RAS – Report Archival System - SR&ED* Project

***Scientific Research & Experimental Development**

Project Description

Department: Mid Range Systems

Date: November 23, 2020

Prepared By: Tino Sequeira

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Document Information

This section provides information about this document and contains the necessary approvals.

Title and Author

Document Name:	RAS – Report Archival System - SR&ED* Project
	*Scientific Research & Experimental Development
Document:	Project Description
Original Author:	Tino Sequeira

1 Introduction

This document complies with the technical portion of the SR&ED claim requirements as it contains the Project Description and other relevant information. ABC has documented the specific SR&ED project from its inception, through design, to completion in order to meet the scientific approach criteria.

ABC has endeavored to track this SR&ED project via appropriate project status reports. This makes for an easier task of making corrections or alterations to the project, not to mention the facilitation of cost allocation and billing. ABC has successfully documented the process and thus built evidentiary support for a SR&ED claim and clearly illustrates the number of iterations required before a successful final system is achieved. This emphasizes and addresses the “systematic” approach.

Finally, the test documents will identify the difficulties and uncertainties encountered as a result of testing. This helps to address the recording of any failures or problems that arise as a result of the project’s development. The documentation therefore lends credibility to the SR&ED claim with respect to proving the existence of technological uncertainties and the scientific approach taken in an attempt to overcome them.

2 Project Details

1.	Project Number	10989786789
2.	Project Name	RAS – SR&ED Project
3.	Combining Activity No.	1
4.	SR&ED for the fiscal year ending	2001
5.	Date Project Started	
6.	Project Completed?	[x] Yes [ ] No
7.	Date Project Completed or expected to complete	

2.2 Overall Project Objective

This R&D project is the initiative of Midrange Systems to bring about **technological advancement** by developing a unique system for the first time in Canada that would resolve the **scientific and technological uncertainty** of multiple cumbersome processes, reduce costs, provide improved customer service and position ABC to having achieved a goal of being foremost in the technological field of archiving reports with so many variables. The project has extensive **scientific and technical content**.

The planned "Solution" processing must eliminate **technological uncertainties** and provide a technical and scientific solution for increased customer service and processing efficiencies. The final result is to enable the interception of the print files without accessing the client's host and route the same to the RS6000 and simultaneously re-present the same print files back on the spool to maintain their original destination i.e. of being able to be recognized as the original print files.

The project will be completed within a reasonable timeframe. (At this point… the end of calendar third quarter 2002).

2.3 Technological Advancement

Obtaining the project objective will involve:

- Addressing the **technological uncertainties** by developing enhancements to the current business process/procedures which will require thorough analysis of the print files, developing a system (RAS) that would eliminate the uncertainties and consistently archive the files whilst at the same time re-routing the files back on the print spool.
- Providing evidence of **scientific content** by developing enhancements to the current process/procedures being followed.
- Providing evidence of **technical content** by displaying the software development (writing code) that would eliminate the uncertainties and achieve the objectives of archiving the right files and re-routing the files back to the print spool.

- Enhancement and relocation of Hardware.
- Development of new software.
- Operational changes that have to be made, with implications to training.
- Software changes to interfaces, and new applications.

The Solution that was being looked for (Technological departure from the current practice of printing reports)

This section provides a set of requirements for a solution to provide a selected set of report print files to the ABC archive. This SR&ED project was looking for a solution that would be used to deliver the requirements. It was the intent of the project to define the technological uncertainties, find the solution that would overcome those uncertainties and thus provide customer service improvement, workload reduction and paper print savings by providing electronic access to XYZ reports.

The initial scope of the project was ABC Toronto only. This volume is between 50% and 66% of the national volume.

Current Process

The XYZ service provides a variety of printed reports on a daily basis to support high cheque volume corporate clients. The service compares files of issued items with cleared items. Reconciliation, balancing, exception processing is provided by ABC.

Currently the client's host application (PQR) sends print files to the ABC Common Spool. The Common Spool then allocates the print jobs to printers. The reports are printed at 2 locations in Toronto; 123 Sinclair Ave and 456 Adelaide St. West. The report print files are sent by the client to ABC from about 21:00 hours to 06:00 hours the next morning. Courier sends the reports to the XYZ Dept. at Brampton Road, By 8 am.

The XYZ dept. first segregates the reports manually, by the staff member's initials. These initials are printed on the print job header page. This enables workload and reports to be distributed by staff member. The reports within this set of initials are printed in XYZ Account Number group order. . Thus, all the reports for a single XYZ account are together. The XYZ staff segregates the printed reports by XYZ Account No. Then each account is worked on and reconciled. The reports are bundled into addressed envelopes or boxes and sent to corporate clients the next day.

Most reports have only a single set of printed-paper report. Thus, there is no additional paper copy of most reports, for use by the XYZ Dept, after the reports have been dispatched to the corporate client. If the XYZ dept. staff needs to review the reports after they have been dispatched to the corporate client, the staff uses a microfiche copy of the report.

Some reports are print suppressed. These are only produced on microfiche. There is no printed-paper report produced.

Microfiche is created for all reports. The fiche is kept on site, at the XYZ Dept. This is used for future investigation and inquiry.

2.4 Technological Progress toward the Overall Objective

Archive Process

ABC uses an electronic archive. The processor is an IBM RS6000 SP complex. The OnDemand application uses DB2 EEE and an AIX operating system.

The archive application can load various print file formats, including the EBCDIC line data, Xerox Metacode, IBM AFP, etc.

The archive must index the input print file, in order to support on line search capability. The indexing creates various search fields and logic. Each report is programmed for its unique search criteria and indices. The indexing logic requires all reports of a single type, to be loaded together. Thus all report number 01 together, report 02 together, report 03 together, etc. The report print file provided to ABC today does *not* provide this grouping of reports by common report id. The report print file today is designed to facilitate printing and paper distribution. It is not designed to facilitate archiving.

2.5 Technological Uncertainty

When 1XYZ (at client host) has finished processing a report job that requires ABC processing, the client host system transmits the relevant job output to ABC's spool. Upon arrival of a specific job output on spool, a $HASP540 message will appear in the OS/390 system log.

As part of RAS, SYSVIEW will monitor and inspect these $HASP messages looking for 1 of the relevant TDXYZ jobs (namely JFRS140I, JFRS140R, JFRS140W). When it finds 1 of these jobs it signals the OPC job scheduler to start up the appropriate RAS series of jobs.

When the RAS jobs are run, they perform the following processing:

Copy the relevant job output(s) from spool to disk.

Delete the original output(s) from spool.

Interrogate the job output(s) (now on disk), and according to flexible parameters:

- Send print data back to spool (with the original job name, dest, class parameters but with ARCHIVED forms name), and / or
- Send archive data to the RS6000 archive via connect direct.

Print Output

Volume

Please note that in the short run, there is no change to the volume of print output. All print in the original JFRS140x job, will get moved back to spool.

Over time as the business user community gets familiar with the archive system, they may choose to print suppress some of the report output. In fact, after a month of operation of the archive for TDXYZ on the SOCPROD system, we were already suppressing approximately one third of the output for the JFRS140x jobs. That means less print for the print shop to manage.

Job Output Parameters

There are no changes to the jobname, destination, and class parameters. Hovever, the forms name will change to be ARCHIVED at the completion of the RAS process.

Forms=ARCHIVED

The forms name of ARCHIVED tells RAS that this output has been processed. This mechanism is required so that as more output arrives on spool RAS will not double process any output.

Processing Time

The SYSVIEW trigger has a 20 minute delay and RAS currently processes on a daily basis in about 2 minutes for a net process time of about 25 minutes per JFRS140x job.

Impact to Print Shop Once RAS is Implemented

There are 2 impacts.

For any of the JFRS140x job outputs, the print shop operators cannot start printing the JFRS140x jobs until the forms name is changed to ARCHIVED.

The print shop operators cannot change the forms name from ARCHIVED. They must set the printer to print forms=ARCHVIED.

Note that this is in contrast with current practive today, whereby the print operators typically change the output forms name to be STD7 or STD8 for these job outputs.

List of RAS Jobs

Original Job	RAS Jobs	Description
JFRS140I	PARC14I0 PARC14I1 PARC14I2 JFRS140I	Gets system date/time, kicks off next job. Copies spool to disk, deletes spool, kicks off next job. Send reports to archive, kicks off print jobs. Print Jobs (same dest, class as original), forms=ARCHIVED
JFRS140R	PARC14R0 PARC14R1 PARC14R2 JFRS140R	Gets system date/time, kicks off next job. Copies spool to disk, deletes spool, kicks off next job. Send reports to archive, kicks off print jobs. Print Jobs (same dest, class as original), forms=ARCHIVED
JFRS140W	PARC14W0 PARC14W1 PARC14W2 JFRS140W	Gets system, date/time, kicks off next job. Copies spool to disk, deletes spool, kicks off next job. Send reports to archive, kicks off print jobs. Print Jobs (same dest, class as original), forms=ARCHIVED

Plus possibly some TSO submitted jobs, not known at this time (**technological uncertainties**)

2.6 Research Steps taken this Taxation Year

2.6.1 Hypothesis

This RAS SR&ED project was looking for a solution that would be used to take print files (flat files) that were being printed as reports and archive them so that they can appear on screen exactly how they were being printed as well as have them printed simultaneously without requesting the originating system to make any changes, viz. requesting the originating system to format the files in such as way that would

make archiving simpler. The intention was reduce paper print and improve the workflow of staff who were using paper reports to carry out their jobs.

2.6.2 Research, Analysis Design, Testing and Modification

Several hours were spent on carrying out detailed research, analysis and testing. This section describes the test plan and scripts for the integration testing of the Archive system. This includes RAS, Connect Direct, ALF (Autoload Facility), On Demand and Big Brother. This plan focuses on 2 main test areas:

- Report Processing, and
- Production Data.

Report Processing deals with processing all reports starting from spool through to arrival in On Demand as an archived report.
Production Data ensures that 3 specific days worth of production data will process correctly and will arrive in the archive correctly.

The scope for the Archive Integrated Testing will start from the point at which the relevant job output is present on spool, to the point at which the relevant report archive files can be viewed in On Demand as an archive report. Big Brother is also in scope to the extent that appropriate messages and alerts are produced.

The scope does not include Sysview or OPC event triggers which sense the incoming job, and initiate the RAS job. These triggers are currently operating successfully in the production environment executing jobs (1 RAS job for each trigger job) containing 1 IEFBR14 (dummy) step.

Test Approach

Each test will start with the following steps:

All tests will be performed on the SOCDEV host and archive development machines.

All tests will start by ensuring that there is no held job output on spool for the relevant jobs in question. (JFRS140I, JFRS140R, JFRS140W, TTDC73, TTDC73A)

All tests will start by ensuring that Connect Direct is running on the host and target systems.

A specified IEBGENR job (with appropriate jobname) will copy test data to held output spool.

Test jobs will be submitted manually via TSO (in production this would be submitted by Sysview and OPC).

Results Tracking

The following results will be kept:

For MVS:
1. Job Listings will be kept
2. SYSINs will be kept

3. Output dsn's will be kept on the system.

For Connect Direct 1. Connect Direct log.

For ALF 1. ALF correspondence file.
2. ALF dump log
3. ALF gen report.

For Big Brother: 1. ALF messages.

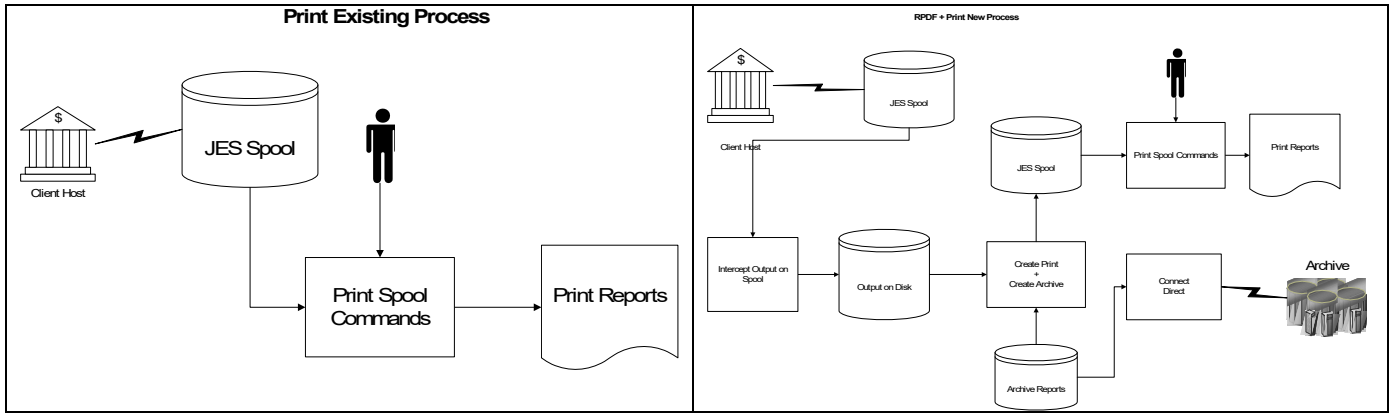
For On Demand 1. The reports will be visually scrutinized versus the originating report on the mainframe and results documented.

2.7 Technical Documentation Retained

High Level Overview For RAS/Archive for 1XYZ on TORP

This section gives a high level overview of the RAS / Archive process and potential impacts to print processing and procedures.

This pictorial depicts the current print process for XYZ report output from external host.



Similar to the above, drawings, notes from technical meetings (minutes), test data, RAS source code and other items are available for scrutiny to substantiate research steps and analysis was indeed performed.

3 Description of Activities

Activity Number	Activity Name	Related Project No. or Name	SR&ED for the fiscal year ending	Date Activity Started	Activity Completed? Yes / No	Date Activity Completed or expected to complete

3.2 Activity Description

This section contains details of how this activity supports the overall project objective.

RAS - Report Archive System Overview

When 1XYZ (at client host) has finished processing a report job that requires ABC processing, the client host system transmits the relevant job output to ABC's spool. Upon arrival of a specific job output on spool, a $HASP540 message will appear in the OS/390 system log.

As part of RAS, SYSVIEW will monitor and inspect these $HASP messages looking for 1 of the relevant TDXYZ jobs (namely JFRS140I, JFRS140R, JFRS140W). When it finds 1 of these jobs it signals the OPC job scheduler to start up the appropriate RAS series of jobs.

When the RAS jobs are run, they perform the following processing:

Copy the relevant job output(s) from spool to disk.

Delete the original output(s) from spool.

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- Send archive data to the RS6000 archive via connect direct.

Print Output

Volume

Please note that in the short run, there is no change to the volume of print output. All print in the original JFRS140x job, will get moved back to spool.

Over time as the business user community gets familiar with the archive system, they may choose to print suppress some of the report output. In fact, after a month of operation of the archive for TDXYZ on

the SOCPROD system, we were already suppressing approximately one third of the output for the JFRS140x jobs. That means less print for the print shop to manage.

Job Output Parameters

There are no changes to the jobname, destination, and class parameters. Hovever, the forms name will change to be ARCHIVED at the completion of the RAS process.

Forms=ARCHIVED

The forms name of ARCHIVED tells RAS that this output has been processed. This mechanism is required so that as more output arrives on spool RAS will not double process any output.

Processing Time

The SYSVIEW trigger has a 20 minute delay and RAS currently processes on a daily basis in about 2 minutes for a net process time of about 25 minutes per JFRS140x job.

Impact to Print Shop Once RAS is Implemented

There are 2 impacts.

For any of the JFRS140x job outputs, the print shop operators cannot start printing the JFRS140x jobs until the forms name is changed to ARCHIVED.

The print shop operators cannot change the forms name from ARCHIVED. They must set the printer to print forms=ARCHVIED.

Note that this is in contrast with current practive today, whereby the print operators typically change the output forms name to be STD7 or STD8 for these job outputs.

List of RAS Jobs

Original Job	RAS Jobs	Description
JFRS140I	PARC14I0 PARC14I1 PARC14I2 JFRS140I	Gets system date/time, kicks off next job. Copies spool to disk, deletes spool, kicks off next job. Send reports to archive, kicks off print jobs. Print Jobs (same dest, class as original), forms=ARCHIVED
JFRS140R	PARC14R0 PARC14R1 PARC14R2 JFRS140R	Gets system date/time, kicks off next job. Copies spool to disk, deletes spool, kicks off next job. Send reports to archive, kicks off print jobs. Print Jobs (same dest, class as original), forms=ARCHIVED
JFRS140W	PARC14W0 PARC14W1 PARC14W2 JFRS140W	Gets system, date/time, kicks off next job. Copies spool to disk, deletes spool, kicks off next job. Send reports to archive, kicks off print jobs. Print Jobs (same dest, class as original), forms=ARCHIVED

Plus possibly some TSO submitted jobs, not known at this time (**technological uncertainties**)

Print File Description

The XYZ print files are EBCDIC line data file format.

There are many print files received each day for XYZ. A review of a single day provided the following list of XYZ print files. Note, the external host application that provides the XYZ service is the PQR system. A sample day found 72 print files. Each would need to be interrogated by the "Solution" to determine possible processing required.

The print sequence today is:

- All reports within a single XYZ account number are together
- A set of XYZ account numbers are grouped within a single staff member initials

Example of a set of XYZ Report print file job names, for a single night:

JOB NAMES Printed at ABC's Head Host

JFRS090I	JFRS090R	JFRS090W	JFRS040R	JFRS040W	JFRS110I
JFRS110R	JFRS110W	JFRS055I	JFRS055R	JFRS055W	
JFRS800I	JFRS800R	JFRS800W	JFRS810I	JFRS810R	JFRS086I
JFRS086R	JFRS086W	JFRS820I	JFRS820R	JFRS820W	JFRS830R
JFRS830W	JFRS830I	JFRS840I	JFRS840R	JFRS840W	
JFRS5103	JFRS5573	JFRS6048	JFRSBIT1	JFRSEPSS	JFRS5169
JFRS6231	JFRS6425	JFRS6540	JFRS6080	JFRS6147	JFRS6175
JFRS6214	JFRS6322	JFRS6323	JFRS6337	JFRS6355	JFRS6450
JFRS6568	JFRS6777	JFRS6797	JFRS6825	JFRS6962	JFRS7000
JFRS7601	JFRS6091	JFRS6N01	JFRS6N03	JFRS6358	
JFRS6611	JFRS6342	JFRS6436	JFRS6752	JFRS6561	JFRS6107
JFRS6048	JFRS6034	JFRS6206	JFRS6N04	JFRS6544	

JOB NAMES Printed off ABC's Tail Host

JTRC0205	JTRC5100	JCDAARP1	JBIT0228

3.3 Technological Advancement

This section contains information on the scientific or technological advancement component of the specific activity. Advancements and goals will be quantified wherever possible.

Report Selection For Archive

The reports required to be loaded into the archive are a subset of all the XYZ reports. The "Solution" is required to select the required reports for archive load. There are 30 different reports that will be archived. All other reports are printed and not archived.

Reports that are not selected for load into the archive must be printed and delivered to customers, same as today. Thus, the "Solution" application must interface with ABC's printers or common spool facility, to support the printing of reports.

"Solution" Considerations:

The "solution" should allow for easy future change to this list of reports. It is anticipated that additional reports will be required to be loaded into the archive in the future. Potentially all XYZ reports could be loaded into the archive. It is anticipated that in the future, there will be requests to load reports from other applications, in addition to XYZ. These would also require report reordering, report selection, etc.

Not all reports have a report id or report number. Thus the "Solution" may have to interrogate both the report id and the report name, in order to select reports for archive processing.

Re-order The Reports For Archive Load And Index

The reports to be loaded into the archive need to be reordered, prior to load and indexing. This is a prerequisite to index the reports when loading into the archive. All reports with the same report id must be together. The print file does not provide this order of reports today. (Technological uncertainty).

If there are multiple report ids in a single report print input file, then the reports should be grouped in ascending report id order. Thus all report 301 first, then all report 302, report 303, etc.

Those reports that are to be printed must have the same print order as today. The printed reports are not reordered prior to printing.

Printing And Print Suppression

The 3 possible outputs for a report are:

- Print, do not archive
- Archive, do not print
- Archive and print

It is expected that the majority of report page volume will be archive and print.

All reports printed must be printed in the same order as they are printed today. Thus, they must retain the same print order as found in the input print file. If a single input file will have reports that are printed and archive / printed; then the print order must be the same as today.

The project will selectively suppress print of individual reports, after implementation. Thus, the initial implementation will require all reports to continue to be printed. The print suppression will need to be gradually phased in . The XYZ dept user community will approve the suppression of print , after successful production experience with archived reports. This provides an automatic fallback solution if archive fails. The reports can continue to be printed. The selection of print suppression will be by :

A report id and/or name (for all XYZ accounts)

At the Company Number Level (used to select reports for a data centre location)

Or, a report id / name for a specific XYZ account number or set of XYZ account numbers

Since most reports have only a single set of reports printed today (there is no additional copy for ABC use for most reports) , it is anticipated that most reports will continue to be printed even if archived. The printed report is delivered to corporate clients, after ABC has used them. The corporate client does not have on line access to the archive.

Some reports are not delivered to corporate clients. These reports are printed and retained by ABC. The project will eventually have their printing suppressed.

Archive Load Error Recovery

If a report fails to load into the archive, ABC requires the ability to print the report, even if it was set up for print suppression. This will allow production support staff to investigate and fix the problem. The production staff can revert to using the paper report to provide their service. The printed report can be used by Production Support staff to investigate the problem. Since a problem may take more than 8 hours to fix, the design solution should have the facility to save a print file that failed to load and archive properly . This saved file can be used by production support staff to investigate the problem . It may be used to print the report. It is expected that ABC would be aware of a failure to properly archive a report within 1 business day after the report is scheduled to load into the archive. Thus the problem of a report scheduled to load into the archive on Monday morning and fails to load, would be advised to Production Support no later than Tuesday morning. The problem recovery may require the print files to be printed or reloaded on Tuesday.

Design Consideration:

It is anticipated that the client will eventually offer their corporate clients on line access to the archived reports. The corporate clients will then selectively wish to suppress printing of their reports , replacing paper print delivery with using on line access only. The design solution should anticipate the future need to suppress report print for an individual XYZ account number and specific report id / name or all reports for a specific XYZ account number.

Note, depending upon design approach, this may require 1XYZ application development and support to selectively suppress the fiche and make the fiche files available to reorder and load into the archive. Perhaps a data set from fiche output file and then select reports and reorder them ?

Microfiche Reports

Some reports are produced only on microfiche. They are not printed. The microfiche is only used by ABC . Client creates files using their Superfiche application and writes them to data tape cartridge daily . This tape cartridge is sent to ABC. ABC sends it to an external fiche developer (Lason / Datacom). The fiche developer creates the microfiche and sends the fiche and tape cartridge back to ABC. ABC retains the microfiche and sends the tape cartridge back to TD.

The order of the reports on fiche is the same as printed reports.

These fiche files must also be reordered prior to load into archive. The fiche must also be suppressed .

The known reports that are not printed and only delivered by microfiche are :

Purged Transactions Report (Report 6)

Interface To Archive

The output file from Transformer must be delivered to the archive for index and load.

Control And Audit

A facility is required to show the processing disposition of all reports. This enables production support staff to investigate missing reports or reports not archived.

This requires:

- A list of all reports received as input , by date and time
- The input job name or identifier
- Date and time the input file was received by transformer
- If the report was selected for archive, print or archive and print
- Provide XYZ account number and report id
- If the report was reordered
- Output file id to archive , date and time from transformer
- If the report was sent to archive, to print or both
- What the output file id to print , date and time from transformer
- Any input report that was not sent to either print or archive , should be reported on an exception or warning report
- Number of pages received as input, by print file
- Number of pages printed, printed and archived , archived not printed
- For each input print file and total for date

If a report is created to support the control and audit requirements, then it should be possible to archive this report.

Files that fail to archive or print successfully , should be retained for production support investigation. They should not be automatically deleted until authorized by production support staff.

3.4 Describe Research Steps Performed This Taxation Year

3.4.1 Research, Analysis Design, Testing and Modification

Several hours were spent on carrying out detailed research, analysis and testing. This section describes the test plan and scripts for the integration testing of the Archive system. This includes RAS, Connect Direct, ALF (Autoload Facility), On Demand and Big Brother. This plan focuses on 2 main test areas:

- Report Processing, and
- Production Data.

Report Processing deals with processing all reports starting from spool through to arrival in On Demand as an archived report.
Production Data ensures that 3 specific days worth of production data will process correctly and will arrive in the archive correctly.
The scope for the Archive Integrated Testing will start from the point at which the relevant job output is present on spool, to the point at which the relevant report archive files can be viewed in On Demand as an archive report. Big Brother is also in scope to the extent that appropriate messages and alerts are produced.

The scope does not include Sysview or OPC event triggers which sense the incoming job, and initiate the RAS job. These triggers are currently operating successfully in the production

environment executing jobs (1 RAS job for each trigger job) containing 1 IEFBR14 (dummy) step.

3.4.2 Test Approach

- Each test will start with the following steps:
- All tests will be performed on the SOCDEV host and archive development machines.
- All tests will start by ensuring that there is no held job output on spool for the relevant jobs in question. (JFRS140I, JFRS140R, JFRS140W, TTDC73, TTDC73A)
- All tests will start by ensuring that Connect Direct is running on the host and target systems.
- A specified IEBGENR job (with appropriate jobname) will copy test data to held output spool.
- Test jobs will be submitted manually via TSO (in production this would be submitted by Sysview and OPC).

3.4.3 Results Tracking

The following results will be kept:

For MVS:	1. Job Listings will be kept 2. SYSINs will be kept 3. Output dsn's will be kept on the system.
For Connect Direct	1. Connect Direct log.
For ALF	1. ALF correspondence file. 2. ALF dump log 3. ALF gen report.
For Big Brother:	1. ALF messages.
For On Demand	1. The reports will be visually scrutinized versus the originating report on the mainframe and results documented.

3.4.4 Test Libraries

All Testing on the mainframe will be performed on production named datasets on the development machine. The following libraries will be used:

PRD.ALL.ARC.CLIST	Rexx code
PRD.ALL.ARC.JCLLIB	JCL
PRD.ALL.ARC.LODLIB	Load modules
PRD.ALL.ARC.PROCLIB	Procs
PRD.ALL.ARC.SYSIN	SYSINs

3.5 Scientific or Technological Uncertainty

In addition to the several technological uncertainties elaborated in the earlier paragraphs, further additional questions had arisen in view of the uncertainties. These were:

1. Will the “Solution” be calling customer programs?
2. Will the “Solution” need to interface to Postal Cleansing Software?
3. Will the “Solution” need to interface to Presort Software?
4. What type of input print streams will be input to the “Solution”?
5. In addition to the print file will there be any external files as input?
6. Will any sorting be required? What are the sort fields?
7. Will the output need to be split into different categories? How many? What are the criteria?
8. Will processing be done from TLE or NOP records?
9. Will the project be creating TLE or NOP records?
10. If Metacode, are all the resources available? (Forms, Fonts, and JSL)
11. Has mapping been completed from the current print image to the new format?
12. If extracting data from the print image, have all fields been identified? What is the format (layout) for the file that will be created?
13. Are there different flavors of the documents? I.e. quarterly, monthly, daily, etc. If so , has the mapping been completed for the different documents?
14. Have all fonts been identified that will be used on the new output? I.e. barcode fonts, logo fonts, special fonts and does the customer have these fonts?
15. Will any reports be created?
16. Will external files be created? I.e. IntellaSort Data File
17. Is a barcode being added? What values will go in the barcode? Where will it be placed on the document? Is there enough clear area on all pages?

_____

Principal Investigator

4 Activity Costs

ACTIVITY REFERENCE #:_____Related Project Name/#:_____

DIRECT SALARY HOURS: (if not accumulated separately via timesheets)

Employee Name	Hours	Rate	Total Cost
TOTAL HOURS			

DIRECT PROJECT EXPENDITURES, MATERIALS & SUBCONTRACTORS: (attach signifcant invoices)

(i) Current Expenditures: Description Cost

_____ _____

_____ _____

_____ _____

_____ _____

_____ _____

TOTAL: _____

(ii) Capital Expenditures:

_____ _____

_____ _____

_____ _____

TOTAL:

_____

Principal Investigator

5 Approvals

The signatures below indicate:

Approval to proceed with the SR&ED claim submission

Agreement with the approach being taken; and

Commitment to the resource requirements as detailed within the schedule.

Signature: _____

Name: _____