Requirements Definition
Effort Reporting System

FINAL

January 14, 2004

EXECUTIVE SUMMARY

Introduction

Regulations concerning the use of federal funds require that universities certify effort devoted to sponsored projects.[1] The University of California ("University") currently uses the Personnel Activity Report (PAR) system to satisfy the requirements for effort reporting, but the system, which has been in use since 1982, has become outdated from a technology perspective and lacks the functionality to meet changing regulations and conditions. The PAR system is entirely paper-based, contains no history or facility to monitor compliance, and does not adequately handle committed cost sharing effort certification or the NIH salary cap.

The University intends to streamline the effort reporting process and address issues that exist within the current PAR system. Towards this end, a workgroup was formed to define requirements for an Effort Reporting System. The current project and the committees staffing the project are made up of representatives from the Berkeley, San Francisco, Davis, Los Angeles, and San Diego campuses--the five campuses currently participating in this project. The intent is that the remaining five campuses should be able to adopt any system that is developed or purchased as a result of this project.

Workgroups were staffed with members representing Business & Financial Services; Controllers; Organized Research and Extramural Funds Administration; Information Technology; Audit Services; Budget and Planning; and academic departments and deans' offices. In addition, input was gathered from all constituencies, including representatives from academic departments, deans' offices, and central administrative departments at the five campuses.

Risk Exposure

In recent years, the federal government and its auditors have become much more active in their review of effort reporting requirements and a number of universities have received large audit disallowances as a result. Recently,

- Northwestern University received an audit disallowance of $5.5 Million related to problems with effort reporting, on a contracts and grants base of $325 Million
- South Florida returned $4.1 Million to the federal government to settle a number of charging issues, including effort reporting

[1] Based on U.S. Office of Management and Budget Circular A-21, *Cost Principles for Higher Educational Institutions*

- University of California paid a total of $2.1 Million to settle an NIH salary cap limitation disallowance for the period 7-1-95 through 6-30-02

In fiscal year 2001-02 the University of California received $2.4 Billion in federal contracts and grants funding. As salary expense represents the largest direct cost component in these projects, any adverse audit findings could subject the University to sizeable audit disallowances and loss of federal funds. Current audit plans for federal auditors include Effort Reporting as a specific audit focus.

Project Scope

An effort reporting system should meet all of the reporting requirements of OMB Circular A-21, Section J.8 by documenting the effort distribution for employees paid from federal and federal-flow-through contracts and grants, as well as for those employees whose salary is part of committed cost sharing. The system must interface with other systems such as the Personnel/Payroll System ("PPS") and campus contract and grant management systems to gather information concerning payroll, awards, and cost sharing. It must calculate effort distribution, produce reports, send out notifications and reminders to appropriate parties, perform edits, generate ad hoc and management reports, provide a mechanism for recording corrections, and in general, provide the tools and information necessary to insure that the University is in compliance with regulations. An Effort Reporting System must:

- Calculate distribution of effort, provide sufficient detail, and display effort in a manner which is clear and understandable to the user
- Provide easy to use web-based reports
- Capture certifications electronically so that the system can monitor compliance and maintain records
- Maintain security and access controls or make use of existing campus security modules so that users can access the system based on logons and passwords that are already familiar to them
- Provide a mechanism for processing corrections and recertifying reports to enable more timely updating of Effort Reports and compliance with regulations
- Provide edits, notifications, and reminders to assist individuals, academic department representatives, and central offices
- Maintain historical information
- Interface with existing campus systems to gather required information and to pass information to appropriate systems, thereby making use of current campus systems and processes
- Provide flexibility in certain areas such as reporting period so that campuses may choose the reporting period which best suits the campus needs

- Provide ad hoc and management reporting capability to assist in monitoring compliance and responding to audits

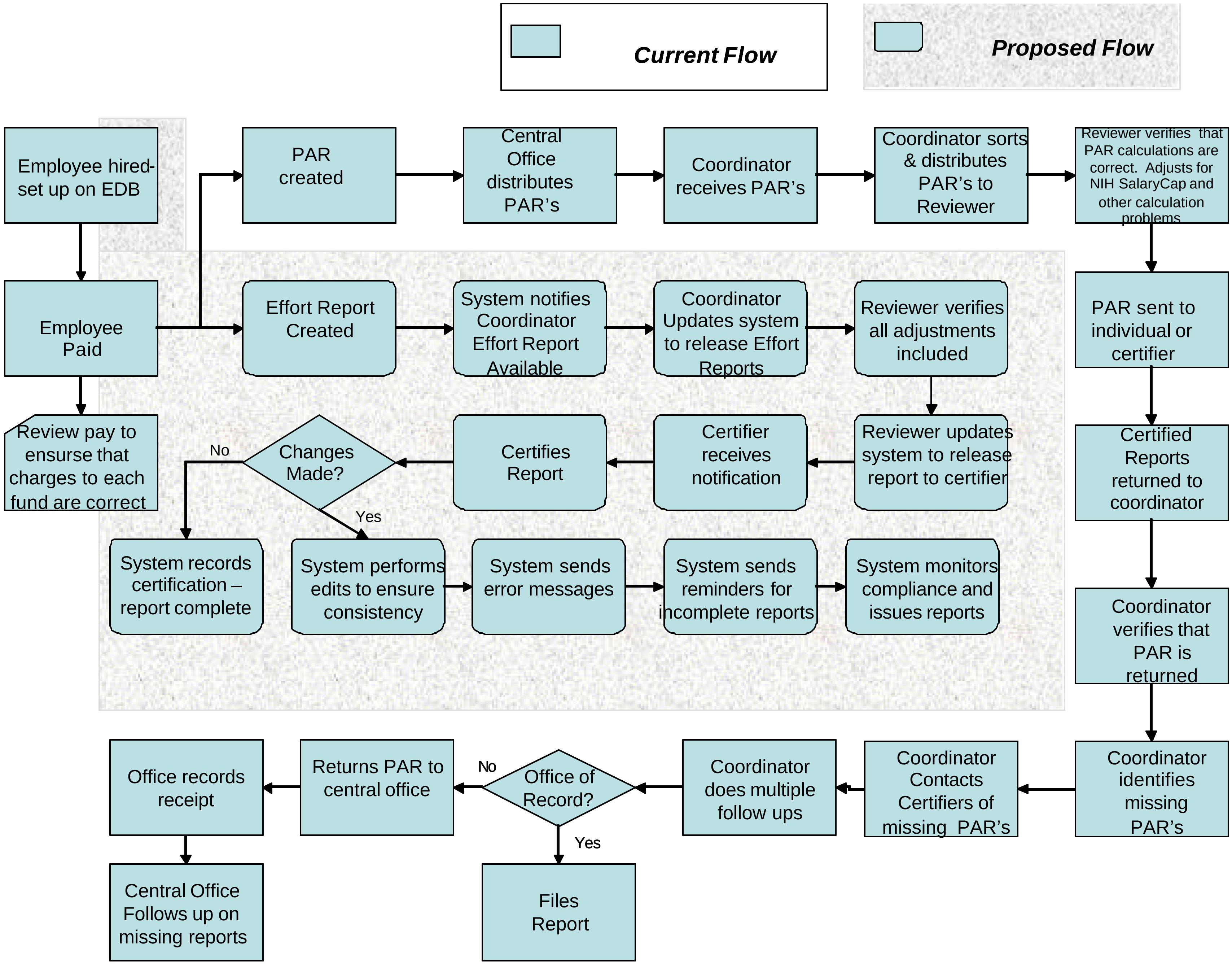
Proposed Process Flow

An Effort Reporting System must gather information from other systems, perform calculations, create and display online effort reports, send notifications, perform edits, monitor for compliance, send reminders, and provide historical records of effort reports as issued, changed, and certified, and allow for reporting from the system as well as compliance reviews. The system must also manage and enforce security and access controls. The system must interface with:

- Payroll/Personnel System (PPS)
- Contract and Grant Systems
- Account Fund Profiles
- Financial Systems
- Cost Sharing Systems
- Local Security Systems
- Local E-mail Systems

Attached is a chart that shows a general representation of the steps involved for both the current and the proposed process flow.

Additional specific details on the Effort Reporting System Requirements follow. Please refer to the attachments at the end of this document for a list of Management Group and Requirements Group participants.


Current Flow
Proposed Flow
Employee hired-set up on EDB
PAR created
Central Office distributes PAR's
Coordinator receives PAR's
Coordinator sorts & distributes PAR's to Reviewer
Reviewer verifies that PAR calculations are correct. Adjusts for NIH SalaryCap and other calculation problems
Employee Paid
Effort Report Created
System notifies Coordinator Effort Report Available
Coordinator Updates system to release Effort Reports
Reviewer verifies all adjustments included
PAR sent to individual or certifier
Review pay to ensure that charges to each fund are correct
No
Changes Made?
Yes
Certifies Report
Certifier receives notification
Reviewer updates system to release report to certifier
Certified Reports returned to coordinator
System records certification – report complete
System performs edits to ensure consistency
System sends error messages
System sends reminders for incomplete reports
System monitors compliance and issues reports
Coordinator verifies that PAR is returned
Office records receipt
Returns PAR to central office
No
Office of Record?
Yes
Coordinator does multiple follow ups
Coordinator Contacts Certifiers of missing PAR's
Coordinator identifies missing PAR's
Central Office Follows up on missing reports
Files Report

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Introduction

Regulations concerning the use of federal funds require that universities certify effort devoted to sponsored projects. The University of California ("University") currently uses the Personnel Activity Report (PAR) system to satisfy the U.S. Office of Management and Budget Circular A-21, *Cost Principles for Educational Institutions* requirements for effort reporting. The system which has been in use since 1982 has become outdated from a technology perspective and lacks the ability to meet changing regulations and conditions. For example, the current PAR system produces paper reports, contains no history or facility to monitor compliance, and does not adequately handle committed cost sharing effort certification or the NIH salary cap which was instituted in 1989. The University intends to streamline the A-21 effort reporting process and address issues that exist within the current PAR system. Towards this end, a review process has been ongoing for several years with an RFP issued in February 2002. Based on limited response, a workgroup of representatives from all campuses was formed to define requirements for an Effort Reporting System. Subsequent to that, a decision was made to move forward with a project to develop a detailed requirements document.

The current project and the committees are made up of representatives from Berkeley, San Francisco, Davis, Los Angeles, and San Diego--the five campuses currently participating in this project. The intent is that the remaining five campuses should be able to adopt any system that is developed or purchased as a result of this project.

Management and Requirements Groups were created with members representing Business & Financial Services; Controllers; Organized Research and Extramural Funds Administration; Information Technology; Audit Services; Budget and Planning; and academic departments and deans' offices. (See attachment A for a list of group members.) With guidance from the Management Group, the Requirements Group has undertaken the task of gathering input from all constituencies and defining detailed requirements for an Effort Reporting System. Meetings have been held at each of the five campuses with representatives from academic departments, deans' offices, and central administrative departments. Please see Section 4 for campus comments.

Section 1: Background

A Note About Terminology

Listed here are five commonly used terms that define the system and are important to mention at the beginning of the document. Additional terms are defined in the Glossary of Terms in Section 10 of this document. The term "PAR" is commonly used in three different ways at UC. To avoid confusion, the following presents the qualified usage of the term "PAR" and "Effort Report" in this document:

PAR System – is shorthand for the existing "Personnel Activity Reporting" system which supports effort reporting currently.

PAR – is shorthand for "Personnel Activity Report", which is the document produced by the PAR System and is currently used for effort certification purposes.

Payroll PAR – is shorthand for the Payroll/Personnel System's "Payroll Audit Record" file containing the details behind actual payments to employees.

Effort Report - is the term used to identify a new and enhanced online report which will serve as a replacement for the current PAR.

Effort Reporting System - is the term used to identify a new system which will be implemented to replace the current PAR system.

These definitions of terms apply throughout this document.

Background of the PAR System

In 1980, the University of California developed the current Personnel Activity Reporting (PAR) system to satisfy the A-21 requirements for effort reporting. For the first few years the system was maintained on a systemwide basis but in 1987 the responsibility for maintenance of the system was turned over to individual campuses. Since that time the system has been modified and has evolved differently at the individual campuses. Some campuses have modified the system little, and use it in much the same way that it was originally designed, while other campuses have developed complete replacement systems. The current system is entirely paper-based, requiring collection of individual signatures as well as printing, routing, collection, and storage of documents for record purposes. The large volume of PAR's and the geographic distribution of faculty members and affected employees make the current paper-based process challenging at best and makes compliance monitoring and enforcement very difficult.

The PAR system uses the After the Fact Activity Records method, gathering payment information from Payroll/Personnel System (PPS) Payroll PAR files, and other information concerning applicable fund ranges from contract and grant and financial systems files. PAR's are produced either by quarter or semester based on the campus academic schedule. Rather than use the percent of time paid as the percent of effort the current PAR system performs a calculation based on gross pay for each fund source. Since employees may be paid at different rates of pay, the resulting calculation of percent of effort is not always easy for individuals to understand and may be incorrect. To add to the difficulty, the PAR system does not handle NIH salary caps which came into being nearly 10 years after the PAR system was developed and does not handle cost sharing on the salary component. Some problems also exist with the way the system handles partial transfers of expense. Some campuses have developed local systems to assist the individual in understanding the calculation of percent of effort. With the exception of the Davis campus, the current PAR system contains no historical information and once a particular PAR is produced the data exists only in the paper copy of the report. Consequently, there is no facility for recording changes, reissuing PAR's, or issuing corrected PAR's.

Interviews with department representatives from five campuses--Berkeley, San Francisco, Davis, Los Angeles, and San Diego--indicate that there are many similarities and many differences in processes, issues, compliance, and timeliness. These differences occur not only by campus but, in large part, are the results of differences in operations between departments. For example, many issues are common to large Health Sciences departments on all campuses, with completely different issues and challenges among small departments at all campuses. In addition there are also campus-specific differences which result either from the nature of the campus or from specific practices. For example: San Francisco faculty are all 11-month or fiscal year appointees so they don't experience the problems associated with 9-month appointments and summer research. Berkeley has no School of Medicine and so does not have issues associated with Health Sciences operations. Some campuses rely completely on the PAR system for certification of effort, including cost sharing, while others rely on cost sharing systems to certify cost sharing effort.

The number of issues and problems with the current PAR system--instances of inaccurate calculations such as those caused by NIH salary cap where the resultant calculated percent of effort on a sponsored project is understated; difficulty in distributing and collecting paper reports; and difficulty monitoring compliance--has led the University to explore alternatives. The University intends to take advantage of current technology and replace the current paper-based system with a modern system containing built in edits, compliance monitoring, and additional functionality. And while there are many differences between campuses and departments, we believe it is possible to define requirements in such a way as to meet the basic needs of all constituencies.

Overview of Current Process

The current Personnel Activity Report or PAR system obtains the majority of its information from the Personnel Payroll System (PPS). Records are selected from PPS and included in the PAR based on fund grouping information, pay category, pay type and Description of Service (DOS) codes.

Within PPS, an employee is hired and set up in the Employee Data Base (EDB) with all relevant information such as dates of employment, title, Description Of Service or DOS code, pay rate, percent of time, fund source, and other associated information. The EDB record also indicates whether a person will be paid automatically based on the information contained in the EDB or whether time will need to be entered into the system for each pay period. Employees who are paid automatically are referred to as "Exception" paid employees, meaning they will get paid as indicated on the EDB and only exceptions to that pay, such as time off without pay, need be entered. Employees whose pay is based on time submitted for each pay period are referred to as "Positive" paid employees, meaning that a positive action must take place for them to be paid.

In addition to entering information into the EDB, departments and central offices enter pay information or transfers of payroll expense into the Payroll Time Reporting (PTR) module of PPS. Transactions are entered for all positive paid employees. Transactions, such as time off without pay or transfers of payroll expense, may also be entered for exception paid employees even though no changes have been made to the EDB record. For each payday a pay compute is run using the payment information automatically generated from the EDB for exception paid employees, and information input into PTR for positive paid employees. Adjustments which were input into PTR for exception paid employees are also included. This compute process produces a Payroll Audit Record--a report/file referred to in this document as a Payroll PAR. The Payroll PAR's are used as the input to the Payroll Expense Distribution process. The Payroll Expense Distribution includes Payroll PAR records for all the pay computes in the month. The Expense Distribution programs perform calculations to charge employee benefits for those benefits based on a percentage of gross, such as workers compensation or unemployment insurance, as well as to distribute the fixed dollar benefit charges such as the University contribution to health insurance. Because the fixed dollar benefits are--by policy--distributed to fund sources based on the entire month's expense, the Expense Distribution process can be run only once a month.

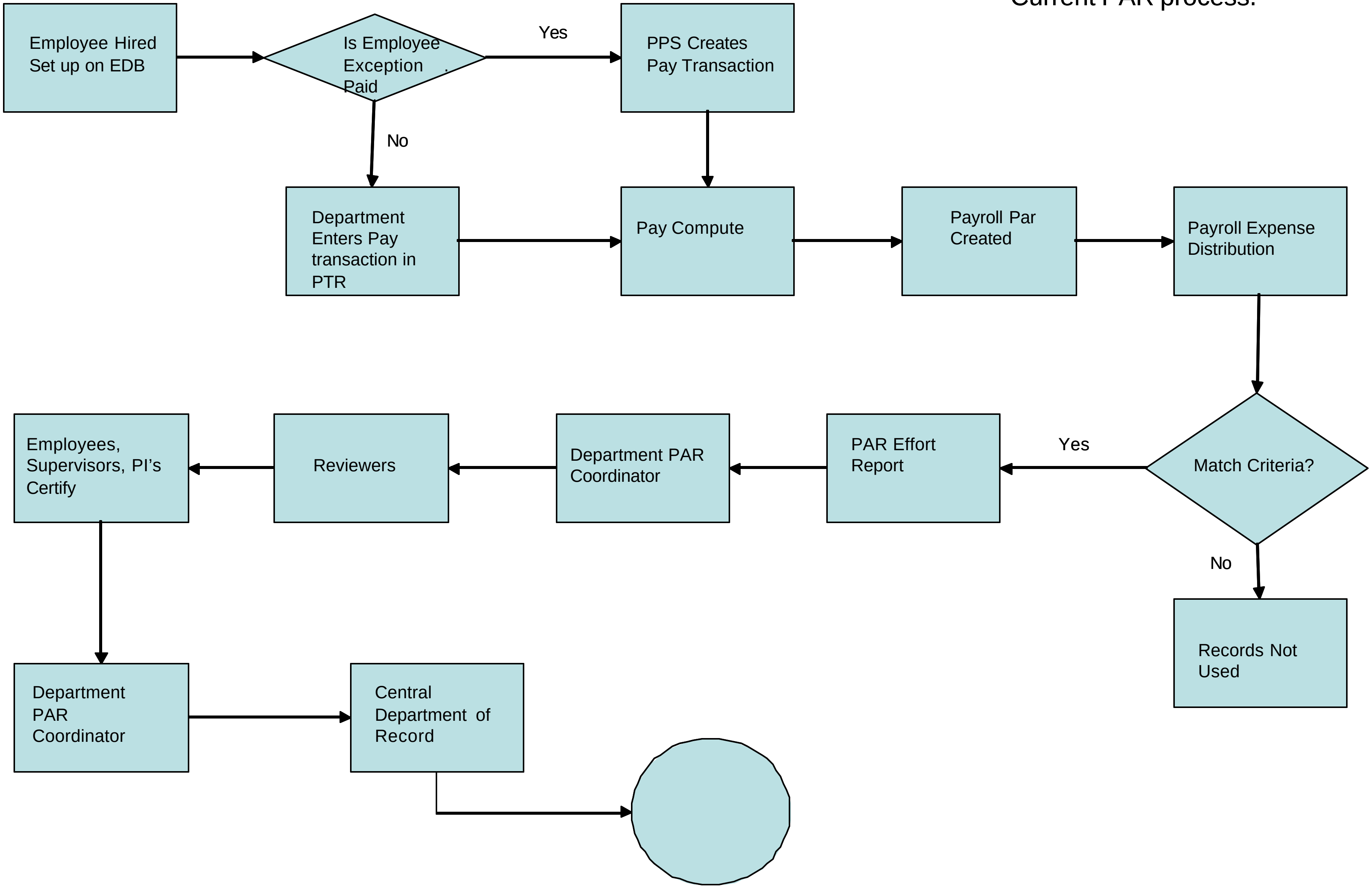
Also contained within PPS are numerous control tables including the DOS table. The DOS table contains attributes which define each DOS code. Two of the attributes--Pay Category and Type Pay--are used to determine which payments are to be included in the PAR effort report. The PAR includes all payments with a pay category of N for normal, and a type pay of 1 through 5. Each payment made to an employee includes a DOS code and that DOS code is then checked against the DOS table to select those which are pay category of N and type pay of 1-5. Below is a list of types of pay:

Type Pay 1	Regular
Type Pay 2	Overtime Straight
Type Pay 3	Overtime Premium
Type Pay 4	Overseas Premium
Type Pay 5	On Call
Type Pay 6	not in use.
Type Pay 7	terminal vacation--Excluded
Type Pay 8	Shift Differential--Excluded
Type Pay 9	by agreement--Excluded

Some payments are either included, excluded, or handled differently, based on the specific DOS code. For example, DOS codes which denote off-quarter research are excluded from the fall PAR and included in the summer PAR. The PAR calculates the percent of effort by summing the gross pay of all the included payments and then dividing each individual gross pay by the total gross pay to arrive at the percent of effort.

The PAR is printed, sent to a central office, and then distributed to the PAR coordinator for each department. While there are differences in how individual departments distribute, review, certify, and follow up on PAR's, there are general patterns. In many cases the PAR coordinator forwards the PAR's to fund managers or administrators with responsibility for monitoring the charges to a particular sponsored project. The fund manager or administrator reviews the PAR to verify that any pending transfers of expense are noted on the report and also verifies that the calculated distribution of effort percentages are correct. Verifying the calculation is especially important for employees paid at more than one rate of pay and for employees whose pay exceeds the NIH salary cap. Because of the number of delayed adjustments and transfers of expense as well as the difficulties with the NIH salary cap calculation, this pre-review by knowledgeable administrators is a crucial factor in ensuring that PAR's are completed and certified correctly. Any corrections or pending transactions are noted on the PAR and the PAR is then forwarded to the person who will be certifying it. In most cases professorial and professional employees or high level staff certify their own PAR's while PAR's for non-professional staff and students are sent either to the Principal Investigators or to the direct supervisor of the employee for certification. Certified PAR's are returned to a central location--in most cases to the PAR coordinator--where they are either filed and maintained as the official record, or forwarded to a central office which serves as the department of record. The method and level of follow-up varies greatly by campus, with some campuses delegating the full responsibility of follow-up to the departments while other campuses scan returned PAR's to verify receipt, and still others review certified amounts and verify completeness. Below is a chart showing the current process flow.

Current PAR process.



Section 2: Project Scope

An effort reporting system should meet all of the reporting requirements of A-21, J.8 by documenting the effort distribution for employees paid from federal and federal-flow-through contracts and grants, as well as for those employees whose salary is part of committed cost sharing. The system must interface with other systems such as PPS and contract and grant management systems to gather information concerning payroll, awards, and cost sharing. It must calculate effort distribution, produce reports, send out notifications and reminders to appropriate parties, perform edits, generate ad hoc and management reports, provide a mechanism for recording corrections, and in general, provide the tools and information necessary to insure that the University is in compliance with regulations. The major categories of requirements listed below are described more fully in the Detail Requirements Section.

- Calculate distribution of effort
- Provide a means of distributing reports and capturing certifications electronically
- Provide a mechanism for processing corrections and recertifying reports
- Provide edits, notifications, and reminders
- Provide ability for department administrators to review reports before they are sent to employees
- Maintain historical information
- Maintain or import security and access controls
- Interface with existing campus systems to gather required information and to pass information to appropriate systems
- Provide flexibility in certain areas such as reporting period
- Provide ad hoc and management reporting capability

Section 3: Issues Considered but Not Included in Requirements

There were a number of processes that were considered for inclusion in this project, which were ultimately excluded from the requirements for various reasons. In some cases, identified functionality provided little payoff given the current level of information available from other systems. An example of this was editing of certified cost sharing against committed cost sharing. In other situations such as the National Institute of Health (NIH) salary cap it made more sense to address the problem in other systems. And there were still other cases where a mandate to ensure compliance through the use of an electronic system precluded the use of paper solutions. Items considered but not included are listed below:

<u>NIH Salary Cap</u> - The NIH salary cap issue has two distinct components or problems. The first problem results when funds (primarily NIH funds) are charged at rates in excess of the NIH salary cap. Since this problem results from incorrect payments it cannot be

addressed by an Effort Reporting System. This problem needs to be addressed either in the Payroll/Personnel System (PPS) or through independent reporting and compliance monitoring. Although this is not part of an Effort Reporting System, work is underway in conjunction with Payroll Managers to develop edits in PPS to enable compliance with the NIH Salary Caps.

The second component of the NIH issue results because of the current methodology for calculating the percent of effort. The proposed method of calculating the percent of effort in a new Effort Reporting System will solve this calculation problem so that the percent of effort appearing on the Effort Report will be a correct calculation based on the percent of time paid.

<u>Automatic Generation of Transfers of Payroll Expense</u> - The question of how to automate transfers of payroll expense is a complicated one. On the one hand is the desire to ease workload and ensure that transactions are processed when required by automating as much as possible. On the other hand is the need to ensure charges are correct; that controls and accountability as well as system security are maintained; and that the specified requirements are not so complex as to make it difficult to understand and maintain the system. There are a number of things to consider:

- It is not possible to fully automate the process and have the system process a transfer of expense without human input. This is true because the percent of effort shown on each effort report is derived from the percent paid for a number of pay periods and even though an employee may change the percent of effort on the effort report, there is no indication as to which particular pay period the change applies. If an employee changes the amount charged to a particular sponsored project there is always an offset amount noted to another fund in order to make the effort report total 100%, and even though the fund number of this offset is noted, the balance of the full accounting unit such as account number and sub is not noted so there would be insufficient information for the system to automatically transfer the expense.
- The information regarding payments to employees is very sensitive and at all campuses is protected by strict access restrictions.
- The payroll system requires a transfer of expense transaction to contain certain information and be formatted in a specific way, which in turn requires access to files such as the payroll expense distribution files which are restricted. The payroll system also requires that anyone processing a transaction be authorized in the payroll system for the particular type of transaction they are submitting.
- Transfers of payroll expense can be initiated only after the expense to be transferred appears as part of the monthly expense distribution.
- In many cases, the person who determines that a transfer of payroll expense is needed is not the person who is authorized to process the transaction.

- It would be extremely difficult to ensure that transactions were not duplicated because there could already be transactions in the transaction holding file.
- It appears as though the number of transfers required as a result of review of the effort report is quite small, with estimates from some campuses as low as 1%.
- Discussions with departments at the five campuses indicate that transactions are seldom generated as a result of review of the PAR. Rather, transactions are already identified and in process by the time the PAR is issued or it may be impossible to process transactions at this time because awards may not have been received and fund numbers established.

Rather than include a requirement for automatic transfers of expense the requirements document specifies ways to facilitate processing of transfers by providing access from the effort report screen directly to another screen on which a transfer of expense can be initiated or a notification sent to another authorized employee requesting that a transfer of expense be initiated. The system must recognize reports that have been changed, in order to ensure that appropriate transfers are completed and so that edits can be built in to the system which will periodically (perhaps monthly) verify whether the certified effort is consistent with the actual expense charged.

<u>Hard Copy of Effort Reports</u> - In order to satisfy other requirements the system must be fully electronic. Providing the ability to print reports as part of the certification process (i.e. to enable a user to certify on paper) would undermine the integrity of the data contained in the system and would invalidate a number of edits and reminders. The system should allow for printing of Completed and Certified Effort Reports for the sole purpose of reporting to government agencies. Based on guidance from the Management Group the system review and certification process will be 100% electronic.

<u>Alternatives to After the Fact Reporting</u> - OMB Circular A-21 describes three *Examples* of Acceptable Methods of Payroll Distribution. The Requirements Group explored the possibility of switching from After the Fact to Plan Confirmation method of certifying effort. With the Plan Confirmation Method the certification is based on budgeted, planned, or assigned work activity rather than on actual pay. That would mean that the effort certification would be based on the EDB record for the employee and would require that an effort report be produced each time a change was made to the employee's EDB record or at least once a year whichever is more frequent. As a result, PAR's would be produced sporadically and depending on the timing of processing of the change, may not be tied to any regular period of time such as month, quarter, semester, etc. This method also assumes that the employee is paid on an exception basis, i.e. paid automatically by the system based on the appointment/distribution information, and will have no transfers of expense or retroactive pay adjustments processed without reflecting those changes on the EDB. For some employees the number of PAR's generated using

this method would be excessive and confusing. It also means that employees who are paid on positive time reporting could not use this method. As a result, either all employees would need to be paid on an exception or automatic basis, or two effort reporting methods would need to be employed.

The Requirements Group determined that the Plan Confirmation method would not be practical. The group proposes to use the After the Fact Reporting method with some variation as approved by our cognizant agency. For example, the University may request approval to report annually for Professorial and Professional employees.

<u>Use of time sheets in lieu of Effort Report</u> - A-21 allows for the use of timesheets as a method of certifying effort, and although the use of timesheets might eliminate some steps for departments, there would be no electronic record of certifications and no way to deal with edits, reminders, or cost sharing. Also, since many employees such as faculty members do not complete timesheets, an effort report would still be required for those employees. Using two methods would be confusing especially since there is no indication within the system of which employees complete timesheets and which don't, making it difficult to determine which employees would be required to complete an effort report. The Management Group has determined that time sheets are not a viable option.

<u>Editing of Cost Sharing Information</u>

In order for an effort reporting system to compare certified cost sharing against committed cost sharing, both pieces of information must be available with an appropriate level of granularity. Most campuses do not have fully functioning cost sharing systems or systems in which cost sharing commitments are stored on a post award basis, by project, by employee, by period, for all employees identified with cost sharing commitments. While certified cost sharing effort could be entered by the employee directly into the effort report, no edits can be performed to ensure that employees are meeting the cost sharing commitment without the committed cost sharing data to edit against. Even for campuses that do have detailed cost sharing commitments there is no record of how much cost sharing effort has been certified or performed to date. Also complicating the issue are the various project periods, length, and extensions, and how they relate to effort reporting periods. It would be difficult to define edits which would work for even one or two campuses at this point in time, given the information which is available at individual campuses and the methodologies currently used by campuses to document cost sharing. It would require a significant amount of effort and expense to define and program edits which most campuses would not use at this time, and it is quite possible that by the time campuses had information against which to edit, the thinking and requirements would have changed. Based on these considerations, editing on cost sharing information will not be performed by the effort reporting system. Instead, the system will simply provide a mechanism for importing or entering certified cost sharing information into the effort reporting system. If a campus is prepared to compare certified cost sharing effort to committed cost sharing effort, those edits could be performed outside of the effort reporting system.

Inclusion of External Payments such as Veteran's Administration (VA) - Although there is a relationship between University compensation and payments made to University faculty by outside institutions such as the VA, there is currently no requirement to include that compensation in the effort reporting calculations and certifications. The information in many cases is not available to the University and even when it is available it would require translation in order to put it into a useable format. Including external payments in the University system would complicate the process since there would be reliance on data over which the University has no control, and would make system development more complex.

Section 4: Campus Comments

Meetings with department representatives from each of the five campuses described some general themes and concerns. They identified the following issues with the current system:

- Problems exist with the current calculations, especially as relates to NIH salary cap and off-quarter research.
- Calculations are often difficult to understand.
- Transfers of Expense are often times not reflected in the PAR's because of processing delays.
- Review and certification of PAR's for employees who work in more than one department is problematic, due in large part to the fact that each department has access only to their portion of the employee record and not a full view of the information that went into the calculations. Coordination of certification of reports between multiple departments is also problematic.
- Problems with calculations and timeliness of transfers of expense make it difficult for Principal Investigators and others certifying PAR's to understand whether the effort shown on the report is correct.
- Requirements for certification of Cost Sharing are not clear.
- Those responsible for certifying PAR's do not always understand the reason for the reports or the importance of completing the certification in a timely manner.

Department representatives also expressed the following views concerning a new system.

- System must address the calculation problem with NIH salary cap and off-quarter research.
- System should provide access to detail to show how calculations were done.

- Complete records for employees working in multiple departments should be available to each of those departments.
- Departments are understandably concerned about workload and have suggested that the system should be easy to maintain and not overly complicated.
- A mechanism to allow departments to review PAR's both *before* and *after* certification will be essential in a new system.
- Departments have concerns about whether all employees who currently certify PAR's will be willing to sign on to an electronic system to complete certification. They expressed a strong opinion that a coordinated and balanced communication strategy is essential to the success of an online system.
- The PAR coordinator concept is an effective means of distributing reports and should be continued in an electronic system as well.
- Notifications when reports are available as well as reminders when reports have not been completed will be helpful.

Section 5: Proposed Process Flow

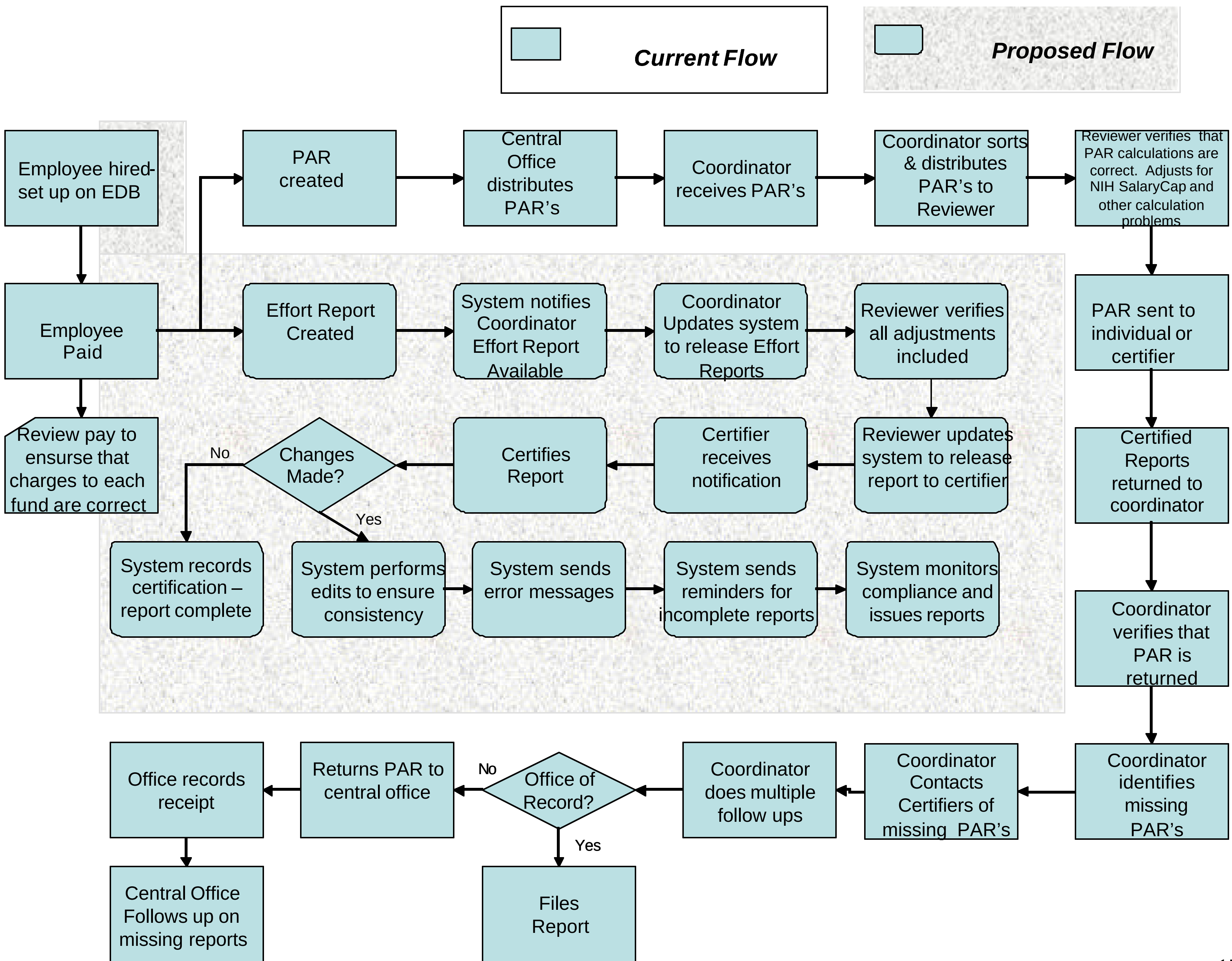
An Effort Reporting System must gather information from other systems, perform calculations, create and display online effort reports, send notifications, perform edits, monitor for compliance, send reminders, and provide historical records of effort reports as issued, changed, and certified, and allow for reporting from the system as well as compliance reviews. The system must also manage and enforce security and access controls. The system must interface with:

- Payroll/Personnel System (PPS)
- Contract and Grant Systems
- Account Fund Profiles
- Financial Systems
- Cost Sharing Systems
- Local Security Systems
- Local E-mail Systems

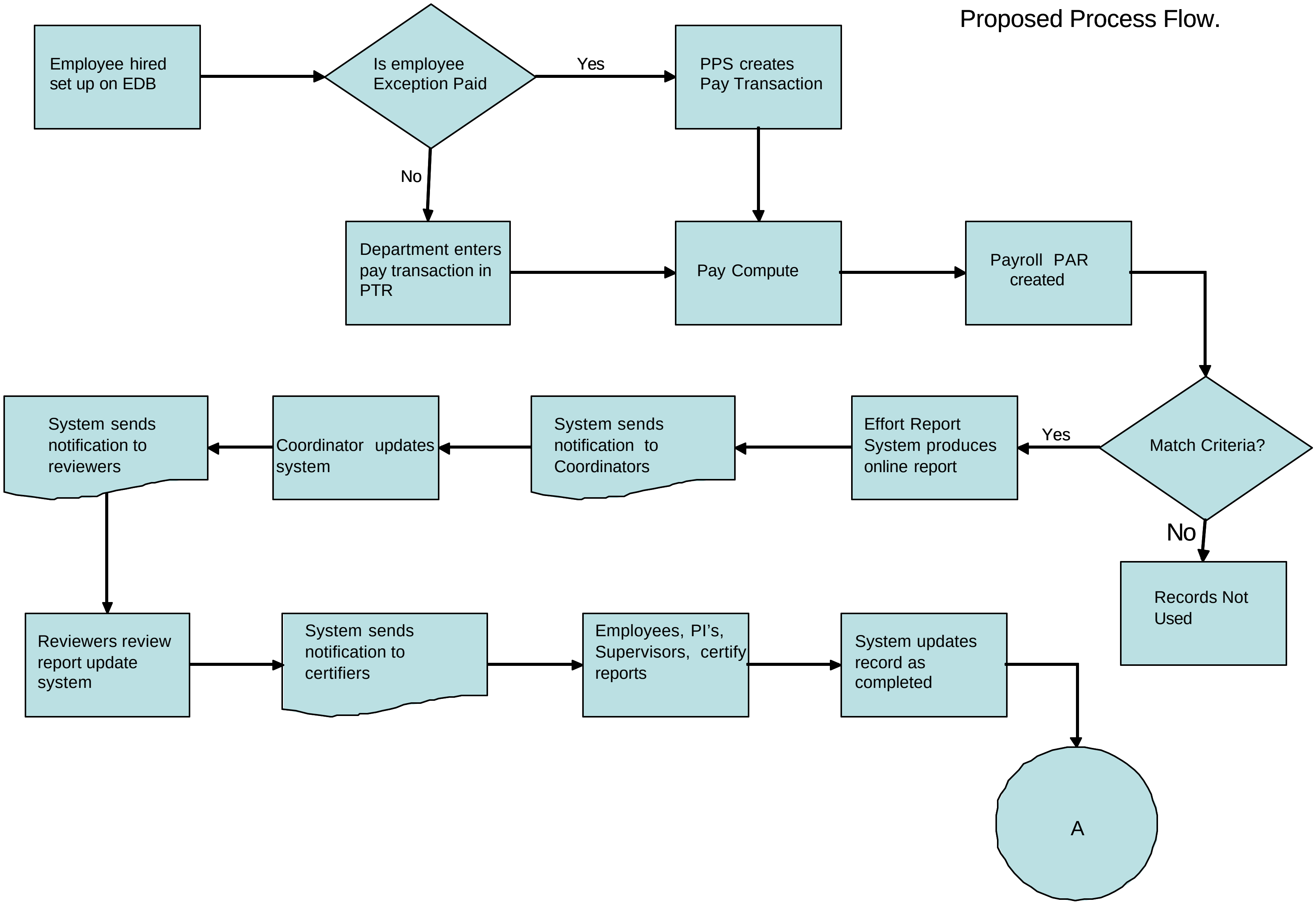
There are five examples of process flow depicted below.

1. The first chart shows a general representation of the steps involved for both the current and the proposed process flow.
2. Proposed Process Flow for Effort Report which is certified with no changes.
3. Proposed Process Flow for Effort Report which is originally certified with no changes but later reissued because of transfers of expense.
4. Proposed Process Flow for Effort Report which was changed by the Reviewer before being certified.

5. Proposed Process Flow for Effort Report for which department has entered a transfer of expense because the original effort report was changed by the Reviewer before being certified.

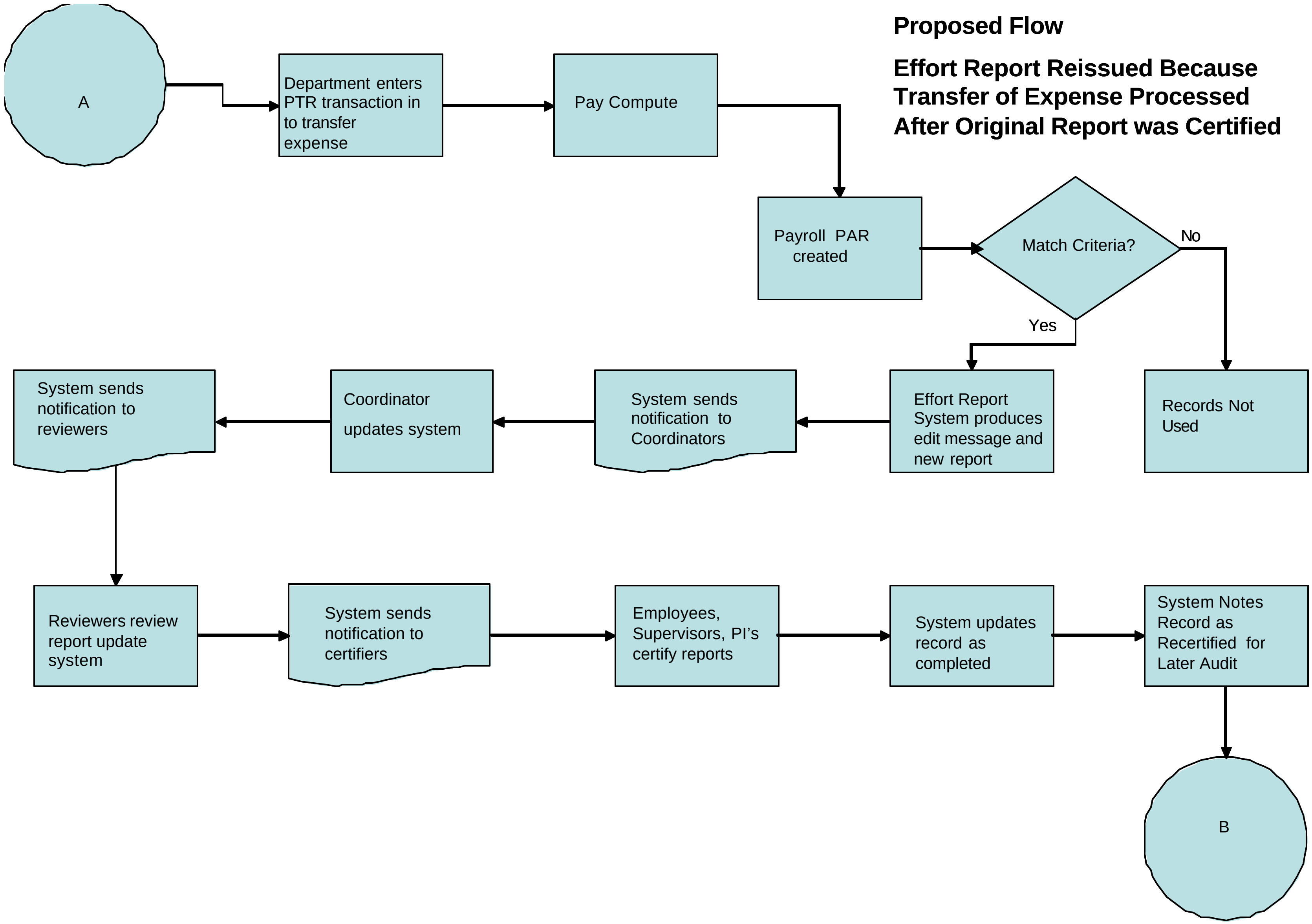

Current Flow
Proposed Flow
Employee hired-set up on EDB
PAR created
Central Office distributes PAR's
Coordinator receives PAR's
Coordinator sorts & distributes PAR's to Reviewer
Reviewer verifies that PAR calculations are correct. Adjusts for NIH SalaryCap and other calculation problems
Employee Paid
Effort Report Created
System notifies Coordinator Effort Report Available
Coordinator Updates system to release Effort Reports
Reviewer verifies all adjustments included
PAR sent to individual or certifier
Review pay to ensure that charges to each fund are correct
No
Changes Made?
Yes
Certifies Report
Certifier receives notification
Reviewer updates system to release report to certifier
Certified Reports returned to coordinator
System records certification – report complete
System performs edits to ensure consistency
System sends error messages
System sends reminders for incomplete reports
System monitors compliance and issues reports
Coordinator verifies that PAR is returned
Office records receipt
Returns PAR to central office
No
Office of Record?
Yes
Coordinator does multiple follow ups
Coordinator Contacts Certifiers of missing PAR's
Coordinator identifies missing PAR's
Central Office Follows up on missing reports
Files Report

Proposed Process Flow.



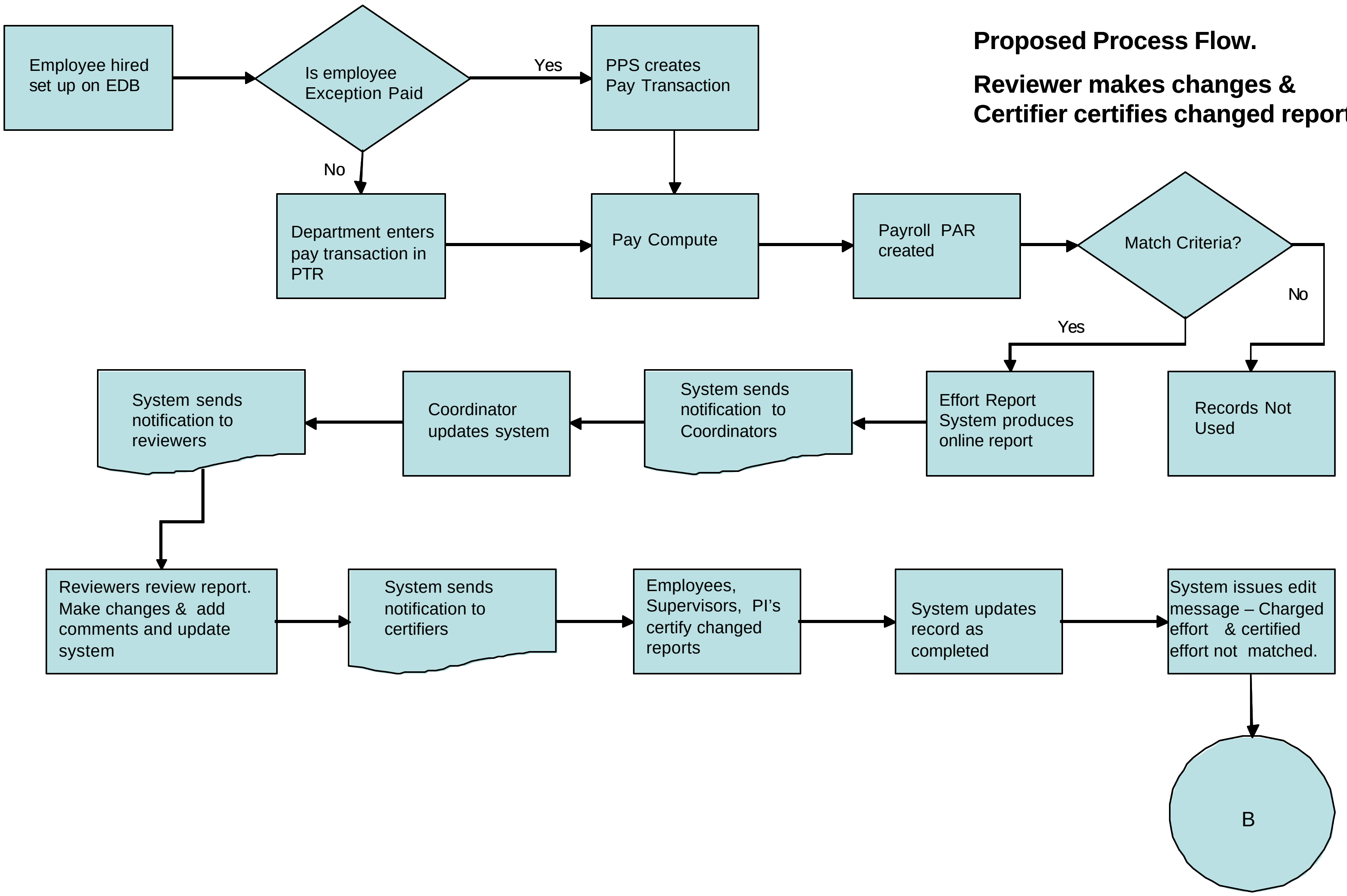
Proposed Flow

Effort Report Reissued Because Transfer of Expense Processed After Original Report was Certified



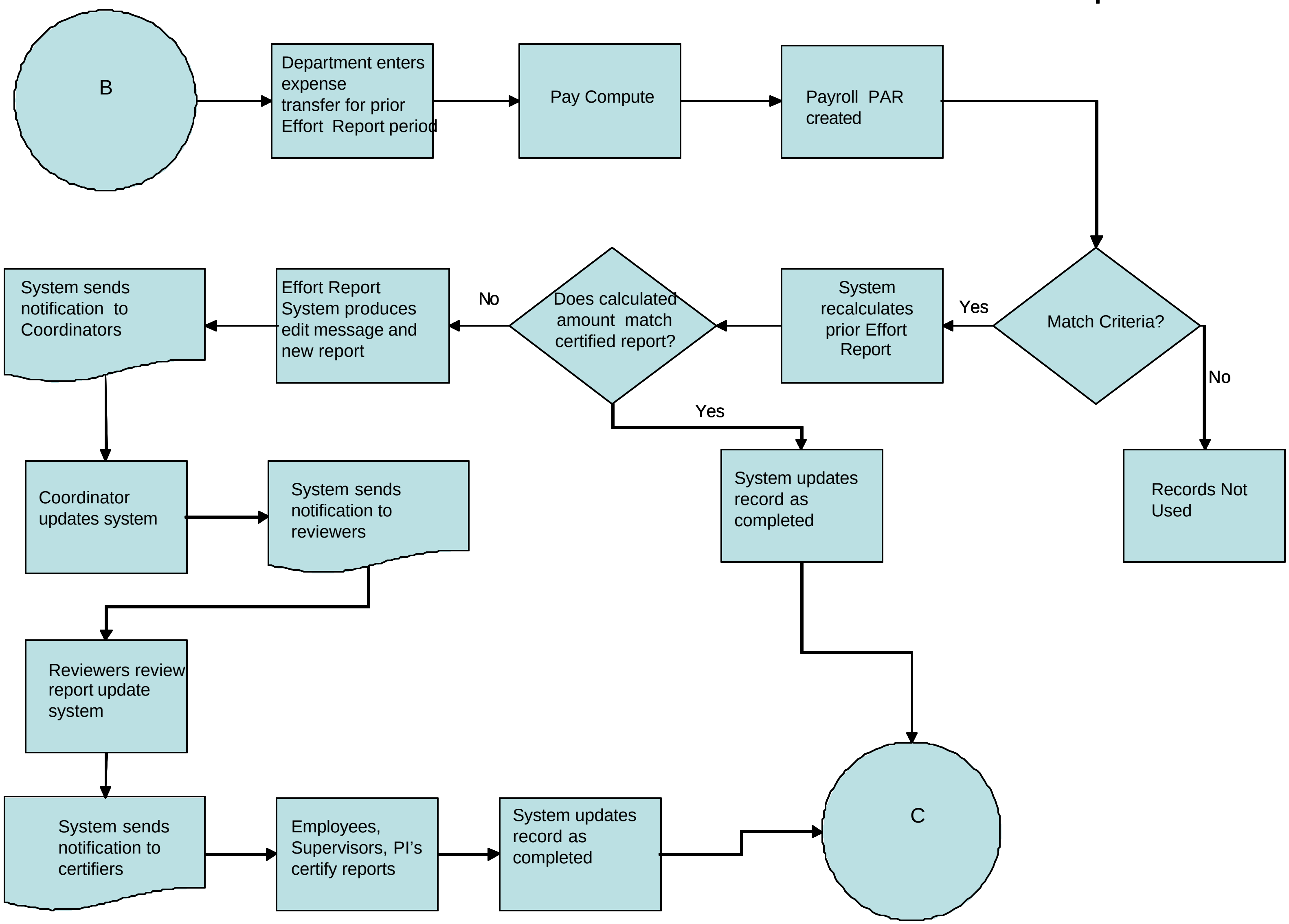
Proposed Process Flow.

Reviewer makes changes & Certifier certifies changed report



Proposed Flow

Effort Report Reissued



Section 6: Detailed Requirements

In order to satisfy requirements such as editing, validation, and monitoring of effort reporting compliance, information must be stored in an up-to-date and systematic fashion. The system must handle reporting, distribution, editing, certification, and follow-up electronically. No requirements exist to provide distribution, editing, certification, or central maintenance of paper records. The system must maintain historical information which will allow not only for review of past reports but provide for modification, reissuance, and recertification of individual effort reports, as well as compliance monitoring, report production, etc. The length of time that historical information is maintained will be determined by campus and/or agreed upon on a systemwide basis and will probably be for a minimum of five years.

Effort Reporting Model

An effort reporting model is based on three major components.

1. Reporting Period - Common reporting periods are month, academic period such as quarter or semester, or annual. In determining the best reporting period, a campus would consider the balance between certifying effort on a basis which is frequent enough to tie the effort to the reporting schedule, and avoiding the unnecessary burden of reporting effort too frequently. Since campuses have different structures, issues, and demands, the system must provide for monthly, academic period or annual reporting, possibly with different reporting periods for different types of employees. For example, a campus might choose an annual reporting period for professorial and professional employees and a quarterly reporting period for non-professional employees. The system must also provide the ability to include different periods of time based on appointment type, e.g., for staff and 11-month appointees a quarterly effort report would include three months while effort reports for 9-month employees would include 4 months per quarter or 6 months per semester. The system also needs to be able to issue a separate off-quarter research effort report for 9-month faculty performing research during their off-quarter. While the vast majority of off-quarter research is currently performed in the summer, changes in academic periods or addition of full summer quarters could result in off-quarter research being performed throughout the year. The system must provide a mechanism for separating these off-quarter payments from regular academic salary.
2. Distribution of Salaries and Wages Basis - Distribution of salaries and wages are based on actual payments. Currently the payment information comes from the Payroll PAR files. Since the Payroll PAR records are available after each payroll compute a campus could choose to run additional compute cycles if there was a critical need to include transfers of payroll expense which were not processed in the regular cycles.

3. Method of Calculating Percent of Effort - Percent of effort is currently calculated by doing a proration of the gross pay. Use of the actual percent of time paid is a more straightforward method and so the system should base the calculation on the percent of time paid rather than on the gross pay. The percent of time (or hours) paid is either generated by the system or input by departments and is part of each individual pay transactions which also includes the fund source to be charged for that particular percent of time. The pay transaction contains all needed information (i.e. percent time paid and fund number) for calculating the percent of effort and attributing it to the appropriate fund source. Within the payroll compute process the system uses the percent of time or hours to multiply the pay rate to arrive at the gross paid amount. The system will need to convert hours to percent for employees paid on an hourly basis and will need to exclude Retroactive Adjustments of payrate (RA transactions with a RA Indicator of A) and overtime premium (type pay 3) from the calculation. For employees who were paid 100% time, the percent of effort and the percent of pay would be equal. Since all effort reports must total 100%, the system should prorate the percent of time between funds if the employee was paid for other than 100% time. Some employees may actually work less than full time and 9-month faculty may be paid for more than 100% time while performing off-quarter research. In those cases the system should prorate the percent so that the effort report would show 100% effort. For example:

   Employee A paid 50% time for the period

25%	/	50%	=	50%	sponsored project
25%	/	50%	=	50%	non sponsored project
			=	100%	Total Effort

   Employee A paid 110% time for the period (9-month faculty performing Off-Quarter Research)

75%	/	110%	=	68%	sponsored project #1
35%	/	110%	=	32%	sponsored project #2
			=	100%	Total Effort

   Employee C paid 100% time for the period

50%	/	100%	=	50%	sponsored project
50%	/	100%	=	50%	non sponsored project
			=	100%	Total Effort

In addition to being more understandable a calculation based on percent of time paid eliminates the calculation problems for employees paid in excess of the NIH salary cap. Since percent rather than gross is used, the calculated percent of effort attributable to sponsored projects will not be erroneously reduced as currently happens. Below is an example of an employee who is being paid 50% time from a sponsored project and 50%

from a non sponsored project and is to receive a salary of $20,000 per month, subject to a $10,000 salary cap. Their pay records would show:

50%	x	$10,000	$ 5,000	sponsored project
50%	x	$20,000	$10,000	non sponsored project
by agreement		$ 5,000	$ 5,000	non sponsored project
Total payment			$20,000	

At some campuses the pay record could look like this:

50%	x	$10,000	$ 5,000	sponsored project
50%	x	$30,000	$15,000	non sponsored project
Total payment			$20,000	

Under the current PAR calculation, the effort calculated on the sponsored project would be changed from 50% to only 25% based on the following calculation.

$5,000/$20,000	=	25%	sponsored project
$10,000/$20,000	=	50%	non sponsored project
$5,000/$20,000	=	25%	non sponsored project
or			
$5,000/$20,000	=	25%	sponsored project
$15,000/$20,000	=	75%	non sponsored project

Use of the new methodology which substitutes the percent for the gross in the calculation would result in the following calculation:

50%	/	100%	=50%	sponsored project
50%	/	100%	=50%	non sponsored project

This calculation method eliminates the NIH salary cap problem as it applies to effort reporting.

<u>Effort Certification Process</u>

Described below are ways in which an effort reporting system could manage, edit, and record certifications and changes made to the existing effort report. In the context of this section the term "employee" can be interpreted to mean the individual for whom the report is issued, or any responsible official authorized to certify the effort report.

Scenario One -Employee reviews effort report and determines that the effort charged to the sponsored project is correct and certifies the report. Effort report is recorded in the system as certified. System verifies that there were no changes made to the effort report and therefore the report and the certified effort are in agreement.

Scenario Two - Employee reviews effort report and determines that the effort charged to the sponsored project is within 4% of actual effort, and because the difference is within the +/- 5% tolerance, the user certifies the report as is. Effort report is recorded in the system as certified.[2]

Scenario Three - Employee reviews effort report and determines that the effort charged to the sponsored project is incorrect. The Reviewer or Effort Report Coordinator later determines that a transfer of payroll expense needs to be processed. Employee notes changes on the effort report and certifies report. Effort report is recorded in the system as certified. System verifies that changes were made to the effort report and therefore the report as issued and the certified effort are not in agreement. System issues a warning message that action is required. Transfer of Expense is processed and the system creates a new effort report. It compares the effort shown on the new effort report with the effort certified on the original changed report. If they agree, no re-certification is required.

By granting a Reviewer or Certifier function, the department is authorizing that Reviewer or Certifier to review or certify Effort Reports for more than one person. Similarly, a department authorizing more than one employee for roles such as Review or Certify, is authorizing more than one person to review or certify any particular Effort Report. If multiple Reviewers or Certifiers are authorized for a department, any one of them could release or certify the report, at which time the system would consider the action complete and would not require action from the other Reviewers or Certifiers. Once completed the report should remain available online so that anyone with access could view the report for as long as historical report information is maintained. Initial notices should go to the individual designated as the department coordinator. An individual or PI would not receive notification until the report was ready for their action.

Roles Defined

Within an Effort Reporting system, access to reports and authority to carry out various actions will be defined by roles. These roles will be assigned by departments and will be granted based on the department code as translated from the full accounting unit. For example, an employee with the role of "View" will be able to see reports only for

[2] Based on U.S. Office of Management and Budget Circular A-21, *Cost Principles for Higher Educational Institution,* effort may be certified within a tolerance. The exact A-21 text reads: *In the use of any methods for apportioning salaries, it is recognized that, in an academic setting, teaching, research, service, and administration are often inextricably intermingled. A precise assessment of factors that contribute to costs is not always feasible, nor is it expected. Reliance, therefore, is placed on estimates in which a degree of tolerance is appropriate.* The University has determined that tolerance to be +/- 5%. The intent is to recognize that an employee may not know the exact amount of effort devoted to the sponsored project. If, however, the employee notes a change on the Effort Report even though the change is within +/- 5%, the assumption will be that the employee knows the exact amount and a transfer of expense to adjust the charge to the sponsored project will be required.

employees within the department that granted the role. In addition to designating roles by department the system must also provide the ability to designate full campus access to the central units to allow them to view reports for all departments. Roles have been defined as follows:

- View - User can view records but cannot input comments or changes or certify the report.
- Review - User can view records as well as make changes and add comments. A Reviewer cannot certify a report. A Reviewer can view a report before or after it is certified, but can make changes or add comments only before certification.
- Certifier - User can view records, make changes, add comments and certify reports.
- Effort Report Coordinator - The person who will receive notifications when effort reports are available, and who will receive the first reminder if reports are not certified by the deadline.

While each of these roles represents certain authorities, a person could be assigned more than one role. For example, an Effort Report Coordinator could also be a Reviewer or a Certifier if the department chooses to assign them those responsibilities. Departments would simply grant multiple roles to individuals who are acting in more than one capacity concerning the effort reports.

Designating Who can Certify for Others

Within the Security and Access Control module department administrators will be able to designate who will certify for others. This designation will be at a department level with perhaps a lower designation to fund number or sponsored project. This means that there will not be a one to one designation for each effort report. Rather, a department could designate several employees who could certify for others and it is up to the individual to know which effort reports they should certify. For non-professional staff titles this would likely be a direct supervisor or someone with first-hand knowledge of the work performed. The system should allow for a distinction between professorial and professional staff and non-professional staff. This distinction could be accomplished through interpretation of the title code contained in individual pay records. This distinction would allow a department to indicate that all effort reports for professorial and professional staff should be certified by the individual named in the report while reports for non-professionals should be certified by those authorized to certify for the department or fund number.

Notification of Report Availability

A notification module will need to provide an email notification to persons designated within the system and defined by roles. The notice would contain a link to the effort reporting system and the employee could click the link and log onto the effort reporting system to view the reports. The system should provide for multiple levels of notification so that an Effort Report Coordinator can indicate to the system that the report is ready for the Reviewer at which point the Reviewer would receive a notification, and once the Reviewer indicates that the report is ready for certification the employee or the Certifier would receive a notification. These notifications will be controlled within the system by two mechanisms. The first mechanism would be contained within the security and access control module and would be part of the initial system setup. On screens within that module, department administrators could designate the Effort Report Coordinator, the Reviewers, and Certifiers for each department. Reviewer and Certifier roles could be further specified to the fund number or sponsored project level. The second mechanism would be contained within the Effort Reporting System and would allow a Coordinator or Reviewer to indicate to the system that they had finished with their review by checking a box and updating the system. The system update would act as a trigger for the next level notification. At that point the system would once again refer to the security and access control module to determine the next person to receive a notification. Coordinators and Reviewers should be able to indicate either by individual or by group that a report is ready for the next step in the process. For example, a Reviewer could access the Effort Reporting System, look at one individual report and then indicate that that one report was ready, or they could select a grouping of reports for a particular Principal Investigator, and once their review is complete they could indicate to the system that all effort reports for a particular Principal Investigator were ready for certification. Once the reports are available, anyone who has access to view, update, or certify the reports based on roles established within the security and access control module, could access the reports. The notification process is simply an aid to let users know when the reports are ready and available to them.

Accessing Reports

The system should provide access to effort reports using a number of views or groupings. Reports should be accessible by individual, fund number or sponsored project, department code, Effort Reporting Coordinator, or Principal Investigator. A user signing on to the system should be presented with a menu of format or grouping choices. When a view is selected, the user would be asked for additional information such as department number or fund number. The system should also provide drop down lists of sponsored projects, Coordinators, Principal Investigators, and individual employee numbers and names, so that the system won't rely on users to enter the information correctly. When a user selects a group of reports, e.g. by Principal Investigator, the user should be able to scroll through reports or access a list of all included reports and be able to select report to review by individual. In order to facilitate access to reports and to support the drop down menus, the system should provide the ability for users to set up and maintain User Profiles, either by department or individual or a combination of both. The system should allow profiles to be set up for each department and provide screens that a central department administrator could use to enter all sponsored projects, fund #'s, PI's, and individuals within the department. This department profile could serve as a default profile which individuals could add to or delete from for their own personal profile. In cases where the information is available in a systematic way, e.g. individuals within the department, the system should automatically build the lists in the profile.

Recording Changes and Certifying Reports

Each person who has update authority, including individuals who are certifying their own effort report, should be able to make changes to the effort report. In order to maintain controls and the integrity of the system these changes should be recorded in separate fields rather than overlaying system generated information. Anyone with the authority to change records should also be able to add comments which will become part of the effort report record. The system should require that comments be entered if the changes are made to the calculated percent of effort for charges to sponsored projects. The system should have the ability to retain multiple comments (a reasonable number might be three or four) which are identified with the logon of the person entering the comments. Since multiple users may access individual records the system must provide for limiting *update* access to one user at a time. Because of these record contention issues the system will not save any changes initiated but not completed prior to exiting the system.

The system needs to provide for multiple certifications for employees who are paid from more than one sponsored project and must provide a method of identifying to which sponsored project the certification applies. If an employee certifies his/her own report multiple certifications are not required even though charges are made to multiple sponsored projects. If, however, a person other than the employee named in the Effort Report certifies the Effort Report, multiple certifications may be required if the sponsored projects are in different departments and/or are the responsibility of multiple Principal Investigators.

Exceptional Inclusion and Generation of Effort Reports

As with the current PAR system an Effort Reporting system will gather information to be included in the effort report by interfacing with various campus systems. The information for calculating the percent of effort based on the hours or percent of time paid and charged to a sponsored project will come from PPS and will include records for all employees for whom there was payment activity on any federally funded projects. There is, however, a need to include payments for employees who received no pay from a sponsored project, if that employee’s salary from other sources was pledged as cost sharing on a project. The system must, therefore, provide the ability to designate, by person, employees to be included in effort reporting. The system should provide for importing information from other systems and provide screens to add, change or delete this information. The information needed includes name, employee ID, committed cost sharing percent and the account/fund of the sponsored project to which the cost sharing is committed, and the time period of the report. The system also needs to allow for multiple entries per person for employees with committed cost sharing on more than one project. This will allow for employees who receive no pay from contract and grant fund sources to be included in effort reporting for the purpose of certifying cost sharing.

The system must also provide the ability to produce an effort report on demand and to indicate the employee for whom the report is needed. This functionality is needed for two specific situations.

- It is needed for cases where an employee has been erroneously excluded from effort reporting, so that once the problem is discovered, an administrator could request that a report be created.
- The second need for this feature is for terminating employees. When employees terminate before the effort report is issued it is difficult if not impossible to obtain certification from the individual after the termination date. It would be helpful if a department could request that an effort report be issued for the period or the portion of the period for which the employee worked so that it could be certified prior to their departure. This need to create an effort report for a partial period would require that pay records be imported into the effort reporting system as they become available rather than waiting for the close of a reporting period. For example, if an 11-month faculty member is terminating in mid-November, the department could request that an effort report be created for the fall quarter even though the fall quarter effort reporting period would not close until after the end of December.

Reissuance of Effort Reports

When retroactive changes are processed after an effort report has been issued, the system will need to recalculate the effort for that reporting period and compare it to the original effort report as produced by the system or if changes were made, as certified by the employee (this would include any changes made by the employee) and if the percent of effort is different a new effort report would need to be generated with the appropriate notifications and distribution. Since the Effort Reporting system gets the payroll information from the Payroll PAR, the revised reports could be reissued based on the frequency of that input.

Cost Sharing

An Effort Reporting System should include cost sharing commitments and certification. The ER system should allow for committed cost sharing information to be imported from other campus systems and displayed on the individual effort reports, where employees can either certify the amounts if correct, or make corrections to the amounts if needed.

The system should allow for changing the imported cost sharing information and in the event that a particular campus has no committed cost sharing information to import, the ER system should allow for the entry of the cost sharing information by the employee. The ER system should allow for export of cost sharing information to other local cost sharing systems. Cost sharing information should be distinguished from effort for which expenditures were charged to the sponsored project, so that an employee is certifying each distinct component thereby avoiding the perceived need for a payroll adjustment as noted below.

Cost sharing information should be displayed as a separate item on the Effort Report and should have its own sub-totals. A standard Effort Report would show a sub-total of effort charged to sponsored projects, a sub-total of effort charged to non-sponsored projects, and a sub-total of cost sharing effort. The calculated percent of effort should be based on the percent of time paid and should not be adjusted by the system based on imported cost sharing commitment. Rather, a credit or negative percent item should be created and included in the non-sponsored fund section to "offset" the amount of committed cost sharing imported from another system. Please see sample report on the following page. The result will be an Effort Report which shows 100% effort, but the source of the cost sharing offset will not be attributed to a specific non-sponsored fund. See example below. If the offset for cost sharing needs to be indicated to the specific non-sponsored fund, it will be up to the person certifying the report to show the credit percent of effort on that fund which is the source of the cost sharing.

The offset to the cost sharing effort percent is made against the percent paid from non-sponsored funds. The system should allow this offset to be made either against specific non-sponsored funds or against the sub-total of non-sponsored fund effort. The system should show the offset as a credit entry identified as cost sharing offset. There may be a requirement to reflect cost sharing provided by non-federal sponsored projects a little differently, but most likely this could be handled as a training issue and would not create additional system requirements.

Report Layout

The report should provide information to the user in a format similar to that shown below. Separate figures should be provided for effort calculated from payroll percent of time paid; cost sharing percent, either as imported or entered; total percent of effort per fund source, as calculated and as entered; full project or fund name per fund source; segregation of numbers for sponsored and non-sponsored categories and cost sharing categories.

The first illustration below shows and example of an Effort Report for an employee with no cost sharing. In this example, the report as issued is correct and the employee can simply certify it.

The second illustration shows an example of an Effort Report for an employee with cost sharing, with cost sharing information being imported from another system. The employee also adds 5% cost sharing for the third sponsored project listed.

University of California, xxxxxxx
Reporting Period: xxxxxxx -- xxxxxxxxxx
Certified Effort Report

Name
Employee ID
Division, Department, Sub-Department

Activities		**Payroll % time**	**Adjusted %**	**Cost Sharing %**	**Adjusted %**	**Total %**	**Certified %**
Sponsored							
xxxxxxxxx	Repository Modeling	10%		0%		10%	0%
xxxxxxxxx	Co-Evolution Integration	17%		0%		17%	0%
xxxxxxxxx	Biocatalyst Engineering	24%		0%		24%	0%
	Total Sponsored	51%	0%	0%	0%	51%	0%
Non-Sponsored							
xxxxxxxxx	General Funds	30%		0%		30%	0%
xxxxxxxxx	Clinical Practice Plan	19%		0%		19%	0%
	Unspecified (for cost sharing only)			0%		0%	0%
	Total Non-Sponsored	49%	0%	0%		49%	0%
	Grand Total	100%	0%	0%	0%	100%	100%

I certify that I have first hand knowledge of the activity reflected on this report and that the certified effort distribution is a reasonable estimate of the effort expended during the period covered by this report.

Certified by:
Date:

University of California, xxxxxxx
Reporting Period: xxxxxxx -- xxxxxxxxxx
Certified Effort Report

Name
Employee ID
Division, Department, Sub-Department

		Payroll % time		Cost Sharing %		Total %	
Activities			**Adjusted %**		**Adjusted %**		**Certified %**
Sponsored							
xxxxxxxxx	Repository Modeling	10%	10%	0%	0%	10%	10%
xxxxxxxxx	Co-Evolution Integration	17%	17%	10%	10%	27%	27%
xxxxxxxxx	Biocatalyst Engineering	24%	24%	0%	5%	24%	29%
	Total Sponsored	51%	51%	10%	15%	61%	66%
Non-Sponsored							
xxxxxxxxx	General Funds	30%	30%	0%	0%	30%	30%
xxxxxxxxx	Clinical Practice Plan	19%	19%	0%	0%	19%	19%
	Unspecified (for cost sharing only)			-10%	-15%	-10%	-15%
	Total Non-Sponsored	49%	49%	-10%	-15%	39%	34%
	Grand Total	100%	100%	0%	0%	100%	100%

I certify that I have first hand knowledge of the activity reflected on this report and that the certified effort distribution is a reasonable estimate of the effort expended during the period covered by this report.

Certified by:
Date:

Transfers of Payroll Expense

In order to facilitate transfers of payroll expense the Effort Reporting system should provide access from an effort report screen directly to another screen on which a transfer of expense can be initiated or a notification sent to another authorized employee requesting that a transfer of expense be initiated. Access should also be provided from the system edit notifications screens such as those stating that certified effort does not match charged effort and that transfers of expense may be required. See the description in the Edits section below. It is assumed that anyone processing transfers of payroll expense will be authorized to do so in the Personnel Payroll System and will need to log onto that system in order to initiate transfers.

Edits

Edits must be able to be turned on or off or set to various levels of severity, at the campus level. Some of the edits should occur at the time an effort report is being certified, while other edits will happen periodically within the system after reports have been certified and considered complete. For example, an employee might be prompted at the time they certify the report if the effort entered did not add to 100%. Edits such as comparisons of effort charged to a sponsored project and effort certified might happen on a monthly basis with messages being sent to appropriate administrators. There are a number of edits listed below. This list is intended as a representation of possible edits and not an exhaustive list.

- Compare certified effort charged to a sponsored project to actual paid effort. In order to ensure that appropriate transfers are completed edits need to be built in to the system which will periodically (perhaps monthly) verify whether the certified effort is consistent with the actual expense charged.
- The system should not allow a certification for anything other than 100% of effort.
- Flag total sponsored effort exceeding a specified percentage for employees with non-sponsored duties such as instruction and/or patient care.
- Identify effort reports which have not been certified by deadline.
- Recertified effort reports should include explanation in comments field.
- Effort reports with changes to the calculated percent of effort should include explanation in comments field.

Reminders

Based on dates identified in the system for each campus, the system should send reminder notices to Department Coordinators, identifying those Effort Reports which are not certified and send additional notices based on an escalation chain defined within the system notification tables. There may be a series of three or four notices, beginning with the department coordinator and ending with the Dean. A table of names of who to notify and the order of escalation should be maintained by department code. The system should provide entry screens to add, change, or delete these names and email addresses.

Compliance Monitoring

On an ongoing basis Effort Reporting Coordinators, department administrators, and central offices should be able to review Effort Reports for all current and prior periods. Summary lists of effort reports should be available by individual, fund number or sponsored project, department code, Effort Reporting Coordinator, or Principal Investigator. Effort Reports which have not been completed should be listed separately from Effort Reports which have been certified. Effort Reports which have been changed should also be displayed separately. Reports should also be available of both changed Effort Reports which do not match charged effort, and Effort Reports which have been re-certified. Central Office should be able to request reports of all departments sorted by certified unchanged, certified changed, uncertified and changed reports which do not match charged effort.

Reporting

The system needs to provide the ability to easily query an Effort Reporting data base and produce ad hoc reports. In addition to the ability to enable ad hoc reporting there are a number of standard reports which will be needed universally and should be provided by the Effort Reporting System. Some examples of standard reports are:

- Number of effort reports: issued, certified, changed, outstanding, and out of compliance.
- Number of effort reports, by department, which have not been certified by the deadline.
- Cost Sharing by employee, by sponsored project.
- Cost Sharing by sponsored project.
- Total effort certified on sponsored project, by sponsored project, by employee.
- Detail reports by individual of the records used to generate the counts in all statistical reports.
- Electronic output file containing information on cost sharing, by account-fund, for importing into the F&A rate calculation.

Controls and Audit Files

The system should ensure that adequate security and access controls are maintained through the use of logon/password controls, and the use of authorities and rolls as defined in the system. Records of all actions updated in the Effort Reporting System, such as changes to percent of effort and cost sharing information as well as certifications should be maintained in the system by logon of the person entering the changes and updates. Changes and updates in the assignment of rolls and access functions should also be maintained by logon of the person entering the change. These records should be easily accessible for audit purposes.

System Security and Access Control

The system must interface with or accept logon/password authorization or authentication from existing campus systems and should allow for multiple sources of authorization identification information. For example a campus might choose to allow access to anyone who currently has access to either their data warehouse, campus email system, or mainframe systems. This would allow individuals to choose which logon/password they prefer to use and the multiple systems would encompass a broader group thereby eliminating the need for the Effort Reporting System to provide a logon/password issuance and maintenance module. Any logon/password information used by the Effort Reporting System would need to include the Employee ID.

In addition to logon/password authentication security, the system must provide for administration of roles and specific authority within the system. For example, roles could be defined as: Effort Report Coordinator, View, Review, or Certify. The system will also need to maintain records of individuals who will receive notices for coordination, review and reminders. Roles and notifications will need to be maintained and may be based on an organizational hierarchy, or possibly full accounting unit level, or simply by department, depending on the model a particular campus chooses to use. Although it is possible that some of the administration of roles might be performed by campus security systems, it appears that there is still a need for security administration of roles within the Effort Reporting System. The system must provide for decentralized administration of security/access functions and granting of roles, since it is important that each department be able to set up and maintain roles and access for their users within the Effort Reporting system. In addition to the roles and access defined in the security and access control module, all employees for whom effort reports are issued will have implicit access and authority to modify and certify their own effort reports. This access and authority will be based on a match of employee number associated with their logon and the employee number contained in the effort report. Security and access control module must be designed in such a way as to allow for hierarchical access based on various chart of account or full accounting unit structure as well as on varying campus hierarchy structures.

Additional Data Elements

The system will need to provide new data elements in order to handle newly identified requirements. Possible data elements include:

- Committed Cost Sharing Percent by Month or by Effort Report Period, by account-fund

- Expanded fund/project name
- Title Code from pay record to be used for distinctions in routing of notifications and also for editing for teaching title and clinical practice time commitments

Reporting Periods

11-Month and Staff Appointees

Summer includes July, August, and September
Fall includes October, November, and December
Winter includes January, February, and March
Spring includes April, May, and June

9-Month Appointees

Off Quarter Research - For example, Summer includes only additional compensation DOS codes and payments made for June, July, August, and September. Separate off-quarter reports may need to be provided throughout the year.
Fall for campuses on quarter system - includes July, August, September, and October and excludes DOS codes for additional compensation
Fall for campuses on semester system - includes July, August, September, October, November, and December and excludes DOS codes for additional compensation
Winter for campuses on quarter system - includes November, December, January, and February
Spring for campuses on quarter system - includes March, April, May, and June
Spring for campuses on semester system - includes January, February, March, April, May, and June

Calculation Details

The system needs to provide easy access to the detail that is included in the effort calculation. One method would be to allow the user to click on any fields based on more detailed information and have the detail for that line appear. User should also be able to see all detail that went into a calculation of effort on a particular effort report.

Section 7: General Technical Requirements

Environment

The transaction processing interface for effort report reviews and approvals must be web-based. This web-interface must be browser-independent. That is, it work in the common browsers: IE, Netscape/Mozilla, and Safari (for Macs). The web interface should not exploit browser-specific features but may take advantage of features implemented across all platforms.

The server side implementation should be J2EE compliant code developed to a minimum level of JDK 1.4 and operating in a J2EE-compliant application server environment (WebSphere, BEA, etc.). Web server must use ssl-encryption for all access to Effort Reporting System transactions.

A relational database management system is to be used as the primary repository of effort reporting data, approvals, notifications, etc. The Effort Reporting System database will also be the source of data for reports and ad hoc queries. In the design phase, further consideration of the appropriateness of a single data base for transaction processing , reporting, and ad hoc queries will need to be considered (some campuses may opt to port data into a campus data warehouse for query purposes).

Security Requirements

Controls on access to the Effort Reporting System must take into account campus identity management and authentication mechanisms. As such, the Effort Reporting System must be developed in such a way as to be easily and least intrusively modified to accommodate campus identity management systems. Administration of identities is outside the scope of these requirements.

Controls on access must also take into account the authorization of individual users to perform specific activities (e.g., view an effort report, revise and/or approve an effort report). The Effort Reporting System must be developed in such a way as to be easily and least intrusively modified to accommodate campus authorization management systems.

Other

Overall presentation design must be flexible to facilitate campus customization for integration of the Effort Reporting System in the context of campus portals.

An audit trail of all web transactions shall be created for the purpose of tracking all web accesses to the Effort Reporting System and its data. Accesses include login and general navigation within the site as well as a variety of specific activities such as effort report review, approval, notification review, etc. This transaction trail shall include all transactions, whether or not data is actually updated as a result of the transaction. The transaction trail must include such information as the web-address of the transaction initiator, timestamp of the transaction, transaction type or other identifier(s) of the page/screen from which the transaction was generated, UserID of the individual initiating the transaction, and any relevant detailed data from the transaction.

Section 8: Assumptions

- Our assumption is that the methods described in A-21 are in fact examples and that other methods and permutations may also be acceptable with appropriate approval of the University's cognizant agency. The University will seek approval for different methods, such as annual reporting period, if it is determined that is appropriate.
- When an employee works for more than one department or sponsored project, each department or sponsored project administrator will have access to the entire employee record.
- There are currently some problems because not all funds which need to have effort reports are included in the "federal fund" ranges. It will be the responsibility of each campus to ensure that all sponsored projects will be correctly identified for inclusion in the effort reporting system. If there are any non-federal funds which require effort reporting, campuses will be responsible for identifying those as well.
- All campuses wishing to upload committed cost sharing data will be responsible for ensuring the quality of the data and for providing that data in the appropriate format. While some campuses may currently have cost sharing commitment data available, it appears that most campuses will need to develop processes/systems to improve the quality and timeliness of committed cost sharing data.
- All logon/password records will contain an employee ID
- Campuses wishing to use existing campus security systems will need to define new roles to be used by the Effort Reporting System within those existing campus systems.
- A detailed data flow analysis will confirm that all necessary data elements are, in fact, available.

Section 9: Implementation Issues

As you review this document detailing the Effort Reporting System Requirements it is important to understand that while a system can provide the mechanism for accomplishing certification, edits, record keeping, reminders, and reporting, there are other process-related and cultural issues that will affect the acceptance and success of the system. A number of such issues, which a system alone cannot address, are highlighted below.

- Currently, departments at some campuses do not have access to the full record for employees who also work in other departments. This is problematic since certified effort must total 100% and what one department does affects all the others. Access to this information would fall well within a "Need to Know" definition. In order for an online system to be successful, all information pertaining to an employee must be available to all concerned departments.

- Campuses will need to develop policies and training, if these do not already exist, to clearly define responsibilities and expectations. While the training relating specifically to policies could be developed on a systemwide basis, there will be a significant amount of local training development which will need to take place as well.

- The effort reports will be only as up to date as the data used to create them. Campuses who routinely pay employees from clearing accounts and don't process the transfers of expense in a timely manner will continue to have difficulty with the accuracy of effort reports and will frequently need to create and certify revised reports. This problem is exacerbated by the fact that some campuses process many if not most transfers of expense on paper documents rather than through the online OPTRS system. Full implementation of the Online Payroll Time Reporting System (OPTRS) is critical to the success of any online Effort Reporting System.

- The requirements described in the attached document as well as any new Effort Reporting System developed from the document are based on the assumption that all transfers of payroll expense are processed through the payroll system and not on financial journals.

- Communication will need to be ongoing throughout the life of the project, likely requiring a significant campus effort. Informing users and providing training will be key components of the communication strategy.

It will be necessary to effect a change in culture that will encourage and achieve full compliance and use of an electronic system. Campuses should consider the issues identified above and begin planning for process changes, communication, and training in order to best take advantage of a new Effort Reporting System.

Section 10: Glossary of Terms

<u>A-21, J.8. Requirements</u> - Issued by Office of Management and Budget--OMB Circular A-21, titled *Cost Principles for Educational Institutions*, provides guidance on requirements to document the distribution of charges for personal services by means of an effort certification process. The document is available online at http://whitehouse.gov/OMB/circulars/a021.html

<u>After the Fact Reporting</u> - A method of certifying effort described in A-21, providing for certification based on actual payments charged to sponsored projects. The certification is to be done based on academic period but no less than every 6 months.

<u>Certified Effort</u> - That effort shown on an effort report which has been signed or certified by the employee or a person with first hand knowledge of the work performed. The purpose of the signature is to certify that work charged to a sponsored project was actually performed.

<u>Certifier</u> - A Certifier is someone who has first-hand knowledge of work performed on specific projects, and who signs the reports attesting to the fact that the work was performed. For academic or professorial titles and professional or high level staff, the employee usually certifies his/her own report. Effort reports for non-professional

employees are usually certified by the Principal Investigator or the employee's direct supervisor.

Committed Cost Sharing - Committed cost sharing can include mandatory cost sharing (cost sharing required by a particular funding agency) as well as voluntary committed cost sharing. Voluntary committed cost sharing is cost sharing which was not required by the agency but which was volunteered by the Principal Investigator (University) and quantified in the proposal.

Compliance - Compliance has a number of components but as used in this document it means the accurate and timely completion of required certification.

Cost Sharing - Cost sharing can include committed cost sharing and non-committed cost sharing. The University is under no obligation to report or certify non-committed cost sharing and as used in this document, cost sharing means committed cost sharing.

Department - A unit within a campus organizational hierarchy. Within the context of this document, the term department is used in two ways. Home department versus department which "owns" the account or full accounting unit. The department which "owns" the account is the department which is translated from the account or full accounting unit. Each employee can have only one Home Department, and if the employee works for more than one department, the Home Department is determined using a campus-specific algorithm. In an Effort Reporting System the Home Department is used for the purpose of identifying the Effort Report Coordinator who will receive initial notifications when Effort Reports are available. The second use of the term department identifies a relationship between an account or full accounting unit and the department to which that account belongs. With only rare exceptions, an account can belong to only one department. Each payment transaction which is included in the effort report calculation contains an account/full accounting unit. A translation from the account/full accounting unit identifies the department which is then used for purposes of security, access, and granting of roles, among other things.

Description of Service (DOS) Code - A three character code used within the Payroll/Personnel system to designate among other things the Type Pay and Pay Category. Every appointment and distribution which is set up on the Employee Data Base (EDB) as well as every pay transaction which is processed contains a DOS code. The Effort Reports are generated using the actual payment transactions, and those payment transactions are selected for inclusion either by the DOS code or by an attribute of the DOS code, such as Pay Category, or Type Pay. Although the DOS code is not displayed on the Effort Report, it is a key element in the behind the scenes calculations.

DOS Code - See Description of Service definition above.

Distribution of Effort -

EDB - Employee Data Base is a module of the Personnel/Payroll System (PPS), in which information about an employee's relationship with the University, such as appointment, pay rates, and intended funding sources are entered.

Effort Report Coordinator - The Effort Report Coordinator is the equivalent of the current PAR Coordinator. The person in this role will receive initial notifications of report availability and will most likely be the recipient of first level reminders. The responsibility of this role varies from one department to another.

Exception Paid Employees - Exception paid employees receive pay each pay period based on the information contained in the EDB. The department does not need to report time in order for the employee to be paid, but they can record adjustments or transfers of payroll expense without entering the information into the EDB. There is no direct relationship between being an Exception Paid employee and the employee completing a timesheet. A department could require an Exception Paid employee to complete a timesheet and they would then use that as backup to determine whether any adjustments to pay needed to be made.

Full Accounting Unit - The University's funding source(s) from which the employee is paid. It is identified on the employee's pay distributions. The format of the FAU may vary slightly between campuses with some parts of the FAU being required while others are optional.

Fund Number - A Fund is a discrete monetary source. These funding sources are allocated for the purpose of meeting certain programmatic or contractual objectives and often have associated regulations, restrictions or limitations that require separate budgeting and accounting.

NIH Salary Cap - The compensation limit which the National Institute of Health sets for employees paid from any of their funds.

Non-professional - Currently defined as non-exempt employees under Fair Labor Standards Act (FLSA), and therefore entitled to overtime pay for time paid in excess of 40 hours per week. This definition could be revisited with perhaps some other method of distinguishing non-professional category.

Non-sponsored Funds - Funds which are not derived from sponsored projects. Common non-sponsored funds include 19900, income, and fee funds.

PAR - Within this document, PAR is means Personnel Activity Report which is generated by the PAR system for effort certification purposes.

PAR Coordinator - An employee designated by a department and assigned responsibility for coordinating distribution, certification, and collection of PAR reports.

PPS - The Payroll/Personnel System used by all UC campuses. It contains several databases and subsystems that departments and central offices use to process personnel actions, generate pay for employees and produce related reports. In this document we will refer to EDB, PTR, Payroll PAR, and Expense Distribution--all components of PPS.

PTR - Payroll Time Reporting System--also known as OPTRS--Online Payroll Time Reporting System - A subsystem of PPS through which campus departments can report time and complete expense transfers. Some campuses refer to this system as PTR, others call it 'On-line Payroll Time Reporting System (OPTRS).

Pay Category - A field on the Description of Service (DOS) table identifying the general category of pay the DOS code represents. Values are N=Normal or regular, L=Leave, A=Additional one-time pay, D=Differential, P=Perquisite, S=Suspense. Only N pay categories are included in effort reporting.

Pay Type - A field on the Description of Service (DOS) table further identifying the type of pay the DOS code represents. Values are 1=regular, 2=overtime straight, 3=overtime premium, 4=overseas premium, 5=on call, 6=not in use, 7=terminal vacation, 8=shift differential, 9=by agreement. Only pay types of 1=5 are included in the PAR reporting.

Payroll Compute - The process that generates payroll checks as well as the Payroll PAR file.

Payroll Expense Distribution - The file containing the payroll expenses. It is created on a monthly basis from a combination of the Payroll PAR files from each of the Payroll Compute cycles from that month. It is fed into the General Ledger.

Payroll PAR - The file containing the details behind actual payments to employees, generated as part of each Payroll Compute.

Percent of Time Paid - The percent of time associated with each payment transaction. This percent is used to multiply the pay rate to calculate the gross to be paid for that particular pay transaction. An employee paid from multiple fund sources will have multiple Percents of Time Paid for each pay period.

Positive Paid - A method of paying employees based on the hours or percent time reported via PTRS or timesheets. Entry of time worked is required in order for a positive time employee to be paid.

Professional - Currently defined as exempt employees under Fair Labor Standards Act (FLSA), and therefore not entitled to overtime pay for time paid in excess of 40 hours per week. This definition could be revisited with perhaps some other method of distinguishing non-professional category.

Professorial - Academic employees including Principal Investigators.

Reporting Period - Period of time included in a particular PAR or Effort Report.

Reviewer - An employee authorized through the assignment of roles to review and modify effort reports.

Roles - A defined set of authorities. The use of 'Roles' or areas of responsibility is a way of establishing different types of access within the Effort Reporting System (i.e. Reviewer, Certifier).

Sponsored Projects - Projects which are funded by outside sources as the result of a proposal and award. In the context of this document the term commonly refers to projects funded by the various federal agencies.

Transfers of Payroll Expense - Transactions processed within Payroll Personnel System to transfer expense originally charged to one fund source to a different fund source.

Type Pay - Same as Pay Type - A field on the Description of Service (DOS) table further identifying the type of pay the DOS code represents. Values are 1=regular, 2=overtime straight, 3=overtime premium, 4=overseas premium, 5=on call, 6=not in use, 7=terminal vacation, 8=shift differential, 9=by agreement. Only pay types of 1=5 are included in the PAR reporting.

Section 11: Required Data Elements

The Effort Reporting System (ERS) will rely on data from a variety of sources. It will include individual employee record data from PPS, both pay transactions and EDB data; translation tables from PPS and Financial Systems; imported data such as committed cost sharing percents from local systems; data which is entered by the user; and calculations and translations performed by the Effort Reporting System. Attached is a table showing required data elements and their sources.

Data Element Name	Source of Data Element	Existing	New	Entered/ Calculated
Account Number	**PPS** - Pay Transaction	X		
Account/Department Translation Tables	**FS -** Normally available from Financial System. Could be any local system	X		
Certification Check Box (multiple occurrences)	**ERS -** Indicator that employee agrees with amount being certified - associate with certifier logon		X	
Certifier Log On (multiple occurrences)	**ERS -** Logon ID of person certifying effort report - associate with certifier check box		X	
Committed Cost Sharing Percent Imported	**Local System** - Cost Sharing or Other Local System	Some	Some	
Cost Sharing Percent Entered	**Entered** - Entered by Reviewer or Certifier			X
Department Name	**Translated** - Translated from Financial System Tables based on Department Number, translated from account contained in pay transaction			X
Department Number	**Translated** - Translated from account contained in pay transaction - PPS			X
Description of Service Code (DOS Code)	**PPS** - Contained in pay transaction	X		
Employee Home Department	**PPS** - Contained in EDB	X		
Employee ID	**PPS** - Contained in pay transaction	X		
Employee Name	**Translated** - Translated from Employee ID			X
Fund Number	**PPS** - Contained in pay transaction	X		
Hours Paid	**PPS** - Contained in pay transaction	X		
Hours Paid Converted to Percent	**Calculated** - Calculated within ERS from Hours Paid from pay transaction			X
Nine/Eleven Month Indicator	**Translated -** Translated from title code contained in pay transaction			X

Data Element Name	Source of Data Element	Existing	New	Entered/ Calculated
Pay Period Ending Date	**PPS** - Contained in pay transaction	X		
Percent of Effort/Payroll - Non-Sponsored Project	**Calculated** - Calculated within ERS from fund number and percent paid from pay transaction			X
Percent of Effort/Payroll - Sponsored Project	**Calculated** - Calculated within ERS from fund number and percent paid from pay transaction			X
Percent of Effort Charged to Non-Sponsored Project - Adjusted	**Entered** - Entered by Reviewer or Certifier			X
Percent of Effort Charged to Sponsored Project - Adjusted	**Entered** - Entered by Reviewer or Certifier			X
Percent of Effort Certified per Non-Sponsored Project	**Calculated** - Calculated within ERS based on figures in other columns			X
Percent of Effort Certified per Sponsored Project	**Calculated/Entered** - Entered for changes or calculated within ERS based on figures in other columns			X
Percent of Time Paid	**PPS** - Contained in pay transaction	X		
Professional/Non-Professional Indicator	**Translated** - Translated from title code contained in pay transaction			X
Project Name	**FS** - Normally available from Financial System. Could be any local system	X		
Title Code	**PPS** - Contained in pay transaction	X		
Total Percent of Effort by Fund Source	**Calculated/Entered** - Entered for changes or calculated within ERS based on figures in other columns			X
Total Non-Sponsored Project Effort/Payroll	**Calculated/Entered** - Entered for changes or calculated within ERS based on figures in other columns			X
Total Sponsored Project Effort/Payroll	**Calculated/Entered** - Entered for changes or calculated within ERS based on figures in other columns			X

Data Element Name	Source of Data Element	Existing	New	Entered/ Calculated
Total Sponsored Project Effort Charged to Sponsored Project - Adjusted	**Entered** - Entered by Reviewer or Certifier			X
Total Non-Sponsored Project Effort Charged to Sponsored Project - Adjusted	**Entered** - Entered by Reviewer or Certifier			X
Total Committed Cost Sharing Percent Imported	**Calculated** - Calculated within ERS based on figures in other columns			X
Total Cost Sharing Percent Entered	**Entered** - Entered by Reviewer or Certifier			X
Total Sponsored Project Effort Certified	**Calculated/Entered** - Entered for changes or calculated within ERS based on figures in other columns			X
Total Non-Sponsored Project Effort Certified	**Calculated/Entered** - Entered for changes or calculated within ERS based on figures in other columns			X
Unspecified Offset Cost Sharing	**Calculated** - Calculated within ERS based on imported Committed Cost Sharing			X
User Logon for Each Update Transaction	**ERS** - Logon identified with each update transaction			X
User Notes/Comments/User Logon ID (4 occurrences)	**Entered** - Must be associated with logon of user entering comments			X

Also needed are:

- Standard system processing elements such as date updated, user logon, and accessible audit trails
- "Help" translation of field labels
- Drill down functionality to display calculation details

EFFORT REPORTING SYSTEM

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EFFORT REPORTING SYSTEM

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