AUTOMATED EMPLOYEE SCHEDULING SYSTEM (AESS)

APPENDIX A4 - TECHNICAL REQUIREMENTS

Reference Number	Requirement	Mandatory(M) or Optional (O)	Vendor Response	COMMENTS
	GENERAL TECHNICAL REQUIREMENTS			
TEC 1.00	System must provide an automated, integrated telephony component that is capable of automatically making requests both telephonically and through e-mail without human intervention.	O		
TEC 2.00	System must be a browser based software solution. A browser based software solution is defined as a solution that utilizes Web browsers as the only required component installed on the client computer.	M		
TEC 3.00	System must be able to install and run all components in a 3-tier architecture [Web browser, application server and/or Oracle/MS-SQL/Sybase database server(s)] where the identified servers can be UNIX servers or Windows servers. The system must also offer clustering architecture for efficient scaling and load balancing.	M		
TEC 4.00	System must meet Americans with Disabilites Act (ADA) compliance rules.	O		
TEC 5.00	System shall be based on server technology that supports vertical and horizontal scalability, fail over, clustering, and load balancing capabilities to support a user community of approximately 20000 employees.	M		
TEC 6.00	Support multi-site capabilities from a centralized server deployment.	M		
TEC 7.00	The system's functionality must be capable of being accessed via a portal.	O		
TEC 8.00	System must provide enterprise wide visibility and still configure to be configurable for each business area.	M		

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	APPLICATION TOOLSETS			
TEC 9.00	Provide toolsets to accommodate the following:			
TEC 9.01	Database maintenance (performance and tuning)	O		
TEC 9.02	Report design	M		
TEC 9.03	Security administration	M		
TEC 9.04	End-user interface design: Configuration engine enables users to configure event-driven business rules for tailoring system behavior and functionality without the need for Java programming	O		
TEC 9.05	System upgrade administration	M		
TEC 9.06	Application Programming Interface (API) Maintenance	O		
TEC 9.07	Online Analytical Processing (OLAP) Maintenance	O		
TEC 9.08	Archiving/purging of data	M		
	DATA ENTRY			
TEC 10.00	Provide the ability to define user pull down lists for any database attribute within the application.	O		
TEC 11.00	Provide immediate transfer of values from "Pop up" tables to the appropriate field when selected and to proceed to the next entry field.	M		
TEC 12.00	Allow complete validation and editing of data at the point of entry based on user defined criteria (e.g., transaction, tables, archived records, transaction status, etc.).	M		
TEC 13.00	Validations for data entry include related fields.	M		
TEC 14.00	Use single entry to update all affected tables and indexes.	M		
TEC 15.00	Provide transaction processing controls and edits for entered transactions.	M		
TEC 16.00	End-user screens contain triggers to additional data screens/fields based on a specific data input.	M		
TEC 17.00	Allow mass changes or deletes by table-driven data through proper security.	M		
TEC 18.00	Provide a consistent user interface across all components, including:			
TEC 18.01	Consistent function keys	M		
TEC 18.02	Screen naming functions	M		

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Reference Number	Requirement	Mandatory(M) or Optional (O)	Vendor Response	COMMENTS
TEC 18.03	Navigation patterns	M		
TEC 18.04	Menus (as defined by security profile)	M		
TEC 18.05	Look and feel (adherence to a single user interface standard)	M		
TEC 19.00	Provide the ability to use one logon ID to access all components.	M		
TEC 20.00	Provide point and click as well as function keys.	M		
TEC 21.00	Provide the option of using either menus or commands.	M		
TEC 22.00	Should minimize manual data entry by utilizing automatic fill feature.	M		
TEC 23.00	Users should not be required to enter separation constants or characters for fields such as slashes for dates, colons for time and parentheses or dashes for telephone numbers. System should insert and display the characters.	M		
TEC 24.00	Should provide for a "copy" feature in order to create new records from old records when only minor changes are required.	O		
TEC 25.00	Provide basic MS-Windows commands (e.g. cut, copy, paste, save).	M		
	NETWORK REQUIREMENTS			
TEC 26.00	Support multi-user capability within a Wide Area Network (WAN) environment.	M		
TEC 27.00	Support the following Network standards and protocols:			
TEC 27.01	Transmission Control Protocol/Internet Protocol (TCP/IP)	M		
TEC 27.01	Ethernet	M		
TEC 27.03	Fast Ethernet	M		
TEC 27.04	Gigabit Ethernet	M		
TEC 27.05	Asynchronous Transfer Mode (ATM)	M		
TEC 27.06	Virtual Private Network (VPN)	M		
TEC 27.07	Frame Relay	M		
	DATABASE REQUIREMENTS			
TEC 28.00	Provide full integration between all software modules. Specifically, the updating of any data element occurs only once, and is then reflected throughout all applications.	M		

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APPENDIX A4 - TECHNICAL REQUIREMENTS

Reference Number	Requirement	Mandatory(M) or Optional (O)	Vendor Response	COMMENTS
TEC 29.00	All applications/modules utilize the same database.	M		
TEC 30.00	Application must use a relational database.	M		
TEC 30.01	Application uses Oracle database.	O		
TEC 30.02	Application uses MS-SQL Server database.	O		
TEC 30.03	Application uses Sybase database.	O		
TEC 31.00	Provide capacity to store a minimum of 10 years of historical data.	M		
TEC 32.00	Provide system administration tools to perform data backup, data restoration, and data file reduction through proper security.	M		
TEC 33.00	Provide support for load balancing.	M		
TEC 34.00	Provide table entries that are future dated, that is they become effective in future date.	M		
TEC 35.00	Ability to archive records upon request for records within a user-defined time and criteria.	M		
TEC 36.00	Provide method to access archived data.	M		
TEC 37.00	Ability to purge records upon request for records within a user-defined time and criteria.	M		
TEC 37.01	Validate integrity of database before and after purged	M		
TEC 37.02	Identify orphaned records (e.g. records do not have parent values)	M		
TEC 38.00	Ability to list all records included in purge.	M		
	REPORTING			
TEC 39.00	Include a comprehensive report generation capability for both standard and ad-hoc reports with built-in graphing and charting.	O		
TEC 40.00	System must support the use of Cognos business intelligence software tools. County's standard for business intelligence software is Cognos, vendor to provide narrative explanation on how system can use Cognos.	O		
TEC 41.00	System must support the use of MS-SQL Server business intelligence software tools.	O		

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Reference Number	Requirement	Mandatory(M) or Optional (O)	Vendor Response	COMMENTS
TEC 42.00	Provide multimedia report output (central printers, screen, data file, CD-Rom, DVD, etc.).	O		
TEC 43.00	Run on-line reports in the background and allow users to continue processing.	O		
TEC 44.00	Ability to schedule reports to be run at a later date and/or on a recurring basis.	O		
TEC 45.00	Ability for end-user to view print progress of any report.	O		
TEC 46.00	Provide end-users with the ability to create & generate ad-hoc reports.	O		
TEC 47.00	Allow ad-hoc report/query definitions to be stored in private folders.	O		
TEC 48.00	Allow ad-hoc report/query definitions to be stored in public libraries.	O		
TEC 49.00	Ability to link from reporting tool to graphic, spreadsheet and presentation applications.	O		
TEC 50.00	Ability to utilize wildcards in queries.	O		
TEC 51.00	Ability to create line graphs from the reporting tools.	O		
TEC 52.00	Ability to create bar charts from the reporting tools.	O		
TEC 53.00	Ability to create pie charts from the reporting tools.	O		
TEC 54.00	Ability to create stacked bar charts from the reporting tools.	O		
TEC 55.00	Ability to create min/mid/max line graphs from the reporting tools.	O		
TEC 56.00	Ability to create regression line from reporting tools.	O		
TEC 57.00	Allow report output to be routed to an external database.	O		
TEC 58.00	Allow report output to be routed to a word processing software.	O		
TEC 59.00	Allow report output to be routed to spreadsheet.	O		
TEC 60.00	Allow report output to be routed to American Standard Code for Information Interchange (ASCII) files.	O		
TEC 61.00	Allow report output as Extensible Markup Language (XML) file.	O		
TEC 62.00	Allow report output in uneditable format such as PDF.	O		
TEC 63.00	Provide print preview capability.	O		
TEC 64.00	Allow year-to-year, month-to-month, period-to-period, year to date and life to date comparison on reports.	O		
TEC 65.00	Ability to report on any date during the month or year.	O		

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APPENDIX A4 - TECHNICAL REQUIREMENTS

Reference Number	Requirement	Mandatory(M) or Optional (O)	Vendor Response	COMMENTS
TEC 66.00	Ability to generate reports based on user-defined thresholds and criteria (other than date).	O		
TEC 67.00	Reports can include control breaks.	O		
TEC 68.00	Reports can include end-user defined calculations and formulas.	O		
TEC 69.00	Reports can include end-user defined headings and borders.	O		
TEC 70.00	Provide flexibility to users to indicate round numbers (or not) in reports.	O		
TEC 71.00	Allow users to sort report by any field within the report.	O		
TEC 72.00	Allow users to define a sort order for reports.	O		
TEC 73.00	On-line, real-time reporting and query capability with the ability to reference a data dictionary.	O		
TEC 74.00	Allow end-users to modify report queries on-line.	O		
	ERROR METHODOLOGIES			
TEC 75.00	Error messages appear in a consistent format across all system modules, for both batch and on-line processing. Specifically, error messages having like codes, text and screen locations.	M		
TEC 76.00	Error messages are integrated with on-line help function.	M		
	SECURITY AND AUDIT CAPABILITIES			
TEC 77.00	Support use of "Secure ID" and similar devices.	O		
TEC 78.00	Ability to record date, time, and user ID for all system transactions.	M		
TEC 79.00	Provide historical records (log file) of table updates for a minimum of ten years including the user ID of who made the changes and the actual changes.	M		
TEC 80.00	Allow users to change passwords.	M		
TEC 81.00	System Administrator can define parameters such as requiring users to use alphanumeric and numeric characters in passwords.	O		
TEC 82.00	Provide the option for system to require password changes periodically. The frequency can be determined by system administrator.	O		
TEC 83.00	solution is not used).	M		
TEC 84.00	Can log-off a user after a specified number of denied log on attempts.	M		

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Reference Number	Requirement	Mandatory(M) or Optional (O)	Vendor Response	COMMENTS
TEC 85.00	Log off user and generate report to security officer if user attempts to breach system authorized level defined security parameters while on-line.	O		
86.00	Manage application login utilizing MS Active Directory.	O		
TEC 87.00	Unsuccessful logon attempts are recorded by system and retained for a user defined period of time.	O		
TEC 88.00	Set security profile to define personnel authorized to:			
TEC 88.01	Log on	M		
TEC 88.02	Add data	M		
TEC 88.03	Delete data	M		
TEC 88.04	Change data	M		
TEC 88.05	View data	M		
TEC 89.00	Provide option to restrict data access for each security profile by:			
TEC 89.01	IP Address	O		
TEC 89.02	Employee ID	O		
TEC 89.03	User ID	O		
TEC 89.04	Application	O		
TEC 89.05	Screen	O		
TEC 89.06	Field	O		
TEC 89.07	Workstation	O		
TEC 89.08	Menu	O		
TEC 89.09	Module	O		
TEC 89.10	Report	O		
TEC 89.11	Program/Project	O		
TEC 89.12	Transaction type	O		
TEC 89.13	Role	O		
TEC 90.00	Accommodate de-centralized (department security administrators overseen by central security administrator) security.	M		
TEC 91.00	Provide ability to view or obtain reports showing:			
TEC 91.01	Authorized system use	O		
TEC 91.02	Unauthorized system use	O		

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Reference Number	Requirement	Mandatory(M) or Optional (O)	Vendor Response	COMMENTS
TEC 91.03	Security profiles by user	O		
TEC 91.04	Security breaches or attempts	O		
TEC 92.00	Ability to predefine, based on job function and role, a security profile and assign individuals to such profiles.	O		
TEC 93.00	Ability to provide multiple security profiles to a single user.	O		
TEC 94.00	Ability to view log files on-line for all changes, deletions, and additions including:			
TEC 94.01	Date /time stamp	M		
TEC 94.02	User ID	M		
TEC 94.03	Specific input device	O		
TEC 95.00	Provide record or file encryption using Data Encryption Standard (DES) standards.	O		
TEC 96.00	Allow user to specify what types of activities require supervisory controls and override.	O		
TEC 97.00	Authenticate users with a single password.	M		
TEC 98.00	Support standard encryption techniques for all data transmitting over the network.	O		
TEC 99.00	System should provide record level security for display, data entry, update and read only.	O		
TEC 100.00	System should provide for the setup options and establishment/maintenance of business rules by departments, divisions and sections.	O		
	INTERFACES			
TEC 101.00	Built-in export feature for extracting data in standard formats (e.g., Excel, comma delimited text, etc.) for use in importing data to other applications.	M		
TEC 102.00	Ability to link to Oracle database applications through ODBC, DB Link, or other mechanism.	M		
TEC 103.00	Ability to utilize Messaging Application Programming Interface (MAPI) compliant e-mail systems such as Outlook.	M		
TEC 104.00	Ability to support Extensible Markup Language (XML) transactions with external systems.	O		
	HELP SYSTEM CAPABILITY			
TEC 105.00	Provide context sensitive on-line help feature.	O		

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Reference Number	Requirement	Mandatory(M) or Optional (O)	Vendor Response	COMMENTS
TEC 106.00	Provide on-line help features for all screen elements (screen errors and error codes).	O		
TEC 107.00	Provide a user customizable help feature.	O		
	DOCUMENTATION CAPABILITY			
TEC 108.00	Provide up-to-date end-user manuals which contain clear and thorough descriptions of all screen functions, screen data, programs, and any processing parameters.	M		
TEC 109.00	Provide on-line documentation for users.	M		
TEC 110.00	Provide user manuals on cd-rom.	O		
TEC 111.00	Provide comprehensive technical system documentation and technical manuals including:			
TEC 111.01	Program descriptions	M		
TEC 111.02	Screen definitions and descriptions	M		
TEC 111.03	Database definitions, logical data model, and record layouts	M		
TEC 111.04	System operations	M		