Problem Resolution Report

Peraton

CoSD Contract No. 554833
Low Code Application Platform – OutSystems
Resource Unit
ES/CoSD 116

Date: October 14, 2022

Summary:

In accordance with the provisions of the IT and Telecommunications Service Agreement No. 554833 (the "Agreement") by and between the County of San Diego ("County") and Perspecta Enterprise Solutions LLC, a Peraton company ("Perspecta" or "Contractor" and hereinafter collectively referred to as "the Parties"), agreement is reached on the Effective Date shown below.

Issue or Problem:

County intends to adopt a new low code application platform to effectively enable a secure environment for low-code development, requiring less effort to produce and maintain applications than traditional development.

Resolution:

1. Using the OutSystems Low Code platform, Contractor shall provide a full stack low-code application platform ("LCAP") that provides rapid application development and deployment using low-code and no-code techniques such as declarative, model-driven application design and development.

2. The LCAP abilities shall include at least the following capabilities:
   - Automated workflows;
   - Build applications with a maximum degree of freedom;
   - Integration with one or more external components;
   - Built-in analytics and monitoring that meet County's compliance requirements;
   - Use of the County's AWS platform to make the application available for County internal users and external (i.e., public) use;
   - Integration with County's centralized identity and access management system which is responsible for authenticating all system users;
   - Serve site content via County's Content Delivery Network (CDN) and shall only allow access from County's CDN;
   - Role-based access for all system users; and
   - Security audit logging of users' activities that meet County's compliance requirements.

3. The Low Code Application Platform – OutSystems Resource Unit (RU) is added to the Agreement with a corresponding monthly RU Fee of $54.06 per County End User for access to an unlimited number of applications within the platform. The RU Fee includes the cost of the OutSystems platform infrastructure and installation, internal County End User licenses, hosting in the County AWS cloud and Application compute hosting in the County AWS cloud, LCAP upgrades costs, and the management of the LCAP environment.

4. The Low Code Application Platform – OutSystems RU Fee does not include:
   - Application specific licenses required for the application solution but not related to the OutSystems platform (e.g., SQL, SFTP).

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- Non-compute hosting resources for the application solution that are external to the OutSystems platform such as database servers (e.g., SQL Server or Remote Desktop Server license) and storage.
- Enterprise licenses required for external users (i.e., public).

5. The Parties acknowledge that the Low Code Application Platform - OutSystems RU is based on the OutSystems solution. Should for any reason such OutSystems solution need replacing, the Parties agree to negotiate in good faith an alternative solution and corresponding fees.

6. Section 6.7 Application Infrastructure Services of Schedule 4.3 is amended to reflect requirements associated with the Low Code Application Platform - OutSystems RU, as per Attachment 1 to this PRR.

7. Section 12.4 is added to Schedule 16.1 - Fees, as follows:

    12.4 Low Code Application Platform – OutSystems
    This section pertains to the Low Code Application Platform – OutSystems Resource Unit (RU) associated with the services described in Schedule 4.3, Section 6.7.1 and listed in Exhibit 16.1-1, Fees Summary by Resource Unit.

    The Low Code Application Platform – OutSystems RU is based on the OutSystems solution. The County will be charged the RU Fee listed in Exhibit 16.1-1 only for internal County users and will provide access to unlimited number of applications within the platform. Enterprise licenses for external users will be charged separately.

8. Exhibits 16.1-1 and 16.1-2 are emended with the addition of the Low Code Application Platform RU, as per Attachments 2 and 3 to this PRR.

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The resolution of the issue or Problem as described in this Problem Resolution Report shall govern the Parties' actions under the Agreement until a formal amendment of the Agreement is implemented in accordance with the terms of the Agreement, at which time this Problem Resolution Report shall be deemed superseded and shall be null and void.

All other terms and conditions of the Agreement remain unchanged and the Parties agree that such terms and conditions set forth in the Agreement shall continue to apply. Unless otherwise indicated, the terms used herein shall have the same meaning as those given in the Agreement.

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IN WITNESS WHEREOF, The Parties hereto, intending to be legally bound, have executed by their authorized representatives and delivered this Problem Resolution Report as of the date first written above.

COUNTY OF SAN DIEGO

By: _(signature)_

Name: John M. Pellegrino

Title: Director, Department of Purchasing and Contracting

Effective Date: 10/19/2022

PERSPECTA ENTERPRISE SOLUTIONS LLC

By: _(signature)_

Name: Max Pinna

Title: Contracts Manager

Date: October 14, 2022

6.   DATA CENTER SERVICES

6.7.   Application Infrastructure Services

6.7.1.   Overview

This section pertains to the Application Infrastructure Services Framework Component within the Data Center Framework. The Application Infrastructure Services Framework Component applies to all Hardware and Software needed to maintain and support County Portfolio Applications.

The Application infrastructure is a platform of integrated technologies that can manage multiple hosted applications. The Application infrastructure is comprised of application servers, web servers, and database servers and is a core applications architecture component. The Application infrastructure will deliver high performance application services to End-Users, Third-Parties and constituents of the Services. Some of the key functionality of the Application infrastructure includes, but is not limited to, transaction management, clustering, application-to-application messaging, system management, advanced application development tools, proprietary access, and interoperability with legacy technologies. Application infrastructure provides a powerful platform to support and extend a broad range of County Portfolio Applications.

Building a multi-tier architecture is foundational for the Application infrastructure. Example for multi-tier architecture is as follows:

- A first-tier, front-end, browser-based presentation layer
- A middle-tier business logic application or set of applications
- A third-tier, back-end, database and transaction server

Application Infrastructure Services Framework Component include, but are not limited to, Server refresh, operating system update and support, management of server resources, monitor and analyze network performance, overall application performance, server performance and capacity tuning and analysis.

6.7.2.   High Level Requirements

6.7.2.1. Contractor shall ensure that County Portfolio Applications are hosted exclusively in the Application Infrastructure Services.

6.7.2.2. Contractor shall provide continuous operating system updates, patches and security hot fixes for Application infrastructure.

6.7.2.3. Contractor shall deploy County preferred and standard virtual servers, virtual storage and virtual network.

6.7.2.4. Contractor shall gain approval by the County for any exception to the virtual first standards.

6.7.2.5. Contractor shall provide annual refresh plans for all virtual services.

6.7.2.6. Contractor shall provide annual server consolidation recommendations.

6.7.2.7. Contractor shall continuously monitor and correct performance Incidents or system degradation for all application servers.

6.7.2.8. Contractor shall maintain Application infrastructure storage on centralized, shared storage environment.

6.7.2.9. Contractor shall provide server hardening across Application infrastructure.

6.7.2.10. Contractor shall implement a data backup strategy to meet County Applications' requirements.

6.7.2.11. Contractor shall support and assist in Third-Party application installation and configuration.

6.7.2.12. Contractor shall improve overall architecture of the Application infrastructure with consideration of cloud and increased virtualization techniques.

6.7.2.13. Contractor shall continuously improve demand levels across the Application infrastructure.

6.7.2.14. Contractor shall continuously improve and reduce costs with integrated tools that provide better security and control of the Application infrastructure.

6.7.2.15. Contractor shall deploy and use standard operating systems on all Hardware used to provide Application Infrastructure Services.

6.7.2.16. Contractor shall continuously improve speed of delivery for new Applications and Services in Application infrastructure.

6.7.2.17. Contractor shall continuously deliver to business objectives while reducing overall Application infrastructure costs across all environments.

6.7.2.18. Contractor shall provide centralized support and tools for Application servers located outside the data center.

6.7.2.19. Contractor shall maintain a timeline/roadmap of all Application Infrastructure Services Hardware versions and Software version life cycles to adequately plan timeframes and completion dates to stay within supported versions of both Hardware and Software that assists in defining the standards.

6.7.2.20. Contractor shall maintain and be responsible for all components needed to provide Application Infrastructure Services.

6.7.2.21. Contractor shall maintain Application Infrastructure Services so there is not a single point failure thereby assuring County business applications continue to operate during any unplanned event.

6.7.2.22. Contractor shall provide continuous architecture and management resources to participate in planning of upgrades, refresh and transformational activities related to Application Infrastructure Services.

6.7.2.23. Contractor shall continuously investigate emerging technologies and services that improve the overall Application infrastructure efficiencies, lowers overall costs and improves business application performance and security.

6.7.2.24. Contractor shall provide Low Code Application Platform Services.

6.7.3.   Environment

6.7.3.1. Hardware and Software

6.7.3.1.1.   Contractor shall provide all Hardware, Software and utilities to support Application Infrastructure Services.

6.7.3.1.2.   All licensing shall be the responsibility of the Contractor for all Hardware and Software used to provide Application Infrastructure Services.

6.7.3.2. Wintel Application Infrastructure Services

WINTEL Application Infrastructure Services are the Microsoft Server operating system based virtual and physical servers supporting Application Infrastructure Services.

6.7.3.2.1.   Contractor shall recommend, for County approval, annual standards for virtual and physical hardware.

6.7.3.2.2.   Contractor shall deploy annual, County approved, virtual and physical hardware standards.

6.7.3.2.3.   Contractor shall publish all County approved standards in the Standards and Procedures Manual on the Service Portal.

6.7.3.2.4.   Contractor shall develop hardware standards shall be set for three classes of physical server types: Small, Medium, Large, and X-Large.

6.7.3.2.5. Contractor shall maintain, with sufficient capacity, a server farm to host all virtual servers.

6.7.3.2.6. Contractor shall develop, install and maintain all storage for Application Infrastructure Services using centralized Storage Area Network (SAN).

6.7.3.2.7. Contractor shall recommend, for County approval, annual standards for Windows Operating Systems for virtual and physical servers.

6.7.3.2.8. Contractor shall maintain operating system currency on all Application Infrastructure Services.

6.7.3.2.9. Contractor shall refresh all physical servers at a rate of 25% per year. No physical server shall be in service longer than 4 years without County written approval.

6.7.3.2.10. Contractor shall perform refresh activities using a straight line methodology throughout the Contract Year.

6.7.3.2.11. Contractor shall maintain and update, for County review, timeline/roadmap of all Hardware and Software product life cycles for Application Infrastructure Services.

6.7.3.2.12. Contractor shall responsible for all activities related to virtual or physical server refresh, including business application reinstall and configuration.

6.7.3.3. UNIX Application Infrastructure Services

UNIX Application Infrastructure Services are the UNIX operating system based virtual and physical servers supporting Application Infrastructure Services.

6.7.3.3.1. Contractor shall recommend, for County approval, annual standards for virtual and physical hardware.

6.7.3.3.2.   Contractor shall deploy annual, County approved, virtual and physical hardware standards.

6.7.3.3.3.   Contractor shall publish all County approved standards in the Standards and Procedures Manual on the Service Portal.

6.7.3.3.4.   Contractor shall develop hardware standards shall be set for three classes of physical server types: Small, Medium, Large and X-Large.

6.7.3.3.5.   Contractor shall develop, deliver, for County approval, and implement an infrastructure to support virtualization of UNIX servers.

6.7.3.3.6.   Contractor shall maintain, with sufficient capacity, a server farm to host all UNIX based virtual servers.

6.7.3.3.7.   Contractor shall develop, install and maintain all storage for UNIX Application Infrastructure Services using centralized Storage Area Network (SAN).

6.7.3.3.8.   Contractor shall recommend, for County approval, annual standards for UNIX Operating Systems for virtual and physical servers.

6.7.3.3.9.   Contractor shall maintain, potentially, different sources for UNIX operating systems.

6.7.3.3.10.   Contractor shall maintain operating system currency on all UNIX Application Infrastructure Services.

6.7.3.3.11.   Contractor shall refresh all physical servers at a rate of 20% per year. No physical server shall be in service longer than 5 years without County written approval.

6.7.3.3.12.   Contractor shall perform refresh activities using a straight line methodology throughout the Contract Year.

6.7.3.3.13. Contractor shall maintain and update, for County review, timeline/roadmap of all Hardware and Software product life cycles for Application Infrastructure Services.

6.7.3.3.14. Contractor shall responsible for all activities related to virtual or physical server refresh, including business application reinstall and configuration.

6.7.3.4. Virtual Application Infrastructure Services

Virtual Application Infrastructure Services are the requirements for supporting Windows Application Infrastructure Services and UNIX Application Infrastructure Services.

A Virtual Guest Server is a logical instance of an operating system and applications environment based on the use of virtualization software on a physical host server (Virtual Host). Virtualization software permits the virtualization of a computing environment to support multiple virtual environments.

6.7.3.4.1. Contractor shall recommend, for County approval, annual standards for Virtual Application Infrastructure to support Windows Application Infrastructure Services and UNIX Application Infrastructure Services.

6.7.3.4.2. Contractor shall deploy annual, County approved, Virtual Application Infrastructure standards.

6.7.3.4.3. Contractor shall determine the number of virtual guest per virtual host server to ensure maximum efficiency and zero service impact due to performance.

6.7.3.4.4. Contractor shall configure and deploy virtual guests to the same standards, or better to physical servers.

6.7.3.4.5. Contractor shall refresh virtual guest servers based on current operating system standards.

6.7.3.4.6.   Contractor shall develop and deliver self-service and policy based infrastructure provisioning to the Virtual Application Infrastructure.

6.7.3.4.7.   Contractor shall extend the Virtual Application Infrastructure to include software-defined storage platform (Hyper-Converged Infrastructure) integration as standard methodology.

6.7.3.4.8.   Contractor shall extend the Virtual Application Infrastructure to integrate and operate in a heterogeneous or hybrid cloud environments.

6.7.3.4.9.   Contractor shall design, deliver (for County approval) and implement software-defined storage that can scale for capacity and performance simultaneous as part of virtual guest provisioning.

6.7.3.4.10. Contractor shall design, deliver and implement high availability, fault tolerance and other similar techniques to minimize or eliminate downtime in the Virtual Application Infrastructure.

6.7.3.4.11. Contractor shall deploy tools to ensure all County Portfolio Applications are virtualized and operating in the Virtual Application Infrastructure as standard practice.

6.7.3.4.12. Contractor shall implement management for the Virtual Application Infrastructure that allows the creation, sharing, deployment and migration of virtual guest servers.

6.7.3.4.13. Contractor shall develop, deliver (for County approval), and implement a centralized content library for virtual templates, virtual appliances, ISO images, and scripts.

6.7.3.4.14. Contractor shall develop and implement cloud management platform for purpose-built hybrid cloud applications.

6.7.3.4.15. Contractor shall develop, deliver (for County approval) and implement capacity and performance tools specifically designed for the Virtual Application Infrastructure environment.

6.7.3.4.16. Contractor shall develop the Virtual Application Infrastructure on Industry standard server virtualization platform.

6.7.3.4.17. Contractor shall build and manage virtualization to optimize infrastructure, automate service delivery and provide high availability to virtual guest servers.

6.7.3.4.18. Contractor shall design, deliver, for County approval and implement the virtual farm required to operate the Application Infrastructure Services.

6.7.3.5. Oracle Exadata Services

6.7.3.5.1. Oracle Exadata Services are the compute and storage system for running Oracle Database software supporting Application Infrastructure Services.

6.7.3.5.2. Contractor shall recommend, for County approval, annual standards for hardware.

6.7.3.5.3. Contractor shall deploy annual, County approved, physical hardware standards.

6.7.3.5.4. Contractor shall publish all County approved standards in the Standards and Procedures Manual on the Service Portal.

6.7.3.5.5.   Contractor shall develop hardware standards for Eighth Rack server.

6.7.3.5.6.   Contractor shall refresh all Oracle Exadata based Application Servers every 5 years. No physical server shall be in service longer than 5 years without County written approval.

6.7.3.5.7.   Contractor shall perform refresh activities using a straight line methodology throughout the Contract Year.

6.7.3.5.8.   Contractor shall maintain and update, for County review, timeline/roadmap of all Hardware and Software product life cycles for Oracle Exadata Services.

6.7.3.5.9.   Contractor shall responsible for all activities related to Oracle Exadata based Application servers refresh, including business application reinstall and configuration, except for County-approved remediation of application software.

6.7.4.   Roles and Responsibilities

The following table identifies the Plan, Build and Operate requirements, roles and responsibilities specific to Application Infrastructure Services.

Application Infrastructure Services Roles and Responsibilities		
Plan Roles and Responsibilities	Contractor	County
1. Produce and submit recommendations for hardware standards of Application Infrastructure Services Assets on a yearly basis.	X	
1. Review and approve hardware standards for Application Infrastructure Services Assets.		X
2. Produce and submit recommendations for operating system standards for Application Infrastructure Services Assets on a yearly basis.	X	
3. Review and approve operating system standards for Application Infrastructure Services Assets.		X

Application Infrastructure Services Roles and Responsibilities		
4. Produce and submit Application Infrastructure Services refresh plan on a yearly basis.	X	
5. Review and approve Application Infrastructure Services refresh plan.		X
6. Produce and submit Application Infrastructure Services storage migration and consolidation plan on a yearly basis.	X	
7. Review and approve Application Infrastructure Services storage migration and consolidation plan.		X
8. Produce and submit backup/recovery policies and procedures.	X	
9. Review and approve backup/recovery policies and procedures.		X
10. Produce and submit recommendations for Application Infrastructure placement into County Locations.	X	
11. Review and approve recommendations for Application Infrastructure placement into County Locations.		X
12. Produce and submit recommendations for Application Infrastructure Services consolidation plan on a yearly basis.	X	
13. Review and approve Application Infrastructure Services consolidation plan.		X
14. Produce and submit Application Infrastructure Services Assets plans for updates or patches as needed for reliable operations and to maintain security.	X	
15. Review and approve Application Infrastructure Assets Services plans for updates or patches as needed for reliable operations and to maintain security.		X
16. Produce and submit recommendations for monitoring and exceptional conditions procedures.	X	
17. Review and approve monitoring and exceptional conditions procedures.		X
18. Produce and submit recommendations for job scheduling requirements, interdependencies, County contacts, and rerun requirements for all production jobs.	X	
19. Review and approve job scheduling requirements, interdependencies, County contacts, and rerun requirements for all production jobs.		X

Application Infrastructure Services Roles and Responsibilities		
20. Recommend replacement or upgrade of County utility software programs with commercially available software to support processing operations.	X	
21. Develop Low Code Application Platform solution design document including but not limited to architecture, functions, data models, design features, configuration, performance requirements (e.g., security, extensibility, maintainability, scalability, availability, and reliability).	X	
22. Review and approve a Low Code Application Platform solution design document including but not limited to architecture, functions, data models, design features, configuration, performance requirements (e.g., security, extensibility, maintainability, scalability, availability, and reliability).		X
23. Develop standards and governance processes for the Low Code Application environment, including but not limited to release management, code reviews, application specification documentation, and code promotion, under the Low Code Center of Excellence.	X	
24. Review and approve standards and governance processes for the Low Code Application environment, including but not limited to release management, code reviews, application specification documentation, and code promotion, under the Low Code Center of Excellence.		X
Build Roles and Responsibilities	**Contractor**	**County**
25. Provide all design and engineering required to deploy, refresh and support Application Infrastructure Services Assets.	X	
26. Design, test and implement hardware standards for Application Infrastructure Services Assets.	X	
27. Design, test and deploy operating system standards for Application Infrastructure Services Assets.	X	
28. Deploy, manage, communicate and report on activities related to Application Infrastructure Services refresh.	X	
29. Review and approve reports on Application Infrastructure Services refresh.		X
30. Design, test and execute Application Infrastructure Services storage migration and consolidation plan.	X	
31. Implement approved backup/recovery policies and procedures.	X	

Application Infrastructure Services Roles and Responsibilities		
32. Design, test and deploy approved Application Infrastructure Services consolidation plans.	X	
33. Test and deploy approved updates or patches to Application Infrastructure Services Assets.	X	
34. Implement the Low Code Application Platform based on the approved solution design document.	X	
35. Update Low Code Application Platform architecture documents as needed (e.g., enhancements).	X	
36. Review and approve updates to Low Code Application Platform architecture documents.		X
Operate Roles and Responsibilities	**Contractor**	**County**
37. Provide support for Application Pre-Production and Application Test Servers.	X	
38. Conduct data and Application migration that is necessary due to any Application Infrastructure refresh or break-fix activity.	X	
39. Monitor, operate, maintain and support the Third-Party Applications running on Application servers.	X	
40. Provide automated event monitoring tools that notify Applications Team for immediate response if there is an application-related Incident.	X	
41. Provide support, including break-fix, for all Application Infrastructure Services Assets.	X	
42. Provide support for Application Infrastructure located in County Locations.	X	
43. Provide support for Application Infrastructure Services storage migration and consolidation plan.	X	
44. Perform backups on Application Infrastructure Services Assets as defined.	X	
45. Conduct data and Application migration that is necessary due to any Application Infrastructure refresh or break-fix activity.	X	
46. Support send and receive electronic data transmissions (e.g., EDI, FTP).	X	
47. Perform upgrades, updates, and security patching to Application Infrastructure Service Assets.	X	

Application Infrastructure Services Roles and Responsibilities		
48. Monitor, operate, maintain and support OS (Operating Systems) installed on Application Infrastructure.	X	
49. Monitor, operate, maintain and support the Third-Party Applications running on Application Infrastructure.	X	
50. Execute standard operating procedures at scheduled times.	X	
51. Start-up and shut-down County online/interactive systems according to defined schedules or upon approved requests.	X	
52. Coordinate and manage Third-Party hardware and software maintenance to meet County requirements.	X	
53. Ensure that System management and monitoring tools do not impact County operations.	X	
54. Provide automated event monitoring tools that shall notify Applications Team for immediate response if there is an application-related problem.	X	

PRR 116 - Low Code Application Platform Resource Unit - Attachment 2
Exhibit 16.1-1 Resource Unit Price Summary

Resource Unit (RU)	*Reference	Unit of Measure	Pricing Method	Bundle	Measurement Method	Baseline Volumes (per Contract Year)	RU Fee (90-110% band)	Baseline Annual Fee	RU Fee (70% to 80% band)	RU Fee (80% to 90% band)	RU Fee (110% to 120% band)	RU Fee (120% to130% band)	RU Fee (130% to 150% band)	RU Fee (150% to 200% band)	Depreciation Period (in Years)
Low Code Application Platform - OutSystems	Schedule 4.3 Section 6.7	User	Fixed Monthly Fee Per Unit		Specific	6,000	S 54.06	S 324,360.00	n/a	n/a	n/a	n/a	n/a	n/a	n/a

L6 - Low Code Application Platform Resource Unit - Attachment 3

t 16.1-2 Resource Unit Price Decomposition

urce Unit (RU)	Reference	Unit of Measure	Pricing Method	Decomposition	Resource Unit Fee	Component Fee	Component Description
Code Application rm - OutSystems	Schedule 4.3 Section 6.7	User	Fixed Monthly Per Unit		$ 54.06		
				Hardware		$ 8.91	Represents the costs associated to the platform cloud hosting.
				Software License		$ 21.17	Represents the software licenses costs of the platform and users
				Sofware Maintenance		$ 11.16	Represents vendor support costs.
				Support Labor		$ 12.82	Represents costs associated with platform support.