

PUTTING VENDOR INTERFACE DATA CONTENT AT YOUR CUSTOMERS' FINGERTIPS

QUENTIN SPRADLING & ROSE TAYLOR

RAYTHEON COMPANY

Introduction

We will share the technology of how we placed vendor interface detail data in the hands of the customer and out of the hands of IT. Using this on-line process, customers can control which employees are sent on interface files and what employee detail information is included on those interfaces. As future business requirements change, the customers can dynamically configure the requirements and IT intervention is no longer needed.

Raytheon is an industry leader in defense and government, electronics, space, information technology, technical services, and special mission aircraft. We currently use PeopleSoft Application version 8.8 and PeopleTools 8.47.08 on an Oracle 10g database with a Unix Sun Solaris operating system. We have a centralized US payroll that pays approximately 65,000 employees bi-weekly and 2,200 employees weekly. We have 15 payroll subsets or groups with the largest subset paying 14,000 employees. Raytheon's international locations use PeopleSoft for HR only. We have a total of 49 different company codes, 39 domestic and 10 international. Raytheon uses PeopleSoft Base Benefits having outsourced Benefits Administration to a third party vendor. We provide our employees with employee self service including On-Line Paycheck View, PTO, Direct Deposit, Federal W-4, State W-4, Emergency Contacts, Education, and Employee Fact Sheet

Business Drivers and IT Goal

We work in a dynamic environment where business drivers dictate frequent change that has the potential to impact IT and Payroll/HR. The Payroll/HR customer would rather spend their money (budget) on enhancements rather than on multiple program modifications to support these frequent changes. The IT goal was to build a flexible solution that allows the customer to configure processes to incorporate these changes without IT intervention, which reduces IT support cost.

Technical Overview

Raytheon IT utilized PeopleSoft's Application Designer tool to modify PeopleSoft and create a custom solution. New tables and pages were created which allow the customer to make configuration changes on-line at anytime. Changes in business requirements are maintained by the customer using PeopleSoft without requiring program logic changes. The customization is self contained and therefore easily identified and carried forward during an upgrade.

Technical Design

Using PeopleTools, we created the Manage Outsource Control tables to control the interface with our benefits administrator. This interface is one example of how the design is used. Many other interfaces also take advantage of this same design. The Manage Outsource Control tables allow the payroll customer to control the employee population based on the PeopleSoft company code. It also allows the payroll customer to control employee detail information based on deduction codes, earnings codes, and tax information.

The Raytheon standard naming convention is to preface our custom objects with a Y_ for easy identification. We used standard PeopleSoft fields and logic where applicable.

We created a parent record named Y_CNLT_TBL to control the Manage Outsource process. The Y_CNLT_TBL record contains the following fields:

- Process Group – This key field defines the process or group this definition is related to, for example, "RAY" defines the process to create the outsourced Raytheon benefits interface.
- Effective Date – This key field defines the effective date of this process.
- Effective Status – This field defines the effective status of this process.
- Description/Short Description – This field defines the long and short description of this process.

- Last Run Date – This field denotes the last time this process was executed.
- Process Mode – This field defines the process mode, being either Initial or On-going. Varying program logic is executed based on whether this is a first time run, or an on-going run.

Exhibit 1

Record Fields		Record Type										
Num	Field Name	Type	Key	Ordr	Dir	CurC	Srch	List	Sys	Audt	Default	
1	Y_GROUP_CD	Char	Key	1	Asc		Yes	Yes	No			
2	EFFDT	Date	Key	2	Desc		No	No	No		%DATE	
3	EFF_STATUS	Char					No	No	No		'A'	
4	DESCR	Char	Alt		Asc		No	Yes	No			
5	DESCRSHORT	Char					No	No	No			
6	Y_PROCESS_DT	Date					No	No	No			
7	Y_GROUP_MODE	Char					No	No	No		'0'	

We created multiple child records to control the detail information. The Y_CNTL_CMPNY record controls employee population based on selected company codes. Only employees in the listed companies are included on the interface. Not all companies use the benefits vendor; therefore, we needed a way to exclude them from the interface file. Invalid company codes are not allowed due to a prompt edit against the PeopleSoft company table. The Y_CNTL_CMPNY record contains the following fields:

- Process Group – This key field is carried forward from parent record.
- Effective Date – This key field is carried forward from parent record.
- Company – This key field denotes the company codes included in this process.

Exhibit 2

Record Fields		Record Type										
Num	Field Name	Type	Key	Ordr	Dir	CurC	Srch	List	Sys	Audt	Defau	
1	Y_GROUP_CD	Char	Key	1	Asc		Yes	Yes	No			
2	EFFDT	Date	Key	2	Desc		No	No	No		%DATE	
3	COMPANY	Char	Key	3	Asc		No	No	No			

The Y_DEDCD_TBL record controls detail deduction information and determines which deductions are included in the interface. Only deductions listed are included. Invalid deduction codes are not allowed due to a prompt edit against the PeopleSoft deduction table. The Y_DEDCD_TBL record contains the following fields:

- Process Group – This key field is carried forward from parent record.
- Effective Date – This key field is carried forward from parent record.
- Plan Type – This key field denotes the deduction plan type associated with the deduction codes included in this process.
- Deduction Code – This key field denotes the deduction codes included in this process.
- Deduction Group – This field is an optional field used to group deductions into categories for certain vendors; for example, all pre-tax deductions could be summed into one category on the vendor interface.

Exhibit 3

Record Fields		Record Type										
Num	Field Name	Type	Key	Ordr	Dir	CurC	Srch	List	Sys	Audt	Defat	
1	Y_GROUP_CD	Char	Key	1	Asc		Yes	Yes	No			
2	EFFDT	Date	Key	2	Desc		No	No	No		%DATE	
3	PLAN_TYPE	Char	Key	3	Asc		No	No	No			
4	DEDCD	Char	Key	4	Asc		No	No	No			
5	Y_BENECALC_ERN_GRP	Char					No	No	No			

The Y_ERNCD_TBL record controls detail earnings information and determines which earnings codes are included in the interface. Only earnings codes listed are included. Invalid earnings codes are not allowed due to a prompt edit against the PeopleSoft earnings table. Currently, we have approximately 600 earnings codes in our database. The Payroll customer requested option to enter “ALL” as valid earnings code to avoid excessive amount of data input. The Y_ERNCD_TBL record contains the following fields:

- Process Group – This key field is carried forward from parent record.
- Effective Date – This key field is carried forward from parent record.
- Earnings Code – This key field denotes the earnings codes included in this process.
- Earnings Group – This field is an optional field used to group earnings into categories for certain vendors; for example, all pension eligible earnings could be summed into one category on the vendor interface.

Exhibit 4

Record Fields		Record Type										
Num	Field Name	Type	Key	Ordr	Dir	CurC	Srch	List	Sys	Audt	Default	
1	Y_GROUP_CD	Char	Key	1	Asc		Yes	Yes	No			
2	EFFDT	Date	Key	2	Desc		No	No	No		%DATE	
3	ERNCD	Char	Key	3	Asc		No	No	No			
4	Y_BENECALC_ERN_GRP	Char					No	No	No			

The Y_SPCLACC_TBL record controls detail special accumulator information and determines which special earnings accumulators are included in the interface. Only special accumulator codes listed are included. Invalid special accumulator codes are not allowed due to a prompt edit against the PeopleSoft special accumulator table. The Y_SPCLACC_TBL record contains the following fields:

- Process Group – This key field is carried forward from parent record.
- Effective Date – This key field is carried forward from parent record.
- Special Accumulator Code – This key field denotes the special accumulator code included in this process.

Exhibit 5

Record Fields		Record Type										
Num	Field Name	Type	Key	Ordr	Dir	CurC	Srch	List	Sys	Audt	Default	
1	Y_GROUP_CD	Char	Key	1	Asc		Yes	Yes	No			
2	EFFDT	Date	Key	2	Desc		No	No	No		%DATE	
3	ERNCD_SPCL	Char	Key	3	Asc		No	No	No			

The Y_TAX_TBL record controls detail tax information and determines which tax balances are included in the interface. Only state, locality and tax class codes listed are included in the interface. Invalid valid state, locality and tax classes are not allowed due to prompt edits to their respective tables. The Y_TAX_TBL record contains the following fields:

- Process Group – This key field is carried forward from parent record.
- Effective Date – This key field is carried forward from parent record.
- State – The key field denotes the tax state included in this process.
- Locality – This key field denotes the tax locality included in this process.
- Tax Class – This key field denotes the tax class included in this process.

Exhibit 6

Record Fields		Record Type										
	Num	Field Name	Type	Key	Ordr	Dir	CurC	Srch	List	Sys	Audt	Default
	1	Y_GROUP_CD	Char	Key	1	Asc		Yes	Yes	No		
	2	EFFDT	Date	Key	2	Desc		No	No	No		%DATE
	3	STATE	Char	Key	3	Asc		No	No	No		
	4	LOCALITY	Char	Key	4	Asc		No	No	No		
	5	TAX_CLASS	Char	Key	5	Asc		No	No	No		

Manage Outsource Control Practical Application

Different batch interface files are created based on the different process groups, which is the key to the parent table. This is a scalable solution that allows for any number of interfaces to use the same table structure template to determine what data is included. Select statements in the batch programs join the Job, Deduction, Earnings or Tax Balance tables to their designated child tables. For example, we've been discussing the process "RAY" which produces our interface to our third party benefits administrator. The Process Control tab describes the process and does the insert/update into the parent record Y_CNTL_TBL. On this page, the customer will describe the interface and note whether this is the initial run of this interface, or an on-going run. Each time the interface runs, the process date field is updated. This field is displayed on the page and gives the customer information as to the last time this interface executed. See Appendix 1.

The Process Company tab contains the company codes used in the "RAY" process and does the insert/update into the child record Y_CNTL_CMPNY. On this page, the customer will add all the selected company codes. Any employees who have a max effective dated PS_JOB row for these companies will be included in this interface. See Appendix 2. Within the batch program "WHERE" clause we specify the "RAY" group code. The custom company child table is joined to the Job Table by company code in order to only retrieve those designated employees. See Appendix 3.

The Process Deductions tab contains the deduction codes used in the "RAY" process and does the insert/update into the child record Y_DEDCD_TBL. On this page, the customer will add all the selected deduction codes. Any deduction balance records for the selected deduction codes will be included in the interface, but only for those employees previously selected. See Appendix 4. Within the batch program "WHERE" clause we specify the "RAY" group code. The custom deduction child table is joined to the Deduction Balance Table by deduction code in order to only retrieve those designated deductions. See Appendix 5.

The Process Earnings tab contains the earnings codes used in the "RAY" process and does the insert/update into the child record Y_ERNCD_TBL. On this page, the customer will add all the selected earnings codes. Any earnings balance records for the selected earnings codes will be included in the interface, but only for those employees previously selected. See Appendix 6. Within the batch program "WHERE" clause we specify the "RAY" group code. The custom earnings child table is joined to the Earnings Balance Table by earnings code in order to only retrieve those designated earnings. See Appendix 7.

The Process Special Accum tab contains the special accumulator codes used in the "RAY" process and does the insert/update into the child record Y_SPCLACC_TBL. On this page, the customer will add all the selected special accumulator codes. Any earnings balance records for the selected special accumulator codes will be included in the interface, but only for those employees previously selected. See Appendix 8. Within the batch program "WHERE"

clause we specify the “RAY” group code. The custom special accumulator child table is joined to the Earnings Balance Table by earnings code in order to only retrieve those designated earnings. See Appendix 9.

The Process Tax tab contains the tax information used in the “RAY” process and does the insert/update to the child record Y_TAX_TBL. On this page, the customer will add the selected state, locality and tax class codes. Any tax balance records for the selected state, locality and tax class will be included in the interface, but only for those employees previously selected. See Appendix 10. Within the batch program “WHERE” clause we specify the “RAY” group code. The custom tax child table is joined to the Tax Balance Table by state, locality and tax class in order to only retrieve those designated tax records. See Appendix 11.

Conclusion

Using PeopleTools, we created a custom, self-contained, scalable solution that is used by the functional customer and easily carried forward during an upgrade. Employee Population, Deductions, Earnings, and or Tax information is entered and controlled by the customer and determines what is included in the defined interfaces. As new requirements are added, future change is managed by the customer without IT intervention. From an IT perspective, this keeps us from making repetitive code changes in order to satisfy new business requirements.

Appendix 1

Process Control | Process Company | Process Deductions | Process Earnings | 

Process Group: RAY

Process Group Details		Find View All	First	1 of 1	Last
*Effective Date:	<input type="text" value="10/01/2007"/>	*Status as of Effective Date:	Active	<input type="button" value="+"/>	<input type="button" value="-"/>
*Description:	<input type="text" value="Raytheon Systems Company"/>				
Short Description:	<input type="text" value="Ray Sys Co"/>				
Last Process Date:	<input type="text" value="02/02/2008"/>				
*Process Mode:	<input type="text" value="On-going"/>				

 Save |  Return to Search |  Previous in List |  Next in List |  Notify |  Previous tab |  Next tab |  Add |  Update/Display

[Process Control](#) | [Process Company](#) | [Process Deductions](#) | [Process Earnings](#) | [Process Special Accum](#) | [Process Tax](#)

Appendix 2

[Process Control](#) | [Process Company](#) | [Process Deductions](#) | [Process Earnings](#) | [▶](#)

Process Group: RAY Raytheon Systems Company

Process Group Data Find | View All | First 1 of 30 Last

Effective Date: 10/01/2007

Company Details Customize | Find | View All | First 1-8 of 91 Last

*Company	Description		
105	Raytheon Company	+	-
110	Raytheon Sarcos Acq Subsid LLC	+	-
300	Hawker Beechcraft Corporation	+	-
305	Raytheon Aircraft Holdings, Inc	+	-
310	Raytheon Aircraft Credit Corp	+	-
315	Hawker Beechcraft Regional Off	+	-
320	RAPID Aircraft Parts Inventory	+	-
325	Travel Air Insurance Company	+	-

[Save](#) | [Return to Search](#) | [Notify](#) | [Previous tab](#) | [Next tab](#) | [Add](#) | [Update/Display](#) | [Include History](#) | [Correct History](#)

[Process Control](#) | [Process Company](#) | [Process Deductions](#) | [Process Earnings](#) | [Process Special Accum](#) | [Process Tax](#)

Appendix 3 – Company Code Select

```
SELECT ...
FROM PS_Y_PERS_DATA_VW P
, PS_EMPLOYMENT B
, PS_JOB C
, PS_Y_CNTL_CMPNY E
WHERE E.Y_GROUP_CD = :1
AND E.EFFDT = :2
AND C.COMPANY = E.COMPANY
AND C.EMPL_RCD = 0
AND C.EFFDT =
  (SELECT MAX(C1.EFFDT)
   FROM PS_JOB C1
   WHERE C1.EMPLID = C.EMPLID
   AND C1.EMPL_RCD = C.EMPL_RCD
   AND C1.EFFDT <= :3)
AND C.EFFSEQ =
  (SELECT MAX(C2.EFFSEQ)
   FROM PS_JOB C2
   WHERE C2.EMPLID = C.EMPLID
   AND C2.EMPL_RCD = C.EMPL_RCD
   AND C2.EFFDT = C.EFFDT)
AND NOT C.UNION_CD = 'ERP'
AND P.EMPLID = C.EMPLID
AND B.EMPLID = C.EMPLID
AND B.EMPL_RCD = C.EMPL_RCD ;
```


Appendix 4


Process Group: RAY Raytheon Systems Company

Process Group Data			Find View All		First	1 of 1	Last
Effective Date: 10/01/2007							
Deduction Code Details			Customize Find View All		First	1-8 of 9	Last
*Plan Type	*Deduction Code						Deduction Group
00	General	089	Hourly Pension				+ -
4X	Excess Ret	007	Excess Retirement				+ -
4Y	Retirement	006	Retirement				+ -
60	FSA Health	068	Health Care Reimbursement RAC				+ -
60	FSA Health	071	Health Care Reimbursement				+ -
61	FSA Depnd	069	Dependent Care Reimbursement				+ -
61	FSA Depnd	070	Dependent Care Reimbursement				+ -
6X	EE HSA	072	EE Health Savings Account				+ -



Appendix 5 – Deduction Code Select

```
SELECT DB.COMPANY
      ,DB.PLAN_TYPE
      ,DB.BENEFIT_PLAN
      ,DB.DEDCD
      ,DB.DED_YTD
      ,DB.DED_QTD
      ,DB.DED_MTD
      ,DB.BALANCE_PERIOD
FROM PS_Y_DEDCD_TBL EDT
      ,PS_DEDUCTION_BAL DB
WHERE
      EDT.Y_GROUP_CD = :1
      AND EDT.EFFDT = :2
      AND DB.EMPLID = :3
      AND DB.BALANCE_ID = 'CY'
      AND DB.BALANCE_YEAR = :4
      AND DB.DEDCD = EDT.DEDCD
      AND DB.BALANCE_PERIOD = (SELECT MAX(DB1.BALANCE_PERIOD)
                                FROM PS_DEDUCTION_BAL DB1
                                WHERE DB1.EMPLID = DB.EMPLID
                                      AND DB1.COMPANY = DB.COMPANY
                                      AND DB1.BALANCE_ID = DB.BALANCE_ID
                                      AND DB1.BALANCE_YEAR = DB.BALANCE_YEAR
                                      AND DB1.BENEFIT_RCD_NBR = DB.BENEFIT_RCD_NBR
                                      AND DB1.PLAN_TYPE = DB.PLAN_TYPE
                                      AND DB1.BENEFIT_PLAN = DB.BENEFIT_PLAN
                                      AND DB1.DEDCD = DB.DEDCD
                                      AND DB1.DED_CLASS = DB.DED_CLASS)
      AND DB.PLAN_TYPE = EDT.PLAN_TYPE ;
```




Appendix 6



[Process Control](#) | [Process Company](#) | [Process Deductions](#) | [Process Earnings](#) 


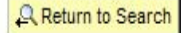

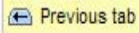
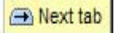


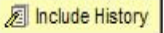
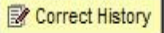
Process Group: RAY Raytheon Systems Company

Process Group Data [Find](#) | [View All](#) First  1 of 1  Last

Effective Date: 10/01/2007

Earnings Code Details [Customize](#) | [Find](#) | [View All](#)  First  1 of 1  Last

<u>*Earnings Code</u>	<u>Earnings Group</u>
ALL	<input type="text"/>  

 Save  Return to Search  Notify  Previous tab  Next tab  Add  Update/Display  Include History  Correct History

[Process Control](#) | [Process Company](#) | [Process Deductions](#) | [Process Earnings](#) | [Process Special Accum](#) | [Process Tax](#)

Appendix 7 – Earnings Code Select

```
SELECT A.COMPANY
      ,A.ERNCD
      ,A.HRS_YTD
      ,A.HRS_QTD
      ,A.HRS_MTD
      ,A.GRS_YTD
      ,A.GRS_QTD
      ,A.GRS_MTD
      ,A.BALANCE_PERIOD
FROM PS_Y_ERNCD_TBL B
     ,PS_EARNINGS_BAL A
WHERE B.Y_GROUP_CD = :1
     AND B.EFFDT = :2
     AND A.EMPLID = :3
     AND A.BALANCE_ID = 'CY'
     AND A.BALANCE_YEAR = :4
     AND A.ERNCD = B.ERNCD
     AND A.BALANCE_PERIOD = (SELECT MAX(A1.BALANCE_PERIOD)
                              FROM PS_EARNINGS_BAL A1
                              WHERE A1.EMPLID = A.EMPLID
                                   AND A1.COMPANY = A.COMPANY
                                   AND A1.BALANCE_ID = A.BALANCE_ID
                                   AND A1.BALANCE_YEAR = A.BALANCE_YEAR
                                   AND A1.ERNCD = A.ERNCD
                                   AND A1.EMPL_RCD = A.EMPL_RCD
                                   AND A1.SPCL_BALANCE = A.SPCL_BALANCE)
     AND A.EMPL_RCD = 0
     AND A.SPCL_BALANCE = 'N';
```

Appendix 8

Process Deductions | Process Earnings | Process Special Accum | Process Tax

Process Group: RAY Raytheon Systems Company

Process Group Data Find | View All First 1 of 1 Last

Effective Date: 10/01/2007

Special Accumulator Details Customize | Find | View All | First 1 of 1 Last

*Special Accumulator Code

PEN	Pension Earnings-Contributory	+	-
-----	-------------------------------	---	---

Save | Return to Search | Notify | Previous tab | Next tab | Add | Update/Display | Include History | Correct History

[Process Control](#) | [Process Company](#) | [Process Deductions](#) | [Process Earnings](#) | [Process Special Accum](#) | [Process Tax](#)

Appendix 9 – Special Accumulator Select

```
SELECT A.COMPANY
,A.ERNCD
,A.HRS_YTD
,A.HRS_QTD
,A.HRS_MTD
,A.GRS_YTD
,A.GRS_QTD
,A.GRS_MTD
,A.BALANCE_PERIOD
FROM PS_Y_SPCLACC_TBL B
,PS_EARNINGS_BAL A
WHERE B.Y_GROUP_CD = :1
AND B.EFFDT = :2
AND A.EMPLID = :3
AND A.BALANCE_ID = 'CY'
AND A.BALANCE_YEAR = :4
AND A.ERNCD = B.ERNCD_SPCL
AND A.BALANCE_PERIOD = (SELECT MAX(A1.BALANCE_PERIOD)
FROM PS_EARNINGS_BAL A1
WHERE A1.EMPLID = A.EMPLID
AND A1.COMPANY = A.COMPANY
AND A1.BALANCE_ID = A.BALANCE_ID
AND A1.BALANCE_YEAR = A.BALANCE_YEAR
AND A1.ERNCD = A.ERNCD
AND A1.EMPL_RCD = A.EMPL_RCD
AND A1.SPCL_BALANCE = A.SPCL_BALANCE)
AND A.EMPL_RCD = 0
AND A.SPCL_BALANCE = 'Y'
;
```

Appendix 10

[Process Deductions](#) | [Process Earnings](#) | [Process Special Accum](#) | **Process Tax**

Process Group: RAY Raytheon Systems Company

Process Group Data Find | View All First 1 of 1 Last

Effective Date: 10/01/2007

Tax Details Customize | Find | View All | First 1-2 of 2 Last

*State	Locality	*Tax Balance Class		
<input type="text" value="\$U"/>	<input type="text"/>	<input type="text" value="D"/> OASDI/EE	<input type="button" value="+"/>	<input type="button" value="-"/>
<input type="text" value="\$U"/>	<input type="text"/>	<input type="text" value="H"/> Withholdng	<input type="button" value="+"/>	<input type="button" value="-"/>

[Process Control](#) | [Process Company](#) | [Process Deductions](#) | [Process Earnings](#) | [Process Special Accum](#) | [Process Tax](#)

Appendix 11 – Tax Select

```
SELECT
  A.EMPLID
,A.COMPANY
,A.STATE
,A.LOCALITY
,A.TAX_CLASS
,A.BALANCE_YEAR
,A.NLGRS_YTD
,A.TXGRS_YTD
,A.BALANCE_PERIOD
FROM PS_Y_TAX_TBL B
  ,PS_TAX_BALANCE A
WHERE B.Y_GROUP_CD = :1
  AND B.EFFDT = :2
  AND A.EMPLID = :3
  AND A.BALANCE_ID = 'CY'
  AND A.BALANCE_YEAR = :4
  AND A.BALANCE_PERIOD = (SELECT MAX(A1.BALANCE_PERIOD)
    FROM PS_TAX_BALANCE A1
    WHERE A1.EMPLID = A.EMPLID
      AND A1.COMPANY = A.COMPANY
      AND A1.BALANCE_ID = A.BALANCE_ID
      AND A1.BALANCE_YEAR = A.BALANCE_YEAR
      AND A1.STATE = A.STATE
      AND A1.LOCALITY = A.LOCALITY
      AND A1.TAX_CLASS = A.TAX_CLASS)
  AND A.STATE = B.STATE
  AND A.LOCALITY = B.LOCALITY
  AND A.TAX_CLASS = B.TAX_CLASS
;
```