



MARKET RESEARCH AGREEMENT FOR A LOW-CODE/NO-CODE PLATFORM REQUEST FOR INFORMATION

1. **SCOPE:** The Panama Canal Authority (ACP) is conducting a market research to determine the availability of an acceptable, world class, Low-Code / No-Code Platform for the development and delivery of digital products and solutions. Any provider of this type of platforms interested in participating in this market research will be required to provide criterion information about the low-code/no-code platform proposed. The intention is to evaluate the overall tools and features of the low-code/no-code platform for development and operation of software solutions. Each Provider should submit supporting platform documentation for each of the criteria listed on the APPENDIX 1 – Assessment Criterion Matrix.

2. **PROVIDERS' ORGANIZATION, EXPERIENCE, PAST PERFORMANCE, AND PRICING MODELS:** To participate in this market research, Providers must provide evidence for:

- a. The platform has been used for development and to deploy low-code/no-code solutions of similar type, size, complexity, and performance specified under this agreement.
- b. Summary of the provider's company/group background information and previous experience and past performance in the design, development, testing, delivery and technical support levels offered for low-code/no-code platforms and end-user's solutions.
- c. Reference clients list.
- d. Platform features by pricing models and licensing scheme.
- e. Platform training programs, consulting services available including terms and conditions, and other potential complimentary services offered by the Provider.

Documentation evidencing compliance with this request and evidence of past performance developing solutions with the platforms proposed shall be submitted **no later than September 17th, 2021**, together with the formal notification required under the Paragraph No. 3.

3. **CONCURRENCE TO PARTICPATE IN AGREEMENT:** Any provider of the specified type of product who is interested in participating in this agreement, is required to submit **no later than September 17th, 2021**, with formal, written notification to the ACP indicating acceptance of the conditions of this agreement.

4. DATA AND INFORMATION RIGHTS:

“Data and Information” to be submitted or provided under this market research agreement means calculations, computer information and other software, drawings, design information, manuals, specifications and other documents of a technical nature required to be prepared, provided and supplied by the Provider or developed during or for the purposes of the work to be carried out by or on behalf of the ACP under this agreement.

5. POINT OF CONTACT: Providers requiring any clarification on this market research should contact, before due date:

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Address:

Panama Canal Authority

Administration Building – 101, Balboa – Ancon

Vice Presidency for Digital Transformation (Vicepresidencia de Transformación Digital)

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APPENDIX 1 – ASSESSMENT CRITERION MATRIX

Assessment Criterion	0	1	2	3
Governance				
Application Life Cycle Management	No application life cycle management provided	Supports all of the following:	Supports all of the following:	Supports all of the following:
		Identify each application owner	Automatic flagging of unused applications	Automatic archiving of unused applications
			Automatic archiving of unused applications	Automatic retirement of applications without an owner
			Provides an approval process within the base platform	
Application Approvals	No application approval process supported	Supports one of the following:	Restricts application access of specific resource types (e.g., confidential data)	Approval required to move application with access to restricted data into production
		Approval process within the base platform		
Integration Controls	No integration controls provided	User-based access granularity	Role-based access granularity	Supports restricting access to specific integrations to external software (e.g., integration with an SAP system)
Application and Platform Metrics	Limited application and platform metrics provided	Reports level of application use by default	Provides one of the following:	Provides both of the following:
			Reporting on the size of application user base	Reporting on the size of application user base
			Reports on the resources accessed by an application	Reports on the resources accessed by an application
Security and Access	Does not provide any security and access capabilities	Supports one the following combinations:	Supports all of the following:	Supports OpenID
		Active Directory DS	OAuth 2.0	
		AD Kerb	SAML	
		LDAP DS		
		AuthN Against LDAP		
		and both of		
		RBAC		
Data-at-rest encryption				
Application and Model Versioning	Does not provide any application and model versioning capabilities	Supports all of the following:	Supports all of the following:	Model-driven metadata export
		Application version history	End-user access to previous versions	

		All versions of model stored	All versions of a model can be restored	
		Model integrity checking		
Use-Case Licensing	Does not provide differentiated licensing for a variety of enterprise use cases	Supports B2B	Supports all of the following:	Supports B2C
			B2E	
			Citizen development	
Developer Access and Onboarding	Does not provide any capabilities for developers to create applications	Allows users to create applications but does not govern application creation in anyway	Supports one of the following:	Supports both of the following:
			Default user application creation policy	Default user application creation policy
			Admin setting to prevent users from creating applications	Admin setting to prevent users from creating applications

Architectural Considerations

Platform Scalability	Has significant limitations on the size of application that can be created and has no platform scalability options	Supports automatic scaling	Supports all of the following:	Supports all of the following:
			No concurrent user limitations	No limits on the number of data entities in a single application
			Ability to constrain resource usage by a single application	No limits on the number of screens in a single application
				No limits on the number of models in a single application
				No combinatorial limit on the number of data entities, screens and models in a single application
				No combinatorial limit on the number of data entities, screens and models for all applications in the platform instance
Hosting Model	N/A: Without at least one hosting model, the LCAP could not exist	Supports multitenancy	Supports either of the following:	Supports either of the following with on-premises installations:
			Fully managed service (SaaS)	Single tenancy
			On-premises installation	Hybrid installation
			Single tenancy	or the following for SaaS offerings
				99.9% SLA for managed service

Architectural Considerations				
Exposing Applications as APIs	No component of the application can be exposed as an API	Support for exposing applications as APIs, but only with manual setup and/or custom coding	Automatic API documentation (e.g., OpenAPI) generation	Automatic API generation for application
Portability and Extensibility	Limited portability options	Custom extensions	Native mobile application	Supports all of the following:
				Complete application export
				Deploy application to Kubernetes or PaaS platform
Disaster Recovery	No disaster recovery capabilities	Automatic backups	Integration with enterprise backup software	Multisite failover
Offline Capabilities	No offline application capabilities	Offline applications	Offline by default with occasional sync	Automatic conflict resolution when offline applications resync
Application Testing	No application testing functionality supported	External testing tools	Built-in testing capabilities	Supports all of the following:
				Unit testing framework
				Test data management
				Testing via CI pipeline

Integration				
Data Access	Does not provide any capabilities to use external data sources	Spreadsheet as a data source	External database can be used instead of bundled database	No license required for external database
Application Connectors	Does not provide any connector frameworks or approved integrations	Supports the following:	Supports the following:	Supports:
		Platform framework for custom connectors	Marketplace of approved integrations	External framework for customer connectors
API Integration	Cannot use any APIs	Cannot use any APIs	Support for consuming custom-built API services	OpenAPI specification consumption
Event-Driven Capabilities	Does not provide any event-driven capabilities	Supports one of the following:	Supports at least three of the following:	Supports all of the following:
		Event-driven source platform support	Event-driven source platform support	Event-driven source platform support
		Streaming data use in an application	Streaming data use in an application	Streaming data use in an application
			Webhooks for consuming events	Webhooks for consuming events
			Webhooks for dispatching events	Webhooks for dispatching events

Developer and Operations Experience				
Developer Personas	No differentiation in developer personas supported	Supports all of the following:	Supports:	Supports:
		Citizen developer	professional developers	Abstracted SDLC
		IT developer		
Data Validation	No data validation completed	Data validation in UI elements	Supports one of the following:	Supports all of the following:
			Data validation in back-end processing	Data validation in back-end processing
			Data import from CSV or spreadsheets	Data import from CSV or spreadsheets
Developer and Operations Tools	Limited developer and operations tooling, unsuited for enterprise usage	Supports at least two of the following:	Supports all of the following:	Supports:
		Platform API for developers	CLI implementing the full platform API	CLI implementing the full admin API
		Admin API for developers and operations	Modification of applications with external IDE	
		Application creation entirely within the web-based platform	All platform and admin capabilities are available via API	
DevOps Methodologies	Limited support for DevOps methodologies, unsuited for enterprise usage	No manual steps in application release process	Supports all of the following:	Supports:
			Source-driven development	Fully automated CI/CD pipeline
			External version control for application source control	
			External version control for application metadata	
			External version control for configuration data	
Sandbox Environments	No sandbox environments provided	Provides developer sandbox environments	Supports all of the following:	Supports all of the following:
			Unlimited number of sandbox environments can be created	Automatic deletion of sandbox environments
			Automated refresh of sandbox environments to clean state	Controls on what external resources a sandbox can access
End-User Experience				
UI Design and Frameworks	No UI design or framework support	Supports all of the following:	Progressive web apps support	Voice as an interface
		Responsive application UI for model-driven development		
		Native mobile device features		