUPPRESS field in the GDS ISSUE OPTS TTS table. When SUPPRESS is set to "Y", a document will not be reissued if nothing has changed on the work request since the last time the document was issued. The only changes/updates tracked by the issue process are SOP/SOAC passes, TIRKS messages, GOC messages, and a change in TECH EC. When SUPPRESS is set to "N", a document will be issued whether or not changes were made to the work request.

To issue the loads for a center, the algorithm selects all JOBIDs on the TLOGS with job status of "PRE", "DSP" or '***' for the ISSUE DATE and gathers the selected documents via two programs, VGG025T1 and VGG027T1. The VGG025T1 gathers just the GDS specific documents, i.e., TLOGS, IWR, ISWR, MWR, MSWR, and SOIs. The VGG027T1 is only used when issuing a load that contains the WORD document. The issue program then distributes the documents according to the SEND TO GARAGE or PRTR fields. If the SEND TO GARAGE field is selected with a "Y", the documents will be sent to the printers that correspond to the PRTR field in the GDSUPV table. If the SEND TO GARAGE field is not selected, the PRTR field must be populated. The PRTR field can be any valid printer within the system.

When the "ISS" COMMAND is used, the user will see a message at the bottom of the screen. Examples of these messages are as follows:

"SPECIFIC ISSUE SUCCESSFUL AND COMPLETE"
"BULK ISSUE SUCCESSFUL AND IN PROGRESS - 6 SUPV GROUPS 102 TOTAL CRAFT

The phrase "AND IN PROGRESS" is used when the selected documents will contain the WORD document.

> **NOTE** - If any ITEMs associated with an issued JOBID are cancelled or completed, this information will be displayed as the last part of the ITEM information.

B. TSEND Device Type Table - GTSDEV

The GTSDEV table is used to define the printer "type" when distributing documents to Destination Access Codes (DACS) via the GDISSU screen.

To access the GTSDEV table, the entry is /FOR GTSDEV. This entry will produce the following example:

```
COMMAND:          TSEND DEVICE TYPE TABLE (GTSDEV)          /FOR
                                          PRTR:          04/20/87 08:48

C DAC      TYPE   C DAC      TYPE   C DAC      TYPE   C DAC      TYPE
- -------- -     - -------- -     - -------- -     - -------- -
```

To add new devices or printer locations, valid entries are as follows:

C - type "a"
DAC - type DAC id, e.g., P225
TYPE - type either "I" (IMS) or "N" (NON-IMS)_

When utilizing the GDISSU screen to send documents to a printer, particularly a non-IMS printer, if the printer is not defined in the GTSDEV table, the issue process will not be successful.

3.6 DISPATCH AND COMPLETION

This section provides the general information on the features associated with the dispatch and completion functions. The on-line screens that support the dispatch and completion process are explained in detail in Section 5.

3.6.1 Dispatch

The dispatch feature allows the GDS user to dispatch a technician through a single automatic function. When a dispatch is performed, the system will either select a job from the Tech's TLOG, dynamically select a job from the pending load pool of jobs, or the user may manually assign a specific job to the technician.

Work may be PREassigned to a technician. Work may be preassigned through the bulk load process, or by manually preassigning a job to a specific technician. Upon dispatch, the system will load the technician with his/her preassigned work.

A technician may be designated the preferred technician for a particular job. This is accomplished by updating the work request with the technician's employee code (EC). At dispatch, the system will attempt to assign the job to the preferred technician if available. If the preferred technician is not available, the job is loaded to another technician.

Technicians may be dispatched to work a job, or dispatched as a helper.

3.6.2 Completion

The completion feature allows the GDS user to complete work automatically through a single function. It allows the technician to complete a job or return a partially complete job, and to apply completion information and comments in a single operation.

When a job is completed by a technician, the system will calculate the time worked on the job, it will invoke an automatic notification of the work completion to the proper operations support systems, and dispatch the next job to the technician.