

Check Processing Control System
International MVS/ESA



General Information

Release 1

Check Processing Control System
International MVS/ESA



General Information

Release 1

Note!

Before using this information and the product it supports, be sure to read the general information under "Notices" on page v.

First Edition (December 1996)

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About This Publication

This publication gives a general introduction to the IBM* Check Processing Control System International MVS/ESA (CPCS-I). It describes various features and advantages of CPCS-I and the hardware and software requirements for operating CPCS-I. It also discusses CPCS-I support of the IBM 3890 Document Processor and the 3890/XP Series document processors, along with some of the features of these processors. (See "Document Processors" on page 1-12 for a description of the 3890/XP Series document processors.)

A Terminology Note

Note: The term *Check* as used in this document is equivalent to the United Kingdom term *Cheque*.

Who Should Read This Publication?

This publication is for executives and managers of financial institutions, administrative personnel, programmers, system engineers, and others who are responsible for evaluating and using CPCS-I.

How Is This Publication Organized?

This publication contains the following sections:

- Chapter 1, "Introducing the Check Processing Control System," describes the features and advantages of CPCS-I. It also includes information about the hardware configuration and the software requirements for CPCS-I. In addition, this chapter explains how you can ensure that CPCS-I fits your specific operational environment.
- Chapter 2, "Describing CPCS-I Processing," shows how CPCS-I does a variety of check processing functions.
- Chapter 3, "CPCS-I Workflow Control and Financial Audit," summarizes the functions of the two basic types of controls within CPCS-I and defines their various control levels.

This publication also contains a glossary, a bibliography, and an index.

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Related Publications

The following publications contain information that relates to Check Processing Control System International MVS/ESA (CPCS-I). For an additional list of relevant publications, see the “Bibliography.”

- *IBM Check Processing Control System International MVS/ESA: General Information*, GC31-2944
Short Title: *CPCS-I General Information*

This publication gives a general introduction to CPCS-I. It describes various features and advantages of CPCS-I and the hardware and software requirements for operating this system. It also discusses CPCS-I support of the IBM 3890 Document Processor and the IBM 3890/XP Series document processors, along with some of the features of these processors.

- *IBM Check Processing Control System International MVS/ESA: Installation Guide*, GC31-2942
Short Title: *CPCS-I Installation Guide*

This guide describes the steps necessary for using the IBM System Modification Program Extended (SMP/E) procedures to install CPCS-I software. It also provides installation procedures for generating CPCS-I modules and creating operational data sets. It provides data for sample problems to test and verify operations after CPCS-I installation.

- *IBM Check Processing Control System International MVS/ESA: Terminal Operations Guide*, SC31-2946
Short Title: *CPCS-I Terminal Operations Guide*

This guide explains how to perform CPCS-I tasks and is written for the CPCS-I operators. Included in this guide are terminal operations for the MICR restart procedures and sample reports.

- *IBM Check Processing Control System International MVS/ESA: Programming Guide*, SC31-2948
Short Title: *CPCS-I Programming Guide*

This guide contains guidelines for CPCS-I programmers. It includes information about application-program processing, problem analysis and documentation procedures.

- *IBM Check Processing Control System International MVS/ESA: Programming Reference*, GC31-3997
Short Title: *CPCS-I Programming Reference*

This publication gives a structured view of the CPCS-I interfaces, specifically application programming, Assembler macros, subroutines, and some control block information.

- *IBM Check Processing Control System International MVS/ESA: Customization Guide*, SC31-2943
Short Title: *CPCS-I Customization Guide*

This guide provides customization information for CPCS-I programmers. It also includes system programming information, and generation and installation procedures.

- *IBM Check Processing Control System International MVS/ESA: Messages and Codes*, SC31-3981
Short Title: *CPCS-I Messages and Codes*

This book describes console and supervisor messages, as well as program return and exit codes.

- *IBM Check Processing Control System International MVS/ESA: Propagation of Adjustments*, SC31-3994

Short Title: *CPCS-I Propagation of Adjustments Guide*

This guide contains the guidelines for the CPCS-I personnel who use the Propagation of Adjustments (PRAD) feature. It includes functional descriptions and information about terminal operations, programming, and application output.

- *IBM Check Processing Control System International MVS/ESA: Master Index*, SC31-3980

Short Title: *CPCS-I Master Index*

This reference combines the index entries for all the publications in the CPCS-I library.

Chapter 1. Introducing the Check Processing Control System

Check processing has changed substantially since magnetic ink character recognition (MICR) was first introduced as the standard for the automated processing of checks. Check processing now involves more critical time schedules, larger and more unpredictable volumes, increased operating expenses, and higher costs associated with delays in the availability of funds. The IBM Check Processing Control System International MVS/ESA (CPCS-I) is uniquely equipped to meet the increased demands of modern check processing.

CPCS-I is designed to:

- Capture large volumes of codeline data effectively¹
- Capture full document images²
- Enable the use of electronic data
- Give a high degree of automated control using Enhanced System Manager
- Facilitate your custom applications
- Supply data for your in-house funds-availability analysis system
- If you are using the repair feature, supply a full range of image-assisted repair functions²
- Process many types of work using common operating procedures
- Support capture of full document images²
- Supply data that you can use as input to your extract programs for your various posting systems.

Working with the IBM 3890 Document Processor and the 3890/XP Series document processors, CPCS-I offers many advanced features in both hardware and software system design. These features simplify and increase the speed of check processing while decreasing the cost. CPCS-I can also work with the IBM ImagePlus^{*} High Performance Transaction System^{*}, which uses electronic images of the document rather than paper documents for processing. For more information about the ImagePlus High Performance Transaction System, see the following publications:

- *IBM Check Processing and Image Processing Systems Volume 1*
- *IBM Check Processing and Image Processing Systems Volume 2*
- *IBM Check Processing and Image Processing Systems Volume 3*
- *IBM ImagePlus High Performance Transaction System General Information Manual*

This chapter describes various features and advantages of CPCS-I and the hardware and software requirements for operating CPCS-I.

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¹ The phrase *codeline data* is used throughout this document in reference to a check's codeline, which CPCS-I copies to the mass data set.

² The phrase *full document image* is used throughout this document in reference to the full document image (front and back), which the High Performance Transaction System stores on the Check Image Management System (CIMS) data set.

CPCS-I Features and Advantages

The following features of CPCS-I offer you many operational and management advantages.

Automatic Restart: When a host or link failure occurs, CPCS-I restarts interrupted item-capture operations without the physical intervention of operators.

The control program for the 3890/XP Series document processor maintains a restart buffer where it stores a copy of the records that it sends to the host. When recovering from a host or link failure, CPCS-I gets the records from this restart buffer and replaces the records that were lost in intermediate buffers when the failure occurred.

Centralized Control: Centralized control in the check processing department permits quick decision making, based on check processing needs rather than on the complete system requirements.

To aid in this centralization, CPCS-I provides the Enhanced System Manager to track and control the task sequence for CPCS-I units of work. CPCS-I creates a unit-of-work record and sets up the task sequence for each of these units of work. CPCS-I then tracks each unit of work through the various tasks and provides monitoring data on the unit-of-work status.

It also starts tasks that are capable of automatic initiation when required by the task sequence for a unit of work.

Code-Line Data Matching: During the first pass of items through the document processor, CPCS-I captures all data from the document codeline and sends it to the mass data set. On later passes, CPCS-I attempts to match each item with the codeline data that went to the mass data set on the previous pass. Code-line data matching enables the system to detect and compensate for unreadable characters and aids in the isolation of missing items or incorrect sorts from previous passes. Code-line data matching carries the incoming sequence number from pass to pass, giving your adjustment department excellent auditing and tracing information. It also eases pass-to-pass reconciliation.

Code-Line Data Match Prime Pass: The codeline data match prime-pass (CDMP) facility processes documents through a special prime pass where they are actively codeline data matched.

Through codeline data matching, this facility enables the prime pass to match the item being processed with the data that was imported into the mass data set. This is done using the document-based electronic funds transfer (DEFT) input functions. Sending institutions (a bank, a branch of your bank, or a customer of your bank) provide the DEFT input data.

Code-Line Data Match of Rejects: The codeline data match of rejects (CDMR) facility automatically sorts system-reject pocket items by matching them against a string of corrected reject data, using extended codeline data matching. The rejects can be from a prime-pass, high-speed reject re-entry (HSRR) pass or a codeline data match subsequent pass, with the exception of fine sort passes. For more information about the CDMR facility, see the *CPCS-I Customization Guide*.

Code-line Validation: Code-line validation is used in the following manner and by the following applications:

- To load 3890/XP Series document processors
- By CPCS-I host applications such as online reject re-entry (OLRR)
- By workstation applications such as High Performance Transaction System Key Entry, which displays images at a workstation for reject repair.

Note: The workstation provides emulation facilities for the 3890/XP Series document processor.

Concurrent File Sorts: You can concurrently run multiple CPCS-I application tasks that need internal file sorts. You can also run any combination of CPCS-I and user-written tasks that include internal file sorts.

Data-Set Duplexing: CPCS-I maintains the integrity of certain data sets through the data-set duplexing (DUPLEX) function. CPCS-I duplexes certain data sets that are critical to its operation. If a disk failure occurs, CPCS-I can re-initialize the duplexed data sets or re-create them through predefined procedures.

Document-Based Electronic Funds Transfer: The Document-Based Electronic Funds Transfer (DEFT) facility captures electronic data that a sending institution (a bank, a branch of your bank, or a customer of your bank) provides to support codeline data match processing of paper documents on the prime pass. This support helps the processing bank do the following:

- Decrease the number of rejects
- Simplify reconciliation
- Improve the audit trail
- Enable the use of electronic data in CPCS-I
- Generate data for trial or actual account posting before processing paper documents.

DEFT Input Data: The DEFT data that your institution receives is a representation of the document codeline and other data about the document that you are processing.

Your institution may have received this DEFT input data in a number of forms, including:

- Diskette
- Magnetic tape
- Optical disk
- LU 6.2 transmissions
- Network file transmissions.

DEFT data must be formatted into a sequential multiple virtual storage (MVS) data set. The CPCS-I DEFT input feature does the following:

- Imports the data into the mass data set
- Assigns available entry run numbers for its generated strings
- Assigns and maintains subset numbers
- Assigns new item-sequence numbers for processed items, unless otherwise requested.

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DEFT Output Data: CPCS-I can write, to a sequential MVS data set, the mass-data-set string that it uses to generate a kill/remittance list. This DEFT output data set can be exported by your financial institution to a receiving institution (for which it becomes DEFT input data).

DEFT Entry Filing System: The DEFT entry filing system tracks input data sets to make the process of loading DEFT data easy and controllable. You can insert or change records in the DEFT entry filing system as a step in an MVS batch job. This system contains one record for each MVS file to be processed by the DEFT input feature. CPCS-I uses the DEFT input feature to read records from the DEFT entry filing system and to update them when the processing is complete. Enhanced System Manager can automatically start DEFT input processing at selectable intervals or times of day.

DEFT Reconciliation Processing: You can use the host codeline data matching (HCDM) facility to perform the reconciliation processing of DEFT captures. This facility performs after-the-fact matching to determine free and missing items. For more information about the HCDM processing system, see "Host Code-Line Data Matching" on page 1-7.

Docket Control Voucher reconciliation: Docket control voucher reconciliation provides a facility that reconciles document control vouchers between two financial institutions.

Dynamic Allocation of Processing Resources: CPCS-I uses the dynamic allocation and deallocation of tapes and disk data sets and, through terminal commands, the dynamic allocation and deallocation of document processors and printers. Dynamic allocation lets you maintain these devices outside the CPCS-I environment for use by programs running in other multiple virtual storage (MVS) regions. To regain or relinquish control of these devices, you do not need to stop CPCS-I, change job control language (JCL) statements, or start CPCS-I again. This feature increases machine usage and flexibility and maximizes CPCS-I scheduled availability.

Efficiency: Peak check-handling loads need a large system capacity. CPCS-I is designed to run under Multiple Virtual Storage/Enterprise System Architecture (MVS/ESA*) environments and can make effective use of available system resources during both peak and normal periods.

High-speed reject re-entry and codeline data matching substantially decrease the number of rejects, which in turn decreases costly low-speed manual handling of rejects and speeds the flow of items out of the financial institution. These improvements in reject processing can result in improved availability of funds.

Improved scheduling of work increases productivity at the document-processor stations. You can also expand the number of pockets on the document processors. Consequently, you can decrease the number of document processors or increase your work-load capacity. Also, the improved audit trail supplied by unique item-sequence numbers and codeline data matching can decrease the adjustment department's work load.

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Enhanced Logging: CPCS-I logging has some significantly enhanced features for automatic recovery of mass-data-set strings. These features include:

- Tracer data-set recovery.
- Automated tracking (history) of mass-data-set strings and logging data sets.
- Elimination of dedicated tape drives.
- Automated full mass data set recovery. Recovery automatically determines which strings should be recovered.
- Recovery of strings with different mass-data-set definitions. Recovery performs data conversions to match the existing mass-data-set definition.
- Recovery of multiple strings with one pass of the logging data set.
- Selective recovery of strings by a generic search capability.

For more information about data-set recovery procedures, see the *CPCS-I Customization Guide*.

Enhanced Reject Processing: CPCS-I provides for two types of reject pockets: system reject pockets and user-defined reject pockets. CPCS-I sends documents to the system reject pockets for one of the following reasons:

- The document goes through the document processor inverted.
- The document is torn or folded.
- One of the required fields, such as the amount, is missing.

CPCS-I lets you correct and re-enter items in the system reject pockets for the prime, the high-speed reject re-entry (HSRR), and the second and third passes of subsequent-pass processing. After these are corrected, you can use the codeline data matching rejects (CDMR) facility to further sort the prime-pass rejected items.

User reject pockets contain items that require further processing outside of the CPCS-I entry. These pockets might include:

- Items with one or more unencoded fields
- Items with unreadable data in one or more fields
- Items that require data adjustment, such as correcting account numbers and special internal processing.

For information on the use of the multiple reject pocket feature of CPCS-I, see the *CPCS-I Programming Guide*.

Enhanced Reject Processing Using High Speed Reject Re-entry (HSRR): Enhanced reject processing using HSRR has the following capabilities:

- Enables the distribution of corrected HSRR data
- Provides enhanced reject processing for entries with HSRR including the creation of an HSRR M-String
- Distributes the HSRR M-String with the M-string Distribution module (DKNMDIS).

Error Processing: A display terminal at the document-processor station immediately displays the last few documents processed before a jam so the operator can take corrective action without referring to long jam lists. When necessary, CPCS-I generates and displays accurate error information at the

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document processor. CPCS-I optional procedures let operators select recovery techniques for:

- Jams
- Selector checks
- Machine checks
- Host system failures.

CPCS-I also provides extensive system controls through a common database, complete pass-to-pass controls, and audit trails to the item level.

Expandable Stacker Modules: The 3890/XP Series document processors offer an expandable number of stacker modules. Each module contains six pockets. The document processors can support up to six modules, offering a total of 36 pockets to aid in decreasing the number of required item passes. CPCS-I supports the complete range of pocket combinations for selection by your sort programs.

Expanded Document Processor Read Record: The 3890/XP Series document processors give your sort program access to a larger read record. You can now expand the read record to contain as many as 12 header bytes and 244 data bytes. CPCS-I supports 15 logical fields, 14 of which are available to you. The document processors move data into the first seven fields from the codeline data. CPCS-I uses field 8 during codeline data match processing. Your sort program can set the remaining seven fields. For example, you can use the additional fields for:

- The depositor's account number
- An alternate account-numbering system
- A pass-pocket history of the pocket used on each pass
- Optical character recognition (OCR) data capture of alphanumeric data.

Extended Addressing: CPCS-I uses AD/Cycle COBOL/370 for all modules so they can use the extended addressing (above the 16 megabyte line) capability of the MVS/ESA environment.

Extended Stacker Control Instruction (SCI) Addressing: With either 2-byte or 4-byte addressing, you can run existing 3890 programs on the 3890/XP Series document processors. You can also take advantage of the expanded memory in the 3890/XP Series. CPCS-I initializes sort programs using either 2-byte or 4-byte addressing.

Full-Document Image Capture: If your CPCS-I system includes the ImagePlus High Performance Transaction System, you can capture the image (both front and back) of all items in an entry. You can use the images for amount capture and balancing, eliminating the need to proof and encode the items before capture. You can store images for later use in back-end systems, including exception item processing, statement assembly, and archiving (replacing paper microfilm). CPCS-I provides an interface to the Check Image Management System (CIMS), a High Performance Transaction System host application that retrieves, manages, and stores images on the host. When an image MICR entry starts, CPCS-I notifies CIMS, which starts capturing document images when the MICR entry starts. Finally, CPCS-I notifies CIMS when the image entry ends.

High-Level Language Sort Program Modules: CPCS-I lets you write sort-program modules for the 3890/XP Series in high-level languages, such as the C/2^{*} language, by letting you call these programs from the CPCS-I supplied SCI prolog.

Host Code-Line Data Matching: The host codeline data matching (HCDM) facility matches two or more files of codeline data and item-sequence numbers to generate a reconciliation report, a reconciliation file, or both. These reports reflect the matched, free, and missing items found during the matching process. The reconciliation file is in a format suitable for use in other CPCS-I functions. For more information about the HCDM processing system, see the *CPCS-I Terminal Operations Guide*.

High-Speed Reject Re-Entry Merge Enhancements: This feature performs a match between the data corresponding to the prime pass rejected items and those same items captured a second time on a high speed document processor. You can correct rejected items from the second entry using the online reject re-entry (OLRR). You can merge the output of the HSRR and OLRR tasks with the prime pass capture data. You can now balance the document and generate the corresponding kill/remittance listing.

Item Capture and Distribution: CPCS-I reads magnetic ink character recognition (MICR) documents or optical character recognition (OCR) documents, including control documents, and writes the codeline data to a direct-access storage device. Your sort program controls pocket distribution.

Item Numbering: Unique item numbering of every prime-pass document gives comprehensive audit-trail capabilities. As CPCS-I processes rehandle items through subsequent passes, these items, when codeline data-matched, logically keep the sequence number that they received during prime pass. CPCS-I stores sequence numbers as 12-digit numbers.

Larger Sort Programs: If you operate one of the 3890/XP Series document processors, you can use existing sort programs. These programs must not occupy more than 64KB of storage. Programs written for the 3890/XP Series, however, do not have this constraint. You can now:

- Get access to more tables
- Create larger tables for your sort programs
- Have sort programs that are totally table-driven.

Location Convenience: The document-processor station is a self-contained unit that you can place at any distance from the computer. If the document processor is attached through a channel, the cable length can restrict its distance from the computer.

If you attach the document processor using the IBM LU 6.2 networking protocol, no cable-length restrictions apply. You can place a self-contained document processor near the reconciliation department to improve the flow of work between the reconciliation department and the document processor area. Also, you can place a

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self-contained document processor in a remote capture site to improve your funds availability.

The use of a CPCS-I display terminal at the document-processor eliminates the need for your operator to operate the computer system, to be knowledgeable in system operation, or to be in close communication with the system operator.

Mass-Data-Set Database: CPCS-I creates and maintains a comprehensive database to keep track of every document that enters the system during a specific processing cycle. CPCS-I gives you the option of either using the standard field definitions or creating your own field definitions based on the needs of your financial institution.

Merge Feed: The 3890/XP Series document processors store divider slips in a separate merge-feed hopper for separating kill or rehandle pocket items into manageable bundles. When the specified number of documents in the pocket is reached, CPCS-I records this fact for the kill/remittance listing or for rehandle codeline data match synchronization. CPCS-I also directs the document processors to send a divider slip to the pocket. This controls kill-bundle size and minimizes the loss of codeline data-match synchronization during rehandle passes.

Mixed Debits and Credits: The mixed debits and credits feature lets you indicate to user-written applications that a particular non-proof of deposit (non-POD) entry consists of mixed debit and credit work.

Moved Items Support: This feature lets CPCS-I power encode logically moved items (usually through High Performance Transaction System balancing). For example, an item may have been misplaced from one deposit into another. During balancing, the operator logically moves the item into the correct deposit. The item stays in its wrong physical location and is power encoded correctly.

Multibank Processing: CPCS-I includes multibank features. You can uniquely identify each financial institution (up to 999) for which you process work. CPCS-I comes with a default bank (000), which you can modify to provide default processing parameters. The definitions of these institutions include the following:

- Name-and-address data
- Cash letter/DCV-summary information
- Control documents
- Processing options
 - Data transmission by field
 - Microfilm options
 - User-exit names
 - Concurrent-kill options
 - Tracer-spray option

CPCS-I creates a bank-control-file (BCF) data set to maintain the definitions. It uses the data set to determine processing options when you start a MICR entry. CPCS-I also lets you make DCV summaries by bank and lets you extract application data by bank.

MVS Host-Support Program Simulator: The 3890/XP MVS host-support program includes the MVS Host-Support Simulator, which provides you with a method for testing host-applications and stacker control instruction (SCI) programs together without using a document processor. You provide a file of document

codelines, including merge documents, as input. The simulator calls the host-support test-aid program to simulate an SCI run. It simulates codeline data-match processing by getting document codeline data records from the simulator input data set. The simulator also builds data-management headers to simulate intervention-required conditions and unit exceptions. You can configure several simulators to test high-volume capture and processing.

Online Adjustments: The Online Adjustments balancing function lets you correct mass-data-set errors found in the CPCS-I reconciliation process. This function processes updated M-string information to provide a balanced, accurate, all-items file for analysis and account posting.

Online Adjustments includes the following functions:

- Adjustment entry
- Adjustment list
- Trial balance

Online Manual Split: The online manual split (OLMS) facility supports the electronic sorting of the corrected system reject pocket data for all passes. It electronically processes the data as if the document had been automatically sorted and lets you perform subsequent processing of CPCS-I functions (for example, remittance lists and DEFT output) for these rejected items. For more information about the OLMS facility, see the *CPCS-I Terminal Operations Guide*.

Online Operation: With IBM display terminals, the system provides:

- Operator communication, jam control, and error control information at the document-processor station
- Low-speed data entry of nonprocessable and rejected work
- Management of workflow
- Supervisory functions and task initiation

Power Encoding: CPCS-I supports the IBM 3892/XP Power Encoder feature on the 3892/XP Document Processor. With this feature, the 3892/XP can encode up to 500 documents a minute. Under the control of suitable user programming, you can use the Power Encoder feature to encode the amount data on your unencoded checks and the complete MICR codeline for MICR rejects.

To ensure accuracy, the Power Encoder feature compares the code-line data from the prime pass with the high or low codeline data on the check that it is encoding.

The 3890/XP Document Processor Toolkit I licensed program (Program No. 5688-043) provides an easy way for you to specify and change encoding data.

ToolKit Note: Please check with your marketing representative for information regarding the availability of Toolkit.

The 3892/XP verifies the data and stops processing when it reaches a set number of consecutive discrepancies. You determine this number during installation. For more information about the power encoder feature, see the *ImagePlus High Performance Transaction System General Information Manual*.

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Programmable Endorsing and Item Numbering: The endorsement that prints on the document is now under the control of the sort program. For each document that flows through any one of the 3890/XP Series document processors, the sort program can request a different endorsement. The ink-jet printer prints the endorsement requested on each document. CPCS-I lets you specify custom endorsement data in the initialization record (IREC) sent to the document processor by CPCS-I at the start of each entry. The run profile, named in the IREC, can also provide endorsement data.

The IBM 3890/XP Document Processor Toolkit I licensed program (Program No. 5688-043) provides an easy way for you to specify and change endorsement data.

Propagation of Adjustments: Propagation of Adjustments provides an optional component that creates and maintains a database of adjustments made by any Balancing operation. It also lets the database of adjustments be reflected in outgoing reports and file extracts.

Run Profile: CPCS-I supports the 3890/XP Series run profile, an ASCII file on the 3890/XP Series disk subsystem. This profile is an extension to the data in the IREC. The run profile contains a set of information that controls the entry. The run profile can contain:

- Names of the modules appended to the sort program
- Names of the high level language modules that are appended to the sort program to run simultaneously as the user stacker control instructions (SCI)
- Names of tables containing information used by the sort program
- Endorsement data
- Other initialization data.

CPCS-I inserts a run-profile name that you specify in the initialization record.

Scope: CPCS-I is the base for MICR or OCR document applications. It provides the data required for your extract programs. Your programmers write these extract programs to pass the CPCS-I captured data to your various application-posting systems.

Security: CPCS-I uses the Resource Access Control Facility (RACF) to provide user identification (user ID) and password security. CPCS-I also enables you to interact with an equivalent security system that provides a standard approach to security. RACF gives CPCS-I a security system that includes the following characteristics:

- Each password can contain as many as 8 characters.
- Access to particular CPCS-I functions can be restricted to specific terminal operators.

Selective Microfilming: The 3890/XP Series document processors permit you to select the documents for microfilming during processing (on-us, transit, or both). Your sort programs control this process.

Subset Processing: CPCS-I provides a subset processing feature that lets you process your work concurrently; that is, you do not have to wait until the complete entry is run through the document processor before you start subsequent processing of captured items.

Concurrent processing lets you process two or more jobs at the same time, giving you more effective use of the system. You can start the following tasks for items in a prime-pass entry before completing that entry:

- Reject handling

You can run high-speed reject re-entry or online reject re-entry.

- Rehandle sorting

You can start a subsequent pass or add items to an existing subsequent pass.

- Kill/Remittance processing.

You can print kill/remittance lists and cash letters/DCV summaries. The kill/remittance process spans subset boundaries to avoid small kill bundles at the end of each subset.

To aid you in identifying where each subset ends, CPCS-I provides an option that lets you distribute tracer slips into each pocket at the beginning of each new subset.

Enhanced System Manager: Enhanced System Manager is an executive-level feature of CPCS-I that controls and monitors the flow of data through the CPCS-I system. Enhanced System Manager also does the following:

- Automates the starting and re-starting of appropriate CPCS-I tasks (not all CPCS-I functions are suitable for automatic initiation; for example, MICR)
- Builds model workflows and dispatch criteria to define the generation of production workflows from a sort pattern
- Provides better control over the management of work flow
- Improves the monitoring and control facilities available to supervisory personnel
- Tracks the progress of all units of work.

A unit of work is a set of data for an entry or subset known as a string whose processing can be tracked by Enhanced System Manager. After this communication, Enhanced System Manager creates or updates the unit-of-work records. When processing is complete, Enhanced System Manager deletes the unit-of-work records.

Enhanced System Manager Automatic Initiation of Tasks: The ESM automatic initiation of tasks function provides ESM with the ability to start a non-terminal task (for example, production of kill/remittance lists).

Enhanced System Manager Online Functions: Enhanced System Manager online functions are a set of application-level functions that monitor and modify the queues and databases of Enhanced System Manager. The online functions allow you to define and modify the flow of work in the system. For more information about the ESM online functions, see the *CPCS Enhanced System Manager User's Guide*.

Features and Advantages

Other Characteristics: CPCS-I also enables:

- Capture of variable-sized MICR or OCR fields.
- Kill/Remittance processing to support dispatch of kill bundles from CPCS-I out-work kill pockets, together with, when suitable, kill/remittance lists, optional power encoded transit work/out-work docket control voucher (DCV) summary files, and electronic data (DEFT output).
- Use of an optional control document/sub-total voucher (STV) that lets you generate kill/remittance sub-totals in large batches. The term *STV* is unique to the United Kingdom. These sub-totals can be cumulative within the DCV (batch). The prime-pass/remittance list includes debit and credit totals at the sub-batch level, the DCV level, and the block level.
- Selective or full encoding of MICR fields.

Document Processors: The IBM 389x/XP Series document processors are high-speed, high-volume document processors that read magnetically inscribed documents or optical-character printed documents.

The IBM 3890/XP Series consists of several models:

- | | |
|----------------|--|
| 3890/XP | A document processor that reads items either magnetically or optically up to a rated speed of 2400 items per minute ³ |
| 3891/XP | A document processor that reads items either magnetically or optically up to rated speed of 1700 items per minute ³ |
| 3892/XP | A document processor that reads items either magnetically or optically up to rated speed of 1000 items per minute. ³ |

Notes:

1. 3890/XP models A, B, E, and F are supported processors.
2. The actual throughput of high-speed processing depends on the characteristics of your work and how you organize your workflow.

These characteristics include:

- The care that you take in conditioning the documents to avoid jams
- The quality of the paper
- The length of the documents
- The skill of the operators in emptying the pockets and feeding new documents
- How many item passes you need to complete full endpoint distribution
- How you handle rejects
- How you recover jams
- How you correlate outgoing bundles with their associated lists.

* Trademark of IBM

³ CPCS-I lets you activate the OCR feature. CPCS-I transports data between the 3890/XP Series document processors and the host. However, you must write the programs that instruct these document processors to read the OCR data optically and process the data internally.

System Configuration

Correct system configuration depends on the volume of work, number of direct access storage devices (DASD), processing techniques, and performance requirements. The virtual-storage size allocated to CPCS-I determines the number of subtasks that you can start concurrently; the more storage available, the higher the number of concurrent subtasks. You should provide a minimum region size of 6 megabytes.

Note: The MVS/ESA environment must be generated to permit the use of the data space and Hiperspace[®] facilities.

For assistance with detailed configuration planning, contact your IBM marketing representative.

Identifying User Responsibilities

To customize CPCS-I to your specific environment, you should perform the following tasks:

- Generate an MVS/ESA environment and allocate disk space for data sets
- Supply the parameters required to generate CPCS-I
- Supply the data to build the bank control file data set, which contains bank-specific processing information
- Supply the data to build a sort-pattern definition file, which contains sort type and pocket type information
- Supply sort programs for the document processors and online reject re-entry
- Prepare tables that provide endpoint identification for kill pockets on each pass
- Supply the data to build an endpoint name-and-address file
- Supply user exit programs as required
- Supply programs, if desired, for proof of deposit, posting extract, and float analysis, using the database provided by CPCS-I
- Establish the local area network (LAN), if necessary, to support the document processors that are attached by using this method
- Generate the production flows that Enhanced System Manager uses to schedule work through the system
- Generate DEFT input files for the codeline data-match prime-pass (CDMP) facility to use during document processing.

Chapter 2. Describing CPCS-I Processing

The functions of check processing applications in a financial institution are characterized briefly as:

- Collecting data from documents for posting to the institution's internal and correspondent accounts.
- Sorting and distributing, by endpoint, the physical documents. Endpoints include commercial or financial institutions, your branches, or regional processing centers.
- Microfilming selected documents for later information retrieval.
- Capturing, when the High Performance Transaction System is installed, full document images for use in reject repair, balancing, encoding, and other High Performance Transaction System applications. For more information about the High Performance Transaction System, see the *IBM ImagePlus High Performance Transaction System General Information* manual.

Although the data-collection function requires only one pass of the items through the document processor, the distribution function can require multiple passes for full endpoint breakout. You can sort document code line records to their endpoints independently of processing the physical documents. By synchronizing the internal sorting with the physical sorting of the documents, you control and synchronize pass-to-pass operation from entry through distribution to endpoints.

This chapter describes the following features of the collection and distribution process:

- Data preparation
- Physical processing
- Internal processing
 - Document records
 - Rejects
 - String merge
 - Subsequent passes
 - Remittance-list processing
 - End-of-cycle processing.

Preparing Data for Check Processing

Work coming into the financial institution falls into two basic categories: unencoded documents and pre-encoded documents.

Unencoded documents come from teller stations, branches where encoding stations are not present, large commercial customers, or financial institutions. These documents might go to the encoding stations, where they are encoded and grouped, or they might be accompanied by DEFT data containing amounts that you can use for power encoding. Pre-encoded documents can come from:

- Correspondent banks
- Clearing houses
- Branches that use encoding stations
- The Federal Reserve Bank (U.S.A.)

Physical Processing

- Large depositors
- Customers (UK-mandated dividend credits) and deposits of traveler's checks.

Note: If you use the image-assisted repair system to repair the reject pocket items, you need not encode the batch slips or block slips.

Grouping the Documents

A **batch** is a logical group of work, usually consisting of approximately 300 documents. A batch can be a group of checks (with kill bundles or with remittance lists) from another financial institution or a *cut* from a teller's machine. For each batch, you encode a batch slip or a docket control voucher (DCV). The batch slip is encoded with the monetary amount of all debit items within the batch. The DCV is placed at the beginning of the batch of documents, with the total of all items within the batch.

You can divide a batch/DCV into smaller groups called **sub-batches**. Sub-batches, the lowest level of control, are optional.

In the United Kingdom, another level of control is a sub-total voucher (STV). This voucher marks the point at which CPCS-I prints a cumulative sub-total on the accompanying remittance list.

A **block** is the next higher level of control after the batch (and optional sub-batch). A block is a group of batches originating from the same source, such as a cash letter or DCV summary that originates at another financial institution, or work that originates from one branch or teller location. You can group blocks together, each block having its own block slip, into trays of approximately 3000 items. Alternatively, you can use a block to delineate a physical tray of items.

The **tracer group**, the next higher level of control, consists of a group of blocks. You place tracer-group slips in front of the documents that constitute the tracer group. Typically, a tracer group contains one or more complete trays.

An **entry** is the highest level of control. By combining several tracer groups, you can form a convenient set of work for a single document processor run or entry.

If you want to take advantage of concurrent processing, the ability to start subsequent processing of items before capturing all the items of an entry, you can specify subsets within an entry. A subset consists of a single tracer group. CPCS-I starts the next task in the workflow when you complete each subset.

For a complete explanation of these control groups, see Chapter 3, "CPCS-I Workflow Control and Financial Audit."

Physical Processing

Running a prime-pass entry is the first task of physical processing. To start a prime-pass entry, the operator logs on to CPCS-I, starts the MICR task, and enters the identification number of the entry. The identification number consists of the first 4 digits of the tracer-group number field on the first tracer slip of the entry. CPCS-I refers to this as the entry number. The operator also enters the number of the sort routine and other parameters for the entry (item number and endorsement position and other document processor feature overrides). When the MICR task indicates

that the entry can start, the operator starts feeding items through the document processor.

Processing Control Documents

The first documents that enter the document processor are the tracer slips. Tracer slips maintain pass-to-pass control. The document processor routes them to either the rehandle or the reject pockets to identify each set of documents. The tracer slips serve to separate and identify the tracer groups within the pockets. CPCS-I builds a record for each tracer slip selected to a pocket. The tracer records contain the item count and monetary value for each rehandle pocket used during this pass. CPCS-I uses the totals as a control for items as they re-enter the system on subsequent passes.

You can also use tracer groups to divide a large entry into subsets so that you can take advantage of subset processing. If you wish to use subset processing, you must specify it in the sort pattern. You must also indicate that every tracer group signals the start of a new subset.

The document processor reads the first group of tracer slips. It then reads the block slip, which identifies all related documents as part of the block, and directs it to the reject pocket.

The batch or DCV slip, which identifies all related documents as part of a batch, follows the block slip and is also directed to the reject pocket. Sub-batch slips, if you select to use them, follow the batch slip. If you select to use STVs, which are unique to the United Kingdom, you can request them at intervals within a batch, because they provide an additional totalling function.

CPCS-I uses the encoded data from the block slips, batch slips, and sub-batch slips to balance the documents within the block, batch, and sub-batch and to identify the source of the documents.

CPCS-I uses the encoded data from the block, batch slips, and sub-batch slips to balance and print prime pass listings containing item amounts and control totals and to identify the source of the documents. In the UK, cumulative sub-totals within a batch/DCV are printed for each STV.

Divider slips separate items within each kill pocket into manageable groups, or **bundles**. You can use the sort pattern to define the size of each of these bundles. CPCS-I uses the merge-feed unit of the document processor to hold the divider slips. The document processor can feed the divider slips into rehandle pockets to provide a resynchronization point for codeline data matching. When a bundle within a kill or rehandle pocket reaches the limit, the document processor automatically selects a divider slip from the merge-feed unit. Once the divider slip is in the input stream, the document processor routes it to the correct kill pocket.

Processing Individual Items

Individual items follow the tracer and block slips, batch or DCVs, and optional sub-batch or STVs. The document processor reads each item. An item-sequence number is printed on the reverse of each item. It can assist in establishing an audit trail that points to the source of the item.

Internal Processing

To print an item-sequence number on the back of a document, CPCS-I requires the programmable item-numbering and endorsing features on the 3890/XP Series document processors or the item-numbering and endorsing features on the 3890. The 3890/XP Series document processors let you specify the print position of the programmable-endorser feature when you generate a sort pattern. The programmable-endorser feature lets you specify up to three lines of data to print on the back of each document as an endorsement. For additional information about the programmable-endorser feature, see the *IBM 3890/XP Document Processor General Information Manual*.

As the document processor reads data, CPCS-I receives the data and stores it on the mass data set. Guided by the encoded data and the user sort program, the document processor sorts the documents to the correct pockets. The pockets are either on-us, kill, reject, or rehandle, according to their definition within the sort pattern.

Incoming documents may be processed through a special prime pass where they are actively codeline data-matched. The codeline data match prime-pass (CDMP) facility enables this prime pass to use codeline data matching of the items being processed against data that is imported into the mass data set using the document-based electronic funds transfer (DEFT) input functions. Each time the CDMP facility encounters a resynchronization voucher (typically a DCV in the UK) a resynchronization of the documents and codeline data occurs (if necessary) and DEFT processing continues. For more information about DEFT, see the *CPCS-I Programming Guide*.

If the document processor has a microfilming feature, you can specify the feature as a CPCS-I option when you specify it in the definition of the document processor to CPCS-I. If microfilming is enabled during the MICR task, your sort program can control the selection of documents to actually be microfilmed.

If you are using the repair feature when using the ImagePlus High Performance Transaction System, you can bypass the encoding step. CPCS-I lets you process unqualified entries on the 3890/XP Series and capture the codeline image on the mass data set. ("Capture" is the process of reading the documents on the document processor and storing data about the documents in one or more data sets.) At the same time, the IBM 3897 Image Capture System captures the full document image.

With rejected items, you can use the image-assisted repair function to logically capture the mass data set amount field from the courtesy amount field on the Check Image Management System (CIMS) document image record. Documents can be rejected for various reasons; see "Processing Rejects" on page 2-5. After the amounts have been captured, you can process the actual items as a subsequent pass on the 3892/XP and, using the corrected string for image matching, encode the amount on the document.

Internal Processing

This section explains the following aspects of internal processing:

- Document records
- Rejects
- String merge

- Subsequent passes
- Kill/Remittance-list processing
- End-of-cycle processing.

CPCS-I Document Records

CPCS-I creates a record on the mass data set for each document that passes through the document processor. It enables you to capture data such as magnetic ink or optical character recognition (MICR or OCR) data from documents, assist documents associated with deposit slips, or from any user-control documents that are processed on any one of the 3890/XP Series document processors. The data is stored in the mass data set record. You must provide the necessary software (SCI) so that the document processor can read the data and pass it to CPCS-I.

The group data records for an entry or subset is called an *I-string*. If an item in the entry or subset is unreadable, the codeline data record of the item is established within the I-string with the unreadable portions indicated.

CPCS-I produces a distributed string (D-string) for each pocket by internally sorting the I-string data based on the pocket code in each record.

Processing Rejects

During any entry, the document processor can reject documents for various reasons. The document processor automatically sorts some of the rejects into the first pocket, identified as the **system reject pocket** or **pocket 1-1**. You can also use the sort program to direct some specific items to pocket 1-1 and tag them as rejects.

In addition to using pocket 1-1, you can identify other pockets as reject pockets and selectively sort items into any of these pockets. You can define as many as 36 pockets as reject pockets. When you use the ImagePlus High Performance Transaction System, you can also sort into kill pockets items that would normally be considered rejects. After these are repaired, you can print a revised kill or remittance list for the kill pockets. The D-string that CPCS-I produces for the system reject pocket from the I-string is known as the **Reject D-string**.

High-Speed Reject Re-entry

The high cost of manually handling rejected documents makes it imperative that as many items as possible be captured during high-speed sorter operation. The design of CPCS-I includes a high-speed reject re-entry (HSRR) run for the items sent to the prime-pass reject pocket. If the operator manually reconditions the items (for example, turning over inverted checks or unfolding checks), a significant number can be successfully captured on a re-entry pass through the document processor. The document processor separates rejected items by their associated block slips and batch or DCVs in the reject pocket.

After reconditioning the rejects in the system reject pocket, the operator places a set of HSRR tracer slips before the prime-pass reject documents. Then the operator indicates that this is an HSRR entry by entering the HSRR entry number on the associated CPCS-I display terminal. CPCS-I assigns a new sequence number for each item in the HSRR run.

Items that the document processor reads correctly go into kill, on-us, reject, or rehandle pockets. The user sort program can cause items read correctly to go to a reject pocket. CPCS-I creates a new I-string for this entry.

If your sort pattern does not specify otherwise, unreadable items enter the system reject pocket with their associated block slips and batch slips or DCVs. You can, however, sort items to other pockets that you have defined as reject pockets.

Because a new set of tracer slips is used for the HSRR entry number, the system links the tracer group with the prime-pass tracer groups that are present during the HSRR entry. After the tracer groups are linked, CPCS-I can automatically associate the I-string produced on the HSRR pass with the reject D-string for the same items from the prime pass. CPCS-I produces a distributed string (**D-string**) by internally sorting the I-string, based on the pocket code in the data record.

If you are using concurrent processing, you can start processing the HSRR rejects when the HSRR subset string is complete. You can mix work from different prime entries, subsets, or sorters into a single HSRR subset entry, provided that the sorting requirements are the same for each unit of work.

Online Reject Re-entry

The online reject re-entry (OLRR) function lets you correct those items that were sorted into a reject pocket during the HSRR entry or, if you did not have a HSRR entry, during the prime-pass entry. OLRR also lets you re-enter items from user-defined reject pockets. OLRR bases its processing on the data in the Reject D-string. The rejected items appear on the display terminal for online manual entry. Your operator must correct these items in sequence. As the operator corrects the items, CPCS-I writes the corrected information to the mass data set. These data records make a new string called a reject string (**R-string**). CPCS-I uses this R-string, merging it with the I-string, to more accurately reflect the original document stream on the mass data set.

The rejected items are required to balance the entry. You can manually sort the items to the correct endpoints using separate kill or remittance lists and cash letters or DCV summaries.

If you use concurrent processing, you can start to process the rejects through OLRR when the subset string is complete.

Codeline Data Match of Rejects

The **codeline data match of rejects** (CDMR) facility automatically sorts system-reject pocket items from any prime-pass high-speed reject re-entry pass or a codeline data-match subsequent pass. To sort the items, it matches them against a string of corrected reject data using extended codeline data matching.

Image-Assisted Repair

If you are using image-assisted repair, this function includes a key entry function. You can perform key entry, using a specially dedicated terminal, for the complete entry or for each pocket within the entry. Key entry replaces the missing codeline data with data that was recognized or keyed by an operator, for example, items that have not been encoded for convenience amounts. Items that require processing to determine the convenience amount can be completed using key entry. The unencoded documents are then power encoded with the amounts during a subsequent pass.

When you run the image-assisted repair function for a string, CPCS-I transfers the reject D-string to the LAN that made the request. The repair function uses data from either the digitized image or operator input to correct the rejected fields in the string. The repair function updates the document header information in the CIMS data set record and writes the corrected string record out to an R-string. When the operator completes repairing the string, the repair function sends the R-string to CPCS-I for more processing.

String Merge

In preparation for additional use of the prime-pass data, CPCS-I arranges the three string types (the prime-pass I-string, the optional high-speed reject re-entry I-string, and the online reject re-entry R-string) in a sequence identical to the original document stream as it appeared before the prime-pass data capture. This process is referred to as the **merge** process.

CPCS-I permits multiple reject pockets, but not all reject pockets need to be repaired at the same time. As a result, CPCS-I performs multiple merges, categorized as follows:

Normal merge

This option merges the R-string from OLRR, with the prime-pass I-string and, optionally, with the HSRR I-string.

If you are not using subset processing **and** are not using multiple reject pockets, the normal merge option marks the string as released.

Consolidated reject merge

CPCS-I lets you place rejects into good pockets, distribute these rejects from all good pockets, repair the codeline data for these rejects, and create an R-string of the corrected images. This option merges this R-string and the input prime-pass I-string¹ to create a new M-string.

Reject pocket merge

This option handles merges for reject pockets other than pocket 1-1. For each user reject pocket, CPCS-I uses the associated R-string for the merge.

Regardless of the option, CPCS-I always merges the R-string into the I-string or the incomplete M-string. The data record for the corrected reject follows its corresponding I-string record in the merged string.

If you run HSRR and then run OLRR for pocket 1-1 of the HSRR run, the merge task uses the R-string and I-string from the HSRR entry. The first part merges these strings. At the end of this step, CPCS-I merges the resulting intermediate string with the prime-pass I-string of the original tracer group, thereby creating a prime-pass M-string.

After you run the merge, you can use the resulting M-string for proof listing, for reconciliation purposes, and for programs that you supply to perform various applications for your financial institution.

¹ CPCS-I uses the I-string as input only the first time you run merge for a string or subset string. The next time, CPCS-I uses the M-string created from the previous run as input. CPCS-I repeats this process each time merge is run for a string. All references to an I-string apply equally to an M-string.

Subsequent Passes

In any pass, you can designate a number of pockets as rehandle pockets. These pockets receive items that require multiple endpoint processing. These items require subsequent passes to distribute them to their correct endpoints.

When you use the ImagePlus High Performance Transaction System, you can optionally sort rejects to rehandle pockets. The data for rejects must be repaired before you generate the kill/remittance lists for the subsequent-pass kill pockets.

Running a Subsequent Pass

To run a subsequent pass, the operator takes the documents from the rehandle pockets and places them in trays. The items do not require further data preparation because their accompanying tracer slips identify the original source and automatically cause the creation of pass-to-pass control records. The operator enters the first tracer number of the current group of work displayed on the terminal. Entry of the first tracer number enables CPCS-I to find the tracer record for this pocket from the previous pass and to automatically determine the control count and amount for the current pass. The tracer-group level provides all necessary controls; no block or batch-control totals are required on passes after the prime pass.

If the document processor fails to read some of the characters of an item on the current pass, you can use codeline data matching to substitute the codeline data from the previous pass for that item, provided that it is in the correct sequence. Codeline data matching substantially decreases rejects on subsequent passes, which in turn decreases many of the manual tasks associated with rejects. More importantly, codeline data matching carries the item-sequence number from the prime pass with the item through each subsequent pass. Because CPCS-I uses the previous-pass data record to reconstruct fields that the document processor reads in error on the current pass, you can trace any item from its kill or remittance location back through all passes to its exact prime-pass entry point.

In subsequent passes, as in the prime pass, the processor selects documents into pockets under control of the sort program. The documents that the processor sorts into kill pockets must be put aside until their kill or remittance lists and cash letters or DCV summaries are printed.

Subsequent-Pass Reconciliation

At the conclusion of any subsequent pass, you can select either or both of the following balancing options:

Option 1: The CPCS-I host codeline data match (HCDM) function can be used to print a subsequent-pass balancing report. This report provides the reconciliation clerk with the information required to balance and to identify any errors within the entry. For each tracer group processed, the report shows:

- Control and accumulated totals for the tracer group
- Item count and amount accumulated for each pocket used
- A list of all free and missing items that result from matching data records to the previous-pass data records.

For most tracer groups, CPCS-I can print a subsequent-pass balancing report on two pages.

Option 2: The SLST option provides a detailed listing of all items fed through the document processor on a subsequent pass. CPCS-I identifies each item by the readable encoded data and by the incoming sequence number assigned on the original prime pass, which is carried forward through codeline data matching. This report prints control totals at the tracer-group level, which facilitates subsequent-pass balancing. This option does not include detailed missing and free item information.

Proof of Deposit

You can implement your own proof-of-deposit analysis as part of CPCS-I. Because the M-string represents the original document stream, you can perform proof-of-deposit analysis and funds-availability or collectability analysis after CPCS-I creates the complete M-string. You need not be concerned with rejected documents; all rejects are corrected before creation of the complete M-string.

Kill/Remittance-List Processing

As the processor sends documents to kill pockets, CPCS-I maintains a running item count for each pocket. When a kill or outwork pocket reaches the assigned limit for a bundle, the document processor feeds a divider slip from the merge feed hopper and selects it to that pocket.

If you use subset processing, pocket item counts are **not** reset at the end of each subset. CPCS-I resets the item counts only at the beginning of a new entry.

When the kill or remittance-list program encounters a divider slip or STV, it prints the totals on the kill or remittance list, writes a record to the kill-bundle data set, and records this information for later summarization. This guarantees that the kill or remittance lists correspond to the kill bundles.

Kill/Remittance lists are printed in **full page format**, meaning that the data appears consecutively in columns. Kill/Remittance lists are printed on a delayed basis, either at the end of an entry, at the end of the subset, or by manual request. This delayed printing permits the system to store all kill/remittance lists for a common endpoint so that a complete cash letter or DCV summary can be printed for this endpoint.

When the kill/remittance-list program reads a subset D-string, it checks to see whether the first bundle is a partial bundle. If so, CPCS-I locates the string that contains the beginning of the bundle, as well as any other strings that have data for this bundle, and uses those strings to print the kill/remittance lists and create the kill-bundle records.

CPCS-I also suppresses printing a remittance list for the last bundle if it is a partial bundle and the string does not include the end of an entry. The kill/remittance-list program only prints a kill/remittance list for a partial bundle when the bundle is at the end of an entry, either in the last subset string of an entry or at the end of an entry that had no subsets.

You can identify the kill/remittance list by the following information:

- Endpoint name and number

Internal Processing

You can select separate debit and credit totals on the on-us kill/remittance lists by specifying this option in the endpoint name-and-address data set for this endpoint.

- Date and time
- Bundle number
- Incoming item number and amount for each item
- Item count and monetary value.

CPCS-I maintains separate totals for debits and credits.

CPCS-I provides a cash letter or DCV summary for each endpoint, indicating the item counts and totals for each kill bundle.

Online Manual Split Processing

The **online manual split** (OLMS) facility electronically processes data for corrected rejects from all passes (including CDMR) as if the document is killed and lets you perform subsequent processing of CPCS-I functions (for example, kill/remittance processing and DEFT output) for these rejected items.

End-of-Cycle Processing

End-of-cycle processing includes all of the tasks used to conclude processing for all completed work in the current cycle. The end-of-cycle process includes the following:

Creating the master data set

The master data set contains data records of documents that do not require further processing. This data set includes records for all kill-pocket items and corrected rejects. CPCS-I includes an item-sequence number in every data record in the mass data set.

Creating the input data set

The input data set contains data from documents that entered the system. It includes all M-strings for a cycle.

Creating a power-encode summary file (Unique to the United Kingdom)

The outwork DCV power-encode summary file contains a record for every kill bundle processed, grouped by endpoint.

Freeing space

Free-space programs let you selectively release strings when you no longer require them.

Ending the cycle

End cycle deletes tracer records for the cycle, summarizes kill-bundle records on a tape, and then deletes the kill-bundle records from the kill-bundle file. The end-of-cycle process also deletes records from both the DEFT entry filing system data set, the electronic-mail data set, and the divider data set when they are no longer needed.

Generating the microfilm report

CPCS-I supports the microfilm feature on the 3890 Document Processor or the 3890/XP Series document processors. It can generate a microfilm-cartridge report in batch/DCV sequence after completing its daily processing. The report details the item number, cartridge number, input time, and relative location of every block and batch/DCV slip filmed during the prime pass. The microfilm

report is your guide to finding information pertinent to missing items from the microfilm archive.

Compressing data sets

This function compresses the kill-bundle and microfilm data sets by removing records that the end-of-cycle and microfilm-report functions flagged for deletion.

Internal Processing

Chapter 3. CPCS-I Workflow Control and Financial Audit

CPCS-I provides the ability to sort documents up to four times in high-speed document processor passes. CPCS-I must keep track of all work as it is processed and maintain records of the relationship between documents and codeline records from input to output of each pass, and from one pass to the next.

Because each document has a monetary value, there is a requirement to be able to reconcile the outputs from CPCS-I (output bundles, kill/remittance lists and codeline data for posting) against the original input documents from the source, in order that proper accounting and audit may take place. In addition, documents must be balanced to control totals to confirm the monetary value claimed by the financial institution sending the work.

CPCS-I meets these requirements as described below.

Workflow Control

Cycles

CPCS-I requires that all processing of work take place under a cycle specified for that work. A cycle contains all work for a particular processing day, and it is at the cycle level that the CPCS-I input and output must be reconciled. Twenty-two cycles are available.

Multiple cycles may be in use at the same time, as two different processing days may overlap. However, the work in different cycles is logically separated and may not normally be intermixed within a CPCS-I function (for example, a document processor run).

Units of Work

A unit of work (UOW) is a set of documents that must be completely processed together through one CPCS-I operation before any of the documents can be processed through a subsequent operation.

A single input UOW generates multiple, independent, output UOWs after a document processor pass. The multiple output UOWs reflects the distribution (split) of documents to pockets after a document processor pass is run and these may be processed independently from that point. For instance, the reject repair must be run on the system reject pocket UOW, the rehandle passes on all the rehandle pocket UOWs and perhaps the kill/remittance lists produced for all the kill pockets.

During a rehandle pass, multiple output UOWs from previous document processor passes may be combined to create a single input UOW. For instance, UOWs for the same pocket from different document processors running prime pass can be combined in a single rehandle pass and will be treated as a single input UOW for that pass.

If you are not using the CPCS-I subset processing capabilities, then the UOW is the whole CPCS-I **entry** (sorter run).

Workflow Control

The CPCS-I **subset** processing capabilities allow you to define multiple UOWs in a single entry.

Tracer Slips and Workflow Control

To ensure data integrity in subsequent operations (for instance, reject repair or document processor rehandle passes), CPCS-I uses tracer slips with unique tracer numbers.

Before the documents are processed in a prime pass, a set of tracer slips is inserted at the start of each entry and at the start of each subsequent subset if subset processing is in use. Each set of tracer slips defines a new UOW, which typically contains between 1 and 10 trays (3,000 to 30,000 documents). All tracers are inserted during the prime, codeline data match prime (CDMP), high speed reject re-entry (HSRR), or codeline data match of rejects (CDMR) passes.

During every pass, sufficient tracer slips are fed to each rehandle pocket to ensure that one or more tracers will be sorted to every rehandle pocket and the system reject pocket for that pass and every subsequent rehandle pass in the sort pattern. In this way, all UOWs are identified to the system by means of one or more tracer slips prefacing the work.

When CPCS-I detects one or more tracer slips on any pass, it creates a pass-to-pass control record in a tracer data-set. This record is a summary of all items within the UOW and serves as the basis for identification of work.

The most recent tracer slip records are used to:

- Identify the unrepaired data records for reject items behind a tracer slip during reject repair
- Identify the codeline data against which to match in the next document processor pass
- Prevent invalid operations on a UOW.

The use of tracer slips permits the physical sorting of non-reject documents on the next pass before completion of reject repair and balancing on the current pass.

Dividers and Synchronization Documents

While tracer slips provide an audit trail back to prime pass, divider slips provide positioning information between one pass and the next. Every few hundred items, dividers may be fed into rehandle pockets for any pass using the 3890/XP Series document processor merge feed facilities. A data set records the position of the divider in the output pocket. If the document processor loses codeline data match synchronization during the next pass, it will be restored on reading the divider slip.

Batch slips/DCVs with unique codelines included in the work at source provide similar synchronization during a codeline data match prime (CDMP) pass, matching against codeline data records from the source of the work (a branch or customer of your bank or another financial institution).

Financial Reconciliation and Audit

Item Sequence Numbers

During prime, codeline data match prime (CDMP), or high speed reject re-entry (HSRR) passes, CPCS-I allocates an item sequence number to each document that increments by one and is unique within that cycle. The number is endorsed (printed) on the back of each document. As far as possible, item sequence numbers (ISNs) allocated in this way are carried forward though all subsequent passes to the CPCS-I outputs. Document processor and host codeline data matching is used to pass ISNs and other codeline data from one pass to the next.

Under certain conditions, document processor codeline data matching can fail when:

- The document does not read sufficiently to allow safe codeline data match and therefore becomes a reject.
- The document is in the wrong place within an input unit of work (UOW).
- The document is in the wrong input UOW.
- Synchronization is lost although the document has a readable codeline and there have been more than 7 consecutive preceding rejects, and no divider or synchronization slip is read which would provide re-synchronization.

During CDMR or rehandle passes (which use codeline data match processing), reject and free documents are allocated a new sequence number and rejects are repaired using this new sequence number. After repair of rejects, CPCS-I host codeline data match (HCDM) attempts to match all free and reject documents in the input UOW against all codeline data records from the previous pass. The prime pass ISNs are restored for all reject and free documents that now match.

Prime Pass Balancing

Prime pass document streams can be balanced using CPCS-I listings, or other balancing packages such as the High Performance Transaction System Balancing application. These typically identify out-of-balance conditions at the following control levels:

Deposit	<p>A deposit is a set of related credits and debits that form a single financial transaction.</p> <p>Differences between the total of credits and the total of debits in each deposit are provided.</p>
Subbatch	<p>The subbatch is the lowest level of financial control document in CPCS-I.</p> <p>Sub-batch slips are optional and can precede or follow the documents to which they relate.</p> <p>Differences between the total of debits and/or credits in the sub-batch and the sub-batch slip control total are provided. The number of documents in each sub-batch can vary.</p>

Subtotal voucher (STV)

Subtotal vouchers (STVs) are optional UK control documents that indicate the position on the accompanying kill/remittance list of sub-totals that are cumulative within batch/DCV.

These vouchers are a monetary sub-total of the documents that is cumulative from the start of each batch/DCV. The calculated sub-total of the documents is compared manually with the kill/remittance list sub-total. STVs must follow the documents to which they relate, are all identical, and are encoded with zero amounts. STV control totals are not available within CPCS-I for automatic comparison and difference calculation.

Batch/DCV

The batch slip/DCV is the most frequently used financial control document in CPCS-I. Differences between the total of debits, credits and/or sub-batch slips and the batch slip/DCV control total are provided.

A batch slip or a docket control voucher (DCV) is associated with a bundle of documents received from another financial institution, from your branches, from processing centers, or customers. Bundles typically contain 300 or more documents.

Batch slips are optional and can precede or follow the documents to which they relate. DCVs (specific to the UK) are inserted by the institution that sends them and must precede the documents to which they relate.

Block

A block is a prime-pass control level consisting of one or more batches.

Differences between the total of debits, credits and/or batch slips/DCVs in the block and the block slip control total are provided.

Block slips are optional and can precede or follow the documents to which they relate.

They are the highest level of financial control documents in CPCS-I. Block slips encoded with the cash-letter control total of documents from a single source can be used to separate the documents received from different sources. Another use for block slips is to identify individual trays of work. In this case, the block slip will not contain a control total and will not represent a financial control document.

Either batch slips/DCVs or block slips or both are typically present in work processed by CPCS-I and are usually encoded with a number that identifies the source of work. CPCS-I provides audit trails that identify the source of work for individual documents.

Prime Pass Audit Trail

Records can be extracted from CPCS-I. These records reflect all changes to the codeline data record for a document and provide a comprehensive audit trail. These records include full codeline data from:

- Document processor capture
- Reject repair
- Adjustments from balancing
- Item moves in balancing.

All records contain the ISN allocated and endorsed on the prime pass.

Pass to Pass Financial Reconciliation

CPCS-I provides listings relating the monetary total of all documents in each rehandle pocket on one pass to the monetary total of documents processed in the subsequent rehandle pass after repair of reject data.

Missing and Free Document Reconciliation

Missing and free items are sometimes referred to as *shorts* and *overs*.

All CPCS-I codeline data matching document processor passes (CDMP, CDMR and all rehandle passes) can be reconciled using host codeline data match (HCDM). This will report on all free items (overs) and missing items (shorts).

Output Reconciliation

The result of CPCS-I processing of documents is represented within CPCS-I as data for each endpoint (destination). This data is used internally for posting to accounts or is sent to other financial institutions. An option is available to include data for rejects.

CPCS-I sorts a divider slip to each output pocket to separate individual kill bundles for a single endpoint. It also generates an internal control record containing the item count and monetary value of each kill bundle.

CPCS-I kill/remittance lists contain prime pass item sequence numbers, codeline data, and adjusted amounts for all items in each kill bundle and a bundle/DCV total.

A master create data set is created and contains output information for all endpoints. The records include not only prime pass codelines and item sequence numbers, but also the kill bundle number and output sequence number within the kill bundle for all items. This provides an audit trail for all items leaving your financial institution relating CPCS-I input to output.

A summary report of all kill bundles for a single endpoint is printed. This report is known as a cash letter or DCV summary report.

Financial Reconciliation

Glossary

This glossary defines important terms and abbreviations used in this manual. If you do not find the term you are looking for, refer to the Index or to the *IBM Dictionary of Computing*, New York: McGraw-Hill, 1994.

A

ABA. American Bankers Association.

ABA number. (1) A numbering system devised by the ABA to provide exact identification of financial institutions. The code structure also identifies the Federal Reserve Bank and branch. (2) The MICR-inscribed field on a US document, containing the financial institution identification number.

account number field. An encoded field, on a check or a deposit slip, that indicates the account held by the drawer of the debit or the recipient of the credit.

adjustment. A change to a credit or debit document that adjusts the balance status of a deposit group (or transaction group).

advice. A letter that is sent to a financial institution or customer from whom checks have been received, advising that errors have been detected in the checks or in the listing that accompanied the checks.

ALS. Application Library Services.

American Bankers Association (ABA). Among the functions of this group is the specification of banking industry standards for US check-handling documents and procedures.

amount due field. This field is on some UK credit documents, typically utility payments, indicating the amount that is due for payment. It might or might not be the same as the actual amount field which will be encoded by the presenting bank when the credit is paid in.

amount field. An encoded field on an item that represents the amount of that item.

Application Library Services (ALS). See *ImagePlus HPTS Application Library Services*.

application tasks. Those application tasks that are delivered as part of the base CPCS-I program product or product feature.

application program task control block (APTCB). A CPCS-I area created by the applications task

(DKNATASK) for every active subtask in the system. This area contains operating system control blocks that are related to the subtask; it also contains addresses and constants used by the CPCS-I executive programs.

APTCB. Application program task control block.

assist document (AST). A document that accompanies incoming work and that supplies information about the work. A remittance/kill list is an example of an assist document.

AST. Assist document.

automatic restart. The process of restarting (continuing) an interrupted entry without having to find and rebatch any item.

B

balanced M-string. The M-string that has been balanced by a balancing product. The balanced M-string is denoted by the string name *eeee-p1-p2-p3-99-t-sss*.

balancing. The act of bringing two sets of related figures into agreement (for example, reconciling accumulated-detail totals and input-control totals).

bank control file (BCF). A CPCS-I data set that contains control information for multiple bank processing.

Bank Giro Credit (BGC). A UK credit document that may be paid in only through a clearing bank. It may be encoded in MICR or in a mixture of MICR and OCR, but the format of the codeline is broadly similar to a check.

base CPCS-I application tasks. See *application tasks*.

basic direct access method (BDAM). An access method used to directly retrieve or update particular blocks of a data set on a direct access device.

batch. The lowest required level that has monetary control established by a control document. See also *Docket Control Voucher*.

batch number. The number that uniquely identifies a specific batch of documents.

batch slip. A level of control for balancing items. See also *batch* and *Docket Control Voucher*.

BCF. Bank Control File.

BDAM • concurrent processing

BDAM. Basic direct access method.

BGC. Bank Giro Credit.

block. (1) A prime-pass control level consisting of one or more batches. In CPCS-I, this control level is used to total multiple batches. A block can also represent work from a specific source. (2) A data-processing term used to refer to a series of logical records stored contiguously on external storage devices. (3) To insert control documents in preparation for a prime-pass sorter run. See also *data preparation*.

block slip. A level of control for balancing batches. See also *block*.

branch separators. A UK term for user control documents used to separate work for different branches in on-us output pockets.

buffer. A main storage area used as a data-transfer area for physical records being read or written.

bundle. A bundle is a set of documents grouped together for processing and prefixed, for control purposes, by slips (for example, batch).

C

capture. (1) To read the codeline that is inscribed on a document. (2) To make a digitized image of a document. In the HPTS system, full-item images can be captured by the Image Capture System attached to the document processor or by a low-speed scanner attached to a workstation.

cash letter summary. In the US, a listing that summarizes kill lists by giving monetary totals and item controls for each kill list. In the UK, this is referred to as a DCV Summary.

CDM. Codeline Data Matching.

CDMP. Codeline Data Matching Prime.

CDMR. Codeline Data Matching Rejects.

check. (UK = cheque) A draft drawn on a financial institution and payable on demand on or after the date indicated.

check number. See *serial field* or *reference*.

Check Image Management System Data Base (CIMS Data Base). A program in ImagePlus HPTS Application Library Services that stores, gets, and manages document images.

cheque. UK spelling of "check."

CIMS. Check Image Management System. See *Check Image Management System Data Base*.

clearing house. An organization, established by financial institutions in the same locality, through which checks and other instruments are exchanged and net balances settled.

codeline data matching (CDM). A method by which a computer system controls items on a detail level by comparing the internal data records from a previous pass with data that it reads on the current pass.

codeline data matching prime (CDMP). The process of performing codeline data matching during a CPCS-I prime pass. Document codeline data is matched against DEFT data transmitted from another bank or a branch of the processing bank. See also *document-based electronic funds transfer*.

codeline data matching rejects (CDMR). The process of performing codeline data matching on CPCS-I prime-pass rejects. Document codeline data is matched against Prime/HSRR codeline data that has been repaired (for example, in OLRR or HPTS key entry).

codeline data record. See *data record*.

cold start. An initiation of the CPCS-I region that causes the deletion of the previous contents of the mass data set and the control data sets.

complete task status. This indicates that this task processed successfully for this UOW. See also *task status*.

complete UOW status. This indicates that all tasks in the task list processed successfully or had a bypass status.

component. A set of modules that performs a major function within a system; for example, a compiler or a master scheduler.

component internal data. All data accessible to any modules within a particular component, but not accessible to any part of the system outside this component.

concurrent kill. Producing remittance/kill lists for kill pockets in an entry before the entire entry is processed. The concurrent kill feature is available only with subset processing.

concurrent processing. A system where the processing of prime capture work through subsequent processes (such as reject handling, rehandle sorting, or remittance printing) begins before completing capture for the whole entry.

control block. A storage area that a computer program uses to hold control information.

control document. An encoded document that contains control information, such as the total of the checks that the document controls, the source of the checks, and a code that describes the level of control.

control slip. See *control document*.

control total. The total value or item count for a group of documents.

copy library. A library that contains statements to be modified by the user, accessed by the assembler instruction copy, and inserted into some of the CPCS-I programs.

correspondent financial institution. A financial institution that carries a deposit balance for, or engages in an exchange of services with, another financial institution.

CPCS-I. Check Processing Control System International MVS/ESA.

credit. The opposite of a debit. Common examples are deposit slips and utility payments.

cross record. See *XREC*.

cutoff. (1) The financial institution's designated point for balancing or releasing work before processing continues. (2) The designated time after which the financial institution cannot accept work for processing.

cycle. (1) A group of work or an identification of a group of work processed completely as a single entity. (2) A convenient grouping of work. A cycle normally contains a variable number of entries.

D

DASD. Direct access storage device.

data preparation. The preparation of documents for processing by a high-speed check-processing system.

data record. The electronic representation of the codeline captured from a check, deposit, debit, credit, or control document. The electronic representation can include additional data to help identify the record.

data space. An area of virtual storage that a program can ask the system to create. The area's size can range from 4K bytes to 2 gigabytes, according to the program's request. Unlike an address space, a data space contains only data. Program code cannot run in a data space. Unlike data in a Hiperspace, data in a data space is directly addressable.

DCV. Docket Control Voucher.

DCV summary. A listing that summarizes all of the kill bundles in a DCV summary report by giving monetary and item controls for each remittance list. See also *cash letter summary*.

DCV summary report. Report listing the group of items to be delivered to an endpoint. Grouping of the items is usually by kill bundle.

debit. A transaction that increases an asset or decreases a liability. In normal check-collection terminology, a check is considered a debit.

deferred printing. The method by which data is processed, transferred to a storage device, and later printed (as opposed to printing during the processing of data).

DEFT. Document-based Electronic Funds Transfer.

DEFT input. Electronically captured data that supports processing of paper documents in a codeline data-matching prime pass.

deleted UOW status. This indicates that the string associated with this UOW is deleted. No more processing can be done for this UOW.

deposit slip. A document that details a deposit. The total of the deposit is encoded on the deposit slip. A deposit is considered a credit.

DFD. Data Flow Diagram.

direct access storage device (DASD). A device in which access time is independent of the location of the data.

distributed string (D-string). The distribution task reads I-strings that the MICR task created and produces D-strings. Each D-string contains the records that correspond to all of the documents in a given pocket of the document processor.

divider slip. A control document that is used to separate kill bundles during machine sorting. It can also be used to support the resynchronization of codeline data matching during subsequent-pass processing.

Docket Control Voucher (DCV). A UK document used to prefix a batch of documents for exchange between clearing operations. A DCV is considered a Batch Slip by CPCS-I. See also *batch*.

document-based electronic funds transfer (DEFT). The transmission, reception, and processing of codeline data sent or received electronically from another

document processor • funds availability

location together with the documents. The data is used in codeline data matching and reconciliation to reduce rejects and balance work.

document processor. A device that can read encoded characters from documents and sort the documents into multiple pockets.

document processor station. A work station consisting of a document processor and a terminal for operator communication.

drawer. The person on whose account a check is being drawn.

D-string. Distributed string.

E

ECDM. Extended codeline data matching.

enclosed and not listed. A condition that exists when an item is in a batch of checks but is not listed on the incoming kill/remittance list or inscriber tape.

encode. To imprint a MICR field on a document. The CPCS-I database contains the information that is encoded. Synonymous with *inscribe*.

encoder. A machine that encodes or inscribes. Synonymous with *inscriber*.

endorsement. (1) The signature of the endorser; (2) the stamp of a financial institution or company.

endorser. (1) A person or financial institution, other than the maker, who presents a check for payment. (2) A device that stamps an endorsement.

endpoint. The destination of an item (debit or credit).

enhanced reject processing. The pockets used in this processing are alternate reject pockets, eligible to receive a reject item and/or an unencoded reject item. These pockets are defined in the J sort pattern definition record with values of J, E, and U respectively.

entry. A variable number of documents that are processed as a single group of work. Normally consists of a number of blocks and batches.

entry number. The number of the first tracer group within an entry.

EPC. Extended process control field.

ERP. Enhanced reject processing.

error description. The detailed description of an error created, detected, and corrected by the processing financial institution.

exception printing. The printing of only the data that requires action external to a computer.

extended codeline data matching (ECDM). A feature available on the 389x/XP Series document processors. It allows the matching criteria to be changed on a per-document basis (based on the perfectly read fields or on the number of digit errors in a field) and increases the chance of a successful match.

extended process control field (EPC). An optional encoded field that indicates special handling (such as return or truncation).

F

fine-sort. (1) The sorting of items, for example, into account number order for filing. (2) The sorting of items for a single account into serial-number order as a customer service.

fine sort group (FSG). A group of documents that have been block-sorted under CPCS-I for fine sorting. Each FSG has a unique CPCS-I endpoint and does not enter fine sorting until all work for that FSG has been processed through all preceding passes.

flip-flop. An event that occurs when the volume to which you are writing a file becomes full. The writing continues on a new volume and the full volume is backed up.

float. The portion of a financial institution's total deposits, or of a depositor's account, that represents items (for example, checks) in the process of collection.

flow code. A 3-digit number (mnemonic) that represents an ordered list of tasks.

flow control. The pairing of a CPCS-I string with a task list through the specification of sort type, pass-pocket history, string type, and flow code.

FSG. Fine sort group.

full-page printing. A method of page formatting in which items are listed in as many columns as can be contained on the page (for example, the first 50 items in column 1, the second 50 in column 2, and so on).

functional unit of work. This unit of work corresponds to a CPCS-I string or subset string.

funds availability. The portion of the financial institution's total deposits or of a depositor's account that represents items (for example, checks) that have been collected and are now available. This includes cash deposited and checks drawn on the depositor's financial institution.

G

generated total. The total value or item count of checks that are processed by the computer.

H

held task status. This indicates that this task should be the next task to process, but a condition external to CPCS-I must complete first. See also *task status*.

High Performance Transaction System (HPTS). See *ImagePlus High Performance Transaction System*.

high-speed reject re-entry. The re-entering into the document processor of reconditioned documents that have previously been sorted to the system reject pocket (pocket 1-1).

Hiperspace. A range of up to two gigabytes of contiguous virtual storage addresses that a program can use as a buffer. Like a data space, a Hiperspace holds only data, not common areas or system data; code does not execute in a Hiperspace. Unlike data in a data space, data in a Hiperspace is not directly addressable.

holdover. (1) Items that were not processed in time to meet their deadline. (2) Items that are held for the next processing cycle.

HPTS. High Performance Transaction System. See *ImagePlus High Performance Transaction System*.

HSRR. High-speed reject re-entry.

I

image. The captured facsimile (picture) of an item represented in digital form suitable for computer processing and storage, and visual display to an operator.

ImagePlus High Performance Transaction System (HPTS). An IBM system that adds image processing capabilities to document processing.

ImagePlus HPTS Application Library Services. An IBM licensed program that supplies the HPTS system with services such as communication, data-storage management, recognition facilities, data compression, data reconstruction, and device support. The program consists of Image Host Application services, Image Processor Recognition Services, and Image Workstation Application Services.

import/export. The sending of information (export) from one system or application and the acceptance of information (import) by another system or application.

inclearings/inwork. A UK term describing checks and credits drawn on your financial institution. Similar to the term "on-us."

incoming sequence number. A number that defines the incoming sequence of an item within the input stream. This unique number is associated with the item throughout the whole cycle of computer processing.

input string (I-string). A string of documents created by the MICR task. On each document processor run, an I-string is created. The string includes every document read by the document processor, including control documents and rejected documents. Related information, such as the pocket selected, is also stored in each record. The string also includes internally generated control records.

inscribe. Synonym for *encode*.

inscriber. A machine that encodes and inscribes in a particular format. Synonym for *encoder*.

interbank settlement sheet. A UK interbank report, produced by Inwork DCV Reconciliation, summarizing the Inwork DCV totals and the settlement figure.

Inwork. A UK term for incoming on-us work from other banks or institutions.

Inwork DCV Detail Report. A UK term for a report produced by Inwork DCV Reconciliation for each responding bank listing the DCVs and WDs that are being returned.

Inwork DCV Recapture File. A UK term for a file created by Inwork DCV Reconciliation by recapturing the Inwork DCVs and WDs after balancing. This file is matched against the Inwork DCV Summary File to produce the Inwork DCV Reconciliation File.

Inwork DCV Reconciliation File. A UK term for a file created by Inwork DCV Reconciliation by matching the Inwork DCV Recapture File against the Inwork DCV Summary File.

Inwork DCV Reconciliation Report. A UK term for a report produced by Inwork DCV Reconciliation that lists the free and missing Inwork DCVs detected.

Inwork DCV Summary File. A UK term for a file created by DKNIDCS after the completion of Prime Balancing. It contains details of all DCVs and WDs captured in the Inwork cycle and is input to Inwork DCV Reconciliation.

interface. A named and shared boundary between two functional units, (for example, component interface, subcomponent interface) defined by functional characteristics, or other characteristics, as appropriate.

invocation • magnetic ink character recognition (MICR)

invocation. Any method of starting a function within a component, subcomponent, or module, such as a direct call with parameters, use of a queue, or event control blocks (ECBs).

inwork. Checks and credits that are drawn on the financial institution that is processing them. Also termed "on-us."

I-string. Input string.

item. A check, deposit slip, or other machine-readable document.

item-sequence number. A number that defines the sequence of an item within the input stream. This unique number is associated with the item throughout the entire cycle of computer processing.

J

jam. A condition that exists when items form a blockage anywhere in the transport mechanism of a document processor.

JGC. Joint Giro Credit.

job control language (JCL). A control language used to identify a job to an operating system and to describe the job's requirements.

JCL. Job Control Language.

JES. Job entry subsystem.

job entry subsystem (JES). A system facility for spooling, job queuing, and managing input and output.

joggler/jogger. A device that straightens and aligns items before high-speed sorting, principally to line up the lower edge and right side of a group of documents. This device is an integral component of some document processors.

Joint Giro Credit (JGC). A UK credit that may be paid in either through a clearing bank or through a post office. The two JGC types are (1) long joint giro, and (2) short joint giro. The only difference between the two types is that the long version has an Amount Due field and the short JGC does not.

K

kill. To process items to a point where no further distribution is required. See also *remit*.

kill bundle. A group of items in a kill pocket, delineated by divider slips, that forms a batch or remittance to another bank. With concurrent kill, this group can span strings. See also *remittance list*.

kill list. A document that accompanies a kill bundle, listing detail and controls for the items.

kill pass. A pass on which items are distributed to their endpoint pockets.

kill pocket. A document-processor pocket assigned to items that are sent and remitted to another bank or destination without further sorting.

L

legal tender. Any money that must, by law, be accepted in payment of debts. A personal check is not legal tender.

link-edit. To use a linkage editor to create a loadable computer program.

listed and not enclosed. A condition that exists when an item is listed on an incoming remittance/kill list or inscriber tape but is not enclosed in the kill bundle.

logical unit (LU). A port through which a user accesses SNA-network functions to communicate with another user on the network.

low-speed transit. The manual sorting and processing of checks.

LU. Logical unit.

LU 6.2. Logical unit 6.2 protocol.

LU 6.2 protocol. An SNA service that receives requests from users and from the system services control point. This service provides session management and other services for sessions between two logical units.

M

magnetic ink character recognition (MICR). The reading of magnetically encoded data on the 5/8" clear band that runs along the bottom of a document. The MICR system uses ten specially coded digits and four special symbols.

Management Information System (MIS). A DB2 system that maintains data on overall check processing. This is a subcomponent of ImagePlus HPTS Application Library Services (IALS).

manual restart. The process of physically finding and rebatching, before resuming an interrupted entry, the items to be recaptured.

mass data set (MDS). A file that contains records of all active document strings. This file consists of two direct access data sets: a directory index and a data record set.

master list. A list of all items that are read during a computer pass.

MDS. Mass data set.

merged string (M-string). The M-string, produced by DKNMRGE, represents the merging of images from the prime-pass I-string with corrected reject data. Reports that result from the M-string let you reconcile and balance input to ensure that all items were captured.

MICR. Magnetic ink character recognition.

microfilm number. The assigned item number that is also captured on microfilm.

MIS. Management Information System.

misread. A condition that occurs when a document processor interprets a character as a good character other than that which actually appears on the document codeline. Synonymous with *substitution*.

missort. An item that is found in a pocket other than the pocket to which it was sorted. This might be the result of a misread.

M-string. Merged string.

Multiple Virtual Storage (MVS). An operating system that consists of MVS/System Product (MVS/SP)*, MVS/ESA*, and the MVS Data Facility Product operating on a System/370 processor.

O

OCR. Optical character recognition.

OLMS. Online manual split.

OLRR. Online reject re-entry.

online fine sort. A computer-controlled sorting of documents (for example, checks) by either or both the account number and the serial number sequence for filing. This process commonly uses codeline data match techniques.

online manual split (OLMS). The process that sorts reject data from the MDS to produce remittance/kill lists and branch reports in the same sequence as manually sorted rejects.

online reject re-entry (OLRR). Manual entry or correction of MICR data through a display terminal.

on-us. Documents belonging to a bank that are sent to its clearing center from other banks or financial institutions. See also *inwork*.

Optical character recognition (OCR). Character recognition that uses optical means to identify graphic characters.

optional field 1. An optional, encoded field used by some US financial institutions for check truncation. It can also be used for other internal purposes.

out-clearing. A UK term meaning the sorting of documents to external destinations. The US term is *transit*. See also *outwork*.

outgoing sequence number. A sequence number or unique identification assigned to each item, identifying the kill bundle in which the item left the financial institution.

outwork. Documents that when processed leave the bank for collection from other institutions. See also *out-clearing*.

Outwork DCV Detail Report. A UK term for a report produced by Outwork DCV Reconciliation for each responding bank. It is essentially a listing of the Outwork DCV Reconciliation File.

Outwork DCV File. A UK term for a file produced by Remittance (Kill) processing. It is essentially an electronic version of the Outwork DCV Report and is used to power encode DCVs.

Outwork DCV Interbank Settlement Sheet. A UK term for a report produced by Outwork DCV Reconciliation for each responding bank, summarizing the agreed DCV totals and the figure for settlement.

Outwork DCV Recapture File. A UK term for a file created by Outwork DCV Reconciliation by recapturing the DCVs returned by other banks. This file is then

* Trademark of IBM

Outwork DCV Reconciliation File • reject string (R-string)

matched against the Outwork DCV Summary File created on the previous day.

Outwork DCV Reconciliation File. A UK term for a file created by Outwork DCV Reconciliation by matching the Outwork DCV Recapture File against the Outwork DCV Summary File.

Outwork DCV Reconciliation Report. A UK term for a report produced by Outwork DCV Reconciliation for each responding bank listing the missing and free DCVs detected.

Outwork DCV Report. A UK term for a report produced by Remittance (Kill) processing. It is similar to a CPCS-I cash letter and summarizes a number of kill bundles. It is not sent with the documents but is used to manually encode DCVs.

Outwork DCV Summary File. A UK term for a file produced by Remittance (Kill) processing. It contains a record for every Remittance (Kill) bundle processed and is grouped by endpoint within a cycle. It is used as input to Outwork DCV Reconciliation when the DCVs are returned by the responding bank on the following day.

P

pass. A single reading and sorting of a group of checks and control documents on a document processor.

pass-to-pass control. A process that maintains the total amount and item control of a group of documents on subsequent passes, when control has been established on the previous pass.

path. The path of a functional unit of work is the ordered list of tasks processed for the associated CPCS-I string. See also *flow code* and *flow control*.

pending status queue. A first-in-first-out System Manager queue through which CPCS-I applications interface to the System Manager, in sequence, to perform UOW creations, deletions, inquiries, and updates.

piggyback item. An item that was missing from its assigned pocket in a sorter and sorted "free" to an unidentified pocket, as when one document attaches itself to or overlaps another during processing.

pocket 1-1. See *system reject pocket*.

PRAD. Propagation of Adjustments.

presenting bank. A UK term for the bank sending documents and DCVs and requesting funds for the DCVs.

prime pass. The first pass of an entry on a document processor.

printing after the fact. See *deferred printing*.

process control field. Used in the US by the payor bank to know which process applies to each item. In the UK this field is called *transaction code* and is used to identify document types.

proof. Receives checks that come from tellers, mail and night depository, and internal departments of the financial institution. Proof balances transactions and inscribes or encodes the monetary amount in MICR.

proof of deposit. The act of totalling items at the deposit level and ensuring that the total of the credits equals the total of the debits.

propagation of adjustments. The process of ensuring that adjustments made in Balancing and elsewhere are carried forward to kill/remittance and other system output processes.

R

RACF. Resource Access Control Facility.

RBA. Relative block address.

reconcile. To find and correct the cause of a difference between two sets of totals.

reconciliation. See *balancing*.

reconditioning. The process of straightening folded items, inverting upside-down items, flipping reversed items, and removing any residual staples or rubber bands.

reference. A UK term for a field encoded on credit documents, corresponding to the 6-digit Serial field on debits. The Reference field may be up to 18 digits in length and (if printed in OCR) may contain alphanumeric characters.

rehandle pocket. A document processor pocket that receives items for multiple endpoints. Items directed to rehandle pockets are processed again on a later pass.

reject. A document that cannot be read in its entirety by a document processor or that fails certain editing checks. This document is normally directed to a special pocket called a reject pocket.

reject string (R-string). Strings that are created by the online reject re-entry task. Each R-string represents checks that have been re-entered online. R-strings are input to the DKNMRGE task.

relationship. Shows the parent/child hierarchy of units of work.

relative block address (RBA). In CPCS-I, the calculated location of a specific record.

remit. A UK term; to send items to another financial institution.

remittance file. A UK term for an MVS data set that is created by Remittance (Kill) processing. It is essentially an electronic version of the remittance list and may be used to support DEFT input processing at the receiving institution.

remittance list. A UK term for a CPCS-I Kill List that is produced to support negotiation and settlement of a batch of documents prefixed by a DCV. It is used for conventional interchange between clearing operations.

repass. See *rehandle pocket*.

rerun. A group of items that are sorted into a pocket on one pass and later brought into a document processor for more sorting.

Resource Access Control Facility (RACF). An MVS security subsystem that determines the validity of each operator's ID password and that controls operator access to application tasks and transactions.

responding bank. A UK term for the bank making payment on documents/DCVs received from the presenting bank.

restart. An initiation of the CPCS-I system after a system failure. A restart is generally used to start the system (after an abnormal end of a task) to cause the executive routines to re-establish the system to the status that existed before the failures.

restart buffer. An area where records are stored in an IBM 389x/XP Series document processor during online operations until they are sent to the host. The buffer is accessed during automatic restart.

resynch document. A control document used in DEFT processing to match DEFT data to the documents currently being processed on Prime and also used to separate and identify kill bundles on output.

return item. A check that is not honored by the maker's financial institution and that is returned to the depositor's financial institution.

routing/transit number field. An encoded check field that represents the financial institution on which the check is drawn. In the UK, this is referred to as the *Sort Code*.

R-string. Reject string.

S

SCI. Stacker Control Instruction.

scroll. The ability to use the DKNSCRL application to page through or look at the scroll data set. This data set includes supervisor terminal messages and DKNATASK log messages.

SDE. String directory entry.

separator. See *divider slip*.

sequence number. A number, assigned to a document, that uniquely identifies its position in a group of incoming or outgoing work.

serial field. A UK term for the 6-digit field, (equivalent to the check number in the US), which is normally the serial number of a check. On credits, the same field is called a Reference and may be up to 18 digits in length.

settlement. The act of bringing sets of related figures from two financial institutions into agreement. Adjustments are made to offset the differences.

simulated sorter. A CPCS-I facility that allows a user to run MICR, using an input file without a physical sorter.

slip. A slip is a control document used to prefix bundles for control purposes.

SMOF. System Manager Online Functions.

SNA. Systems Network Architecture.

sort code. A UK term for the field (equivalent to the routing transit field in the US) which identifies the bank and branch to which a debit or credit item belongs. It is in the format *BB-bbbb*, where *BB* identifies the bank, and *bbbb* identifies the branch within that bank. It may be printed in MICR (on checks and some credits) or in OCR (on some credits). If printed in MICR, the two parts of the field are separated by a dash (SS4).

sorter station (also document-processor station). A work station consisting of a document processor and a terminal for operator communications. Synonym for document-processor station.

sort pattern. A table used by the sort routine to determine the pocket to which a check is to be directed.

sort-pattern definition file. A collection of records that contains control information that MICR in CPCS-I uses to set up and control document sorting; it also contains data about endpoints.

sort routine • tracer group

sort routine. A time-dependent routine that does all processing required to direct a document to a specific document processor pocket.

sort program. A routine that performs all processing required to select a document to a pocket.

spool data set. A data set used to store printed output lines. Each spool (Simultaneous Peripheral Operations On-Line) data set is written by a CPCS-I application task and is read by the CPCS-I output writer as it is being printed.

SSB. String status block.

SSM. String segment map.

Stacker Control Instruction (SCI). SCI is the name of a language used to write programs to control the sorting of documents on a 389x document processor.

statistics. The processing of unit-of-work (UOW) data through a statistical program such as the ImagePlus Application Library Services (MIS) system. This term can also refer to the processing of unit-of-work data through a user-written statistical program.

string. The data records representing a group of items, for example, an I-string, a D-string, or an M-string. See related definitions for details.

string segment map (SSM). One of three types of segment maps in CPCS-I. Each string in the system is associated with a string segment map. Each bit in a map represents a segment of direct access storage.

string status block (SSB). This CPCS-I control block is maintained by the MDS programs for every open string.

STV. Subtotal voucher.

subcomponent. Functional subset of a component where subsetting is appropriate based on data use, logic flow, or other factors relating to modules.

subcomponent internal data. All data accessible to any modules within this particular subcomponent, but not accessible to any part of the system outside this subcomponent.

subsequent pass. A pass on which previously sorted items are resorted for further distribution.

subset. A defined portion of an entry, indicated by one or more tracer groups.

subset processing. Processing a portion of an entry beyond the document-entry step before the whole entry is run through the document processor.

subset string. A predefined group of data records that represents a portion of the physical items in an entry. A subset string can contain multiple tracer groups.

substitution. See *misread*.

subtotal voucher (STV). An optional UK document that can be inserted into a batch of documents to mark the point at which a cumulative subtotal is printed on the accompanying remittance list.

supervisor. (1) An MVS term used to refer to the system nucleus in internal storage. (2) A person responsible for operation of a financial institution area.

supervisory terminal. A special terminal or operating mode used in CPCS-I.

System Manager. A subsystem of CPCS-I that directs and controls the operations.

System Manager Online Functions (SMOF). A set of application-level tasks that monitor and modify the queues and databases of System Manager.

system reject pocket. The first physical pocket on the document processor. It is used by CPCS-I to hold machine and user-selected rejects.

System Network Architecture (SNA). The description of the logical structure, formats, protocols, and operational sequences for transmitting information units through, and controlling the configuration of, networks.

T

tab key. A keyboard function key. The tab key causes the cursor to position to the next colon on the screen or to the top of the screen.

task. A CPCS-I application or function. User-written tasks must be in the CPCS-I BLDL list.

task list. The ordered list of tasks to be performed for a unit of work. It is determined by selecting the flow code for a given flow control record.

task status. A representation of what will happen, what is happening, or what happened during processing of this unit of work. Can be pending, ready, or complete. See related definitions for details.

total system. A system in which the computer is used for all phases of an operation.

tracer. A check-processing document used to provide pass-to-pass control.

tracer group. A grouping of documents between sets of tracers for control purposes. If subset processing is

in operation, this tracer group normally becomes a unit of work that can be processed independently of other units of work within that entry.

tracer ID. The tracer group and slip numbers corresponding to a tracer slip.

transaction code. A UK term for the 2-digit field that identifies debit, credit and control document types (similar to the Process Control Field in the US). A blank transaction code is a valid identifier for a check.

transit. The sorting of checks to external destinations. See also *out-clearing* and *outwork*.

U

unit of work (UOW). A logical entity that the System Manager uses to track a piece of work through CPCS-I. It can be informational or functional. See also *functional unit of work*.

UOW. Unit of work.

UOW status. This status represents the state of a unit of work and its associated string. Can be pending, ready, or complete.

V

Virtual Storage Access Method (VSAM). An access method for indexed or sequential processing of fixed or variable-length records on direct access storage devices.

Virtual Telecommunications Access Method (VTAM). A set of programs that control the communication between terminals and application programs.

VSAM. See *Virtual Storage Access Method*.

VTAM. See *Virtual Telecommunications Access Method*.

W

warm start. An initiation of the CPCS-I system, causing the contents of the MDS and the control data sets to be retained. A warm start is generally used for restarting CPCS-I after a normal ending.

WD (wrongly delivered). A UK term for items (debits or credits, not DCVs) that have been dispatched to the wrong bank. They are returned rather than redirected.

XREC. The dynamic control block that maps the string data at various points in the system. It cross-records or

maps the string as it is in the data base, or as it is in the data space.

work. Any document or group of documents that CPCS-I processes.

work flow. An ordered list of tasks for a specific CPCS-I string. Each CPCS-I string must have a work flow.

Z

zero-balancing. The procedure that ensures that generated totals for a group of items plus any documented errors minus the control total equals zero.

Numerics

3890/XP Document Processor. A document processor in the 3890/XP Series of document processors that can read and sort documents at a rate of up to 2400 documents per minute.

3890/XP Series document processors. A series of high-speed document processors that can read and sort up to 1000, 1700, or 2400 documents per minute. These document processors include the IBM 3890/XP Document Processor, the IBM 3891/XP Document Processor, and the IBM 3892/XP Document Processor.

3891/XP Document Processor. A document processor in the 3890/XP Series of document processors that can read and sort documents at a rate of up to 1700 documents per minute.

3892/XP Document Processor. A document processor in the 3890/XP Series of document processors that can read and sort documents at a rate of up to 1000 documents per minute.

3892/XP Power Encoder Feature. An optional device that can be attached to the 3892/XP Document Processor to encode the MICR codeline field on a document.

99 M-string. See *balanced M-string*.

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The following publications are related to document processor support:

IBM 3890/XP Series Document Processor General Information, GA34-2012

IBM 3890/XP Series Programming Guide, GC31-2662

IBM 3890/XP Series SPXServ Reference, GC31-2704

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IBM ImagePlus High Performance Transaction System General Information Manual, GC31-2706

IBM ImagePlus High Performance Transaction System Application Library Services Programming Reference, SC31-2794

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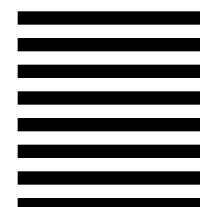
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