

**Alabama Department of Environmental Management
Permits & Service Division – Information Systems Branch**

January 26, 2010

REQUEST FOR BIDS

**Migration and modernization of Oracle6i Forms and
Reports to Microsoft .NET and Crystal Reports,
Conversion of Wang PACE database to Oracle 11g and
PACE applications to Microsoft .NET and Crystal Reports,
and
TIFF image conversion/integration into FileNet PDF format**

The Alabama Department of Environmental Management utilizes several applications in which the data is currently housed in an Oracle 11g database. These applications were originally developed on a WANG VS System using WANG PACE database management software. The WANG PACE databases and user software were then converted/migrated into Oracle. The current versions of the user applications for these databases were converted into Oracle Forms and Reports (version 6i) from PACE programs and reports and are listed below:

- ALWIC Agenda and Minutes of Alabama Water Improvement Commission
- PREAPDB Preapproval database LAND (Hazardous Waste 1990-current)
- HWMFDB Hazardous Waste Manifest Document Tracking
- USTTAB Underground Storage Tanks

It has become necessary to upgrade these applications from the existing outdated version of Oracle Forms and Reports to a more modern platform in order to mitigate lack of vendor support for obsolete versions of Oracle Forms and Reports. These applications must be converted into Windows-based forms developed using the Microsoft .NET framework with VB .NET code, with all functionality retained. In the time since the databases referenced above were converted and placed into production in 2003, several additional processes have also been added to the user applications by the Department's IT staff which include MS Access 2003 tables, forms, reports and queries that perform vital tasks for the users, increasing the productivity level of the databases on a daily basis. These processes must be integrated into the finished production version of this project, with the MS Access forms also being converted to Windows-based .NET forms with VB .NET code, with their functionality retained. All Oracle Reports and MS Access reports associated with the originally converted databases, as well as the newer processes, must be converted to Crystal Reports and their functionality retained. Additionally, TIFF images associated with the Oracle databases must be converted to PDF format and integrated into the existing FileNet system used by the Department for electronic filing, so that users can access the electronic documents from inside the FileNet application that they currently use daily.

The Department owns and operates a virtual Wang System which houses at least one database in its PACE database management system that is related to one or more of the previously mentioned applications. PACE is a fully integrated application development and

information management environment consisting of the following components: the Data Definition facility, or data dictionary, for creating and maintaining relational databases; the Application Builder (AB) for designing and building application programs for database inquiry and update; PACE Query for retrieving and updating information in a PACE database; PACE Report for interactively generating reports; and the PACE Host Language Interface (HLI) for writing VS COBOL programs that access a PACE database. The PACE database listed below must be migrated to Oracle 11g, with all of the associated PACE user applications converted to Windows-based .NET forms with VB .NET code. The conversion must include all forms, queries and other database procedures and processes. All PACE reports must be converted to Crystal Reports and their functionality retained.

- SWAPPR Preapproval database LAND (Solid Waste)

Summary information concerning the components of the databases included in this project are given in Appendix A. The vendor must return to the Department a fixed-cost proposal for the project.

REQUEST FOR BIDS

Requirements

1. Vendor must have performed a minimum of three automated database conversions (not redesigns and/or rewrites) from the PACE database platform to Oracle.

Vendor must cite references for each PACE database conversion that they have performed providing the following information:

Name and phone number of the contact person at the reference site,
Conversion beginning and ending dates,
Conversion project cost,
Converted platform hardware,
Server operating system,
Network operating system,
Detailed description of the converted Oracle database.

2. Vendor must have performed a minimum of two application conversions from Oracle6i Forms and Reports to Microsoft .NET and Crystal Reports within the last 24-months.

Vendor must cite references for each Oracle6i Forms and Reports conversion that they have performed providing the following information:

Name and phone number of the contact person at the reference site,
Conversion beginning and ending dates,
Conversion project cost,
Converted .NET system hardware,
Server operating system,
Network operating system,
Detailed description of the converted .NET system.

3. Vendor must have converted a minimum of three Imaging Systems from TIFF to .PDF format including all related indexing and cataloging information.

Vendor must cite references for each TIFF to .PDF conversion that they have performed providing the following information:

Name and phone number of the contact person at the reference site,
Conversion beginning and ending dates,
Conversion project cost,
Converted Imaging software,
Server operating system,
Network operating system,
Description of the hardware and software used to convert WIIS images.

4. Vendor must not subcontract any of the conversion/migration work for any part of this project.
5. At the start of the conversion, the Department must have the option to specify the color/attribute mapping defaults according to those that were used in the field attributes for the Oracle Forms, PACE AB programs and MS Access forms (such as BOLD, BLINK, BRIGHT, UNDERSCORE, MODIFIABLE, and UNMODIFIABLE) so that resulting converted .NET applications conform to our users' preferences. The Department must be able to view prototyped versions of the proposed .NET forms prior to their development in order to review and discuss the details of the basic .NET form layout and format, as well as the system work flow.
6. The converted .NET applications must retain the logical screenset operation and screen data definitions of the original Oracle Forms, PACE applications and MS Access forms, as well as provide the same functionality that the rules of the Oracle Forms, PACE AB programs and MS Access forms provide in the existing applications.
7. The transaction management in existing Oracle applications, PACE programs and MS Access programs must be provided by the converted .NET applications.
8. All Query and List screens must provide the same functions in the .NET applications that they did in the Oracle Forms and PACE applications, even down to using "?" for the Query wildcard character, maintaining the word-in-text capability, the sort functionality, and the saved Query capabilities. The converted .NET application must extend word-in-text capability to all character fields. All saved Queries must be retained in the converted .NET application from both Oracle and PACE programs. Converted MS Access forms must provide the Search and Find functions of the original MS Access applications.
9. The functionality provided by the Oracle applications via PL/SQL code linked to Oracle Forms function keys must be provided by the converted .NET applications. The converted .NET applications must provide the same functionality that the rules of the linked PL/SQL routines provided in the existing Oracle Forms applications.
10. All reports of the existing Oracle, PACE, and MS Access applications must be converted to Crystal Reports, preserving all report breaking and totaling facilities. If the original program had Oracle, PACE, or MS Access reports attached to the Output button, then the converted .NET application must offer the same results using Crystal Reports when the Output button is activated.
11. Where necessary, list-based reports must have the capability of being output as text, delimited text, .PDF, HTML and/or Excel (.xls) files, as well as printed output. This will not be necessary for all converted Crystal Reports with specific report formats and layouts.
12. The converted .NET applications must provide the same functionality as the Oracle Forms, PACE applications and MS Access programs for the Queries, saved Queries,

and print functions of the existing applications. Programmatic execution of all Queries, saved Queries and printed reports must be retained.

13. The converted .NET applications must provide correct screen alignment and provide GUI capability including scroll bars, cut/copy/paste functions, mouse action on PF Keys (as buttons or tabs), and drop-down menus. All Oracle Forms and PACE AB pick screens must be converted to table-fed Drop-down Boxes.
14. All of the functionality of the existing Oracle PL/SQL code and all other procedures associated with the existing Oracle applications must be incorporated into the converted .NET applications.
15. Vendor must provide in the converted .NET application all the functionality provided to the existing Oracle Forms applications by the linked PL/SQL Subroutines and Libraries.
16. The converted .NET applications must provide the same level of security provided by the existing Oracle Forms, PACE applications and MS Access programs including the following: ability to grant user access to all records or limit user access to selected groups of records; ability to assign each user or group of users different levels of security to add, modify, delete, view, and/or print application data or any portion of any programming unit.
17. Vendor must physically deliver the converted .NET applications and converted Oracle tables, install them on the Department's servers, perform testing to ensure that they work in accordance with the contract requirements, provide an error list of any inconsistencies, and establish security. After successful testing, the vendor must convert any live data necessary. After conversion/installation of the applications and live data, the vendor must provide transition support of the converted system for thirty (30) business days.
18. Upon completion of the project the vendor must provide the Department with installation documentation that pertains to the conversion/modernization in electronic format. Documentation must be complete and contain 100% of the .NET Visual Basic source code, as well as all code, scripts, and batch files used for the installation/data conversion.
19. The vendor must provide installation and maintenance training on-site to approximately 5-7 members of the Department's Information Systems staff.
20. The vendor must be responsible for maintaining any executables for which the source code is not provided. If these modules require modifications after production has begun, the vendor must either provide the source code and instructions for creating a modified executable module or make the necessary changes to the code and provide an updated executable product to the Department.
21. The converted .NET applications must not be designed to be maintainable in whole, or in part, exclusively by the vendor/contractor contracted to provide the conversion

services. Modifications to the converted .NET applications must not require the procurement of licenses, permissions, specialized or proprietary software or the payment of fees or royalties.

22. The converted .NET applications must operate in the following environment:
 - a. Network: Microsoft Windows 2003
 - b. TCP/IP LAN/WAN
 - c. Clients: Windows XP Professional, Windows Vista, Windows 7
 - d. Database: Oracle 11g Standard Edition (on Windows 2003 server)
 - e. Oracle 10g Internet Application Server (on Windows 2003 server)
23. Vendor must provide the Department with a licensed, functional copy of the image conversion/integration software utilized in this project.
24. Warranty: Vendor must warrant the converted .NET applications for not less than sixty (60) days. Changes deemed necessary for the purpose of fulfilling the requirement that the converted .NET system be the functional equivalent of the existing Oracle, PACE or MS Access system must be made during the warranty period at the written request of the Department.
25. All converted TIFF images must be stored in .PDF format and integrated into the Department's existing FileNet imaging system under the existing FileNet cataloging conventions.
26. All functionality in the existing PACE application to be converted (SWAPPR) must be present in the converted .NET application.
27. The PACE Data Dictionary (DD) of the SWAPPR application must be converted to Oracle 11g and the data in the original PACE SWAPPR application must be converted and stored in the Department's Oracle 11g database.
28. The converted SWAPPR Oracle 11g database must provide the same business rules that were provided in the DD of the original PACE applications so that for all table rules, the processing must be in the Oracle database, must not be in any .NET forms, and must be applied strictly for formula fields, sums and counts, basecopydown fields, and table validation.
29. The converted SWAPPR Oracle 11g database must provide the same referential integrity capabilities as the PACE database application.
30. The functionality provided by the PACE SWAPPR application via HLI code linked to the DD must be provided by the converted SWAPPR Oracle 11g database and .NET applications.
31. The converted .NET SWAPPR application must provide updates made through views, fully preserving the ability of the original PACE applications to update multiple tables in a single view statement.

32. AB programs of the existing PACE SWAPPR application must be converted to .NET forms. The converted .NET applications must not include any of the data dictionary code.
33. The converted .NET application must provide any variant screen functionality of the original SWAPPR PACE applications.
34. All record processing and screen handling capabilities of HLI in existing SWAPPR PACE applications must be preserved in the converted .NET applications.
35. All HLI COBOL AB Exit code of the original SWAPPR PACE applications must be converted to PL/SQL or Visual Basic .NET code. No COBOL code must be retained.
36. All HLI COBOL Update Exit code, Default Exit code, Retrieval Exit code, and batch processes of the original SWAPPR PACE applications must be converted to server based packages and procedures written in Oracle PL/SQL in the Oracle 11g database. No COBOL code must be retained.
37. Payment Milestones:

Milestone	Percentage of Contract Price
Acceptance by ADEM of Work Plan, Schedule	10%
Acceptance of Basic Screen Layout from Prototype Screen Demo and Document	25%
Completion of TIFF image conversion to .PDF and FileNet integration	25%
Delivery of Completed .NET Applications, Oracle 11g database and data migration	30%
Oracle to .NET - ALWIC Agenda and Minutes of Alabama Water Improvement Commission	
Oracle to .NET - PREAP Preapproval database LAND (Hazardous Waste 1990-current)	
Oracle to .NET - HWMFDB Hazardous Waste Manifest Document Tracking	
Oracle to .NET - USTTAB Underground Storage Tanks	
PACE to Oracle 11g and .NET - SWAPPR Preapproval database LAND (Solid Waste)	
Provision of Technical Documentation, Source Code and Image Conversion Software	5%
Project Completion-Acceptance after testing/Begin Warranty	5%
Total:	100%

Appendix A

Summary of Oracle Database Components

	<u>Database to be converted to .NET</u>			
	<u>USTTAB</u>	<u>PREAP</u>	<u>HWMFDB</u>	<u>ALWIC</u>
ORACLE FORMS	136	73	6	6
ORACLE REPORTS	48	6	1	1
ORACLE DATABASE TABLES	58	24	3	2
ORACLE VIEWS	20	9		
FUNCTIONS/PROCEDURES/PACKAGES	53	53		
DATABASE TRIGGERS	59	31	3	2
ORACLE USER ROLES	10	3	1	1
ESTIMATED COUNT OF IMAGE DOCUMENTS	132,000	58,000	67,000	500
ESTIMATED COUNT OF IMAGE PAGES	821,000	453,000	75,000	8000

Summary of Access Database Components

	<u>Additional Process to be converted to .NET</u>		
	<u>UST-Postcards</u>	<u>UST-Checklist</u>	<u>UST-TFRAC</u>
ACCESS TABLES	6	25	15
ACCESS QUERIES	8	78	8
ACCESS FORMS/SUBFORMS	3	25	18
ACCESS REPORTS	4	16	5
ACCESS MODULES	2	3	3
ACCESS MACROS			19

Summary of PACE Database Components

SWAPPR

FILES =	17				
BASE TABLES =	18			VIEWS =	13
FIELDS =	254			VIEW FIELDS =	897
KEYS =	40			KEY FIELDS =	69
RELATIONSHIPS =	14			RELATIONSHIP FIELDS =	28
VALID VALUES =	344			CONDITIONS =	31
QUERIES =	4			REPORTS =	18
PROCEDURES =	15			LINES =	510
HLI PROGRAMS =	3			SOURCE LINES =	904
COPY MEMBERS =				SOURCE LINES =	
AB PROGRAMS =	1	SCREEN SETS =	38	SCREENS =	220
HLI SCREEN FILES =		SCREEN SETS =		SCREENS =	
WIT FIELDS =	10	FORMULA FETCH =	291	INTERACTIVE HLI =	
RSN FIELDS =	10	FORMULA UPDATE =	22	UPDATE EXITS =	
WP FIELDS =		CONDITIONS =	31	DEFAULT EXITS =	
WP+ FIELDS =	?	SUM/COUNTS =	18	RETRIEVAL EXITS =	
IMAGE FIELDS =	2	DISPLAY & READ =		AB EXITS =	
MERGED AB'S =				AB'S WITH EXITS =	